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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Friday, June 24, 2022  
WELL WORK PERMIT  
Horizontal 6A / New Drill

TUG HILL OPERATING, LLC  
380 SOUTHPOINTE BOULEVARD, PLAZA II  
SUITE 200  
CANONSBURG, PA 15317

Re: Permit approval for HEAVEN HILL 3N-14HM  
47-051-02451-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

A blue ink signature of James A. Martin, Chief, is written over a white background.

James A. Martin  
Chief

Operator's Well Number: HEAVEN HILL 3N-14HM  
Farm Name: ANDREW C WHITLATCH ET AL  
U.S. WELL NUMBER: 47-051-02451-00-00  
Horizontal 6A New Drill  
Date Issued: 6/24/2022

Promoting a healthy environment.

07/01/2022

## PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

### CONDITIONS

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

## PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to [DEPOOGNotify@wv.gov](mailto:DEPOOGNotify@wv.gov).

**4705102451**

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**WELL WORK PERMIT APPLICATION**

1) Well Operator: Tug Hill Operating, LLC 494510851 Marshall Meade Glen Easton 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Heaven Hill 3N-14HM Well Pad Name: Heaven Hill 3

3) Farm Name/Surface Owner: Andrew C. Whitlatch, et ux Public Road Access: Yeater Lane CR 21/11

4) Elevation, current ground: 1,328' Elevation, proposed post-construction: 1,328'

5) Well Type (a) Gas  Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_

Other \_\_\_\_\_

(b) If Gas Shallow  Deep \_\_\_\_\_

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):

Marcellus is the target formation at a depth of 6,819' - 6,869', thickness of 50' and anticipated pressure of approx. 3800 psi.

8) Proposed Total Vertical Depth: 6,969'

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9) Formation at Total Vertical Depth: Onondaga

JUN 15 2022

10) Proposed Total Measured Depth: 16,171'

11) Proposed Horizontal Leg Length: 8,472.23'

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12) Approximate Fresh Water Strata Depths: 70; 1,038'

13) Method to Determine Fresh Water Depths: Based on the depth of Pittsburgh Coal seam, per WVGES mapping contours

14) Approximate Saltwater Depths: 1,431'

15) Approximate Coal Seam Depths: Sewickley Coal - 945' and Pittsburgh Coal - 1,032'

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes  No \_\_\_\_\_

(a) If Yes, provide Mine Info: Name: Marshall County Coal Resources / Marshall County Mine

Depth: Pittsburgh coal TVD - 1,032' and subsea level - 295'

Seam: Pittsburgh #8

Owner: Marshall County Coal Resources, Inc.

WW-6B  
(04/15)

API NO. 47-051 **4705102451**  
 OPERATOR WELL NO. Heaven Hill 3N-14HM  
 Well Pad Name: Heaven Hill 3

18)

**CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	100'	100'	259FT^3(CTS)
Fresh Water/Coal	13 3/8"	NEW	J55	54.5#	1,175'	1,175'	1,108FT^3(CTS)
Intermediate	9 5/8"	NEW	J55	36#	2,954'	2,954'	983FT^3(CTS)
Production	5 1/2"	NEW	P110	20#	16,171'	16,171'	4,127FT^3(CTS)
Tubing	2 3/8"	NEW	P110	4.7#		6,814'	
Liners							

*YJK 1/19/2022*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water/ Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate	9 5/8"	12 1/4"	.352	3,520	2,816	SEE #24	1.19
Production	5 1/2"	8 7/8" _ 8 3/4"	.361	12,640	10,112	SEE #24	1.17/1.19
Tubing	2 3/8"		.19	11,200	8,960		
Liners							

**PACKERS**

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

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WW-6B  
(10/14)

4705102451  
API NO. 47-051 -  
OPERATOR WELL NO. Heaven Hill 3N-14HM  
Well Pad Name: Heaven Hill 3

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill through the Marcellus and TD Pilot Hole 100' into the Onondaga. Log vertical section and run a solid cement plug back to proposed KOP (6,314'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Well to be completed with approximately 21,200,000 lb proppant and 290,000 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

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21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 18.43 acres

22) Area to be disturbed for well pad only, less access road (acres): 7.15 acres

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23) Describe centralizer placement for each casing string:

Will run 3 centralizers on surface casing at equal distance. Intermediate will have 1 centralizer every other joint. Production casing will have one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

24) Describe all cement additives associated with each cement type:

Sfc - Premium NE-1 + 2% CaCl; Int1 - Premium NE-1 + 1.5% CaCL + Flake; Int2 - Lead: Premium NE-1 + 5% BA-90 + .85% R-3 + 3% KCl + .75 gals/100sk FP-13L + 1% MPA-170 Tail: Premium NE-1 + .1% R-3 + 5% KCl + 1% CD-32 + .4% FL-52 + .2% ASA-301 + .6% Sodium Metasilicate; Kick Plug - Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L; Prod - Lead: 50:50 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .75 gal/100sk FP-13L Tail: 25:75 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .375 gal/100sk FP-13L

25) Proposed borehole conditioning procedures:

Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, POOH

\*Note: Attach additional sheets as needed.

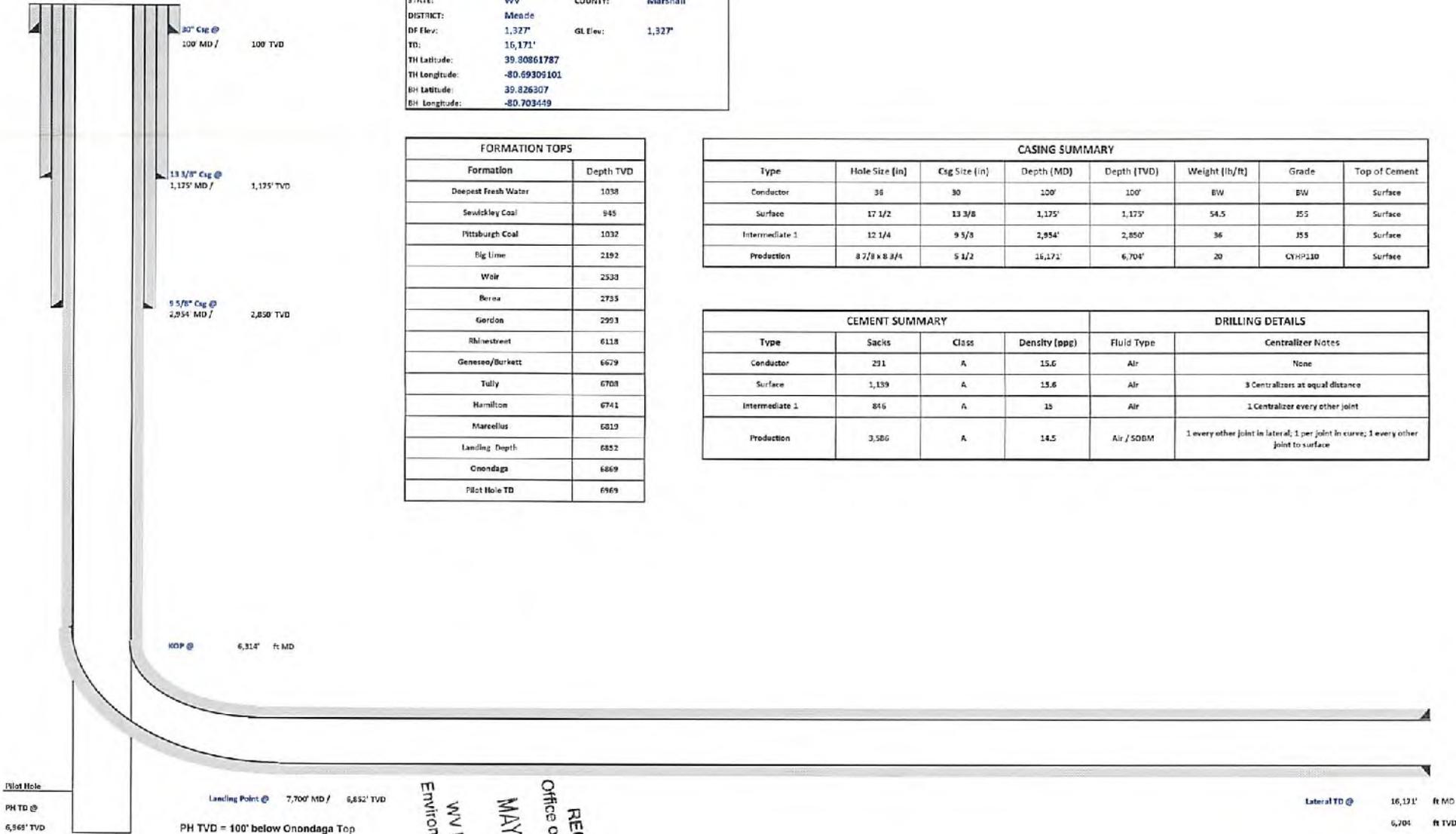


WELL NAME: Heaven Hill 3 N-141M  
 STATE: WV COUNTY: Marshall  
 DISTRICT: Meade  
 DF Elev: 1,327' GL Elev: 1,327'  
 TD: 16,171'  
 TH Latitude: 39.80861787  
 TH Longitude: -80.69309101  
 BH Latitude: 39.826307  
 BH Longitude: -80.703449

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	1038
Sewickley Coal	945
Pittsburgh Coal	1032
Big Lime	2192
Wair	2530
Rena	2735
Gordon	2993
Rhinestreet	6118
Genesee/Burkett	6679
Tully	6708
Hamilton	6741
Maecellus	6819
Landing Depth	6852
Onondaga	6869
Pilot Hole TD	6969

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	100'	100'	8W	8W	Surface
Surface	17 1/2	13 3/8	1,175'	1,175'	54.5	J55	Surface
Intermediate 1	12 1/4	9 5/8	2,954'	2,850'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	16,171'	6,704'	20	CYHP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	291	A	15.6	Air	None
Surface	1,139	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	846	A	15	Air	1 Centralizer every other joint
Production	3,586	A	14.5	Air / SOBDM	1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface



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**Tug Hill Operating, LLC Casing and Cement Program**

**Heaven Hill 3 N-14HM**

**Casing**

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	100'	CTS
Surface	13 3/8"	J55	17 1/2"	1,175'	CTS
Intermediate	9 5/8"	J55	12 1/4"	2,954'	CTS
Production	5 1/2"	CYHP110	8 7/8 x 6 3/4	16,171'	CTS

**Cement**

Conductor: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Conductor Cement mixed at 15.6 ppg, Y=1.2

Surface: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2

Intermediate: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15 ppg, Y=1.38

Kick Off Plug: Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L - KOP Plug

Production: 50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 14.5 ppg, Y = 1.3

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Planning Report - Geographic

<b>Database:</b>	DB_Dec2220_v16	<b>Local Co-ordinate Reference:</b>	Well Heaven Hill 3 N-14 HM (R)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 1327.00usft
<b>Project:</b>	Marshall County, West Virginia.	<b>MD Reference:</b>	GL @ 1327.00usft
<b>Site:</b>	Heaven Hill 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Heaven Hill 3 N-14 HM (R)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev5		

<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>	Heaven Hill 3				
<b>Site Position:</b>		<b>Northing:</b>	14,457,178.77 usft	<b>Latitude:</b>	39.80858060
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,728,571.98 usft	<b>Longitude:</b>	-80.69321360
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "		

<b>Well</b>	Heaven Hill 3 N-14 HM (R)					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	14,457,192.45 usft	<b>Latitude:</b>	39.80861787
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	1,728,606.35 usft	<b>Longitude:</b>	-80.69309101
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,327.00 usft
<b>Grid Convergence:</b>						

<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>
	IGRF2020	12/2/2021	-8.67	68.51	51,708.34234335

<b>Design</b>	rev5			
<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) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	335.51

<b>Plan Survey Tool Program</b>	<b>Date</b>			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	16,170.97 rev5 (Original Hole)		

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</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	0.00	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,444.99	26.90	137.67	2,396.12	-229.15	208.75	2.00	2.00	0.00	137.67	
6,314.11	26.90	137.67	5,846.60	-1,523.21	1,387.61	0.00	0.00	0.00	0.00	
7,388.04	60.00	334.69	6,774.74	-1,224.16	1,343.89	8.00	3.08	-15.18	-165.28	
7,700.31	91.00	330.76	6,852.00	-959.11	1,206.42	10.00	9.93	-1.28	-7.59	
16,170.97	91.00	330.76	6,704.00	6,431.33	-2,930.20	0.00	0.00	0.00	0.00	Heaven Hill 3N-14HM



Planning Report - Geographic

Database: DB\_Dec2220\_v16  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia.  
 Site: Heaven Hill 3  
 Well: Heaven Hill 3 N-14 HM (R)  
 Wellbore: Original Hole  
 Design: rev5

Local Co-ordinate Reference: Well Heaven Hill 3 N-14 HM (R)  
 TVD Reference: GL @ 1327.00usft  
 MD Reference: GL @ 1327.00usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

Planned Survey

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	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
100.00	0.00	0.00	100.00	0.00	0.00	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
200.00	0.00	0.00	200.00	0.00	0.00	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
300.00	0.00	0.00	300.00	0.00	0.00	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
400.00	0.00	0.00	400.00	0.00	0.00	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
500.00	0.00	0.00	500.00	0.00	0.00	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
600.00	0.00	0.00	600.00	0.00	0.00	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
700.00	0.00	0.00	700.00	0.00	0.00	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
800.00	0.00	0.00	800.00	0.00	0.00	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
900.00	0.00	0.00	900.00	0.00	0.00	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,457,192.46	1,726,606.36	39.80851787	-80.69309101
<b>KOP Begin 2°/100' build</b>									
1,200.00	2.00	137.67	1,199.98	-1.29	1.18	14,457,191.17	1,726,607.54	39.80851432	-80.69308684
1,300.00	4.00	137.67	1,299.84	-5.15	4.70	14,457,187.30	1,726,611.06	39.80850366	-80.69307434
1,400.00	6.00	137.67	1,399.45	-11.60	10.57	14,457,180.85	1,726,616.93	39.80855891	-80.69305352
1,500.00	8.00	137.67	1,498.70	-20.61	18.78	14,457,171.85	1,726,625.14	39.80856109	-80.69302441
1,600.00	10.00	137.67	1,597.47	-32.17	29.31	14,457,160.28	1,726,635.67	39.80852924	-80.69298704
1,700.00	12.00	137.67	1,695.62	-46.28	42.16	14,457,146.18	1,726,648.52	39.80849038	-80.69294148
1,800.00	14.00	137.67	1,793.08	-62.81	57.31	14,457,129.55	1,726,663.67	39.80844457	-80.69288772
1,900.00	16.00	137.67	1,889.64	-82.04	74.74	14,457,110.42	1,726,681.10	39.80839187	-80.69282589
2,000.00	18.00	137.67	1,985.27	-103.65	94.42	14,457,088.80	1,726,700.79	39.80833233	-80.69275605
2,100.00	20.00	137.67	2,079.82	-127.72	116.35	14,457,064.74	1,726,722.71	39.80826603	-80.69267828
2,200.00	22.00	137.67	2,173.17	-154.21	140.48	14,457,038.25	1,726,746.84	39.80819305	-80.69259267
2,300.00	24.00	137.67	2,265.21	-183.09	165.79	14,457,009.36	1,726,773.16	39.80811348	-80.69249933
2,400.00	26.00	137.67	2,355.84	-214.33	195.25	14,456,978.12	1,726,801.62	39.80802742	-80.69239838
2,444.99	26.90	137.67	2,396.12	-229.15	208.75	14,456,963.31	1,726,815.11	39.80798661	-80.69235051
<b>Begin 26.90° tangent</b>									
2,500.00	26.90	137.67	2,445.18	-247.54	225.51	14,456,944.91	1,726,831.87	39.80793593	-80.69229105
2,600.00	26.90	137.67	2,534.36	-280.99	255.96	14,456,911.46	1,726,852.34	39.80784379	-80.69218297
2,700.00	26.90	137.67	2,623.54	-314.44	286.44	14,456,878.02	1,726,892.81	39.80775165	-80.69207489
2,800.00	26.90	137.67	2,712.72	-347.88	316.91	14,456,844.57	1,726,923.28	39.80765951	-80.69196681
2,900.00	26.90	137.67	2,801.90	-381.33	347.38	14,456,811.13	1,726,953.75	39.80756737	-80.69185873
3,000.00	26.90	137.67	2,891.08	-414.77	377.85	14,456,777.68	1,726,984.21	39.80747524	-80.69175065
3,100.00	26.90	137.67	2,980.26	-448.22	408.32	14,456,744.24	1,727,014.68	39.80738310	-80.69164257
3,200.00	26.90	137.67	3,069.44	-481.67	438.79	14,456,710.79	1,727,045.15	39.80729096	-80.69153449
3,300.00	26.90	137.67	3,158.62	-515.11	469.25	14,456,677.34	1,727,075.62	39.80719882	-80.69142641
3,400.00	26.90	137.67	3,247.80	-548.56	499.72	14,456,643.90	1,727,106.09	39.80710668	-80.69131833
3,500.00	26.90	137.67	3,336.98	-582.00	530.19	14,456,610.45	1,727,136.56	39.80701454	-80.69121025
3,600.00	26.90	137.67	3,426.16	-615.45	560.66	14,456,577.01	1,727,167.02	39.80692240	-80.69110217
3,700.00	26.90	137.67	3,515.34	-648.89	591.13	14,456,543.56	1,727,197.49	39.80683026	-80.69099409
3,800.00	26.90	137.67	3,604.52	-682.34	621.60	14,456,510.11	1,727,227.96	39.80673812	-80.69088602
3,900.00	26.90	137.67	3,693.70	-715.79	652.07	14,456,476.67	1,727,258.43	39.80664598	-80.69077794
4,000.00	26.90	137.67	3,782.88	-749.23	682.53	14,456,443.22	1,727,288.90	39.80655384	-80.69066986
4,100.00	26.90	137.67	3,872.06	-782.68	713.00	14,456,409.78	1,727,319.37	39.80646170	-80.69056178
4,200.00	26.90	137.67	3,961.24	-816.12	743.47	14,456,376.33	1,727,349.83	39.80636956	-80.69045371
4,300.00	26.90	137.67	4,050.42	-849.57	773.94	14,456,342.89	1,727,380.30	39.80627742	-80.69034563
4,400.00	26.90	137.67	4,139.60	-883.02	804.41	14,456,309.44	1,727,410.77	39.80618528	-80.69023756
4,500.00	26.90	137.67	4,228.78	-916.46	834.88	14,456,275.99	1,727,441.24	39.80609314	-80.69012948
4,600.00	26.90	137.67	4,317.96	-949.91	865.34	14,456,242.55	1,727,471.71	39.80600100	-80.69002140
4,700.00	26.90	137.67	4,407.14	-983.35	895.81	14,456,209.10	1,727,502.18	39.80590886	-80.68991333
4,800.00	26.90	137.67	4,496.32	-1,016.80	926.28	14,456,175.66	1,727,532.64	39.80581672	-80.68980525
4,900.00	26.90	137.67	4,585.50	-1,050.24	956.75	14,456,142.21	1,727,563.11	39.80572458	-80.68969718
5,000.00	26.90	137.67	4,674.68	-1,083.69	987.22	14,456,108.76	1,727,593.58	39.80563244	-80.68958910



Planning Report - Geographic

Database: DB\_Dec2220\_v16  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia.  
 Site: Heaven Hill 3  
 Well: Heaven Hill 3 N-14 HM (R)  
 Wellbore: Original Hole  
 Design: rev5

Local Co-ordinate Reference: Well Heaven Hill 3 N-14 HM (R)  
 TVD Reference: GL @ 1327.00usft  
 MD Reference: GL @ 1327.00usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,100.00	26.90	137.67	4,763.88	-1,117.14	1,017.69	14,458,075.32	1,727,624.05	39.80554030	-80.68948103	
5,200.00	26.90	137.67	4,853.04	-1,150.58	1,048.15	14,458,041.67	1,727,654.52	39.80544816	-80.68937296	
5,300.00	26.90	137.67	4,942.22	-1,184.03	1,078.62	14,458,008.43	1,727,684.99	39.80535602	-80.68926488	
5,400.00	26.90	137.67	5,031.40	-1,217.47	1,108.09	14,458,974.98	1,727,715.46	39.80526388	-80.68915681	
5,500.00	26.90	137.67	5,120.58	-1,250.92	1,139.56	14,458,941.54	1,727,745.92	39.80517174	-80.68904874	
5,600.00	26.90	137.67	5,209.76	-1,284.37	1,170.03	14,458,908.09	1,727,776.39	39.80507960	-80.68894066	
5,700.00	26.90	137.67	5,298.94	-1,317.81	1,200.50	14,458,874.64	1,727,806.86	39.80498746	-80.68883259	
5,800.00	26.90	137.67	5,388.12	-1,351.26	1,230.97	14,458,841.20	1,727,837.33	39.80489531	-80.68872452	
5,900.00	26.90	137.67	5,477.30	-1,384.70	1,261.43	14,458,807.75	1,727,867.80	39.80480317	-80.68861645	
6,000.00	26.90	137.67	5,566.48	-1,418.15	1,291.90	14,458,774.31	1,727,898.27	39.80471103	-80.68850837	
6,100.00	26.90	137.67	5,655.65	-1,451.59	1,322.37	14,458,740.86	1,727,928.73	39.80461889	-80.68840030	
6,200.00	26.90	137.67	5,744.83	-1,485.04	1,352.84	14,458,707.41	1,727,959.20	39.80452675	-80.68829223	
6,300.00	26.90	137.67	5,834.01	-1,518.49	1,383.31	14,458,673.97	1,727,989.67	39.80443461	-80.68818416	
6,314.11	26.90	137.67	5,846.60	-1,523.21	1,387.61	14,458,669.25	1,727,993.97	39.80442160	-80.68816891	
<b>Begin 8°/100' build/tum</b>										
6,350.00	24.13	135.88	5,878.98	-1,534.48	1,398.18	14,458,657.98	1,728,004.55	39.80439055	-80.68813138	
6,400.00	20.32	132.64	5,925.26	-1,547.70	1,411.69	14,458,644.75	1,728,018.06	39.80435410	-80.68806346	
6,450.00	16.60	128.01	5,972.68	-1,557.99	1,423.71	14,458,634.47	1,728,030.08	39.80432574	-80.68804079	
6,500.00	13.04	120.88	6,021.02	-1,565.28	1,434.18	14,458,627.17	1,728,040.55	39.80430561	-80.68800359	
6,550.00	9.81	108.80	6,070.03	-1,569.55	1,443.06	14,458,622.91	1,728,049.42	39.80429381	-80.68797205	
6,600.00	7.38	87.24	6,119.48	-1,570.77	1,450.29	14,458,621.69	1,728,058.66	39.80429039	-80.68794630	
6,650.00	6.64	54.49	6,169.12	-1,568.93	1,455.85	14,458,623.53	1,728,062.21	39.80429538	-80.68792553	
6,700.00	8.12	25.09	6,218.72	-1,564.05	1,459.70	14,458,628.41	1,728,068.07	39.80430875	-80.68791272	
6,750.00	10.94	7.67	6,268.04	-1,556.15	1,461.83	14,458,636.31	1,728,068.20	39.80433042	-80.68790503	
6,800.00	14.32	357.83	6,316.83	-1,545.26	1,462.23	14,458,647.19	1,728,068.60	39.80436031	-80.68790348	
6,850.00	17.96	351.78	6,364.85	-1,531.45	1,460.90	14,458,661.00	1,728,067.26	39.80439826	-80.68790306	
6,900.00	21.72	347.75	6,411.88	-1,514.78	1,457.83	14,458,677.68	1,728,064.20	39.80444408	-80.68791877	
6,950.00	25.55	344.87	6,457.68	-1,495.32	1,453.05	14,458,697.14	1,728,059.42	39.80449756	-80.68793554	
7,000.00	29.42	342.70	6,502.03	-1,473.18	1,446.59	14,458,719.28	1,728,052.95	39.80455843	-80.68795829	
7,050.00	33.32	341.00	6,544.71	-1,448.46	1,438.46	14,458,744.00	1,728,044.82	39.80462640	-80.68798892	
7,100.00	37.24	339.62	6,585.52	-1,421.28	1,428.72	14,458,771.18	1,728,035.08	39.80470113	-80.68802128	
7,150.00	41.18	338.46	6,624.26	-1,391.77	1,417.40	14,458,800.68	1,728,023.76	39.80478226	-80.68806120	
7,200.00	45.12	337.48	6,660.73	-1,360.09	1,404.57	14,458,832.37	1,728,010.93	39.80486940	-80.68810650	
7,250.00	49.07	336.62	6,694.76	-1,326.37	1,390.28	14,458,866.08	1,727,996.64	39.80496212	-80.68815695	
7,300.00	53.02	335.86	6,726.19	-1,290.80	1,374.81	14,458,901.68	1,727,980.97	39.80505997	-80.68821230	
7,350.00	56.98	335.17	6,754.86	-1,253.53	1,357.63	14,458,938.22	1,727,964.00	39.80516248	-80.68827229	
7,388.04	60.00	334.69	6,774.74	-1,224.16	1,343.89	14,458,968.30	1,727,950.25	39.80524327	-80.68832086	
<b>Begin 10°/100' build/tum</b>										
7,400.00	61.19	334.51	6,780.61	-1,214.75	1,339.42	14,458,977.71	1,727,945.79	39.80526916	-80.68833666	
7,450.00	66.14	333.80	6,802.79	-1,174.44	1,319.99	14,458,018.02	1,727,926.25	39.80538006	-80.68840571	
7,500.00	71.11	333.14	6,821.00	-1,132.79	1,299.09	14,458,059.88	1,727,905.45	39.80549481	-80.68847925	
7,550.00	76.07	332.51	6,835.13	-1,090.14	1,277.19	14,458,102.31	1,727,883.55	39.80561196	-80.68855670	
7,600.00	81.04	331.92	6,845.05	-1,048.80	1,254.35	14,458,145.86	1,727,860.71	39.80573121	-80.68863748	
7,650.00	86.00	331.34	6,850.89	-1,003.10	1,230.75	14,458,169.36	1,727,837.11	39.80585144	-80.68872097	
7,700.31	91.00	330.76	6,852.00	-959.11	1,208.42	14,458,233.35	1,727,812.78	39.80597248	-80.68880707	
<b>Begin 91.00° lateral</b>										
7,800.00	91.00	330.76	6,850.26	-872.13	1,157.73	14,458,320.33	1,727,764.10	39.80621182	-80.68887935	
7,900.00	91.00	330.76	6,848.51	-784.88	1,108.90	14,458,407.57	1,727,715.26	39.80645189	-80.68915215	
8,000.00	91.00	330.76	6,846.76	-697.63	1,060.06	14,458,494.82	1,727,666.43	39.80669195	-80.68932486	
8,100.00	91.00	330.76	6,845.02	-610.39	1,011.23	14,458,582.07	1,727,617.59	39.80693202	-80.68949777	
8,200.00	91.00	330.76	6,843.27	-523.14	962.39	14,458,669.32	1,727,568.76	39.80717209	-80.68967058	
8,300.00	91.00	330.76	6,841.52	-435.89	913.56	14,458,756.56	1,727,519.92	39.80741216	-80.68984339	
8,400.00	91.00	330.76	6,839.78	-348.64	864.72	14,458,843.81	1,727,471.09	39.80765223	-80.68901620	
8,500.00	91.00	330.76	6,838.03	-261.40	815.89	14,458,931.06	1,727,422.25	39.80789229	-80.69018901	



Planning Report - Geographic

Database: DB\_Dec2220\_v16  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia.  
 Site: Heaven Hill 3  
 Well: Heaven Hill 3 N-14 HM (R)  
 Wellbore: Original Hole  
 Design: rev5

Local Co-ordinate Reference: Well Heaven Hill 3 N-14 HM (R)  
 TVD Reference: GL @ 1327.00usft  
 MD Reference: GL @ 1327.00usft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
8,600.00	91.00	330.76	6,836.28	-174.15	767.05	14,457,018.31	1,727,373.42	39.80613236	-80.69036182	
8,700.00	91.00	330.76	6,834.53	-86.90	716.22	14,457,105.55	1,727,324.58	39.80837243	-80.69053464	
8,800.00	91.00	330.76	6,832.79	0.35	869.39	14,457,192.80	1,727,275.75	39.80861249	-80.69070746	
8,900.00	91.00	330.76	6,831.04	87.59	620.55	14,457,280.05	1,727,226.91	39.80885256	-80.69088027	
9,000.00	91.00	330.76	6,829.29	174.84	571.72	14,457,367.30	1,727,178.08	39.80909263	-80.69105309	
9,100.00	91.00	330.76	6,827.54	262.09	522.88	14,457,454.54	1,727,129.25	39.80933269	-80.69122591	
9,200.00	91.00	330.76	6,825.80	349.34	474.05	14,457,541.79	1,727,080.41	39.80957276	-80.69139873	
9,300.00	91.00	330.76	6,824.05	436.58	425.21	14,457,629.04	1,727,031.58	39.80981282	-80.69157156	
9,400.00	91.00	330.76	6,822.30	523.63	376.38	14,457,716.29	1,726,982.74	39.81005289	-80.69174438	
9,500.00	91.00	330.76	6,820.56	611.08	327.54	14,457,803.53	1,726,933.91	39.81029295	-80.69191720	
9,600.00	91.00	330.76	6,818.81	698.33	278.71	14,457,890.78	1,726,885.07	39.81053302	-80.69209003	
9,700.00	91.00	330.76	6,817.06	785.57	229.87	14,457,978.03	1,726,836.24	39.81077308	-80.69226286	
9,800.00	91.00	330.76	6,815.31	872.82	181.04	14,458,065.28	1,726,787.40	39.81101315	-80.69243569	
9,900.00	91.00	330.76	6,813.57	960.07	132.20	14,458,152.52	1,726,738.57	39.81125321	-80.69260852	
10,000.00	91.00	330.76	6,811.82	1,047.32	83.37	14,458,239.77	1,726,689.73	39.81149327	-80.69278135	
10,100.00	91.00	330.76	6,810.07	1,134.56	34.53	14,458,327.02	1,726,640.90	39.81173334	-80.69295418	
10,200.00	91.00	330.76	6,808.33	1,221.81	-14.30	14,458,414.27	1,726,592.06	39.81197340	-80.69312701	
10,300.00	91.00	330.76	6,806.58	1,309.06	-63.13	14,458,501.51	1,726,543.23	39.81221346	-80.69329985	
10,400.00	91.00	330.76	6,804.83	1,396.31	-111.67	14,458,588.76	1,726,494.39	39.81245352	-80.69347268	
10,500.00	91.00	330.76	6,803.08	1,483.55	-160.80	14,458,676.01	1,726,445.56	39.81269359	-80.69364552	
10,600.00	91.00	330.76	6,801.34	1,570.80	-209.64	14,458,763.26	1,726,396.73	39.81293365	-80.69381836	
10,700.00	91.00	330.76	6,799.59	1,658.05	-258.47	14,458,850.50	1,726,347.89	39.81317371	-80.69399120	
10,800.00	91.00	330.76	6,797.84	1,745.30	-307.31	14,458,937.75	1,726,299.06	39.81341377	-80.69416404	
10,900.00	91.00	330.76	6,796.10	1,832.54	-356.14	14,459,025.00	1,726,250.22	39.81365383	-80.69433688	
11,000.00	91.00	330.76	6,794.35	1,919.79	-404.98	14,459,112.25	1,726,201.39	39.81389389	-80.69450972	
11,100.00	91.00	330.76	6,792.60	2,007.04	-453.81	14,459,199.49	1,726,152.55	39.81413395	-80.69468256	
11,200.00	91.00	330.76	6,790.85	2,094.29	-502.65	14,459,286.74	1,726,103.72	39.81437401	-80.69485541	
11,300.00	91.00	330.76	6,789.11	2,181.53	-551.48	14,459,373.99	1,726,054.88	39.81461407	-80.69502826	
11,400.00	91.00	330.76	6,787.36	2,268.78	-600.32	14,459,461.24	1,726,006.05	39.81485413	-80.69520110	
11,500.00	91.00	330.76	6,785.61	2,356.03	-649.15	14,459,548.49	1,725,957.21	39.81509419	-80.69537395	
11,600.00	91.00	330.76	6,783.86	2,443.28	-697.99	14,459,635.73	1,725,908.38	39.81533425	-80.69554680	
11,700.00	91.00	330.76	6,782.12	2,530.52	-746.82	14,459,722.98	1,725,859.54	39.81557431	-80.69571965	
11,800.00	91.00	330.76	6,780.37	2,617.77	-795.65	14,459,810.23	1,725,810.71	39.81581437	-80.69589251	
11,900.00	91.00	330.76	6,778.62	2,705.02	-844.49	14,459,897.47	1,725,761.87	39.81605443	-80.69606535	
12,000.00	91.00	330.76	6,776.88	2,792.27	-893.32	14,459,984.72	1,725,713.04	39.81629448	-80.69623821	
12,100.00	91.00	330.76	6,775.13	2,879.51	-942.16	14,460,071.97	1,725,664.21	39.81653454	-80.69641107	
12,200.00	91.00	330.76	6,773.38	2,966.76	-990.99	14,460,159.22	1,725,615.37	39.81677460	-80.69658393	
12,300.00	91.00	330.76	6,771.63	3,054.01	-1,039.83	14,460,246.46	1,725,566.54	39.81701466	-80.69675678	
12,400.00	91.00	330.76	6,769.89	3,141.26	-1,088.66	14,460,333.71	1,725,517.70	39.81725471	-80.69692964	
12,500.00	91.00	330.76	6,768.14	3,228.50	-1,137.50	14,460,420.96	1,725,468.87	39.81749477	-80.69710251	
12,600.00	91.00	330.76	6,766.39	3,315.75	-1,186.33	14,460,508.21	1,725,420.03	39.81773483	-80.69727537	
12,700.00	91.00	330.76	6,764.65	3,403.00	-1,235.17	14,460,595.45	1,725,371.20	39.81797488	-80.69744823	
12,800.00	91.00	330.76	6,762.90	3,490.25	-1,284.00	14,460,682.70	1,725,322.36	39.81821494	-80.69762109	
12,900.00	91.00	330.76	6,761.15	3,577.49	-1,332.84	14,460,769.95	1,725,273.53	39.81845500	-80.69779396	
13,000.00	91.00	330.76	6,759.40	3,664.74	-1,381.67	14,460,857.20	1,725,224.69	39.81869505	-80.69796683	
13,100.00	91.00	330.76	6,757.66	3,751.99	-1,430.51	14,460,944.44	1,725,175.86	39.81893511	-80.69813969	
13,200.00	91.00	330.76	6,755.91	3,839.24	-1,479.34	14,461,031.69	1,725,127.02	39.81917516	-80.69831256	
13,300.00	91.00	330.76	6,754.16	3,926.48	-1,528.17	14,461,118.94	1,725,078.19	39.81941522	-80.69848543	
13,400.00	91.00	330.76	6,752.41	4,013.73	-1,577.01	14,461,206.19	1,725,029.36	39.81965527	-80.69865830	
13,500.00	91.00	330.76	6,750.67	4,100.96	-1,625.84	14,461,293.43	1,724,980.52	39.81989533	-80.69883118	
13,600.00	91.00	330.76	6,748.92	4,188.23	-1,674.68	14,461,380.68	1,724,931.69	39.82013538	-80.69900405	
13,700.00	91.00	330.76	6,747.17	4,275.47	-1,723.51	14,461,467.93	1,724,882.85	39.82037543	-80.69917693	
13,800.00	91.00	330.76	6,745.43	4,362.72	-1,772.35	14,461,555.18	1,724,834.02	39.82061549	-80.69934980	
13,900.00	91.00	330.76	6,743.68	4,449.97	-1,821.18	14,461,642.42	1,724,785.18	39.82085554	-80.69952268	
14,000.00	91.00	330.76	6,741.93	4,537.22	-1,870.02	14,461,729.67	1,724,736.35	39.82109559	-80.69969556	



Planning Report - Geographic

<b>Database:</b>	DB_Dec2220_v16	<b>Local Co-ordinate Reference:</b>	Well Heaven Hill 3 N-14 HM (R)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 1327.00usft
<b>Project:</b>	Marshall County, West Virginia.	<b>MD Reference:</b>	GL @ 1327.00usft
<b>Site:</b>	Heaven Hill 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Heaven Hill 3 N-14 HM (R)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
14,100.00	91.00	330.76	6,740.18	4,624.46	-1,916.85	14,461,816.92	1,724,687.51	39.82133584	-80.69966844	
14,200.00	91.00	330.76	6,738.44	4,711.71	-1,967.89	14,461,904.17	1,724,638.68	39.82157570	-80.70004132	
14,300.00	91.00	330.76	6,736.69	4,796.96	-2,016.52	14,461,991.41	1,724,589.84	39.82181575	-80.70021420	
14,400.00	91.00	330.76	6,734.94	4,886.21	-2,065.36	14,462,078.66	1,724,541.01	39.82205580	-80.70038709	
14,500.00	91.00	330.76	6,733.20	4,973.45	-2,114.19	14,462,166.91	1,724,492.17	39.82229585	-80.70055997	
14,600.00	91.00	330.76	6,731.45	5,060.70	-2,163.02	14,462,253.16	1,724,443.34	39.82253590	-80.70073266	
14,700.00	91.00	330.76	6,729.70	5,147.95	-2,211.86	14,462,340.40	1,724,394.50	39.82277595	-80.70090574	
14,800.00	91.00	330.76	6,727.95	5,235.20	-2,260.69	14,462,427.65	1,724,345.67	39.82301601	-80.70107863	
14,900.00	91.00	330.76	6,726.21	5,322.44	-2,309.53	14,462,514.90	1,724,296.84	39.82325606	-80.70125152	
15,000.00	91.00	330.76	6,724.46	5,409.69	-2,358.36	14,462,602.15	1,724,248.00	39.82349611	-80.70142441	
15,100.00	91.00	330.76	6,722.71	5,496.94	-2,407.20	14,462,689.39	1,724,199.17	39.82373616	-80.70159731	
15,200.00	91.00	330.76	6,720.97	5,584.19	-2,456.03	14,462,776.64	1,724,150.33	39.82397621	-80.70177020	
15,300.00	91.00	330.76	6,719.22	5,671.43	-2,504.87	14,462,863.89	1,724,101.50	39.82421626	-80.70194309	
15,400.00	91.00	330.76	6,717.47	5,758.68	-2,553.70	14,462,951.14	1,724,052.66	39.82445630	-80.70211599	
15,500.00	91.00	330.76	6,715.72	5,845.93	-2,602.54	14,463,038.39	1,724,003.83	39.82469635	-80.70228889	
15,600.00	91.00	330.76	6,713.98	5,933.18	-2,651.37	14,463,125.63	1,723,954.99	39.82493640	-80.70246178	
15,700.00	91.00	330.76	6,712.23	6,020.42	-2,700.21	14,463,212.88	1,723,906.16	39.82517645	-80.70263468	
15,800.00	91.00	330.76	6,710.48	6,107.67	-2,749.04	14,463,300.13	1,723,857.32	39.82541650	-80.70280758	
15,900.00	91.00	330.76	6,708.73	6,194.92	-2,797.88	14,463,387.37	1,723,808.49	39.82565655	-80.70298048	
16,000.00	91.00	330.76	6,706.99	6,282.17	-2,846.71	14,463,474.62	1,723,759.65	39.82589659	-80.70315339	
16,100.00	91.00	330.76	6,705.24	6,369.41	-2,895.54	14,463,561.87	1,723,710.82	39.82613664	-80.70332629	
16,170.97	91.00	330.76	6,704.00	6,431.33	-2,930.20	14,463,623.79	1,723,676.16	39.82630700	-80.70344900	
PBHL/TD 16170.97 MD 6704.00 TVD - 20" Casing										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Heaven Hill 3N-14HM BI - hit/miss target - Shape - Point	0.00	0.00	6,704.00	6,431.33	-2,930.20	14,463,623.79	1,723,676.16	39.82630700	-80.70344900	
Heaven Hill 3N-14HM Lf - plan misses target center by 0.01usft at 7700.30usft MD (6852.00 TVD, -959.11 N, 1206.42 E) - Point	0.00	0.01	6,852.00	-959.11	1,206.42	14,456,233.35	1,727,812.79	39.80597248	-80.68890704	
Heaven Hill 3N-14HM Lf - plan misses target center by 43.70usft at 7676.10usft MD (6851.92 TVD, -980.26 N, 1218.19 E) - Point	0.00	0.00	6,852.00	-959.11	1,256.43	14,456,233.35	1,727,862.79	39.80597200	-80.68862900	

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
16,170.97	6,704.00	20" Casing	20	24	



Planning Report - Geographic

<b>Database:</b>	DB_Dec2220_v16	<b>Local Co-ordinate Reference:</b>	Well Heaven Hill 3 N-14 HM (R)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 1327.00usft
<b>Project:</b>	Marshall County, West Virginia.	<b>MD Reference:</b>	GL @ 1327.00usft
<b>Site:</b>	Heaven Hill 3	<b>North Reference:</b>	Grid
<b>Well:</b>	Heaven Hill 3 N-14 HM (R)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev5		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,100.00	1,100.00	0.00	0.00	KOP Begin 2°/100' build
2,444.99	2,396.12	-229.15	203.75	Begin 26.90° tangent
6,314.11	5,846.60	-1,523.21	1,387.61	Begin 8°/100' build/turn
7,388.04	6,774.74	-1,224.16	1,343.89	Begin 10°/100' build/turn
7,700.31	6,852.00	-959.11	1,206.42	Begin 91.00° lateral
16,170.97	6,704.00	6,431.33	-2,930.20	PBHL/TD 16170.97 MD 6704.00 TVD

WW-9  
(4/16)

API Number 47-051-4705102451  
Operator's Well No. Heaven Hill 3N-14HM

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

Watershed (HUC 10) Fish Creek Quadrangle Glen Easton 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: AST Tanks with proper containment will be used for staging fresh and produced water for frac

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? AST Tanks will be used with proper contain

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number UIC 2459, UIC 965, UIC 359, UIC 2D0732540, UIC 2D0732523 )
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

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Will closed loop system be used? If so, describe: Yes - For Vertical Drilling

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. WV Department of Environmental Protection

-If oil based, what type? Synthetic, petroleum, etc. n/a

Additives to be used in drilling medium? Barite for weight

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. All drill cuttings to be disposed of in a Landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? Wetzel County Sanitary Landfill (SWF-1021 / WVD109185) and Westmoreland Sanitary Landfill, LLC (SAN145 / PA DEP EC#1368420); Chestnut Valley Landfill (100415)

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature James A Pancake  
Company Official (Typed Name) Jim Pancake  
Company Official Title Vice President - Geosciences

Subscribed and sworn before me this 4<sup>th</sup> day of May, 2022

Susanne Deliere Notary Public

My commission expires 1/15/2025

Commonwealth of Pennsylvania - Notary Seal  
Susanne Deliere, Notary Public  
Washington County  
My commission expires January 15, 2025  
Commission number 1382332  
Member, Pennsylvania Association of Notaries

Form WW-9

Operator's Well No. Heaven Hill 3N-14HM

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 18.43 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

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Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre
Annual Ryegrass	40
Spring Oats	96

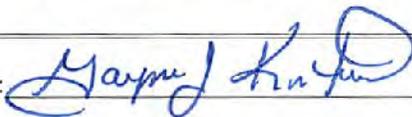
Seed Type	lbs/acre
Orchard Grass	12
Ladino	3
White Clover	2

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:



Comments:

Title: Oil and Gas Inspector

Date:

1/19/2022

Field Reviewed?

(  ) Yes

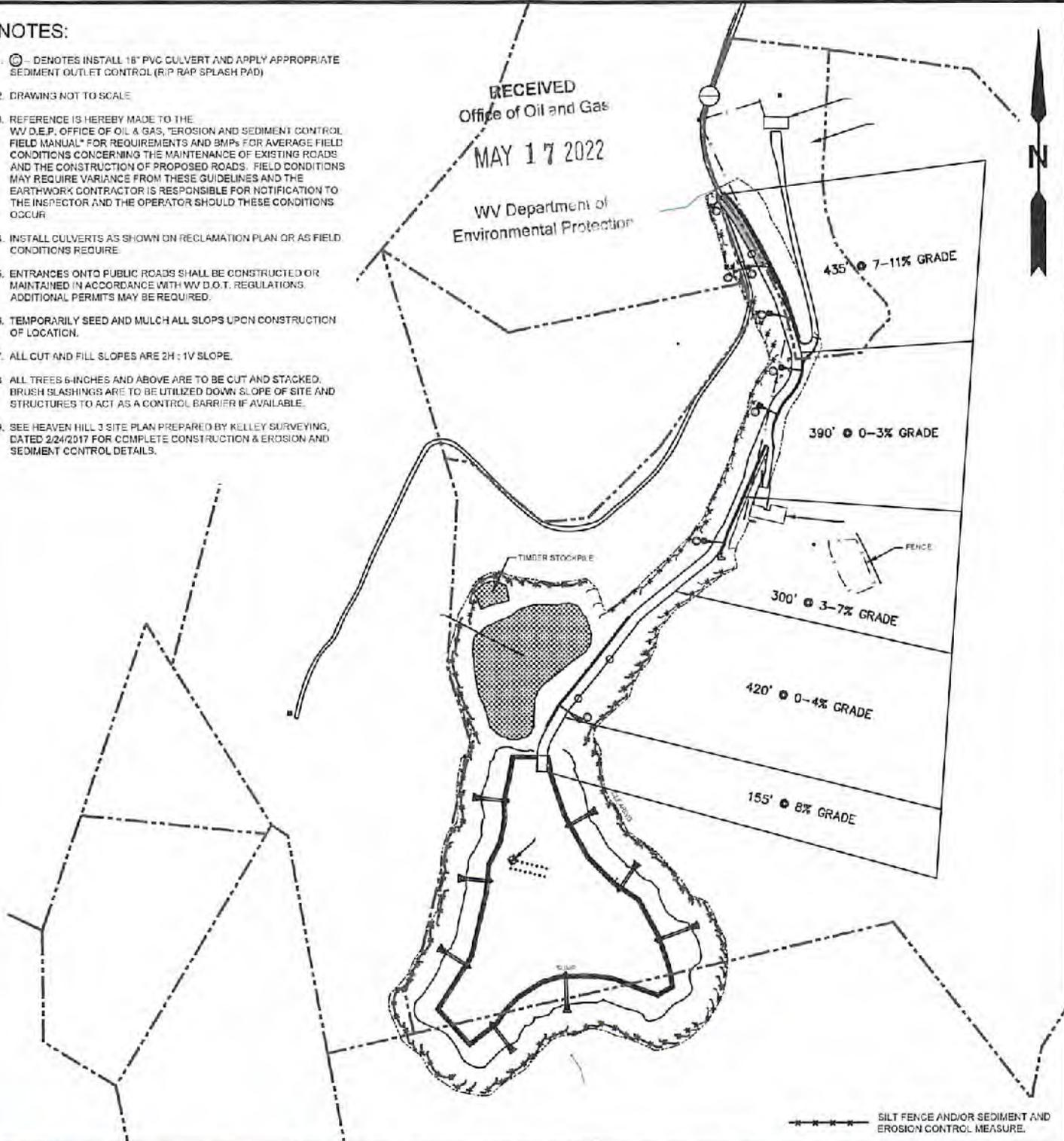
(  ) No

# PROPOSED HEAVEN HILL 3N - 14HM

**NOTES:**

1. - DENOTES INSTALL 18" PVC CULVERT AND APPLY APPROPRIATE SEDIMENT OUTLET CONTROL (R.P.RAP SPLASH PAD)
2. DRAWING NOT TO SCALE
3. REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.
4. INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.
5. ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.
6. TEMPORARILY SEED AND MULCH ALL SLOPS UPON CONSTRUCTION OF LOCATION.
7. ALL CUT AND FILL SLOPES ARE 2H : 1V SLOPE.
8. ALL TREES 6-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO BE UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.
9. SEE HEAVEN HILL 3 SITE PLAN PREPARED BY KELLEY SURVEYING, DATED 2/24/2017 FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.

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----- SILT FENCE AND/OR SEDIMENT AND EROSION CONTROL MEASURE.

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Land & Energy Development  
Solutions from the ground up.  
P.O. Box 150 • 12 Vanhook Drive • Glenville, WV 26351 • (304) 462-5634  
www.slsurveys.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, L.L.C. 380 SOUTHPOINTE BLVD SUITE 209 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	MEADE		
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8654	06/21/2019	NONE

**TUG HILL**  
OPERATING

07/01/2022

4705102451



**TUG HILL**  
**OPERATING**

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**Well Site Safety Plan**  
**Part A – Site Specific Data and Figures**

**Well Name: Heaven Hill 3N-14HM**

**Pad Name: Heaven Hill 3**

**County: Marshall**

UTM (meters), NAD83, Zone 17

Northing: 4,406,561.07

Easting: 526,270.67

*Maynard*  
*11/19/2022*

**KEY CONTACT FOR WELL SITE SAFETY PLAN  
DEVELOPMENT AND MAINTENANCE**

**Jerry V. DeRosa, Director EH&S Affairs**

**(724) 338-2029 (office)**

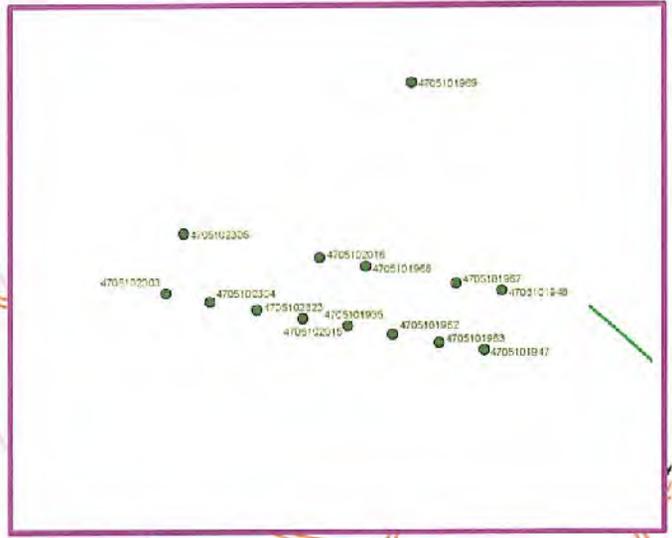
**(412) 736-5767 (cellular)**

**24-HOUR EMERGENCY PHONE NUMBER**

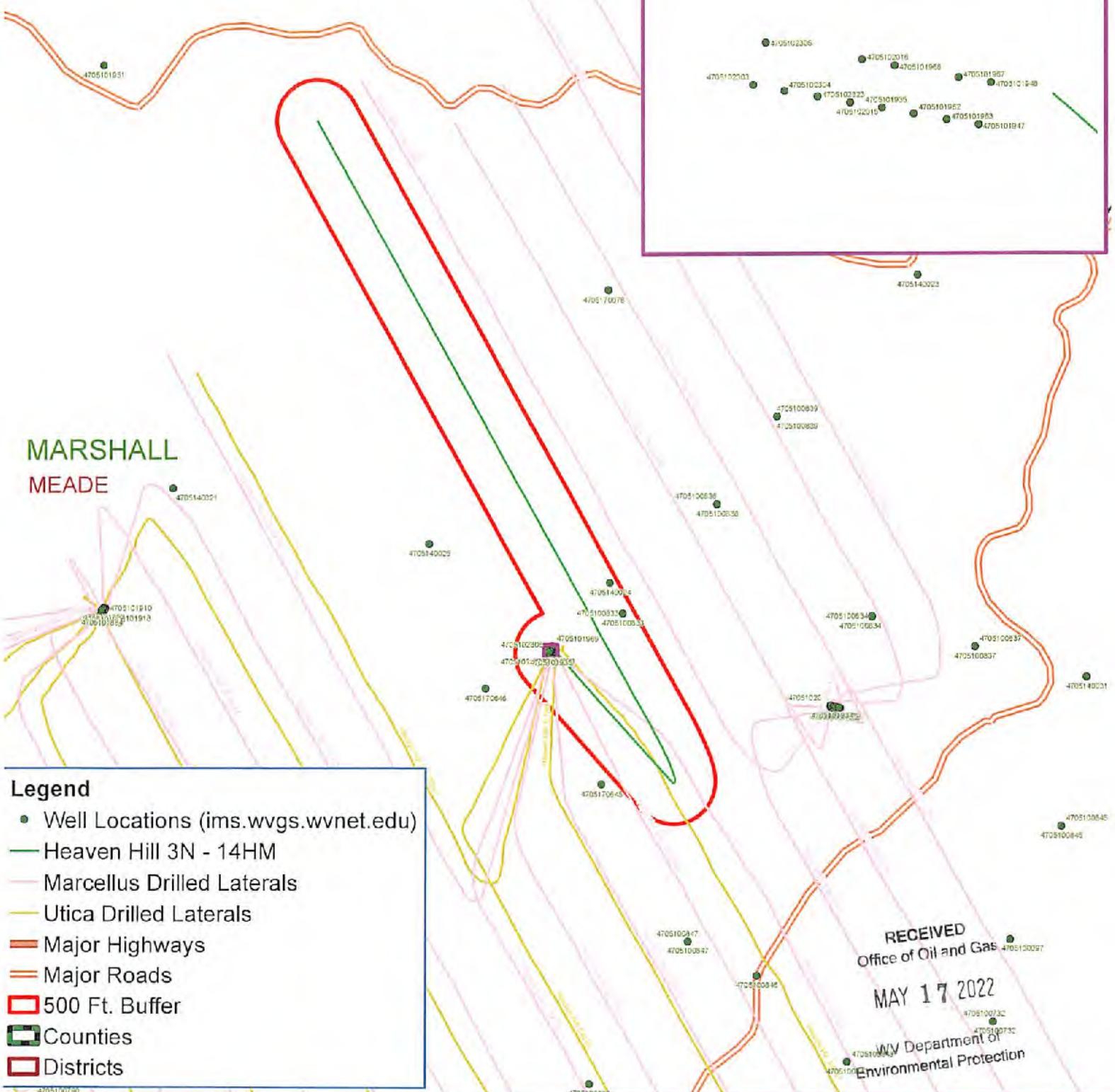
**(800) 921-9745**

07/01/2022

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MARSHALL  
MEADE



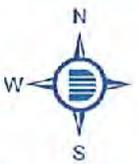
**Legend**

- Well Locations (ims.wvgs.wvnet.edu)
- Heaven Hill 3N - 14HM
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- Major Highways
- Major Roads
- 500 Ft. Buffer
- Counties
- Districts

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# Heaven Hill 3N - 14HM Meade District Marshall County, WV



Map Prepared by:  
**EPS**  
LAND SERVICES

07/01/2022

**Area of Review****Sources of information to Support 35CSR8 - 5.11: 9.3 et seq.**

Description of process to identify potential pathways for well communication during hydraulic fracturing activities.

## Data Sources Reviewed:

1. Enverus and RS Energy Group Well Data service: Public nationwide data service that pulls directly from State agency Oil and Gas databases
2. Farm Maps
3. Topo Maps: Recent and older (contact WVGES)
4. Check with DPS

Contacted Adam Picard 724-485-9331, [apicard@dpslandservices.com](mailto:apicard@dpslandservices.com), DPS GIS (1/11/2022) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it is the best publicly available. See attached map he provided.

## Request maps for:

1. Wellbore with Enverus All Wells Layer
2. Map with Farm lines overlain and any well spots identified on Farm Maps
3. More recent (1970s vintage) topos and older topos

## Discussion with Phil Dinterman WVGES GIS Department (7/15/2016)

- WVGES has plotted every well spot they have access to and are aware of with that contains a coordinate. 30000, 70000, and 90000 series wells are available via the WVGES online map. Some locations aren't great due to vintage and manipulation of maps through time
- 30000 series – any well drilled prior to 1929 – APIs were not assigned to original wells
- 70000 series – Well spots pulled from old Farm line maps that the WVGES has access to
- 90000 series – Any sources that the WVGES has access that shows a well spot but has no additional supporting information. DEP does not have 90000 series on their maps.
- There can be duplication between wells in the 3 series
- Phil indicated that other Operators are providing a screenshot of the WVGES map with their planned well and using that for permits

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**Wells within 500' Buffer**

Note: Well spots depicted on Area of Review map are derived from State held coordinates. The spots may differ from those depicted on the Well Plat because the Plat locations represent actual field surveyed locations. Please refer to the Plat for surveyed well spots.

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101935	Tug Hill Operating, LLC.	19555' MD / 6968' TVD	Marcellus	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-14HM.
4705101947	Tug Hill Operating, LLC.	17877' MD / 6912' TVD	Marcellus	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-14HM.
4705101948	Tug Hill Operating, LLC.	17936' MD / 6928' TVD	Marcellus	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-14HM.
4705101962	Tug Hill Operating, LLC.	19057' MD / 6923' TVD	Marcellus	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-14HM.

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API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101963	Tug Hill Operating, LLC.	18243' MD / 6904' TVD	Marcellus	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-14HM.
4705101967	Tug Hill Operating, LLC.	22395' MD / 11920' TVD	Point Pleasant	none	No, this is a producing well in the Point Pleasant. This well is too deep to be within the expected fracture propagation from the proposed Marcellus stimulation.	Producing Point Pleasant well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-14HM.
4705101968	Tug Hill Operating, LLC.	23854' MD / 11898' TVD	Point Pleasant	none	No, this is a producing well in the Point Pleasant. This well is too deep to be within the expected fracture propagation from the proposed Marcellus stimulation.	Producing Point Pleasant well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-14HM.
4705101969	Tug Hill Operating, LLC.	22722' MD / 11865' TVD	Point Pleasant	none	No, this is a producing well in the Point Pleasant. This well is too deep to be within the expected fracture propagation from the proposed Marcellus stimulation.	Producing Point Pleasant well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-14HM.
4705102015	Tug Hill Operating, LLC.	15224' MD / 6762' TVD	Marcellus	none	Yes, this is a producing well in the Marcellus. This well is within the expected fracture propagation from the proposed Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-14HM.

4705102015

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API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705102016	Tug Hill Operating, LLC.	19300' MD / 11612' TVD	Point Pleasant	none	No, this is a producing well in the Point Pleasant. This well is too deep to be within the expected fracture propagation from the proposed Marcellus stimulation.	Producing Point Pleasant well, operated by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-14HM.
4705102303	Tug Hill Operating, LLC.	6966' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102304	Tug Hill Operating, LLC.	6969' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102305	Tug Hill Operating, LLC.	6969' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102323	Tug Hill Operating, LLC.	6969' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.

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API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705102306	Tug Hill Operating, LLC.	11684' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102307	Tug Hill Operating, LLC.	11701' TVD (proposed)	none	none	No, this is a permitted well in the Point Pleasant. This well is too deep to be within the expected fracture propagation from the proposed Marcellus stimulation.	Permitted Point Pleasant well by Tug Hill Operating, LLC., located on same well pad as proposed Heaven Hill 3 N-14HM.
4705100833	McElroy Coal Company	2978' TVD	Gordon	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation. Well is plugged.	Well was plugged 5/13/1939 & 7/22/1998.
4705140024	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well.	State records are incomplete.

4705102451

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WV Geological & Economic Survey

Well: County = 51 Permit = 01935

Report Time: Wednesday, January 12, 2022 9:14:23 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LCN_DD	UTME	UTMN
4705101935	Marshall	1935	Meade	Gen Easton	Cameron	39.6995	-80.593321	526251	4406559

Bottom Hole Location Information:

API	EP	FLAG	UTME	UTMN	LCN_DD	LAT_DD
4705101935	1	As Drilled	527724.7	4402595.9	-80.676272	39.772843
4705101935	1	As Proposed	527726.5	4402595.9	-80.676231	39.772843

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101935	10/25/2019	Divd Crptd Loc	Completed	Ricky L Whitatch	3-11HM	Heaven Hill	Ricky L Whitatch et al	Heaven Hill	6878	Marcellus Fm			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FIG	KOD	G_BEF	G_AFT	O_BEF
4705101935	10/25/2019	2/15/2018	1328	Ground Level	Unnamed	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Acid-Frac	5958	19500	19500	7268			0

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705101935	10/25/2019	Water	Fresh Water	Deviated			297						
4705101935	10/25/2019	Water	Salt Water	Deviated			1595						
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	8497	Marcellus Fm	8540	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	8552	Marcellus Fm	8615	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	8637	Marcellus Fm	8690	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	9012	Marcellus Fm	9165	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	9107	Marcellus Fm	9240	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	9352	Marcellus Fm	9515	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	9537	Marcellus Fm	9690	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	9712	Marcellus Fm	9865	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	9987	Marcellus Fm	10040	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	10052	Marcellus Fm	10215	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	10237	Marcellus Fm	10390	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	10442	Marcellus Fm	10565	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	10587	Marcellus Fm	10740	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	10782	Marcellus Fm	10915	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	10937	Marcellus Fm	11090	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	11112	Marcellus Fm	11265	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	11287	Marcellus Fm	11440	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	11452	Marcellus Fm	11615	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	11537	Marcellus Fm	11790	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	11612	Marcellus Fm	11965	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	11587	Marcellus Fm	12140	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	12162	Marcellus Fm	12315	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	12337	Marcellus Fm	12490	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	12512	Marcellus Fm	12695	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	12587	Marcellus Fm	12840	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	12862	Marcellus Fm	13015	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	13037	Marcellus Fm	13190	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	13212	Marcellus Fm	13365	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	13387	Marcellus Fm	13540	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	13562	Marcellus Fm	13715	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	13737	Marcellus Fm	13890	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	13912	Marcellus Fm	14065	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	14087	Marcellus Fm	14240	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	14262	Marcellus Fm	14415	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	14437	Marcellus Fm	14590	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	14612	Marcellus Fm	14765	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	14787	Marcellus Fm	14940	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	14962	Marcellus Fm	15115	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	15137	Marcellus Fm	15290	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	15312	Marcellus Fm	15465	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	15487	Marcellus Fm	15640	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	15662	Marcellus Fm	15815	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	15837	Marcellus Fm	15990	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	16012	Marcellus Fm	16165	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	16187	Marcellus Fm	16340	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	16362	Marcellus Fm	16515	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	16537	Marcellus Fm	16690	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	16712	Marcellus Fm	16895	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	16887	Marcellus Fm	17040	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	17062	Marcellus Fm	17215	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	17237	Marcellus Fm	17390	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	17412	Marcellus Fm	17565	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	17587	Marcellus Fm	17740	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	17762	Marcellus Fm	17915	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	17937	Marcellus Fm	18090	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	18112	Marcellus Fm	18265	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	18287	Marcellus Fm	18440	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	18462	Marcellus Fm	18515	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	18637	Marcellus Fm	18790	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	18812	Marcellus Fm	18965	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	18987	Marcellus Fm	19140	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	19162	Marcellus Fm	19315	Marcellus Fm					
4705101935	10/25/2019	Pay	Oil & Gas	Deviated	19335	Marcellus Fm	19440	Marcellus Fm					

Production Gas Information (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101935	Tug Hill Operating, LLC	2019	456,540	0	0	0	0	0	0	0	0	0	0	0.004	133,453
4705101935	Tug Hill Operating, LLC	2020	3,004,659	326,581	290,363	303,288	256,144	269,736	212,967	133,806	242,383	338,580	220,897	208,893	200,721

WV Geological & Economic Survey

Well: County = 51 Permit = 01947

Report Time: Wednesday, January 12, 2022 9:15:35 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705101947	Marshall	1547	Meade	Glen Easton	Cameron	39.809577	-80.693191	526262.1	4406556.5

Bottom Hole Location Information:

API	EP	FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101947	1	As Drilled	526127.3	4403271.8	-80.671542	39.77892
4705101947	1	As Proposed	526197.7	4403272.5	-80.67072	39.778929

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101947	10/28/2019	Divd Orgrl Loc	Completed	Ricky L Whitatch	3-4HM	Heaven Hill			Ricky L Whitatch et al	Tug Hill Operating, LLC		6676	Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMO	NEW_FTG	KOD	G_BEF	G_AFT	O
4705101947	10/28/2019	3/15/2018	1326	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Acidized	6911	17867			17867	6634	

Comment: 10/28/2019 Plot Missing data

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705101947	10/28/2019	Water	Fresh Water	Vertical			1094	Marcellus Fm					Pennsylvania System
4705101947	10/28/2019	Water	Salt Water	Vertical			1595	Marcellus Fm					Salt Sands (unconf)
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	7497	Marcellus Fm	7643	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	7673	Marcellus Fm	7816	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	7848	Marcellus Fm	7994	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	8023	Marcellus Fm	8169	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	8190	Marcellus Fm	8344	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	8373	Marcellus Fm	8515	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	8549	Marcellus Fm	8655	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	8724	Marcellus Fm	8870	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	8899	Marcellus Fm	9045	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	9074	Marcellus Fm	9220	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	9249	Marcellus Fm	9395	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	9425	Marcellus Fm	9571	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	9600	Marcellus Fm	9748	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	9775	Marcellus Fm	9921	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	9950	Marcellus Fm	10096	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	10125	Marcellus Fm	10271	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	10301	Marcellus Fm	10447	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	10476	Marcellus Fm	10522	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	10551	Marcellus Fm	10797	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	10826	Marcellus Fm	10972	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	11001	Marcellus Fm	11147	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	11177	Marcellus Fm	11323	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	11352	Marcellus Fm	11498	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	11527	Marcellus Fm	11673	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	11702	Marcellus Fm	11846	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	11877	Marcellus Fm	12023	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	12053	Marcellus Fm	12199	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	12229	Marcellus Fm	12374	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	12403	Marcellus Fm	12549	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	12578	Marcellus Fm	12724	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	12753	Marcellus Fm	12900	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	12928	Marcellus Fm	13075	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	13104	Marcellus Fm	13280	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	13279	Marcellus Fm	13425	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	13454	Marcellus Fm	13600	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	13829	Marcellus Fm	13775	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	13806	Marcellus Fm	13561	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	13980	Marcellus Fm	14128	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	14155	Marcellus Fm	14301	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	14330	Marcellus Fm	14476	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	14505	Marcellus Fm	14651	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	14681	Marcellus Fm	14827	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	14856	Marcellus Fm	15002	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	15031	Marcellus Fm	15177	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	15206	Marcellus Fm	15352	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	15381	Marcellus Fm	15527	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	15557	Marcellus Fm	15703	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	15732	Marcellus Fm	15878	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	15907	Marcellus Fm	16053	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	15982	Marcellus Fm	16228	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	16257	Marcellus Fm	16403	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	16433	Marcellus Fm	16579	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	16508	Marcellus Fm	16754	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	16783	Marcellus Fm	16929	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	16958	Marcellus Fm	17104	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	17133	Marcellus Fm	17279	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	17309	Marcellus Fm	17455	Marcellus Fm					
4705101947	10/28/2019	Pay	Oil & Gas	Deviated	17484	Marcellus Fm	17630	Marcellus Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM	
4705101947	Tug Hill Operating, LLC	2019	442,741	0	0	0	0	0	0	0	0	0	0	10,039	136,648	295,854
4705101947	Tug Hill Operating, LLC	2020	2,647,154	275,383	251,477	286,751	230,753	245,083	191,068	120,033	213,753	206,319	197,055	179,040	170,442	

WV Geological & Economic Survey

Well: County = 51 Permit = 01948

Report Time: Wednesday, January 12, 2022 9:20:26 AM

Location Information [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101948	Marshall	1948	Meade	Glen Easton	Cameron	38.809632	-80.692941	526263.5	4406562.7

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101948	1 As Drilled	526334.7	4403376.8	-80.689116	39.778662
4705101948	1 As Proposed	526335.6	4403373	-80.692449	39.778691

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101948	10/28/2019	Drill Orig/Loc	Completed	Ricky L Whitatch	Marcellus Fm		3-5HM Heaven Hill		Ricky L Whitatch et al	Tug Hill Operating, LLC	6978	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FTM	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FIG	KOD	G_BEF	G_AFT	O
4705101948	10/28/2019	10/26/2018	1326	Ground Level	Cameron-Gainer	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Acid-Frac	6925	19967	19967	19967	5729		

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705101948	10/28/2019	Water	Fresh Water	Vertical			70	Pennsylvanian System					
4705101948	10/28/2019	Water	Salt Water	Vertical			2167	Salt Sands (undiff)					
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	7603	Marcellus Fm		7765	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	7806	Marcellus Fm		7956	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	7950	Marcellus Fm		8132	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	8154	Marcellus Fm		8306	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	8328	Marcellus Fm		8480	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	8502	Marcellus Fm		8654	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	8675	Marcellus Fm		8827	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	8849	Marcellus Fm		9001	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	9023	Marcellus Fm		9175	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	9197	Marcellus Fm		9349	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	9371	Marcellus Fm		9523	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	9544	Marcellus Fm		9696	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	9718	Marcellus Fm		9870	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	9892	Marcellus Fm		10044	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	10056	Marcellus Fm		10218	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	10240	Marcellus Fm		10392	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	10413	Marcellus Fm		10565	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	10587	Marcellus Fm		10739	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	10761	Marcellus Fm		10913	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	10935	Marcellus Fm		11087	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	11109	Marcellus Fm		11261	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	11252	Marcellus Fm		11434	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	11456	Marcellus Fm		11608	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	11630	Marcellus Fm		11782	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	11804	Marcellus Fm		11956	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	11978	Marcellus Fm		12130	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	12151	Marcellus Fm		12303	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	12325	Marcellus Fm		12477	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	12499	Marcellus Fm		12651	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	12673	Marcellus Fm		12825	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	12847	Marcellus Fm		12999	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	13020	Marcellus Fm		13172	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	13194	Marcellus Fm		13346	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	13368	Marcellus Fm		13520	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	13542	Marcellus Fm		13694	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	13716	Marcellus Fm		13868	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	13890	Marcellus Fm		14041	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	14063	Marcellus Fm		14215	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	14237	Marcellus Fm		14389	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	14411	Marcellus Fm		14563	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	14585	Marcellus Fm		14737	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	14759	Marcellus Fm		14910	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	14932	Marcellus Fm		15084	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	15106	Marcellus Fm		15258	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	15280	Marcellus Fm		15432	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	15454	Marcellus Fm		15606	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	15627	Marcellus Fm		15779	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	15801	Marcellus Fm		15953	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	15975	Marcellus Fm		16127	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	16149	Marcellus Fm		16301	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	16323	Marcellus Fm		16475	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	16496	Marcellus Fm		16648	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	16670	Marcellus Fm		16822	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	16844	Marcellus Fm		16996	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	17018	Marcellus Fm		17174	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	17365	Marcellus Fm		17517	Marcellus Fm				
4705101948	10/28/2019	Pay	Oil & Gas	Deviated	17539	Marcellus Fm		17691	Marcellus Fm				

Production Gas Information (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101948	Tug Hill Operating, LLC	2019	411,073	0	0	0	0	0	0	0	0	0	10,272	104,022	295,979
4705101948	Tug Hill Operating, LLC	2020	2,560,161	269,951	252,975	261,995	223,361	223,337	173,237	117,917	212,652	292,348	168,939	176,650	166,573

WV Geological & Economic Survey

Well: County = 51 Permit = 01962

Report Time: Wednesday, January 12, 2022 9:20:56 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705101962	Marshall	1962	Meade	Gen Easton	Cameron	39.606592	-80.693278	526254.7	4406550.2

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101962	1 As Drilled	527872.2	4402800.7	-80.674541	39.774888
4705101962	1 As Proposed	527874	4402801.1	-80.67452	39.77489

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101962	10/26/2019	Divd Orign Loc	Completed	Ricky L Whitlatch	3	2HM	Heaven Hill		Ricky L Whitlatch et al	Tug Hill Operating, LLC	6876	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	C
4705101962	10/26/2019	2/25/2016	1325	Ground Level	Cameron-Gerber	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Acid-Frac	6923	19063	18063	6989		0

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_GNTY
4705101962	10/26/2019	Water	Fresh Water	Vertical			1064		Pennsylvanian System				
4705101962	10/26/2019	Water	Salt Water	Vertical			1595		Salt Sands (undiff)				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	7781	Marcellus Fm	7935		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	7957	Marcellus Fm	8110		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	8132	Marcellus Fm	8286		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	8303	Marcellus Fm	8461		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	8483	Marcellus Fm	8637		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	8653	Marcellus Fm	8812		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	8834	Marcellus Fm	8987		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	9009	Marcellus Fm	9163		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	9185	Marcellus Fm	9338		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	9350	Marcellus Fm	9514		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	9536	Marcellus Fm	9689		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	9711	Marcellus Fm	9885		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	9907	Marcellus Fm	10040		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	10062	Marcellus Fm	10216		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	10237	Marcellus Fm	10391		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	10413	Marcellus Fm	10566		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	10588	Marcellus Fm	10742		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	10764	Marcellus Fm	10917		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	10939	Marcellus Fm	11093		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	11115	Marcellus Fm	11268		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	11290	Marcellus Fm	11444		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	11466	Marcellus Fm	11619		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	11641	Marcellus Fm	11794		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	11816	Marcellus Fm	11970		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	11992	Marcellus Fm	12145		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	12167	Marcellus Fm	12321		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	12343	Marcellus Fm	12496		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	12518	Marcellus Fm	12672		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	12694	Marcellus Fm	12847		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	12869	Marcellus Fm	13023		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	13044	Marcellus Fm	13198		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	13220	Marcellus Fm	13373		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	13395	Marcellus Fm	13549		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	13571	Marcellus Fm	13724		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	13746	Marcellus Fm	13900		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	13922	Marcellus Fm	14075		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	14097	Marcellus Fm	14249		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	14273	Marcellus Fm	14426		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	14449	Marcellus Fm	14602		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	14623	Marcellus Fm	14777		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	14799	Marcellus Fm	14952		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	14974	Marcellus Fm	15128		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	15150	Marcellus Fm	15303		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	15325	Marcellus Fm	15479		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	15501	Marcellus Fm	15654		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	15676	Marcellus Fm	15830		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	15852	Marcellus Fm	16005		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	16027	Marcellus Fm	16180		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	16202	Marcellus Fm	16356		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	16378	Marcellus Fm	16531		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	16553	Marcellus Fm	16707		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	16729	Marcellus Fm	16882		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	16904	Marcellus Fm	17058		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	17080	Marcellus Fm	17233		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	17255	Marcellus Fm	17409		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	17430	Marcellus Fm	17584		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	17606	Marcellus Fm	17759		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	17781	Marcellus Fm	17935		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	17957	Marcellus Fm	18110		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	18132	Marcellus Fm	18286		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	18308	Marcellus Fm	18461		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	18483	Marcellus Fm	18637		Marcellus Fm				
4705101962	10/26/2019	Pay	Oil & Gas	Deviated	18659	Marcellus Fm	18812		Marcellus Fm				

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101962	Tug Hill Operating, LLC	2019	456,279	0	0	0	0	0	0	0	0	0	8,396	136,934	310,949
4705101962	Tug Hill Operating, LLC	2020	2,891,168	329,763	268,711	299,840	249,569	259,937	202,562	133,439	228,979	317,415	292,370	193,443	185,120

WV Geological & Economic Survey

Well: County = 51 Permit = 01963

Report Time: Wednesday, January 12, 2022 9:21:24 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX DISTRICT	QUAD_76	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101963	Marshall	1963	Meade	Green Easton	Cameron	38.508594	-80.693234	526258.4	440657.3

Bottom Hole Location Information

API	EP FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101963	1 As Drilled	527975.8	4403078.1	-80.67332	39.777182
4705101963	1 As Proposed	527977.5	4403078.5	-80.67333	39.777188

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101963	10/28/2019	Drill Origin Loc	Completed	Ricky L Whitatch			3-3HM Heaven Hill		Ricky L Whitatch et al	Tug Hill Operating, LLC	6876	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FTM	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT
4705101963	10/28/2019	3/7/2019	1326	Ground Level	Cameron-Gamer	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rctary	Add-Frac	6904	18261		18261	6923

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705101963	10/28/2019	Water	Fresh Water	Vertical					70				Pennsylvanian System
4705101963	10/28/2019	Water	Salt Water	Vertical					2137				Big Lime
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	7653	Marcellus Fm			7617				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	7839	Marcellus Fm			7992				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	8014	Marcellus Fm			8150				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	8190	Marcellus Fm			8343				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	8365	Marcellus Fm			8515				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	8541	Marcellus Fm			8694				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	8716	Marcellus Fm			8870				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	8892	Marcellus Fm			9045				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	9067	Marcellus Fm			9221				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	9242	Marcellus Fm			9396				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	9410	Marcellus Fm			9572				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	9590	Marcellus Fm			9747				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	9769	Marcellus Fm			9923				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	9944	Marcellus Fm			10090				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	10120	Marcellus Fm			10274				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	10296	Marcellus Fm			10443				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	10471	Marcellus Fm			10624				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	10646	Marcellus Fm			10800				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	10822	Marcellus Fm			10975				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	10997	Marcellus Fm			11151				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	11173	Marcellus Fm			11328				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	11348	Marcellus Fm			11502				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	11524	Marcellus Fm			11677				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	11699	Marcellus Fm			11853				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	11875	Marcellus Fm			12028				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	12050	Marcellus Fm			12204				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	12226	Marcellus Fm			12379				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	12401	Marcellus Fm			12555				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	12577	Marcellus Fm			12730				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	12752	Marcellus Fm			12906				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	12928	Marcellus Fm			13081				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	13103	Marcellus Fm			13257				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	13279	Marcellus Fm			13432				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	13454	Marcellus Fm			13608				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	13630	Marcellus Fm			13783				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	13805	Marcellus Fm			13959				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	13981	Marcellus Fm			14134				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	14156	Marcellus Fm			14310				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	14332	Marcellus Fm			14485				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	14507	Marcellus Fm			14661				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	14683	Marcellus Fm			14836				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	14850	Marcellus Fm			15012				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	15034	Marcellus Fm			15187				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	15209	Marcellus Fm			15363				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	15385	Marcellus Fm			15530				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	15560	Marcellus Fm			15714				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	15736	Marcellus Fm			15869				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	15911	Marcellus Fm			16065				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	16087	Marcellus Fm			16240				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	16262	Marcellus Fm			16416				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	16430	Marcellus Fm			16591				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	16613	Marcellus Fm			16767				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	16789	Marcellus Fm			16942				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	16964	Marcellus Fm			17118				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	17140	Marcellus Fm			17293				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	17315	Marcellus Fm			17469				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	17491	Marcellus Fm			17644				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	17666	Marcellus Fm			17820				Marcellus Fm
4705101963	10/28/2019	Pay	Oil & Gas	Deviated	17842	Marcellus Fm			17995				Marcellus Fm

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM	
4705101963	Tug Hill Operating, LLC	2015	437,799	0	0	0	0	0	0	0	0	0	0	8,554	131,175	297,678
4705101963	Tug Hill Operating, LLC	2020	2,761,968	296,576	269,268	291,341	242,016	251,555	196,801	125,743	221,437	306,996	198,457	198,040	175,885	

WV Geological & Economic Survey

Well: County = 51 Permit = 01967

Report Time: Wednesday, January 12, 2022 9:21:52 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101967	Marshall	1967	Meade	Glen Easton	Cameron	39.80864	-80.693218	526259.8	4406563.5

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101967	1 As Proposed	527778.2	4404242.7	-80.676162	39.787893
4705101967	1 As Drilled	528190.9	4403437.5	-80.670792	39.780413

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101967	10/28/2019	Dvld Crgnl Loc	Completed	Ricky L Whitlatch			3-6HU Heaven Hill		Ricky L Whitlatch et al	Tug Hill Operating, LLC	11829	Pt Pleasant Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TYD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF
4705101967	10/28/2019	4/4/2018	1326	Ground Level	Cameron-Garner	Trenton Group	Pt Pleasant Fm	Development Well	Development Well	Gas	Rotary	Acid+Frac	22395	22395	10708			

Comment: 10/28/2019 Completion information straight from operator

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705101967	10/28/2019	Water	Fresh Water	Vertical			1064	Pennsylvanian System					
4705101967	10/28/2019	Water	Salt Water	Vertical			1595	Salt Sands (undiff)					
4705101967	10/28/2019	Pay	Gas	Deviated	12390	Pt Pleasant Fm	12535	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	12564	Pt Pleasant Fm	12709	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	12739	Pt Pleasant Fm	12884	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	12913	Pt Pleasant Fm	13058	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	13008	Pt Pleasant Fm	13233	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	13262	Pt Pleasant Fm	13407	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	13437	Pt Pleasant Fm	13582	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	13611	Pt Pleasant Fm	13756	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	13785	Pt Pleasant Fm	13931	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	13959	Pt Pleasant Fm	14105	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	14135	Pt Pleasant Fm	14280	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	14309	Pt Pleasant Fm	14454	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	14404	Pt Pleasant Fm	14629	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	14658	Pt Pleasant Fm	14803	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	14833	Pt Pleasant Fm	14978	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	15007	Pt Pleasant Fm	15152	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	15182	Pt Pleasant Fm	15327	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	15355	Pt Pleasant Fm	15501	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	15531	Pt Pleasant Fm	15676	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	20766	Pt Pleasant Fm	20911	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	20940	Pt Pleasant Fm	21085	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	21115	Pt Pleasant Fm	21260	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	21289	Pt Pleasant Fm	21434	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	21464	Pt Pleasant Fm	21609	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	21639	Pt Pleasant Fm	21784	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	21813	Pt Pleasant Fm	21958	Pt Pleasant Fm					
4705101967	10/28/2019	Pay	Gas	Deviated	21988	Pt Pleasant Fm	22133	Pt Pleasant Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101967	Tug Hill Operating, LLC	2019	1,043,859	0	0	0	0	0	0	0	0	0	69,536	439,145	535,178
4705101967	Tug Hill Operating, LLC	2020	4,740,538	485,522	447,408	492,592	450,763	472,547	452,617	393,736	373,315	344,073	335,032	220,657	271,076

WV Geological & Economic Survey

Well: County = 61 Permit = 01968

Report Time: Wednesday, January 12, 2022 9:22:17 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX DISTRICT	QUAD_76	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101968	Marshall	1968	Meade	Glen Easton	Cameron	39.803358	-80.693304	526252.4	4408565.2

Bottom Hole Location Information:

API	EP FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101968	1 As Drilled	527715.5	4402751.7	-80.676373	39.77425
4705101968	1 As Proposed	527075.6	4403953	-80.693799	39.704283

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101968	10/28/2019	Drld Ornt Loc	Completed	Ricky L Whitlatch			3-8HU Heaven Hill		Ricky L Whitlatch et al.	Tug Hill Operating, LLC	11629	Pt Pleasant Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFF	G_AFT	O_B
4705101968	10/28/2019	5/20/2016	1326	Ground Level	Cameron-Garner	Trenton Group	Pt Pleasant Fm	Development Well	Development Well	Gas	Rotary	Acid-Frac	11855	23568	23968	10967		500

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEFF	G_AFT	O_BEFF	O_AFT	WATER_ONLY
4705101968	10/28/2019	Water	Fresh Water	Vertical			1064	Pennsylvanian System					
4705101968	10/28/2019	Water	Salt Water	Vertical			1595	Salt Sands (undiff)					
4705101968	10/28/2019	Pay	Gas	Deviated	12593	Pt Pleasant Fm	12759	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	12754	Pt Pleasant Fm	12959	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	12984	Pt Pleasant Fm	13160	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	13155	Pt Pleasant Fm	13368	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	13355	Pt Pleasant Fm	13561	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	13566	Pt Pleasant Fm	13761	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	13766	Pt Pleasant Fm	13962	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	13987	Pt Pleasant Fm	14162	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	14187	Pt Pleasant Fm	14363	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	14388	Pt Pleasant Fm	14563	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	14588	Pt Pleasant Fm	14764	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	14769	Pt Pleasant Fm	14964	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	14995	Pt Pleasant Fm	15195	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	15190	Pt Pleasant Fm	15390	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	15390	Pt Pleasant Fm	15586	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	15581	Pt Pleasant Fm	15786	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	15791	Pt Pleasant Fm	15987	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	15992	Pt Pleasant Fm	16187	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	16192	Pt Pleasant Fm	16388	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	16393	Pt Pleasant Fm	16590	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	16593	Pt Pleasant Fm	16789	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	16794	Pt Pleasant Fm	16989	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	16994	Pt Pleasant Fm	17170	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	17195	Pt Pleasant Fm	17370	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	17395	Pt Pleasant Fm	17571	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	17596	Pt Pleasant Fm	17771	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	17796	Pt Pleasant Fm	17972	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	17997	Pt Pleasant Fm	18172	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	18197	Pt Pleasant Fm	18373	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	18398	Pt Pleasant Fm	18573	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	18599	Pt Pleasant Fm	18774	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	18799	Pt Pleasant Fm	18974	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	18999	Pt Pleasant Fm	19175	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	19200	Pt Pleasant Fm	19375	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	19400	Pt Pleasant Fm	19576	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	19601	Pt Pleasant Fm	19776	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	19801	Pt Pleasant Fm	19977	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	20002	Pt Pleasant Fm	20177	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	20202	Pt Pleasant Fm	20378	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	20403	Pt Pleasant Fm	20578	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	20603	Pt Pleasant Fm	20779	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	20804	Pt Pleasant Fm	20979	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	21004	Pt Pleasant Fm	21180	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	21205	Pt Pleasant Fm	21380	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	21405	Pt Pleasant Fm	21581	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	21606	Pt Pleasant Fm	21781	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	21806	Pt Pleasant Fm	21982	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	22007	Pt Pleasant Fm	22182	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	22207	Pt Pleasant Fm	22383	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	22408	Pt Pleasant Fm	22583	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	22608	Pt Pleasant Fm	22784	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	22809	Pt Pleasant Fm	22984	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	23010	Pt Pleasant Fm	23185	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	23210	Pt Pleasant Fm	23386	Pt Pleasant Fm					
4705101968	10/28/2019	Pay	Gas	Deviated	23411	Pt Pleasant Fm	23586	Pt Pleasant Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101968	Tug Hill Operating, LLC	2019	1,028,627	0	0	0	0	0	0	0	0	0	73,846	424,843	529,936
4705101968	Tug Hill Operating, LLC	2020	5,293,404	540,001	481,650	467,232	452,774	516,773	473,650	455,502	444,395	402,717	412,109	286,167	320,103

WV Geological & Economic Survey

Well: County = 51 Permit = 01969

Report Time: Wednesday, January 12, 2022 9:22:41 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101969	Marshall	1969	Meade	Glen Easton	Cameron	39.809548	-80.693261	526256.1	4406564.4

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101969	1 As Drilled	527904.9	4403167.7	-80.674144	39.777992
4705101969	1 As Proposed	527400.6	4404047.6	-80.679996	39.785936

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101969	10/28/2019	Drill Orig/Loc	Completed	Ricky L Whitstach			3-ZHU Heaven Hill		Ricky L Whitstach et al	Tug Hill Operating, LLC	11829	Pt Pleasant Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT
4705101969	10/28/2019	4/27/2018	1326	Ground Level	Cameron-Gamer	Pt Pleasant Fm	Pt Pleasant Fm	Development Well	Development Well	Gas	Rotary	Acid+Frac	11965	22736	22736	11677			500

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705101969	10/28/2019	Water	Fresh Water	Vertical			1064	Pennsylvanian System					
4705101969	10/28/2019	Water	Salt Water	Vertical			1595	Salt Sands (undiff)					
4705101969	10/28/2019	Pay	Gas	Deviated	12458	Pt Pleasant Fm	12533	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	12558	Pt Pleasant Fm	12634	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	12959	Pt Pleasant Fm	13034	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	13059	Pt Pleasant Fm	13335	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	13260	Pt Pleasant Fm	13435	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	13480	Pt Pleasant Fm	13636	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	13661	Pt Pleasant Fm	13836	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	13951	Pt Pleasant Fm	14037	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	14062	Pt Pleasant Fm	14237	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	14262	Pt Pleasant Fm	14438	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	14463	Pt Pleasant Fm	14638	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	14683	Pt Pleasant Fm	14838	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	14904	Pt Pleasant Fm	15039	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	15084	Pt Pleasant Fm	15240	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	15265	Pt Pleasant Fm	15440	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	15465	Pt Pleasant Fm	15641	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	15686	Pt Pleasant Fm	15841	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	15888	Pt Pleasant Fm	16042	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	16067	Pt Pleasant Fm	16242	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	16267	Pt Pleasant Fm	16443	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	16468	Pt Pleasant Fm	16643	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	16668	Pt Pleasant Fm	16844	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	16889	Pt Pleasant Fm	17044	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	17089	Pt Pleasant Fm	17245	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	17270	Pt Pleasant Fm	17445	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	17470	Pt Pleasant Fm	17646	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	17671	Pt Pleasant Fm	17846	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	17871	Pt Pleasant Fm	18047	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	18072	Pt Pleasant Fm	18247	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	18272	Pt Pleasant Fm	18446	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	18473	Pt Pleasant Fm	18646	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	18673	Pt Pleasant Fm	18849	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	18874	Pt Pleasant Fm	19049	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	19074	Pt Pleasant Fm	19250	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	19275	Pt Pleasant Fm	19450	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	19475	Pt Pleasant Fm	19651	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	19676	Pt Pleasant Fm	19851	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	19876	Pt Pleasant Fm	20052	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	20077	Pt Pleasant Fm	20252	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	20277	Pt Pleasant Fm	20453	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	20478	Pt Pleasant Fm	20653	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	20678	Pt Pleasant Fm	20854	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	20879	Pt Pleasant Fm	21054	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	21079	Pt Pleasant Fm	21255	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	21280	Pt Pleasant Fm	21455	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	21480	Pt Pleasant Fm	21656	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	21681	Pt Pleasant Fm	21857	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	21882	Pt Pleasant Fm	22057	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	22082	Pt Pleasant Fm	22258	Pt Pleasant Fm					
4705101969	10/28/2019	Pay	Gas	Deviated	22283	Pt Pleasant Fm	22458	Pt Pleasant Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101969	Tug Hill Operating, LLC	2019	1,036,727	0	0	0	0	0	0	0	0	0	72,074	427,502	529,151
4705101969	Tug Hill Operating, LLC	2020	4,599,352	502,639	439,245	483,818	459,546	480,964	435,261	400,538	362,681	296,675	267,984	213,120	227,581

WV Geological & Economic Survey

Well: County = 51 Permit = 02015

Report Time: Wednesday, January 12, 2022 9:23:04 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705102015	Marshall	2015	Meade	Glen Easton	Cameron	39.608607	-80.693364	526247.3	4405559.8

Bottom Hole Location Information:

API	EP FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705102015	1 As Drilled	524814.4	4407564.3	-80.710062	39.618602
4705102015	1 As Proposed	524811.1	4407566	-80.710104	39.617715

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102015	10/28/2019	Dvld Orgnl Loc	Completed	Ricky L Whittatch		3N-9HM	Heaven Hill		Ricky L Whittatch et al	Tug Hill Operating, LLC		6876	Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TYD	TMD	NEW_FTG	KOD	G_BEF	G_AFT
4705102015	10/28/2019	-/26/2019	1325	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Acid-Frac	6886	15275		15275	6739

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705102015	10/28/2019	Water	Fresh Water	Vertical			1064	Pennsylvanian System					
4705102015	10/28/2019	Water	Salt Water	Vertical			1595	Salt Sands (undiff)					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	8344	Marcellus Fm	8497	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	8519	Marcellus Fm	8672	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	8694	Marcellus Fm	8847	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	8869	Marcellus Fm	9022	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	9044	Marcellus Fm	9197	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	9219	Marcellus Fm	9372	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	9394	Marcellus Fm	9547	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	9569	Marcellus Fm	9722	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	9744	Marcellus Fm	9897	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	9919	Marcellus Fm	10072	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	10094	Marcellus Fm	10247	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	10289	Marcellus Fm	10422	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	10444	Marcellus Fm	10597	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	10519	Marcellus Fm	10772	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	10794	Marcellus Fm	10947	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	10969	Marcellus Fm	11122	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	11144	Marcellus Fm	11297	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	11319	Marcellus Fm	11472	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	11494	Marcellus Fm	11647	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	11669	Marcellus Fm	11822	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	11844	Marcellus Fm	11997	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	12019	Marcellus Fm	12172	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	12194	Marcellus Fm	12347	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	12369	Marcellus Fm	12522	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	12544	Marcellus Fm	12697	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	12719	Marcellus Fm	12872	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	12894	Marcellus Fm	13047	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	13069	Marcellus Fm	13222	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	13244	Marcellus Fm	13397	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	13419	Marcellus Fm	13572	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	13594	Marcellus Fm	13747	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	13769	Marcellus Fm	13922	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	13944	Marcellus Fm	14097	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	14119	Marcellus Fm	14272	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	14294	Marcellus Fm	14447	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	14469	Marcellus Fm	14622	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	14644	Marcellus Fm	14797	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	14819	Marcellus Fm	14972	Marcellus Fm					
4705102015	10/28/2019	Pay	Oil & Gas	Deviated	15042	Marcellus Fm	15095	Marcellus Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705102015	Tug Hill Operating, LLC	2019	275.885	0	0	0	0	0	0	0	0	0	8,568	86,145	181,172
4705102015	Tug Hill Operating, LLC	2020	1,591,527	177,397	165,398	167,981	141,491	143,341	111,951	74,195	113,364	173,970	113,265	106,576	102,608

WV Geological & Economic Survey

Well: County = 51 Permit = 02016

Report Time: Wednesday, January 12, 2022 9:23:27 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705102016	Marshall	2016	Meade	Glen Easton	Cameron	39.808664	-80.693348	526248.7	4406566.1

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705102016	1 As Proposed	524924	4407583.6	-80.709785	39.817871
4705102016	1 As Drilled	524925.3	4407592	-80.709769	39.817947

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102016	10/28/2019	Dvtd Orgnl Loc	Completed	Ricky L Whillatch	3N-10HU	Heaven Hill			Ricky L Whillatch et al	Tug Hill Operating, LLC	11898	Pt Pleasant Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT
4705102016	10/28/2019	7/4/2018	1326	Ground Level	Cameron-Garner	Trenton Group	Pt Pleasant Fm	Development Well	Development Well	Gas	Rotary	Acid+Frac	11701	19300	19300	11200		500		

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705102016	10/28/2019	Water	Fresh Water	Vertical			1064	Pennsylvanian System					
4705102016	10/28/2019	Water	Salt Water	Vertical			1595	Salt Sands (undiff)					
4705102016	10/28/2019	Pay	Gas	Deviated	12724	Pt Pleasant Fm	12873	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	12922	Pt Pleasant Fm	13071	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	13120	Pt Pleasant Fm	13269	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	13318	Pt Pleasant Fm	13467	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	13516	Pt Pleasant Fm	13665	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	13714	Pt Pleasant Fm	13863	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	13912	Pt Pleasant Fm	14061	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	14110	Pt Pleasant Fm	14259	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	14308	Pt Pleasant Fm	14457	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	14506	Pt Pleasant Fm	14655	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	14704	Pt Pleasant Fm	14853	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	14902	Pt Pleasant Fm	15051	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	15100	Pt Pleasant Fm	15249	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	15298	Pt Pleasant Fm	15447	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	15496	Pt Pleasant Fm	15645	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	15694	Pt Pleasant Fm	15843	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	15892	Pt Pleasant Fm	16041	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	16090	Pt Pleasant Fm	16239	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	16288	Pt Pleasant Fm	16437	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	16486	Pt Pleasant Fm	16635	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	16684	Pt Pleasant Fm	16833	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	16882	Pt Pleasant Fm	17031	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	17080	Pt Pleasant Fm	17229	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	17278	Pt Pleasant Fm	17427	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	17476	Pt Pleasant Fm	17625	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	17674	Pt Pleasant Fm	17823	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	17872	Pt Pleasant Fm	18021	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	18070	Pt Pleasant Fm	18219	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	18268	Pt Pleasant Fm	18417	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	18466	Pt Pleasant Fm	18615	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	18664	Pt Pleasant Fm	18813	Pt Pleasant Fm					
4705102016	10/28/2019	Pay	Gas	Deviated	18862	Pt Pleasant Fm	19011	Pt Pleasant Fm					

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705102016	Tug Hill Operating, LLC	2019	913,548	0	0	0	0	0	0	0	0	0	65,949	368,699	478,900
4705102016	Tug Hill Operating, LLC	2020	3,760,795	471,086	424,437	476,515	442,726	435,171	329,071	266,387	243,834	194,240	184,792	142,449	150,087

WV Geological & Economic Survey:

**Well: County = 51 Permit = 02303**

Report Time: Wednesday, January 12, 2022 9:23:55 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102303	Marshall	2303	Meade	Glen Easton	Cameron	39.808631	-80.693495	526236.1	4406562.4

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102303	1 As Proposed	525041.3	4407722.8	-80.707409	39.819122

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102303	-/-	Dvtd Orgnl Loc	Permitted	Ricky L Whitlatch		3N-11HM	Heaven Hill		R L Whitlatch et al	Tug Hill Operating, LLC	6966	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	N
4705102303	-/-	-/-	1330	Ground Level																		

WV Geological & Economic Survey:

**Well: County = 51 Permit = 02304**

Report Time: Wednesday, January 12, 2022 9:24:25 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102304	Marshall	2304	Meade	Glen Easton	Cameron	39.808623	-80.693453	526239.7	4406561.5

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102304	1 As Proposed	525205.7	4407897	-80.705481	39.820687

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102304	-/-	Dvtd Orgnl Loc	Permitted	Ricky L Whitlatch		3N-12HM	Heaven Hill		R L Whitlatch et al	Tug Hill Operating, LLC	6969	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	N
4705102304	-/-	-/-	1333	Ground Level																		

WV Geological & Economic Survey:

**Well: County = 51 Permit = 02305**

Report Time: Wednesday, January 12, 2022 9:24:59 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102305	Marshall	2305	Meade	Glen Easton	Cameron	39.808687	-80.693478	526237.5	4408568.6

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102305	1 As Proposed	525377.5	4408521.3	-80.70345	39.826307

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102305	-/-	Dvtd Orgnl Loc	Permitted	Ricky L Whittatch		3N-14HM	Heaven Hill		R L Whittatch et al	Tug Hill Operating, LLC	6969	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	
4705102305	-/-	-/-	1330	Ground Level																		

WV Geological & Economic Survey:

**Well: County = 51 Permit = 02323**

Report Time: Wednesday, January 12, 2022 9:25:10 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102323	Marshall	2323	Meade	Glen Easton	Cameron	39.808615	-80.693408	526243.5	4406560.7

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102323	1 As Proposed	525337.6	4408127.8	-80.703931	39.822762

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102323	-/-	Dvtd Orgnl Loc	Permitted	Ricky L Whittatch		3N-13HM	Heaven Hill		R L Whittatch et al	Tug Hill Operating, LLC	6969	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	
4705102323	-/-	-/-	1336	Ground Level																		

WV Geological & Economic Survey:

Well: County = 51 Permit = 02306

Report Time: Wednesday, January 12, 2022 10:58:39 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102306	Marshall	2306	Meade	Glen Easton	Cameron	39.808679	-80.693434	526241.3	4406567.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102306	-/-		Dvtd Orgnl Loc	Permitted	Ricky L Whitlatch	3	3N-15HU			Tug Hill Operating, LLC		11684	Pt Pleasant Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT
4705102306	-/-	-/-	1326	Ground Level							not available	unknown	unknown							

WV Geological & Economic Survey:

Well: County = 51 Permit = 02307

Report Time: Wednesday, January 12, 2022 10:59:00 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102307	Marshall	2307	Meade	Glen Easton	Cameron	39.808671	-80.693391	526245	4406568.9

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102307	-/-		Dvtd Orgnl Loc	Permitted	Ricky L Whitlatch	3	3N-16HU			Tug Hill Operating, LLC		11701	Pt Pleasant Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT
4705102307	-/-	-/-	1326	Ground Level							not available	unknown	unknown							

WV Geological & Economic Survey:

Well: County = 51 Permit = 00833

Report Time: Wednesday, January 12, 2022 9:27 10 AM

Well Reassignment Information: Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	30098	51	833

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100833	Marshall	833	Meade	Glen Easton	Cameron	39.80992	-80.690163	526520.8	4406706.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100833	9/22/1907	Original Loc	Completed	Daniel Jones	1	142			Daniel Jones	Beren, I. H.			
4705100833	7/22/1998	Plugging	Completed	Dexter F & Bessie Hall		96-4 (M-32)				McElroy Coal Company			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O
4705100833	9/22/1907	7/18/1907	1230	Barometer	Cameron-Gamer	UDev undf Ber/LoHURN	Gordon	unclassified	unclassified	Oil	Cable Tool	Shol	2978		2978		0	0	
4705100833	7/22/1998	7/7/1998	1228	Ground Level						Gas	unknown	unknown							

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705100833	9/22/1907	Pay	Oil	Vertical		Gordon	2930	Gordon	0	0			

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (E-Log) data for this well

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100833	5/13/1939	0
4705100833	7/22/1998	0

There is no Sample data for this well

WV Geological & Economic Survey:

**Well: County = 51 Permit = 40024**

Report Time: Wednesday, January 12, 2022 9:27:34 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705140024	Marshall	40024	Meade	Glen Easton	Cameron	39.810935	-80.690728	526472.1	4409319

There is no Bottom Hole Location data for this well

There is no Owner/Completion data for this well

There is no Owner/Completion data for this well

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

Stratigraphy Information:

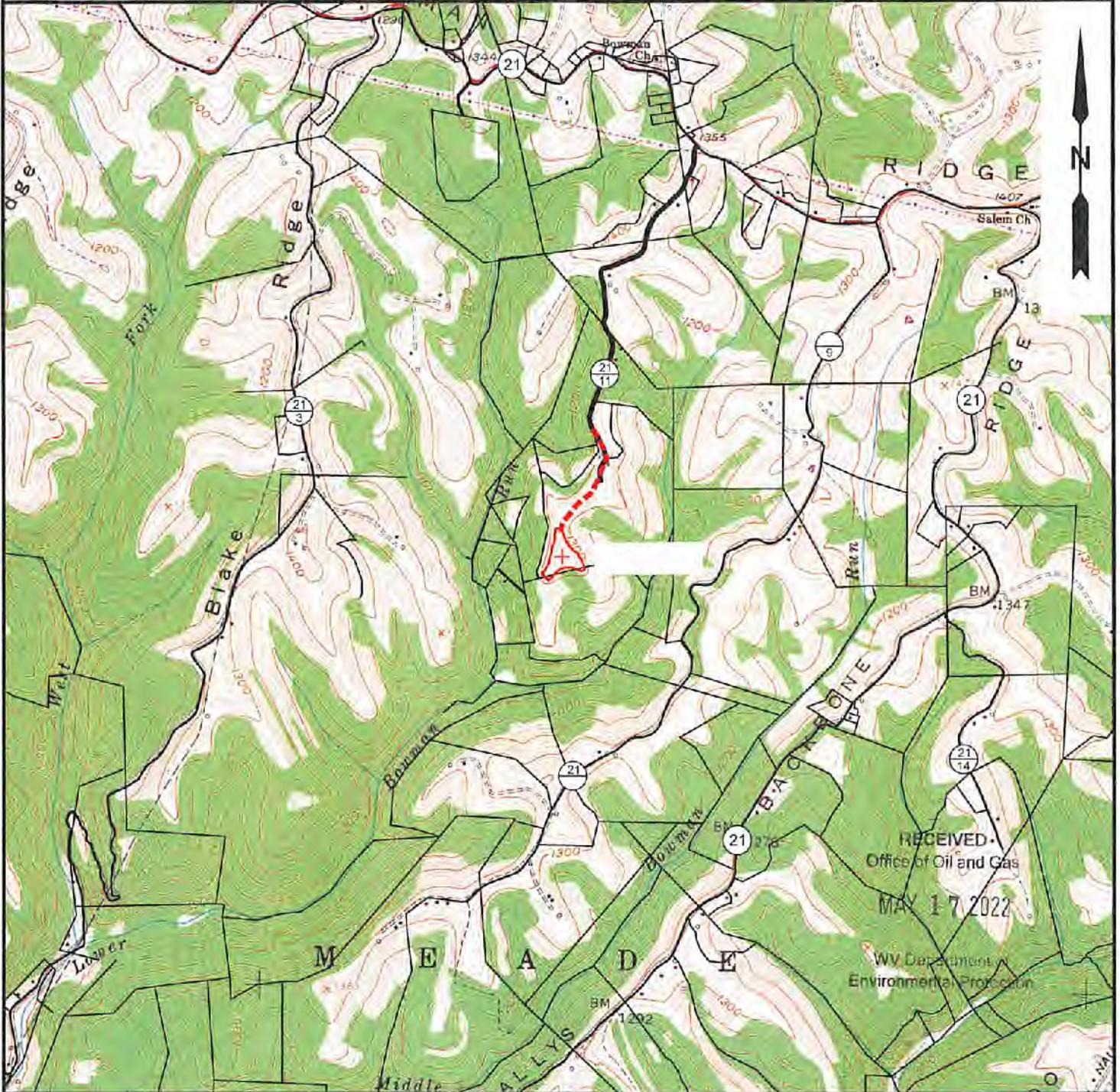
API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705140024	Original Loc	Pittsburgh coal	CBM Drill Hole	1035	Reasonable	7	Reasonable	1343	unknown

There is no Wireline (E-Log) data for this well

There is no Plugging data for this well

There is no Sample data for this well

**PROPOSED  
HEAVEN HILL 3N - 14HM**



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MAY 17 2022

WV Department of  
Environmental Protection

NOTE: CLOSEST WATER PURVEYOR  
CITY OF CAMERON - FRANK WALKER RESERVOIR  
CAMDEN, WV

LAT: 39.829865  
LON: -80.573724  
LOCATED: N 77°44'18" E AT 34,474.56' FROM THE CENTER OF HEAVEN HILL 3N WELL PAD LOCATION.

**SLS**  
Land & Energy Development  
Solutions from the ground up.  
P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26035 • (304) 462-6034  
www.slsurveys.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
DRAWN BY		SUITE 200	
K.G.M.	JOB NO.	CANONSBURG, PA 15317	
	8654	DATE	SCALE
		06/21/2019	1" = 2000'

**TUG HILL  
OPERATING**

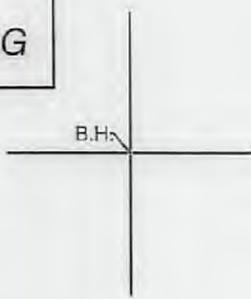
07/01/2022

10,331' B.H.

7,423' T.H.

HEAVEN HILL 3N  
WELL 14HM  
TUG HILL OPERATING

T.H. LATITUDE 39°50'00"  
B.H. LATITUDE 39°50'00"



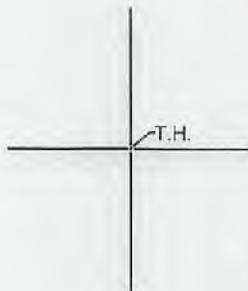
(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT)	N. 478,865.46	E. 1,633,336.75
NAD'83 GEO.	LAT-(N) 39.808818	LONG-(W) 80.693091
NAD'83 UTM (M)	N. 4,406,561.07	E. 526,270.67
<b>LANDING POINT</b>		
NAD'83 S.P.C.(FT)	N. 477,886.0	E. 1,634,527.4
NAD'83 GEO.	LAT-(N) 39.805972	LONG-(W) 80.688307
NAD'83 UTM (M)	N. 4,406,268.7	E. 526,638.4
<b>BOTTOM HOLE</b>		
NAD'83 S.P.C.(FT)	N. 485,347.0	E. 1,630,513.5
NAD'83 GEO.	LAT-(N) 39.626307	LONG-(W) 80.703449
NAD'83 UTM (M)	N. 4,408,521.3	E. 526,377.5

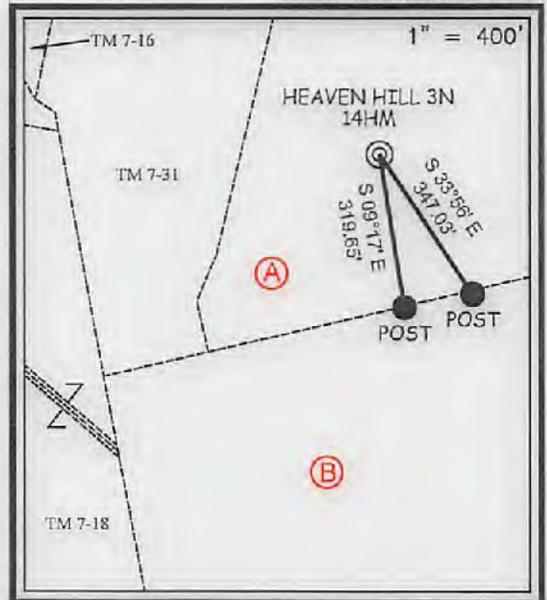
T.H. LONGITUDE 80°40'00"  
B.H. LONGITUDE 80°40'00"

9,003' T.H.

2,560' B.H.



REFERENCES

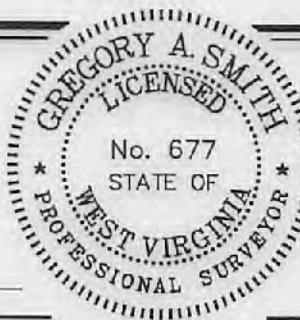


NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'

12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5634  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
254 East Beckley Bypass | Beckley, WV 26801 | 304.255.5296  
slswv.com

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.



P.S. 849 Gregory A. Smith

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE AUGUST 30, 20 19  
REVISED NOVEMBER 5, 2019 & MAY 13, 2022  
OPERATORS WELL NO. HEAVEN HILL 3N-14HM  
API WELL NO. 47 - 051 - 02451  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. 8654P14HMR3.dwg  
HEAVEN HILL 3-14HM REV5  
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS



WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 1,328.00' WATERSHED LOWER BOWMAN RUN OF FISH CREEK (HUC 10)  
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER ANDREW C. WHITLATCH ET UX ACREAGE 72.82±  
ROYALTY OWNER RICKY L. WHITLATCH, ET AL ACREAGE 72.82±

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION MARCELLUS  
ESTIMATED DEPTH TVD: 6,969' / TMD: 16,171'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS CT CORPORATION  
FORT WORTH, TX 76107 ADDRESS 5098 WASHINGTON ST. W, STE 407  
CHARLESTON, WV 25313-1561

COUNTY NAME  
PERMIT

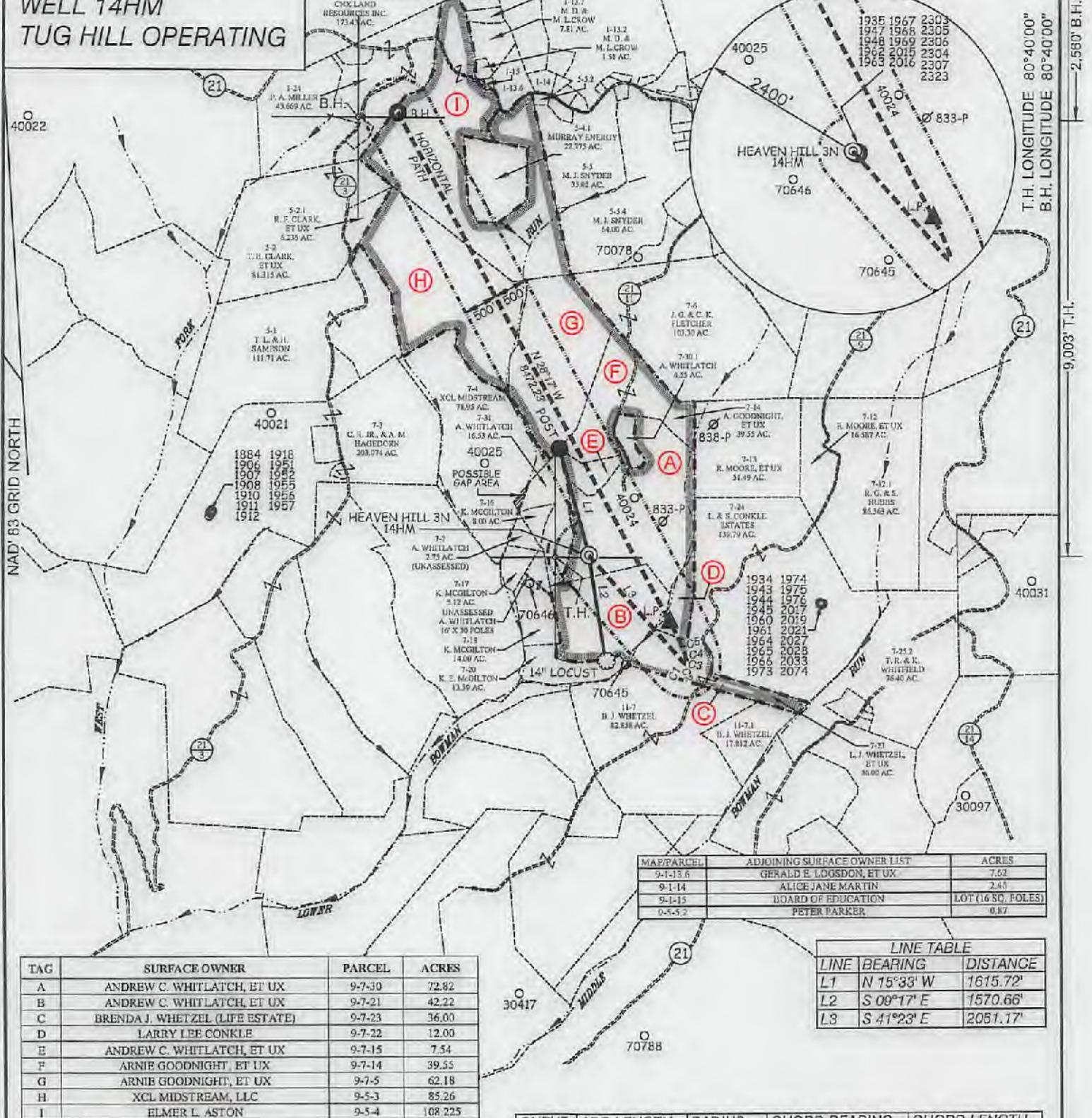
07/01/2022

10,331' B.H.

7,423' T.H.

**HEAVEN HILL 3N  
WELL 14HM  
TUG HILL OPERATING**

T.H. LATITUDE 39°50'00"  
B.H. LATITUDE 39°50'00"



MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
9-1-13.5	GERALD E. LOGSDON, ET UX	7.62
9-1-14	ALICE JANE MARTIN	2.40
9-1-15	BOARD OF EDUCATION	LOT (16 SQ. POLES)
0-5-5.2	PETER PARKER	0.87

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 15°33' W	1615.72'
L2	S 09°17' E	1570.66'
L3	S 41°23' E	2051.17'

TAG	SURFACE OWNER	PARCEL	ACRES
A	ANDREW C. WHITLATCH, ET UX	9-7-30	72.82
B	ANDREW C. WHITLATCH, ET UX	9-7-21	42.22
C	BRENDA J. WHETZEL (LIFE ESTATE)	9-7-23	36.00
D	LARRY LEE CONKLE	9-7-22	12.00
E	ANDREW C. WHITLATCH, ET UX	9-7-15	7.54
F	ARNIE GOODNIGHT, ET UX	9-7-14	39.55
G	ARNIE GOODNIGHT, ET UX	9-7-5	62.18
H	XCL MIDSTREAM, LLC	9-5-3	85.26
I	ELMER L. ASTON	9-5-4	108.225

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	62.97'	241.30'	S 46°57' E	62.79'
C2	17.25'	30.75'	S 70°15' E	17.02'
C3	20.18'	14.67'	N 39°16' E	18.63'
C4	110.88'	298.33'	N 11°17' W	110.24'
C5	542.32'	3413.10'	N 24°25' W	541.75'



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5634  
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 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5295  
 slsw.com

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

P.S. 849

*Gregory A. Smith*



**LEGEND**

- LEASE LINE
- SURFACE LINE
- WELL LATERAL
- OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- TAX MAP-PARCEL
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE WW-6A1)

SCALE 1" = 2000' FILE NO. 0654P14HMR3.dwg  
 HEAVEN HILL 3-14HM REV5  
 DATE AUGUST 30, 2019  
 REVISED NOVEMBER 5, 2019 & MAY 13, 2022  
 OPERATORS WELL NO. HEAVEN HILL 3N-14HM  
 API WELL NO. 47-051-02451  
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OFFICE OF OIL AND GAS



WELL OPERATOR TUG HILL OPERATING, LLC  
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500  
 FORT WORTH, TX 76107

DESIGNATED AGENT DARREN BROWN  
 CT CORPORATION  
 ADDRESS 5098 WASHINGTON ST. W, STE 407  
 CHARLESTON, WV 25313-1561

COUNTY NAME PERMIT

07/01/2022

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

(1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

(2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
----------------------	-----------------------	-----------------------	---------	-----------

\*See attached pages

RECEIVED  
Office of Oil and Gas

MAY 17 2022

WV Department of  
Environmental Protection

**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Tug Hill Operating, LLC  
 By: Amy L. Morris *AmyL Morris*  
 Its: Permitting Specialist - Appalachia Region

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC	GRANTEE, LESSEE, ETC	ROYALTY	DEED BOOK/PAGE		Assignment	Assignment	Assignment	Assignment
10*15557	9-7-30	A	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780	226	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15557	9-7-21	B	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780	226	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15746	9-7-23	C	BRUCE D SCHURR	TH EXPLORATION LLC	1/8+	921	478	N/A	N/A	N/A	N/A
10*16021	9-7-23	C	TOMMY BONAR AND TANYA S BONAR	TH EXPLORATION LLC	1/8+	925	325	N/A	N/A	N/A	N/A
10*16115	9-7-23	C	EARL W HARRIS	TH EXPLORATION LLC	1/8+	925	329	N/A	N/A	N/A	N/A
10*16121	9-7-23	C	ISAIAH BENNETT	TH EXPLORATION LLC	1/8+	933	105	N/A	N/A	N/A	N/A
10*16247	9-7-23	C	CAROL RIGGLE AND JAMES DENNIS PARSELY	TH EXPLORATION LLC	1/8+	925	327	N/A	N/A	N/A	N/A
10*17415	9-7-23	C	DILLON PITSENBARGER	TH EXPLORATION LLC	1/8+	919	241	N/A	N/A	N/A	N/A
10*17506	9-7-23	C	CHASKIA F HARRIS AND JAMES M HARRIS	TH EXPLORATION LLC	1/8+	919	239	N/A	N/A	N/A	N/A
10*17507	9-7-23	C	DEZRAY METCALF	TH EXPLORATION LLC	1/8+	919	235	N/A	N/A	N/A	N/A
10*47051.256.1	9-7-23	C	BRENDA J WHETZEL	TH EXPLORATION LLC	1/8+	881	145	N/A	N/A	N/A	N/A
10*47051.256.7	9-7-23	C	MARILYN SUE BUMER	TH EXPLORATION LLC	1/8+	905	29	N/A	N/A	N/A	N/A
10*47051.256.8	9-7-23	C	PAMELA ANN MASON	TH EXPLORATION LLC	1/8+	905	31	N/A	N/A	N/A	N/A
10*47051.256.9	9-7-23	C	WANDA MASON SUNSHINE	TH EXPLORATION LLC	1/8+	905	33	N/A	N/A	N/A	N/A
10*47051.256.10	9-7-23	C	GRACE LAURA BONAR	TH EXPLORATION LLC	1/8+	905	35	N/A	N/A	N/A	N/A
10*47051.256.11	9-7-23	C	JOHN L MASON	TH EXPLORATION LLC	1/8+	905	37	N/A	N/A	N/A	N/A
10*47051.256.12	9-7-23	C	STEVEN A BOHRER	TH EXPLORATION LLC	1/8+	905	39	N/A	N/A	N/A	N/A
10*47051.256.13	9-7-23	C	WILLIAM W CRAIG	TH EXPLORATION LLC	1/8+	905	41	N/A	N/A	N/A	N/A
10*47051.256.14	9-7-23	C	HUGH R BUZZARD	TH EXPLORATION LLC	1/8+	905	43	N/A	N/A	N/A	N/A
10*47051.256.15	9-7-23	C	ROY E AND CHARLOTTE J BONAR YOHO	TH EXPLORATION LLC	1/8+	904	455	N/A	N/A	N/A	N/A
10*47051.256.16	9-7-23	C	CHARLOTTE B HUMMELL	TH EXPLORATION LLC	1/8+	905	45	N/A	N/A	N/A	N/A
10*47051.256.17	9-7-23	C	MAXINE G JOHNSON	TH EXPLORATION LLC	1/8+	904	457	N/A	N/A	N/A	N/A
10*47051.256.18	9-7-23	C	JOHN WILLIAM BONAR AND SHIRLEY BONAR	TH EXPLORATION LLC	1/8+	913	522	N/A	N/A	N/A	N/A
10*47051.256.19	9-7-23	C	MICHAEL DAVID PYLES AND CYNTHIA A PYLES	TH EXPLORATION LLC	1/8+	907	207	N/A	N/A	N/A	N/A
10*47051.256.20	9-7-23	C	JEFFREY THOMAS PYLES AND TERESA A PYLES	TH EXPLORATION LLC	1/8+	907	209	N/A	N/A	N/A	N/A
10*47051.256.21	9-7-23	C	JACK L MASON AND JEAN M MASON	TH EXPLORATION LLC	1/8+	904	626	N/A	N/A	N/A	N/A
10*47051.256.22	9-7-23	C	BEVERLY J HOPSON	TH EXPLORATION LLC	1/8+	913	581	N/A	N/A	N/A	N/A
10*47051.256.23	9-7-23	C	ROBERT L BONAR	TH EXPLORATION LLC	1/8+	913	556	N/A	N/A	N/A	N/A
10*47051.256.24	9-7-23	C	CATHERINE BONAR PETTIT BILLIE	TH EXPLORATION LLC	1/8+	904	628	N/A	N/A	N/A	N/A
10*15486	9-7-22	D	RICHARD NEAL NORRIS AND CAROL NORRIS	TH EXPLORATION LLC	1/8+	905	430	N/A	N/A	N/A	N/A
10*15487	9-7-22	D	WILLIAM C RUTAN	TH EXPLORATION LLC	1/8+	905	475	N/A	N/A	N/A	N/A
10*15489	9-7-22	D	DONALD T SNODGRASS AND LILA F SNODGRASS	TH EXPLORATION LLC	1/8+	915	189	N/A	N/A	N/A	N/A
10*15492	9-7-22	D	HEATHER WHORTON AND CHRISTOPHER STILLION	TH EXPLORATION LLC	1/8+	905	473	N/A	N/A	N/A	N/A
10*15609	9-7-22	D	MICHELLE R WILHELM	CHEVRON USA INC	1/8+	834	456	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15610	9-7-22	D	SARAH STEVENS	CHEVRON USA INC	1/8+	834	432	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15611	9-7-22	D	ROBERT S ZEHNDER	CHEVRON USA INC	1/8+	834	437	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15612	9-7-22	D	VERA SHIRLENE WORKMAN	CHEVRON USA INC	1/8+	837	361	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148

4705102451

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 Office of Oil and Gas  
 MAY 17 2022  
 WV Department of Environmental Protection

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC	GRANTEE, LESSEE, ETC	ROYALTY	DEED BOOK/PAGE		Assignment	Assignment	Assignment	Assignment
10*15613	9-7-22	D	THOMAS L STEVENS	CHEVRON USA INC	1/8+	836	290	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15614	9-7-22	D	DAVID F RINE	CHEVRON USA INC	1/8+	837	130	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15615	9-7-22	D	PAUL WAYNE RINE	CHEVRON USA INC	1/8+	837	133	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15616	9-7-22	D	PHILLIP C RINE	CHEVRON USA INC	1/8+	836	332	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15617	9-7-22	D	GLADYS M RINE	CHEVRON USA INC	1/8+	836	329	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15618	9-7-22	D	CHARLES A RINE	CHEVRON USA INC	1/8+	835	22	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15619	9-7-22	D	SHARON M REYNOLDS	CHEVRON USA INC	1/8+	840	322	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15620	9-7-22	D	GLADYS RUCKMAN	CHEVRON USA INC	1/8+	840	319	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15621	9-7-22	D	KATHERINE A STALNAKER	CHEVRON USA INC	1/8+	840	325	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15622	9-7-22	D	JAY LEROY RINE	CHEVRON USA INC	1/8+	840	351	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15623	9-7-22	D	SUSAN JANE WHEELER	CHEVRON USA INC	1/8+	847	473	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15624	9-7-22	D	RONALD A ZEHNDER	CHEVRON USA INC	1/8+	847	213	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15625	9-7-22	D	LAWRENCE W STIRLING	CHEVRON USA INC	1/8+	852	384	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15626	9-7-22	D	ROBERT J SEAVER	CHEVRON USA INC	1/8+	854	77	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15627	9-7-22	D	PAULA R SEAVER	CHEVRON USA INC	1/8+	853	483	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15628	9-7-22	D	JENNIFER SEAVER	CHEVRON USA INC	1/8+	853	272	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15629	9-7-22	D	DANIEL L RINE	CHEVRON USA INC	1/8+	860	86	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15630	9-7-22	D	JANE L HELFER	CHEVRON USA INC	1/8+	836	342	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15631	9-7-22	D	DAVID HEINZEROTH	CHEVRON USA INC	1/8+	836	219	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15632	9-7-22	D	MARIAN D JONES	CHEVRON USA INC	1/8+	835	38	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15633	9-7-22	D	ROGER W GATTS	CHEVRON USA INC	1/8+	835	35	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148

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10*15634	9-7-22	D	JAMES W DAYTON	CHEVRON USA INC	1/8+	847	567	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15635	9-7-22	D	ELLEN L BETTINAZZI	CHEVRON USA INC	1/8+	847	496	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15636	9-7-22	D	JOSEPH ASTON JR BY HIS A-I-F MELVIN J. ASTON	CHEVRON USA INC	1/8+	848	280	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15637	9-7-22	D	DONALD ASTON	CHEVRON USA INC	1/8+	848	274	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15638	9-7-22	D	PAUL J ASTON A/K/A JACK ASTON	CHEVRON USA INC	1/8+	848	277	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15639	9-7-22	D	DELLA M BURKEY A/K/A MAXINE ASTON	CHEVRON USA INC	1/8+	848	435	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15640	9-7-22	D	EMMA JANE DAVIS A/K/A EMA ASTON	CHEVRON USA INC	1/8+	848	271	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15641	9-7-22	D	HENRY W ASTON	CHEVRON USA INC	1/8+	847	138	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15642	9-7-22	D	KENNETH L DAYTON	CHEVRON USA INC	1/8+	852	366	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15643	9-7-22	D	NORMAN G JOHNSON	CHEVRON USA INC	1/8+	848	363	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15644	9-7-22	D	RONALD BEN LAUGHTON	CHEVRON USA INC	1/8+	852	360	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15645	9-7-22	D	KAREN K OLDFIELD	CHEVRON USA INC	1/8+	854	111	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15646	9-7-22	D	JUDITH A CIRONE	CHEVRON USA INC	1/8+	848	428	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15647	9-7-22	D	KENNETH WENDELL OLDFIELD	CHEVRON USA INC	1/8+	861	589	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15648	9-7-22	D	MARTHA CRAWFORD	CHEVRON USA INC	1/8+	863	542	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15649	9-7-22	D	MARY JANE DANIEL	CHEVRON USA INC	1/8+	858	28	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15650	9-7-22	D	MARY GLADYS KUHN BY A-I-F CONNIE LYONS	CHEVRON USA INC	1/8+	860	89	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15651	9-7-22	D	THOMAS G ASTON	CHEVRON USA INC	1/8+	860	83	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15652	9-7-22	D	ISAAC R ASTON A/K/A IKE ASTON	CHEVRON USA INC	1/8+	886	136	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15653	9-7-22	D	EMILY M HENCEROTH	CHEVRON USA INC	1/8+	862	574	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15654	9-7-22	D	GEORGE E HENNIGER	CHEVRON USA INC	1/8+	863	612	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148

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10*15655	9-7-22	D	ANNA EMERSON A/K/A ANNIE ASTON	CHEVRON USA INC	1/8+	864	603	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15656	9-7-22	D	PATTY L MYERS	CHEVRON USA INC	1/8+	867	100	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15657	9-7-22	D	MARY MARGARET ASTON	CHEVRON USA INC	1/8+	868	283	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15658	9-7-22	D	GLEN MATTHEW LAUGHTON	CHEVRON USA INC	1/8+	873	324	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15659	9-7-22	D	WILLIAM E DAYTON BY HIS AIF	CHEVRON USA INC	1/8+	871	190	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15660	9-7-22	D	DOUGLAS PAUL HENCEROOTH BY HIS AIF	CHEVRON USA INC	1/8+	871	193	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15662	9-7-22	D	LARRY LEE CONKLE	CHEVRON USA INC	1/8+	863	354	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15663	9-7-22	D	ROY A CONKLE SR AND LORIE A CONKLE	CHEVRON USA INC	1/8+	863	311	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15664	9-7-22	D	TERESA A HUGHES	CHEVRON USA INC	1/8+	863	343	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15666	9-7-22	D	BRENDA J WHETZEL	CHEVRON USA INC	1/8+	863	635	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15673	9-7-22	D	DIANE B ASTON	CHEVRON USA INC	1/8+	864	595	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15679	9-7-22	D	CARA BONAR FREESE AND GEORGE H FREESE	TH EXPLORATION LLC	1/8+	905	481	N/A	N/A	N/A	N/A
10*15680	9-7-22	D	ROBERTA JANE CLAYTON	TH EXPLORATION LLC	1/8+	905	485	N/A	N/A	N/A	N/A
10*15688	9-7-22	D	JOSH GARY AND CHRISTINA M GARY	TH EXPLORATION LLC	1/8+	905	487	N/A	N/A	N/A	N/A
10*15689	9-7-22	D	JOHN LEROY BAKER AND CYNTHIA A BAKER	TH EXPLORATION LLC	1/8+	905	491	N/A	N/A	N/A	N/A
10*15690	9-7-22	D	ROBERT WHORTON AND LINDSAY WHORTON	TH EXPLORATION LLC	1/8+	905	489	N/A	N/A	N/A	N/A
10*15728	9-7-22	D	MARY LOU AND FREDERICK W KITTELBERGER	TH EXPLORATION LLC	1/8+	905	483	N/A	N/A	N/A	N/A
10*15729	9-7-22	D	DONNA KAY ALLEN AND ROGER ALLEN	TH EXPLORATION LLC	1/8+	905	493	N/A	N/A	N/A	N/A
10*15747	9-7-22	D	WILLIAM H BAKER	TH EXPLORATION LLC	1/8+	905	499	N/A	N/A	N/A	N/A
10*15748	9-7-22	D	CAROLYN LEE FUREY AND MARTIN J FUREY	TH EXPLORATION LLC	1/8+	905	495	N/A	N/A	N/A	N/A
10*15749	9-7-22	D	DIANA SMITH KNIGHT	TH EXPLORATION LLC	1/8+	905	497	N/A	N/A	N/A	N/A
10*16019	9-7-22	D	ROGER E GALLAGHER AND CONIE M GALLAGHER	TH EXPLORATION LLC	1/8+	905	503	N/A	N/A	N/A	N/A
10*16029	9-7-22	D	MARTHA ASHWORTH KNIGHT	TH EXPLORATION LLC	1/8+	905	505	N/A	N/A	N/A	N/A
10*16049	9-7-22	D	DANNY SHAWN KERNS AND AMY LYNN KERNS	TH EXPLORATION LLC	1/8+	905	518	N/A	N/A	N/A	N/A
10*16050	9-7-22	D	WILLIAM L GALLAGHER	TH EXPLORATION LLC	1/8+	905	512	N/A	N/A	N/A	N/A
10*16114	9-7-22	D	ROBERT SANDFORD BLACK AND JOAN BLACK	TH EXPLORATION LLC	1/8+	905	510	N/A	N/A	N/A	N/A
10*16123	9-7-22	D	PHYLLIS R GATTO	TH EXPLORATION LLC	1/8+	905	520	N/A	N/A	N/A	N/A
10*16138	9-7-22	D	LARRY W KUHN AND VICKIE B KUHN	TH EXPLORATION LLC	1/8+	905	522	N/A	N/A	N/A	N/A
10*16139	9-7-22	D	HUBERT DEAN KUHN AND ANDREA KUHN	TH EXPLORATION LLC	1/8+	905	524	N/A	N/A	N/A	N/A
10*16140	9-7-22	D	ANDY PAUL KUHN	TH EXPLORATION LLC	1/8+	905	526	N/A	N/A	N/A	N/A
10*16141	9-7-22	D	HOWARD L KUHN AND MARY L KUHN	TH EXPLORATION LLC	1/8+	905	528	N/A	N/A	N/A	N/A
10*16177	9-7-22	D	JOSEPHINE BROWN	TH EXPLORATION LLC	1/8+	905	530	N/A	N/A	N/A	N/A

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10*16179	9-7-22	D	DANA BERRY COPELAND	TH EXPLORATION LLC	1/8+	905 532	N/A	N/A	N/A	N/A
10*16287	9-7-22	D	CHARLINE M ENGLE AND KEVIN E ENGLE	TH EXPLORATION LLC	1/8+	905 534	N/A	N/A	N/A	N/A
10*16384	9-7-22	D	DANIELLE BONAR AND LOUIS MICHAEL OSTER	TH EXPLORATION LLC	1/8+	905 501	N/A	N/A	N/A	N/A
10*16389	9-7-22	D	CHARLES BERRY	TH EXPLORATION LLC	1/8+	905 508	N/A	N/A	N/A	N/A
10*16423	9-7-22	D	GAIL L VAUGHN AND LARRY VAUGHN	TH EXPLORATION LLC	1/8+	905 536	N/A	N/A	N/A	N/A
10*16426	9-7-22	D	RENE J RUTAN	TH EXPLORATION LLC	1/8+	905 538	N/A	N/A	N/A	N/A
10*16440	9-7-22	D	MELANIE C WILKINS AND ROBERT WILKINS	TH EXPLORATION LLC	1/8+	927 462	N/A	N/A	N/A	N/A
10*16513	9-7-22	D	LOWELL D AND JANICE L KNIGHT	TH EXPLORATION LLC	1/8+	927 458	N/A	N/A	N/A	N/A
10*16546	9-7-22	D	WALTER C RINE AND CHERYL A RINE	TH EXPLORATION LLC	1/8+	927 456	N/A	N/A	N/A	N/A
10*16558	9-7-22	D	PAUL BONAR AND SUZANNE L HOPKINS-KNIGHT	TH EXPLORATION LLC	1/8+	927 460	N/A	N/A	N/A	N/A
10*16820	9-7-22	D	ROBERTA ANN GIBB AND DAVID S GIBB	TH EXPLORATION LLC	1/8+	919 237	N/A	N/A	N/A	N/A
10*16844	9-7-22	D	HOLLY A LONGFELLOW	TH EXPLORATION LLC	1/8+	927 454	N/A	N/A	N/A	N/A
10*16845	9-7-22	D	TRACY L AND KEITH W BARNBY	TH EXPLORATION LLC	1/8+	927 452	N/A	N/A	N/A	N/A
10*16896	9-7-22	D	MARTHA J BLACK	TH EXPLORATION LLC	1/8+	927 450	N/A	N/A	N/A	N/A
10*17365	9-7-22	D	MYSTI JOANNE GOODMAN	TH EXPLORATION LLC	1/8+	927 468	N/A	N/A	N/A	N/A
10*17370	9-7-22	D	KELLY JUNE GOODMAN	TH EXPLORATION LLC	1/8+	927 470	N/A	N/A	N/A	N/A
10*17497	9-7-22	D	SUZANNA DOOLING AND MICHAEL DOOLING	TH EXPLORATION LLC	1/8+	927 464	N/A	N/A	N/A	N/A
10*17584	9-7-22	D	WILLIAM THOMAS AND MONICA BONAR	TH EXPLORATION LLC	1/8+	927 466	N/A	N/A	N/A	N/A
10*17625	9-7-22	D	CHARLES E BROWN	TH EXPLORATION LLC	1/8+	929 624	N/A	N/A	N/A	N/A
10*18256	9-7-22	D	JEFFREY STEPHEN GOODMAN	TH EXPLORATION LLC	1/8+	929 1	N/A	N/A	N/A	N/A
10*18415	9-7-22	D	CHAD LONGFELLOW	TH EXPLORATION LLC	1/8+	932 575	N/A	N/A	N/A	N/A
10*18514	9-7-22	D	JOHN R BERRY	TH EXPLORATION LLC	1/8+	933 569	N/A	N/A	N/A	N/A
10*18522	9-7-22	D	MARTIN REED BROWN AND DOLORES BROWN	TH EXPLORATION LLC	1/8+	933 558	N/A	N/A	N/A	N/A
10*19391	9-7-22	D	JEFF BERRY AND AMY BERRY	TH EXPLORATION LLC	1/8+	940 340	N/A	N/A	N/A	N/A
10*19406	9-7-22	D	WILLIAM KENT BROWN AND KAYLEEN BROWN	TH EXPLORATION LLC	1/8+	939 289	N/A	N/A	N/A	N/A
10*21960	9-7-22	D	AKRON BAPTIST TEMPLE	TH EXPLORATION LLC	1/8+	960 22	N/A	N/A	N/A	N/A
10*27947	9-7-22	D	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063 568	N/A	N/A	N/A	N/A
10*47051.295.3	9-7-22	D	HAZEL ARIZONA MOORE REYNOLDS	TH EXPLORATION LLC	1/8+	904 632	N/A	N/A	N/A	N/A
10*47051.295.4	9-7-22	D	LLOYD D MOORE	TH EXPLORATION LLC	1/8+	904 459	N/A	N/A	N/A	N/A
10*47051.295.5	9-7-22	D	DALE R MOORE	TH EXPLORATION LLC	1/8+	904 635	N/A	N/A	N/A	N/A
10*47051.295.6	9-7-22	D	MARY I BURKHART	TH EXPLORATION LLC	1/8+	904 638	N/A	N/A	N/A	N/A
10*47051.295.7	9-7-22	D	JEANNE V MELCHIORI	TH EXPLORATION LLC	1/8+	904 462	N/A	N/A	N/A	N/A
10*47051.295.9	9-7-22	D	JAMES E HIMELRICK JR AND KAREN HIMELRICK	TH EXPLORATION LLC	1/8+	904 465	N/A	N/A	N/A	N/A
10*47051.295.10	9-7-22	D	DEENA J PALOMO	TH EXPLORATION LLC	1/8+	905 470	N/A	N/A	N/A	N/A
10*47051.295.11	9-7-22	D	REGINA D FIGUEROA AND DAVID FIGUEROA	TH EXPLORATION LLC	1/8+	905 435	N/A	N/A	N/A	N/A
10*47051.295.12	9-7-22	D	EARL D WELLMAN	TH EXPLORATION LLC	1/8+	905 432	N/A	N/A	N/A	N/A
10*47051.295.13	9-7-22	D	THE DOLLYE F WOOD REVOCABLE TRUST	TH EXPLORATION LLC	1/8+	904 641	N/A	N/A	N/A	N/A
10*15557	9-7-15	E	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780 226	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15558	9-7-14	F	ARNIE AND BOBBIE B GOODNIGHT	CHEVRON USA INC	1/8+	777 59	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148
10*15558	9-7-5	G	ARNIE AND BOBBIE B GOODNIGHT	CHEVRON USA INC	1/8+	777 59	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 36/148

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10*21588	9-5-3	H	LAWRENCE ALLEN WAYT	CHESAPEAKE APPALACHIA LLC	1/8+	687 233	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 22/646	Statoil USA Onshore Properties Inc: 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 42/435
10*21591	9-5-3	H	BEATRICE ANN KIDD	CHESAPEAKE APPALACHIA LLC	1/8+	687 230	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 22/646	Statoil USA Onshore Properties Inc: 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 42/435
10*15481	9-5-4	I	DEAN P RIGBY AND SUSAN RIGBY	TH EXPLORATION LLC	1/8+	908 197	N/A	N/A	N/A	N/A
10*15482	9-5-4	I	SUSAN NELSON	TH EXPLORATION LLC	1/8+	908 203	N/A	N/A	N/A	N/A
10*15594	9-5-4	I	IVAN F GORBY	CHESAPEAKE APPALACHIA LLC	1/8+	695 527	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 36/148
10*15595	9-5-4	I	JOSEPH D DAKAN	CHESAPEAKE APPALACHIA LLC	1/8+	695 519	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 36/148
10*15596	9-5-4	I	JOHN E GORBY	CHESAPEAKE APPALACHIA LLC	1/8+	695 523	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 36/148
10*15597	9-5-4	I	KAREN S GAST	CHESAPEAKE APPALACHIA LLC	1/8+	694 534	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 36/148
10*15598	9-5-4	I	ADA HAZEL GONTA	CHESAPEAKE APPALACHIA LLC	1/8+	695 183	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 36/148
10*15599	9-5-4	I	PATSY JO RAJU	CHESAPEAKE APPALACHIA LLC	1/8+	694 561	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 36/148
10*15686	9-5-4	I	JOHN OMER BOLTZ	TH EXPLORATION LLC	1/8+	908 160	N/A	N/A	N/A	N/A
10*15750	9-5-4	I	SANDRA K TRULL	TH EXPLORATION LLC	1/8+	908 229	N/A	N/A	N/A	N/A
10*16058	9-5-4	I	MATTIE RUTH JACKSON PRESCOTT	TH EXPLORATION LLC	1/8+	908 231	N/A	N/A	N/A	N/A
10*16118	9-5-4	I	RUBY RIDDLE JACKSON	TH EXPLORATION LLC	1/8+	908 233	N/A	N/A	N/A	N/A
10*16383	9-5-4	I	ROBERT STEPHEN DRIGGERS	TH EXPLORATION LLC	1/8+	908 224	N/A	N/A	N/A	N/A
10*16414	9-5-4	I	MARY ELIZABETH DRIGGERS	TH EXPLORATION LLC	1/8+	908 208	N/A	N/A	N/A	N/A
10*16415	9-5-4	I	TERENCE J ANDERSON AND NANCY J ANDERSON	TH EXPLORATION LLC	1/8+	908 213	N/A	N/A	N/A	N/A
10*16416	9-5-4	I	CYNTHIA HUDSON	TH EXPLORATION LLC	1/8+	908 219	N/A	N/A	N/A	N/A
10*16424	9-5-4	I	ROBERT J RIGBY	TH EXPLORATION LLC	1/8+	908 241	N/A	N/A	N/A	N/A
10*16448	9-5-4	I	RALPH L AND JUANITA L CRIM	TH EXPLORATION LLC	1/8+	908 584	N/A	N/A	N/A	N/A
10*16478	9-5-4	I	MARION L AND EMILY CAMPBELL	TH EXPLORATION LLC	1/8+	908 245	N/A	N/A	N/A	N/A
10*16514	9-5-4	I	ALEX R CAMPBELL & JOYCE A CAMPBELL	TH EXPLORATION LLC	1/8+	908 248	N/A	N/A	N/A	N/A
10*16515	9-5-4	I	ANNA MARIE JACKSON	TH EXPLORATION LLC	1/8+	908 251	N/A	N/A	N/A	N/A
10*16516	9-5-4	I	WILSON ANDREW JACKSON ANNA MARIE JACKSON AIF	TH EXPLORATION LLC	1/8+	908 253	N/A	N/A	N/A	N/A
10*16545	9-5-4	I	ROBERT G FOUNDS AND ELLEN FOUNDS	TH EXPLORATION LLC	1/8+	908 260	N/A	N/A	N/A	N/A
10*16662	9-5-4	I	RICHARD THOMAS MIMS & VICKI J MIMS	TH EXPLORATION LLC	1/8+	908 263	N/A	N/A	N/A	N/A
10*16666	9-5-4	I	MICHAEL P PYLE	TH EXPLORATION LLC	1/8+	908 255	N/A	N/A	N/A	N/A

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LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC	GRANTEE, LESSEE, ETC	ROYALTY	DEED BOOK/PAGE	Assignment	Assignment	Assignment	Assignment
10*16667	9-5-4	I	CHARLES F PYLE AND GAIL ANN PYLE	TH EXPLORATION LLC	1/8+	908 266	N/A	N/A	N/A	N/A
10*16668	9-5-4	I	JACK I PYLE AND MERRILEE ANN PYLE	TH EXPLORATION LLC	1/8+	908 257	N/A	N/A	N/A	N/A
10*16669	9-5-4	I	PATRICIA S DADO AND JOHN S DADO	TH EXPLORATION LLC	1/8+	908 269	N/A	N/A	N/A	N/A
10*16686	9-5-4	I	CHERYLE M TRACEY	TH EXPLORATION LLC	1/8+	927 475	N/A	N/A	N/A	N/A
10*16688	9-5-4	I	SHERRYL PYLE BAIR	TH EXPLORATION LLC	1/8+	927 481	N/A	N/A	N/A	N/A
10*16689	9-5-4	I	JOHN C FOUNDS	TH EXPLORATION LLC	1/8+	927 478	N/A	N/A	N/A	N/A
10*16690	9-5-4	I	RICARDO ORTIZ	TH EXPLORATION LLC	1/8+	921 352	N/A	N/A	N/A	N/A
10*16720	9-5-4	I	DONNA ELAINE BRASKETT	TH EXPLORATION LLC	1/8+	921 152	N/A	N/A	N/A	N/A
10*16738	9-5-4	I	CHARLES A RINE AND RUTH K RINE	TH EXPLORATION LLC	1/8+	908 274	N/A	N/A	N/A	N/A
10*16747	9-5-4	I	WILLIAM DALE BRASKETT	TH EXPLORATION LLC	1/8+	921 96	N/A	N/A	N/A	N/A
10*16787	9-5-4	I	HERBERT B CAMPBEL & DONNA D CAMPBELL	TH EXPLORATION LLC	1/8+	942 451	N/A	N/A	N/A	N/A
10*16798	9-5-4	I	PATRICK A RANKIN AND ROBIN A RANKIN	TH EXPLORATION LLC	1/8+	921 364	N/A	N/A	N/A	N/A
10*16800	9-5-4	I	JAMES KENNETH JACKSON AND JULIE JACKSON	TH EXPLORATION LLC	1/8+	921 93	N/A	N/A	N/A	N/A
10*16802	9-5-4	I	CHRISTOPHER AND TAMMY RICHARDSON	TH EXPLORATION LLC	1/8+	921 495	N/A	N/A	N/A	N/A
10*16804	9-5-4	I	WILLIAM N TAYLOR	TH EXPLORATION LLC	1/8+	921 510	N/A	N/A	N/A	N/A
10*16806	9-5-4	I	VIRGINIA WHITMAN TRUST DTD 7-25-1984	TH EXPLORATION LLC	1/8+	921 528	N/A	N/A	N/A	N/A
10*16807	9-5-4	I	DAVID TULLER AND SUSAN STORTS TULLER	TH EXPLORATION LLC	1/8+	921 513	N/A	N/A	N/A	N/A
10*16808	9-5-4	I	MICHAEL L ORTIZ	TH EXPLORATION LLC	1/8+	921 349	N/A	N/A	N/A	N/A
10*16815	9-5-4	I	HAROLD W PYLE	TH EXPLORATION LLC	1/8+	921 357	N/A	N/A	N/A	N/A
10*16819	9-5-4	I	TERESA ORTIZ BIGGS	TH EXPLORATION LLC	1/8+	921 147	N/A	N/A	N/A	N/A
10*16821	9-5-4	I	SHEILA BRASKETT WEICHEY	TH EXPLORATION LLC	1/8+	921 516	N/A	N/A	N/A	N/A
10*16836	9-5-4	I	RICK A STORTS AND LENORE A STORTS	TH EXPLORATION LLC	1/8+	921 507	N/A	N/A	N/A	N/A
10*16837	9-5-4	I	TERRY L POFF AND THELMA A POFF	TH EXPLORATION LLC	1/8+	927 472	N/A	N/A	N/A	N/A
10*16838	9-5-4	I	ROBERT G FUNARI	TH EXPLORATION LLC	1/8+	821 82	N/A	N/A	N/A	N/A
10*16839	9-5-4	I	JAMES B FOUNDS AND LYNN M MOWERY	TH EXPLORATION LLC	1/8+	921 73	N/A	N/A	N/A	N/A
10*16863	9-5-4	I	TINA MOORE	TH EXPLORATION LLC	1/8+	921 334	N/A	N/A	N/A	N/A
10*16868	9-5-4	I	MICHAEL W STORTS AND JESSICA M STORTS	TH EXPLORATION LLC	1/8+	921 504	N/A	N/A	N/A	N/A
10*16879	9-5-4	I	MARK E STORTS AND LESLEY A STORTS	TH EXPLORATION LLC	1/8+	921 501	N/A	N/A	N/A	N/A
10*16880	9-5-4	I	BEVERLY ANN STORTS	TH EXPLORATION LLC	1/8+	921 498	N/A	N/A	N/A	N/A
10*16902	9-5-4	I	MARY BARCAW DUKE	TH EXPLORATION LLC	1/8+	921 105	N/A	N/A	N/A	N/A
10*16962	9-5-4	I	BARBARA EZELL FLORY AND DENNIS P FLORY	TH EXPLORATION LLC	1/8+	921 70	N/A	N/A	N/A	N/A
10*16976	9-5-4	I	LESTER G AND CONSTANCE B NICKOLSON	TH EXPLORATION LLC	1/8+	921 343	N/A	N/A	N/A	N/A
10*16977	9-5-4	I	JEREMY COCHENOUR	TH EXPLORATION LLC	1/8+	921 102	N/A	N/A	N/A	N/A
10*16987	9-5-4	I	LAURIE EZELL PERRY	TH EXPLORATION LLC	1/8+	921 355	N/A	N/A	N/A	N/A
10*16989	9-5-4	I	BRITTANY RICHARDSON	TH EXPLORATION LLC	1/8+	921 376	N/A	N/A	N/A	N/A
10*16991	9-5-4	I	MARYELLEN FOUNDS AND LAUREN FOUNDS	TH EXPLORATION LLC	1/8+	921 79	N/A	N/A	N/A	N/A
10*16996	9-5-4	I	THOMAS RANKIN	TH EXPLORATION LLC	1/8+	917 75	N/A	N/A	N/A	N/A
10*17130	9-5-4	I	CINDY L BARGER	TH EXPLORATION LLC	1/8+	921 137	N/A	N/A	N/A	N/A
10*17155	9-5-4	I	JESSE LEON JR AND TERESA GAIL EZELLE	TH EXPLORATION LLC	1/8+	921 118	N/A	N/A	N/A	N/A
10*17156	9-5-4	I	HENRI NELL JACKSON KENT BARNES	TH EXPLORATION LLC	1/8+	921 139	N/A	N/A	N/A	N/A
10*17157	9-5-4	I	JAMES N REEVES JR AND RITA M REEVES	TH EXPLORATION LLC	1/8+	921 367	N/A	N/A	N/A	N/A
10*17198	9-5-4	I	THOMAS G AND DIANE W BAYLESS	TH EXPLORATION LLC	1/8+	921 141	N/A	N/A	N/A	N/A
10*17205	9-5-4	I	SANDRA JEAN WILSON	TH EXPLORATION LLC	1/8+	921 524	N/A	N/A	N/A	N/A

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10*17208	9-5-4	I	PATRICK S GALLAGHER AND JOYCE ANN FOUNDS	TH EXPLORATION LLC	1/8+	921	86	N/A	N/A	N/A	N/A
10*17274	9-5-4	I	DAVID H WILSON	TH EXPLORATION LLC	1/8+	921	474	N/A	N/A	N/A	N/A
10*17275	9-5-4	I	JOHN R REEVES AND MONA G REEVES	TH EXPLORATION LLC	1/8+	921	373	N/A	N/A	N/A	N/A
10*17276	9-5-4	I	BERTHA EZELL WYATT	TH EXPLORATION LLC	1/8+	921	526	N/A	N/A	N/A	N/A
10*17278	9-5-4	I	MICHAEL L EZELLE	TH EXPLORATION LLC	1/8+	921	121	N/A	N/A	N/A	N/A
10*17339	9-5-4	I	JOSEPH W FOUNDS	TH EXPLORATION LLC	1/8+	921	76	N/A	N/A	N/A	N/A
10*17377	9-5-4	I	MILTON HOWARD EZELLE JR & ELIZABETH A EZELLE	TH EXPLORATION LLC	1/8+	921	123	N/A	N/A	N/A	N/A
10*17416	9-5-4	I	ANDREW M ORTIZ	TH EXPLORATION LLC	1/8+	921	346	N/A	N/A	N/A	N/A
10*17438	9-5-4	I	DENNIS M WILSON	TH EXPLORATION LLC	1/8+	921	476	N/A	N/A	N/A	N/A
10*17440	9-5-4	I	KENDRA WALISA	TH EXPLORATION LLC	1/8+	927	484	N/A	N/A	N/A	N/A
10*17441	9-5-4	I	RALPH J WILSON	TH EXPLORATION LLC	1/8+	921	522	N/A	N/A	N/A	N/A
10*17442	9-5-4	I	SHANE ALLEN AND MENDY JEAN ALLEN	TH EXPLORATION LLC	1/8+	921	134	N/A	N/A	N/A	N/A
10*17443	9-5-4	I	MICHELLE MORROW-BACK	TH EXPLORATION LLC	1/8+	921	337	N/A	N/A	N/A	N/A
10*17444	9-5-4	I	KELLY FOUNDS CAMPBELL	TH EXPLORATION LLC	1/8+	921	99	N/A	N/A	N/A	N/A
10*17449	9-5-4	I	PHYLLIS J BLAKE	TH EXPLORATION LLC	1/8+	921	150	N/A	N/A	N/A	N/A
10*17482	9-5-4	I	TERESA MARIE RALYA	TH EXPLORATION LLC	1/8+	927	487	N/A	N/A	N/A	N/A
10*17483	9-5-4	I	RICHARD I PYLE	TH EXPLORATION LLC	1/8+	921	359	N/A	N/A	N/A	N/A
10*17484	9-5-4	I	NELDA S JACKSON	TH EXPLORATION LLC	1/8+	921	330	N/A	N/A	N/A	N/A
10*17485	9-5-4	I	MARGIE ANN JACKSON ROBBINS GRAHAM	TH EXPLORATION LLC	1/8+	921	91	N/A	N/A	N/A	N/A
10*17526	9-5-4	I	JEFFREY L REEVES AND JODY L REEVES	TH EXPLORATION LLC	1/8+	921	370	N/A	N/A	N/A	N/A
10*17527	9-5-4	I	JAMES MICHAEL EZELL AND LUCILLE D EZELL	TH EXPLORATION LLC	1/8+	921	111	N/A	N/A	N/A	N/A
10*17538	9-5-4	I	CHERYL RANKIN-KING	TH EXPLORATION LLC	1/8+	952	160	N/A	N/A	N/A	N/A
10*17552	9-5-4	I	JOHN BEVACQUA AND PATRICIA A BEVACQUA	TH EXPLORATION LLC	1/8+	921	144	N/A	N/A	N/A	N/A
10*17554	9-5-4	I	MICHAEL T RANKIN	TH EXPLORATION LLC	1/8+	921	361	N/A	N/A	N/A	N/A
10*17561	9-5-4	I	ROGER L TYRRELL AND KATHRYN L TYRRELL	TH EXPLORATION LLC	1/8+	927	24	N/A	N/A	N/A	N/A
10*17564	9-5-4	I	JAMES RONALD AND TRACEY E NICKOLSON	TH EXPLORATION LLC	1/8+	921	340	N/A	N/A	N/A	N/A
10*17565	9-5-4	I	JESSE ALLEN AND ELIZABETH D JACKSON	TH EXPLORATION LLC	1/8+	921	327	N/A	N/A	N/A	N/A
10*17566	9-5-4	I	NATHAN P ERDOSSY AND BARBARA T ERDOSSY	TH EXPLORATION LLC	1/8+	921	108	N/A	N/A	N/A	N/A
10*17588	9-5-4	I	JAMES M JACKSON	TH EXPLORATION LLC	1/8+	921	325	N/A	N/A	N/A	N/A
10*17589	9-5-4	I	MARY CHRISTINE MCKENNA	TH EXPLORATION LLC	1/8+	921	332	N/A	N/A	N/A	N/A
10*17744	9-5-4	I	SAM PRESLEY EZELL DIVERSICARE OF PELL CITY	TH EXPLORATION LLC	1/8+	921	116	N/A	N/A	N/A	N/A
10*17983	9-5-4	I	HOLLY SUE CUTHBERT	TH EXPLORATION LLC	1/8+	925	380	N/A	N/A	N/A	N/A
10*18021	9-5-4	I	CHRISTOPHER A HANIFAN AND JACKIE L HANIFAN	TH EXPLORATION LLC	1/8+	927	267	N/A	N/A	N/A	N/A
10*18022	9-5-4	I	DALE P WARD AND CYNTHIA J WARD	TH EXPLORATION LLC	1/8+	927	264	N/A	N/A	N/A	N/A
10*19524	9-5-4	I	THE ESTATE OF AGNES IRENE EZELL CLARK	TH EXPLORATION LLC	1/8+	942	633	N/A	N/A	N/A	N/A
10*19693	9-5-4	I	MARIO R FUNARI	TH EXPLORATION LLC	1/8+	936	145	N/A	N/A	N/A	N/A
10*19695	9-5-4	I	WILLIE REED JACKSON ET AL	TH EXPLORATION LLC	1/8+	944	333	N/A	N/A	N/A	N/A
10*19695.1	9-5-4	I	VIRGINIA P FOUNDS KASSERMAN	TH EXPLORATION LLC	1/8+	944	333	N/A	N/A	N/A	N/A
10*19939	9-5-4	I	ROBERT J MILLS & SHERRA SUE MILLS	TH EXPLORATION LLC	1/8+	949	212	N/A	N/A	N/A	N/A
10*22630	9-5-4	I	AGENA FOUNDATION INC	TH EXPLORATION LLC	1/8+	1024	287	N/A	N/A	N/A	N/A
10*25628	9-5-4	I	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1025	631	N/A	N/A	N/A	N/A
10*27947	9-5-4	I	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	568	N/A	N/A	N/A	N/A
10*47051.223.1	9-5-4	I	JEAN ANNE GORBY STORCH AIF JOHN HERMAN STORCH	TH EXPLORATION LLC	1/8+	877	216	N/A	N/A	N/A	N/A

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10*47051.223.2	9-5-4	I	STEPHANIE SCHIEFER AND GEOFFREY SCHIEFER	TH EXPLORATION LLC	1/8+	885	321	N/A	N/A	N/A	N/A
10*47051.223.3	9-5-4	I	ROBERT A AND M REBECCA LEADBETTER	TH EXPLORATION LLC	1/8+	885	324	N/A	N/A	N/A	N/A
10*47051.223.5	9-5-4	I	HAROLD S BROWN II AND MARIA A BROWN	TH EXPLORATION LLC	1/8+	907	641	N/A	N/A	N/A	N/A
10*47051.223.6	9-5-4	I	JOSHUA RINE AND REBECCA RINE	TH EXPLORATION LLC	1/8+	907	634	N/A	N/A	N/A	N/A
10*47051.223.7	9-5-4	I	JACK R WILSON JR	TH EXPLORATION LLC	1/8+	908	4	N/A	N/A	N/A	N/A
10*47051.223.8	9-5-4	I	DAVID M WILSON	TH EXPLORATION LLC	1/8+	907	649	N/A	N/A	N/A	N/A
10*47051.223.9	9-5-4	I	LINDA DELBERT	TH EXPLORATION LLC	1/8+	908	32	N/A	N/A	N/A	N/A
10*47051.223.10	9-5-4	I	ROBERT E GORBY AND NANCY M GORBY	TH EXPLORATION LLC	1/8+	908	47	N/A	N/A	N/A	N/A
10*47051.223.11	9-5-4	I	ELIZABETH ESTEP	TH EXPLORATION LLC	1/8+	908	37	N/A	N/A	N/A	N/A
10*47051.223.12	9-5-4	I	ALICE GORBY MARTIN	TH EXPLORATION LLC	1/8+	908	52	N/A	N/A	N/A	N/A
10*47051.223.13	9-5-4	I	JAMES A GORBY	TH EXPLORATION LLC	1/8+	908	42	N/A	N/A	N/A	N/A
10*47051.223.14	9-5-4	I	JUSTIN RINE AND BECKY RINE	TH EXPLORATION LLC	1/8+	907	639	N/A	N/A	N/A	N/A
10*47051.223.15	9-5-4	I	LARRY D TAUNT AND NANCY L TAUNT	TH EXPLORATION LLC	1/8+	908	14	N/A	N/A	N/A	N/A
10*47051.223.16	9-5-4	I	WILLIAM K STERN AND BETTY L STERN	TH EXPLORATION LLC	1/8+	908	64	N/A	N/A	N/A	N/A
10*47051.223.17	9-5-4	I	RALPH E HUNTER JR AND CHARLOTTE HUNTER	TH EXPLORATION LLC	1/8+	908	9	N/A	N/A	N/A	N/A
10*47051.223.18	9-5-4	I	BRITTNEY MENEAR	TH EXPLORATION LLC	1/8+	908	57	N/A	N/A	N/A	N/A
10*47051.223.19	9-5-4	I	JASON RINE AND HEATHER RINE	TH EXPLORATION LLC	1/8+	907	629	N/A	N/A	N/A	N/A
10*47051.223.20	9-5-4	I	BARBARA A BUZZARD	TH EXPLORATION LLC	1/8+	908	24	N/A	N/A	N/A	N/A
10*47051.223.21	9-5-4	I	GARY T WARD AND SHARON D WARD	TH EXPLORATION LLC	1/8+	908	19	N/A	N/A	N/A	N/A
10*47051.223.22	9-5-4	I	SALLY DAVIS COLE	TH EXPLORATION LLC	1/8+	908	74	N/A	N/A	N/A	N/A
10*47051.223.23	9-5-4	I	RONALD S CRIM	TH EXPLORATION LLC	1/8+	908	79	N/A	N/A	N/A	N/A
10*47051.223.24	9-5-4	I	JO DEE K DAVIS	TH EXPLORATION LLC	1/8+	908	136	N/A	N/A	N/A	N/A
10*47051.223.25	9-5-4	I	JOANNE WELCH	TH EXPLORATION LLC	1/8+	908	141	N/A	N/A	N/A	N/A
10*47051.223.26	9-5-4	I	WENDY L SMARKEL	TH EXPLORATION LLC	1/8+	908	69	N/A	N/A	N/A	N/A
10*47051.223.27	9-5-4	I	TIMI J HOBBS	TH EXPLORATION LLC	1/8+	908	277	N/A	N/A	N/A	N/A
10*47051.223.30	9-5-4	I	LAURIE DRIGGERS MANDERSON	TH EXPLORATION LLC	1/8+	908	165	N/A	N/A	N/A	N/A
10*47051.223.33	9-5-4	I	NANCY C HOUSLEY	TH EXPLORATION LLC	1/8+	908	187	N/A	N/A	N/A	N/A
10*47051.223.34	9-5-4	I	JOHN CIAFFAGLIONE	TH EXPLORATION LLC	1/8+	908	170	N/A	N/A	N/A	N/A
10*47051.223.35	9-5-4	I	DEBRA L CIAFFAGLIONE	TH EXPLORATION LLC	1/8+	908	190	N/A	N/A	N/A	N/A

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 WV Department of  
 Environmental Protection

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STATE OF WEST VIRGINIA §  
  §  
COUNTY OF MARSHALL §

Jan. Post  
MARSHALL County 12:43:01 PM  
Instrument No 1404876  
Date Recorded 05/20/2016  
Inclusion Type ASH  
Pages Recorded 20  
Book-Page 36-148  
Recording Fee \$20.00  
Additional \$9.00

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ASSIGNMENT AND CONVEYANCE

**THIS ASSIGNMENT AND CONVEYANCE** (the "Assignment") is made and entered into this 17th day of May, 2016 (the "Effective Date"), by and between **CHEVRON U.S.A. INC.** (hereinafter "Assignor") and **TH EXPLORATION, LLC** (hereinafter "Assignee") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated May 2, 2016 (the "Acreage Trade Agreement"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

WITNESSETH:

**WHEREAS**, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to those certain Oil and Gas Leases situated in Marshall County, West Virginia, as described in Exhibit "A", and as depicted in Exhibits "A-1" and "A-2", attached hereto and made a part hereof (hereinafter the "Leases"); and

**WHEREAS**, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to the Leases as described below.

**NOW, THEREFORE**, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and subject to the limited warranties, restrictions and conditions hereinafter mentioned, the parties hereto, intending to be legally bound, do covenant and agree as follows:

1. Assignment. Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over and transfer, as of the Effective Date, to Assignee, its respective successors and assigns, forever, all of Assignor's right, title and interest in and to the Leases, and the lands covered thereby, together with all rights incident thereto and appurtenances thereon, except that Assignor accepts and reserves from this Assignment the Chevron ORRI previously conveyed to Assignor and as described in that certain Memorandum of Assignment of Oil and Gas Lease Interests dated November 6, 2012 by and between Cornell Holdings Incorporated and Chevron U.S.A. Inc., which is recorded at Book 0028, Page 0239 in the Office of the County Clerk of Marshall County, West Virginia.

**TO HAVE AND TO HOLD** such right, title and interest in and to the Leases unto Assignee or its designee, and their respective successors and assigns, forever, in accordance with the provisions of this Assignment.

2. Special Warranty. Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered (other than Permitted Encumbrances) its interest in the Conveyed Interests since the time that Assignor obtained its interests in the Leases. Assignor does covenant, promise and agree, to and with the Assignee, its respective successors and assigns, to forever specially warrant and defend the title to the Leases or portions thereof included under this Assignment, unto the Assignee and its respective successors and assigns, against the lawful claims of Assignor, and all persons claiming, or to claim, the same or any part thereof, by, through or under Assignor.

#27  
fs: nsw

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**COPY**

STATE OF WEST VIRGINIA

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§  
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COUNTY OF MARSHALL

**MEMORANDUM OF ASSIGNMENT OF OIL AND GAS LEASES**

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MAY 17 2022

WV Department of  
Environmental Protection

This **MEMORANDUM OF ASSIGNMENT OF OIL AND GAS LEASES** ("**Memorandum**") dated as of September 7<sup>th</sup>, 2018 (the "**Effective Date**"), is made by and between **Chevron U.S.A. Inc.**, a Pennsylvania corporation, with an address at 700 Cherrington Parkway, Coraopolis, PA 15108 ("**Chevron**" or "**Assignor**") and **TH Exploration, LLC**, Texas limited liability company, with an address at 1320 S. University Drive, Suite 500, Fort Worth, TX 76107 ("**Assignee**"). **Chevron** and **Assignee** are each referred to herein as a "**Party**" and collectively as the "**Parties**." Capitalized terms used but not defined herein shall have the meaning ascribed to those terms in that certain Assignment of Oil and Gas Leases between the Parties dated September 7<sup>th</sup>, 2018 ("**Assignment**").

- A. Notice is hereby given that the Parties have entered into the Assignment, pursuant to which **Chevron** assigned to **Assignee** all of **Assignor's** right, title, and interest in and to those certain Leases situated in Marshall County, West Virginia, less and except certain identified portions, as described in Exhibit "A", attached hereto and made a part hereof.
- B. **Chevron** does covenant, promise and agree, to and with the **Assignee**, its respective successors and assigns, to forever specially warrant and defend the title to the Leases or portions thereof included under the Assignment and this Memorandum, unto the **Assignee** and its respective successors and assigns, against the lawful claims of **Chevron**, and all persons claiming, or to claim, the same or any part thereof, by, through or under **Chevron**.
- C. Preparation of this Memorandum has been a joint effort of the Parties and it must not be construed more severely against any of the Parties than against any other.
- D. This Memorandum is subject to and expressly incorporates the terms of the Assignment. The Assignment will govern to the extent of any conflict between the terms of this Memorandum and the Assignment.
- E. In consideration of the mutual promises set out in this Assignment, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree to be bound by the terms of this Assignment.

IN WITNESS WHEREOF, this Memorandum is executed this 7<sup>th</sup> day of September, 2018.

Marshall County  
Jan Pest, Clerk  
Instrument 1445509  
09/11/2018 @ 02:17:18 PM  
ASSIGNMENTS  
Book 42 @ Page 435  
Pages Recorded 7  
Recording Cost \$ 13.00

**MEMORANDUM OF AGREEMENT**

This Memorandum of Agreement is entered into this 14<sup>th</sup> day of February, 2018, between TUG HILL OPERATING, LLC (THQ), a Texas limited liability company, whose address is 1320 S. University Blvd., Suite 500, Fort Worth, TX 76107 and CHEVRON U.S.A., INC. (Chevron), a Pennsylvania corporation, whose address is 700 Cherrington Parkway, Coraopolis, PA 15108.

**PARTIES AND AGREEMENT REFERENCE:** THQ and Chevron entered into a letter agreement ("Letter Agreement") dated February 14<sup>th</sup>, 2018 (the "Commencement Date") outlining pursuit of definitive agreements to allow THQ the right to permit, drill, extract, produce and market oil and gas from those certain oil and gas interests controlled by Chevron in the Meade District of Marshall County, West Virginia, as more fully described in Exhibit A attached hereto, made a part hereof, and incorporated herein by reference.

1. **TERM:** The rights granted in the Letter Agreement will terminate upon the earlier of (i) one hundred eighty (180) days from the Commencement Date, (ii) Chevron's revocation of the rights granted in the Letter Agreement, or (iii) the parties entering into the definitive agreement described in the Letter Agreement. Upon termination of the Letter Agreement under subsection (i) or (ii) of the immediately preceding sentence, THQ will record a surrender of this Memorandum and withdraw any related well work permit requests.

2. **MEMORANDUM FOR RECORDING PURPOSES ONLY:** This Memorandum is for recording purposes only and does not supplement or supersede the parties' respective rights set forth in the Letter Agreement or other agreements.

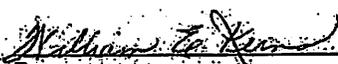
IN WITNESS WHEREOF, the parties have signed their names hereto as of the date first above written.

Tug Hill Operating, LLC



By: Sean Willis  
Its: VP, Engineering &  
Development Manager - Appalachia

Chevron U.S.A., Inc.



By: William E. Kerns  
Its: Attorney-in-Fact

Marshall County  
Jan Pest, Clerk  
Instrument 1436705  
02/16/2018 @ 02:16:57 PM  
AGREEMENT  
Book 960 @ Page 409  
Pages Recorded 2  
Recording Cost \$ 11.00

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MAY 17 2022  
WV Department of  
Environmental Protection



TUG HILL

4705102451

May 16, 2022

WV Department of Environmental Protection  
Office of Oil & Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Attention: Charles T. Brewer

RE: Heaven Hill 3N-14HM

Subject: Road Crossing Letter

Dear Taylor:

Tug Hill Operating, LLC (THO) will not be crossing any County Routes in the area of the Heaven Hill 3N-14HM well plat.

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 304-376-0111, or by email at [amorris@tug-hilop.com](mailto:amorris@tug-hilop.com).

Sincerely,

Amy L. Morris  
Permitting Specialist  
Appalachia Region

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STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE CERTIFICATION

Date of Notice Certification: 05/16/2022

API No. 47- 051 -  
Operator's Well No. Heaven Hill 3N-14HM  
Well Pad Name: Heaven Hill 3

**Notice has been given:**

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>526,270.67</u>
County:	<u>Marshall</u>		Northing:	<u>4,406,561.07</u>
District:	<u>Meade</u>	Public Road Access:	<u>Yeater Lane (Co. Rt. 21/11)</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>Ricky L. Whittlatch</u>	
Watershed:	<u>(HUC 10) Fish Creek</u>			

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
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WV Department of  
Environmental Protection

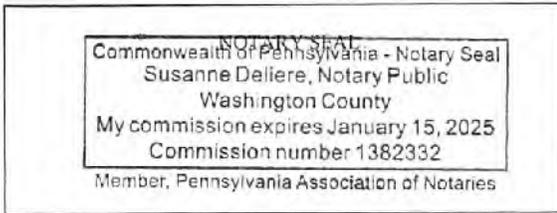
**Required Attachments:**

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

**Certification of Notice is hereby given:**

THEREFORE, I Amy L. Morris, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	<u>Tug Hill Operating, LLC</u>	Address:	<u>380 Southpointe Blvd, Southpointe Plaza II, Suite 200</u>
By:	<u>Amy L. Morris <i>Amy L. Morris</i></u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Regulatory Analyst - Appalachia</u>	Facsimile:	<u>724-338-2030</u>
Telephone:	<u>724-749-8388</u>	Email:	<u>amorris@tug-hilltop.com</u>



Subscribed and sworn before me this 16<sup>th</sup> day of May 2022  
*Susanne Deliere* Notary Public  
 My Commission Expires 1/15/2025

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [deprivacvofficer@wv.gov](mailto:deprivacvofficer@wv.gov).

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WV Department of  
Environmental Protection

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4705102451  
API NO: 47-051  
OPERATOR WELL NO. Heaven Hill 3N-14HM  
Well Pad Name: Heaven Hill 3

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 5/13/2022 Date Permit Application Filed: 5/15/2022

Notice of:

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MAY 17 2022

WV Department of  
Environmental Protection

PERMIT FOR ANY WELL WORK       CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

PERSONAL SERVICE       REGISTERED MAIL       METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice    WSSP Notice    E&S Plan Notice    Well Plat Notice is hereby provided to:

SURFACE OWNER(s)

Name: Ricky L. Whittlatch

Address: 1044 Yeater Lane  
Glen Easton, WV 26039

Name: None

Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: Andrew Whittlatch

Address: 942 Yeater Lane  
Glen Easton, WV 26039

Name: Arnie Goodnight, et ux

Address: 102 Goodnight Lane  
Moundsville, WV 26041

SURFACE OWNER(s) (Impoundments or Pits)

Name: None

Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: Marshall County Coal Resources, Inc.

Address: 46226 National Road  
St. Clairsville, OH 43950

COAL OPERATOR

Name: Same as above coal owner

Address: \_\_\_\_\_

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: \*See supplement page 1A attached

Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: None

Address: \_\_\_\_\_

\*Please attach additional forms if necessary

07/01/2022

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

**This Notice Shall Include:**

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Well Location Restrictions**

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

WW-6A  
(8-13)

API NO. 47-051 -  
OPERATOR WELL NO. Heaven Hill 3N-14HM  
Well Pad Name: Heaven Hill 3

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

#### **Water Well Testing:**

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

#### **Water Testing Laboratories:**

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

#### **Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:**

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

#### **Written Comment:**

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

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Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

07/01/2022

**Time Limits and Methods for Filing Comments.**

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

**Comment Requirements**

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

**Permit Denial or Condition**

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

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A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of the permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

WW-6A  
(8-13)

4705102451  
API NO. 47-051 -  
OPERATOR WELL NO. Heaven Hill 3N-14HM  
Well Pad Name: Heaven Hill 3

**Notice is hereby given by:**

Well Operator: Tug Hill Operating, LLC  
Telephone: 724-749-8388  
Email: amorris@tug-hill-op.com *amorris*

Address: 380 Southpointe Blvd, Southpointe Plaza II, Suite 200  
Canonsburg, PA 15317  
Facsimile: 724-338-2030

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [deprivacyofficer@wv.gov](mailto:deprivacyofficer@wv.gov).

Commonwealth of Pennsylvania - Notary Seal  
SEAN COTTER - Notary Public  
Washington County  
My Commission Expires Jan 2, 2024  
Commission Number 1264582

Subscribed and sworn before me this 13 day of May, 2022.  
*[Signature]* Notary Public  
My Commission Expires 1/2/2024

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Commonwealth of Pennsylvania - State Seal  
SEAN COTTER - Katara Public  
Washington County  
My Commission Expires Jan 1, 2024  
Commission Number: 164883

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JAN 11 2022

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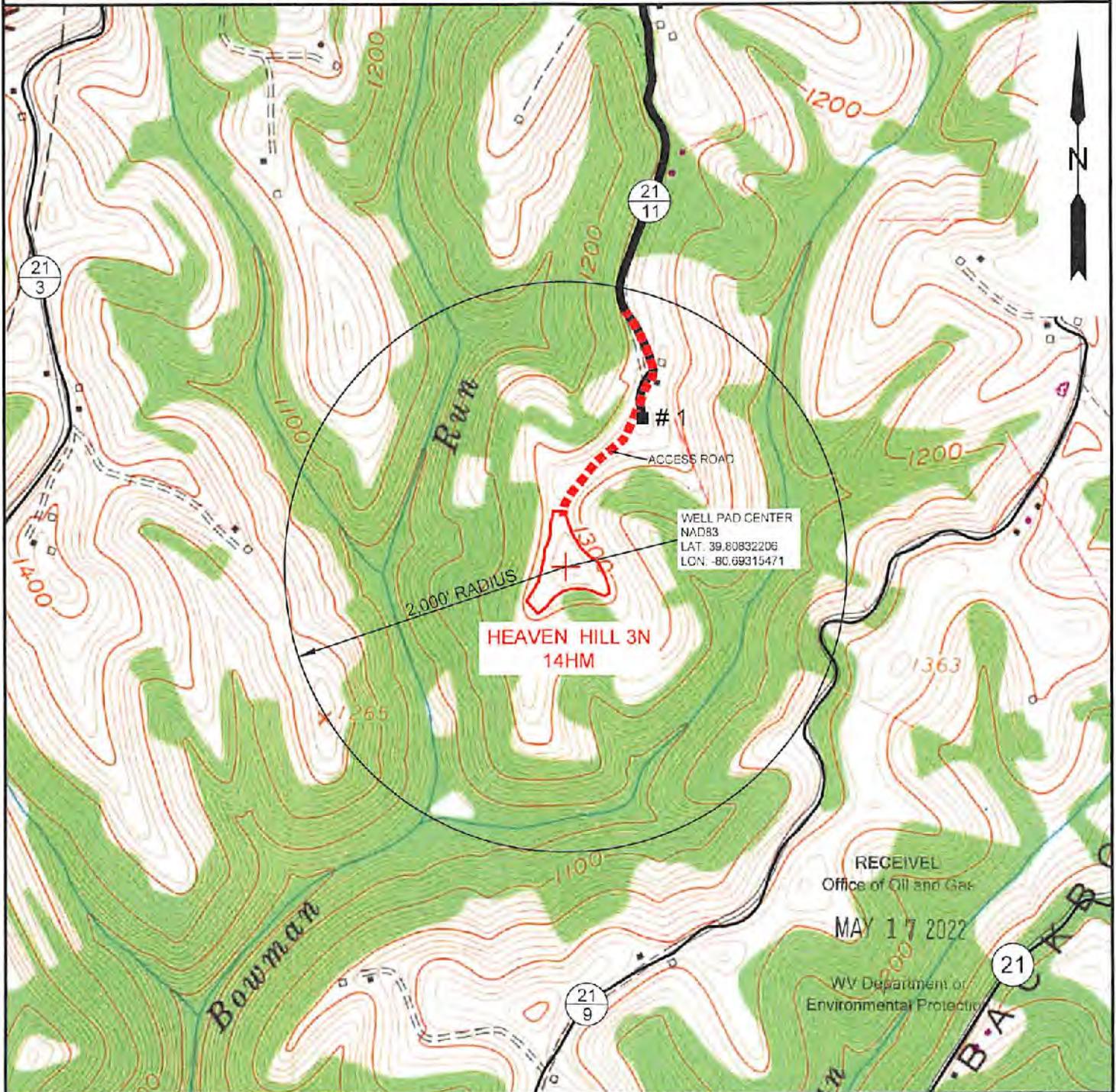
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# PROPOSED HEAVEN HILL 3N - 14HM



NOTE: THERE APPEARS TO BE ONE (1) POSSIBLE WATER SOURCE WITHIN TWO THOUSAND FEET (2,000').

**SLS**  
Land & Energy Development  
*Solutions from the ground up.*  
P.O. Box 150 • 112 Vanhorn Drive • Glenville, WV 26031 • (304) 462-5034  
www.slssurvey.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8654	06/21/2019	1" = 1000'



**TUG HILL**  
OPERATING

07/01/2022

4705102451

**Exhibit WW-6A**

**Supplement Pg. 1A**

Tug Hill Operating, LLC  
380 Southpointe Blvd, Suite 200  
Cannonsburg, PA 15137

**Residences within Two-Thousand Feet (2,000')**

Well: Heaven Hill 3N – 14HM  
District: Meade (Residence #1)  
State: WV

There is one (1) residence, no business or commercial sites, no churches, no schools or emergency facilities within two-thousand feet (2,000') of the above referenced well location.

<p><b>Residence (#1)</b> TM 7 Pcl. 30 Ricky L. Whitlatch <b>Phone:</b> 304-843-1168 <b>Physical Address:</b> 1044 Yeater Ln. Glen Easton, WV 26039 <b>Tax Address:</b> Same</p>
---

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MAY 17 2022  
WV Department of  
Environmental Protection

07/01/2022

4705102451

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least TEN (10) days prior to filing a permit application.

Date of Notice: 03/18/2022

Date Permit Application Filed: 03/28/2022

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Delivery method pursuant to West Virginia Code § 22-6A-16(b)

MAY 17 2022

HAND DELIVERY  
 CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

WV Department of  
Environmental Protection

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Ricky L. Whittlatch  
Address: 1044 Yeater Lane  
Glen Easton, WV 26039

Name: Andrew Whittlatch  
Address: 942 Yeater Lane  
Glen Easton, WV 26039 \*See attached sheet

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia UTM NAD 83 Easting: 526,270.67  
County: Marshall Northing: 4,406,561.07  
District: Meade Public Road Access: Yeater Lane CR 21/11  
Quadrangle: Glen Easton 7.5' Generally used farm name: Ricky L. Whittlatch  
Watershed: Fish Creek

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Notice is hereby given by:

Well Operator: Tug Hill Operating, LLC  
Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317  
Telephone: 724-749-8368  
Email: amorris@tug-hillop.com  
Facsimile: \_\_\_\_\_

Authorized Representative: Darren Brown  
Address: 5098 Washington Street W, Suite 407  
Charleston, WV 25313-1561  
Telephone: 877-467-3525  
Email: cl-statecommunications@wolterskluwer.com  
Facsimile: \_\_\_\_\_

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

07/01/2022

4705102451

**Additional WW-6A4 Notice  
Heaven Hill 3**

Arnie Goodnight, et ux  
102 Goodnight Lane  
Moundsville, WV 26041

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**MAY 17 2022**

WV Department of  
Environmental Protection

07/01/2022

WW-6A5  
(1/12)

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF PLANNED OPERATION**

**Notice Time Requirement:** notice shall be provided no later than the **filing date of permit application.**

**Date of Notice:** 05/13/2022      **Date Permit Application Filed:** 05/15/2022

**Delivery method pursuant to West Virginia Code § 22-6A-16(c)**

- CERTIFIED MAIL                                       HAND
- RETURN RECEIPT REQUESTED                                      DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

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MAY 17 2022  
  
WV Department of  
Environmental Protection

**Notice is hereby provided to the SURFACE OWNER(s)**  
(at the address listed in the records of the sheriff at the time of notice):

Name: Ricky L. Whittlatch  
Address: 1044 Yeater Lane  
Glen Easton, WV 26039

Name: Andrew Whittlatch  
Address: 942 Yeater Lane  
Glen Easton, WV 26039 \*\*See Attached\*\*

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>526,270.67</u>
County:	<u>Marshall</u>		Northing:	<u>4,406,551.07</u>
District:	<u>Meede</u>	Public Road Access:	<u>Yeater Lane (Co. Rt. 21/11)</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>Ricky L. Whittlatch</u>	
Watershed:	<u>(HUC 10) Fish Creek</u>			

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: Tug Hill Operating, LLC  
Telephone: 724-749-9398  
Email: amiller@tug-hilltop.com

Address: 380 Southpointe Blvd, Southpointe Plaza II, Suite 200  
Canonsburg, PA 15317  
Facsimile: 724-338-2030

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

4705102451

Operator Well No. Heaven Hill Unit 3N-14HM

**WW-6A5 Notice of Entry for Plat Survey ..... Attachment 1 of 1**

**Notice is hereby provided to the SURFACE OWNER(s):**

**Name:** Arnie Goodnight, et ux  
**Address:** 102 Goodnight Lane  
Moundsville, WV 26041

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Environmental Protection

07/01/2022



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

1900 Kanawha Boulevard East • Building Five • Room 110  
 Charleston, West Virginia 25305-0430 • (304) 558-3505

D. Alan Reed, P.E.  
 State Highway Engineer

Jimmy Wriston, P. E.  
 Secretary of Transportation  
 Commissioner of Highways

January 24, 2022

James A. Martin, Chief  
 Office of Oil and Gas  
 Department of Environmental Protection  
 601 57<sup>th</sup> Street, SE  
 Charleston, WV 25304

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 Office of Oil and Gas  
 MAY 17 2022  
 WV Department of  
 Environmental Protection

Subject: DOH Permit for the Heaven Hill 3 Pad, Marshall County  
 Heaven Hill 3N-14HM Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2017-0126 which has been issued to Tug Hill Operating LLC for access to the State Road for a well site located off Marshall County Route 21/11 SLS MP 0.89.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

Gary K. Clayton, P.E.  
 Regional Maintenance Engineer  
 Central Office O&G Coordinator

Cc: Amy Morris  
 Tug Hill Operating LLC  
 CH, OM, D-6  
 File



TUG HILL

4705102451

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WV Department of  
Environmental Protection

PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Heaven Hill 3 Wells

PRODUCT NAME:	CHEMICAL DESCRIPTION:	PRODUCT USE:	HAZARDOUS COMPONENT:
GBW-20C	Hemicellulase Breaker	Breaker - Water	None
ALPHA 1427		Biocide	Glutaraldehyde – CAS#000111-30-8 Quaternary ammonium chloride CAS# 007173-51-5 Alky dimethyl benzyl ammonium Chloride (C12-16) – CAS#068424-85-1 Ethanol – CAS# 000064-17-5 Water – CAS# 007732-18-5
FRAC SAND	Silica Sand (various Mesh sizes)	Proppant	Crystalline silica (quartz) CAS# 14808-60-7
S-8C, Sand	Silica Sand (100 mesh)	Sand	Silica – CAS# 14808-60-7
GW-3LDF		Gellant - Water	Petroleum Distillate Blend – Proprietary, (Not Associated with Diesel Fuel) Guar gum – CAS# 009000-30-0
FRW-18		Friction Reducer	Hydrotreated light distillate CAS# 064742-47-8
Scaletrol		Scale Inhibitor	Ethylene glycol – CAS# 000107-21-1 Diethylene glycol – CAS# 000111-46-6



<b>HH 3-1HM</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478859.938 E: 1633271.434 Lat.: 39°48'30.961" Lon.: -80°41'35.964"
NAD 27 - WV North Ft N: 478823.196 E: 1664708.181 Lat.: 39°48'30.682" Lon.: -80°41'36.657"
Marshall County Mine N: -79116.876 E: 59279.811
UTM Zone 17 NAD 83 Meters N: 4406559.056 E: 526250.803

<b>HH 3-2HM</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478857.076 E: 1633283.75 Lat.: 39°48'30.935" Lon.: -80°41'35.805"
NAD 27 - WV North Ft N: 478820.334 E: 1664720.499 Lat.: 39°48'30.655" Lon.: -80°41'36.499"
Marshall County Mine N: -79119.571 E: 59292.165
UTM Zone 17 NAD 83 Meters N: 4406558.247 E: 526254.570

<b>HH 3-3HM</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478852.945 E: 1633296.462 Lat.: 39°48'30.895" Lon.: -80°41'35.642"
NAD 27 - WV North Ft N: 478816.202 E: 1664733.211 Lat.: 39°48'30.616" Lon.: -80°41'36.335"
Marshall County Mine N: -79123.530 E: 59304.931
UTM Zone 17 NAD 83 Meters N: 4406557.053 E: 526258.463

<b>HH 3-4HM</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478850.935 E: 1633308.285 Lat.: 39°48'30.877" Lon.: -80°41'35.490"
NAD 27 - WV North Ft N: 478814.191 E: 1664745.034 Lat.: 39°48'30.597" Lon.: -80°41'36.183"
Marshall County Mine N: -79125.380 E: 59316.780
UTM Zone 17 NAD 83 Meters N: 4406556.501 E: 526262.076

<b>HH 3-5HM</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478870.951 E: 1633313.93 Lat.: 39°48'31.076" Lon.: -80°41'35.421"
NAD 27 - WV North Ft N: 478834.208 E: 1664750.679 Lat.: 39°48'30.796" Lon.: -80°41'36.114"
Marshall County Mine N: -79105.289 E: 59322.153
UTM Zone 17 NAD 83 Meters N: 4406562.628 E: 526263.693

<b>HH 3-6HU</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478880.340 E: 1633277.216 Lat.: 39°48'31.164" Lon.: -80°41'35.893"
NAD 27 - WV North Ft N: 478843.598 E: 1664713.966 Lat.: 39°48'30.884" Lon.: -80°41'36.586"
Marshall County Mine N: -79096.704 E: 59285.320
UTM Zone 17 NAD 83 Meters N: 4406565.301 E: 526252.461

<b>HH 3-7HU</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478877.332 E: 1633289.641 Lat.: 39°48'31.135" Lon.: -80°41'35.733"
NAD 27 - WV North Ft N: 478840.589 E: 1664726.390 Lat.: 39°48'30.856" Lon.: -80°41'36.427"
Marshall County Mine N: -79099.238 E: 59297.780
UTM Zone 17 NAD 83 Meters N: 4406564.448 E: 526256.261

<b>HH 3-8HU</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478874.117 E: 1633301.527 Lat.: 39°48'31.105" Lon.: -80°41'35.580"
NAD 27 - WV North Ft N: 478837.375 E: 1664738.276 Lat.: 39°48'30.826" Lon.: -80°41'36.274"
Marshall County Mine N: -79102.292 E: 59309.708
UTM Zone 17 NAD 83 Meters N: 4406563.529 E: 526259.899

<b>HH 3 N-91HM</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478863.305 E: 1633259.816 Lat.: 39°48'30.993" Lon.: -80°41'36.113"
NAD 27 - WV North Ft N: 478826.563 E: 1664696.596 Lat.: 39°48'30.713" Lon.: -80°41'36.806"
Marshall County Mine N: -79113.667 E: 59268.179
UTM Zone 17 NAD 83 Meters N: 4406560.023 E: 526247.255

<b>HH 3 N-10HU</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478883.387 E: 1633264.931 Lat.: 39°48'31.192" Lon.: -80°41'36.051"
NAD 27 - WV North Ft N: 478846.645 E: 1664701.680 Lat.: 39°48'30.912" Lon.: -80°41'36.744"
Marshall County Mine N: -79093.518 E: 59272.991
UTM Zone 17 NAD 83 Meters N: 4406566.167 E: 526248.702

<b>HH 3 N-11HM</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478847.927 E: 1633320.09 Lat.: 39°48'30.849" Lon.: -80°41'35.338"
NAD 27 - WV North Ft N: 478811.184 E: 1664756.839 Lat.: 39°48'30.569" Lon.: -80°41'36.032"
Marshall County Mine N: -79128.227 E: 59328.626
UTM Zone 17 NAD 83 Meters N: 4406555.645 E: 526265.687

<b>HH 3 N-12HM</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478845.070 E: 1633331.745 Lat.: 39°48'30.822" Lon.: -80°41'35.188"
NAD 27 - WV North Ft N: 478808.326 E: 1664768.493 Lat.: 39°48'30.543" Lon.: -80°41'35.882"
Marshall County Mine N: -79130.926 E: 59340.318
UTM Zone 17 NAD 83 Meters N: 4406554.834 E: 526269.253

<b>HH 3 N-13HM</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478868.523 E: 1633325.091 Lat.: 39°48'31.051" Lon.: -80°41'35.278"
NAD 27 - WV North Ft N: 478831.580 E: 1664761.839 Lat.: 39°48'30.772" Lon.: -80°41'35.971"
Marshall County Mine N: -79107.765 E: 59333.349
UTM Zone 17 NAD 83 Meters N: 4406561.884 E: 526267.107

<b>HH 3 N-14HM</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478865.466 E: 1633336.746 Lat.: 39°48'31.024" Lon.: -80°41'35.128"
NAD 27 - WV North Ft N: 478828.722 E: 1664773.494 Lat.: 39°48'30.745" Lon.: -80°41'35.821"
Marshall County Mine N: -79110.464 E: 59345.042
UTM Zone 17 NAD 83 Meters N: 4406561.073 E: 526270.672

<b>HH 3 N-15HU</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478865.668 E: 1633247.733 Lat.: 39°48'31.013" Lon.: -80°41'36.268"
NAD 27 - WV North Ft N: 478828.926 E: 1664684.484 Lat.: 39°48'30.735" Lon.: -80°41'36.962"
Marshall County Mine N: -79111.468 E: 59256.035
UTM Zone 17 NAD 83 Meters N: 4406560.681 E: 526243.553

<b>HH 3 N-16HU</b>
County: Marshall
District: Meade
NAD 83 - WV North Ft N: 478886.064 E: 1633252.734 Lat.: 39°48'31.217" Lon.: -80°41'36.208"
NAD 27 - WV North Ft N: 478849.322 E: 1664689.484 Lat.: 39°48'30.937" Lon.: -80°41'36.901"
Marshall County Mine N: -79091.006 E: 59260.759
UTM Zone 17 NAD 83 Meters N: 4406566.921 E: 526244.973



Heaven Hill 3  
Coal Exhibit



Designed By: ZS  
Date: 04/08/2022

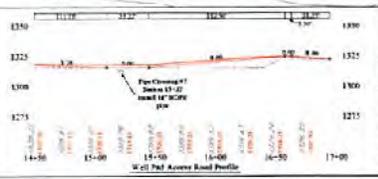
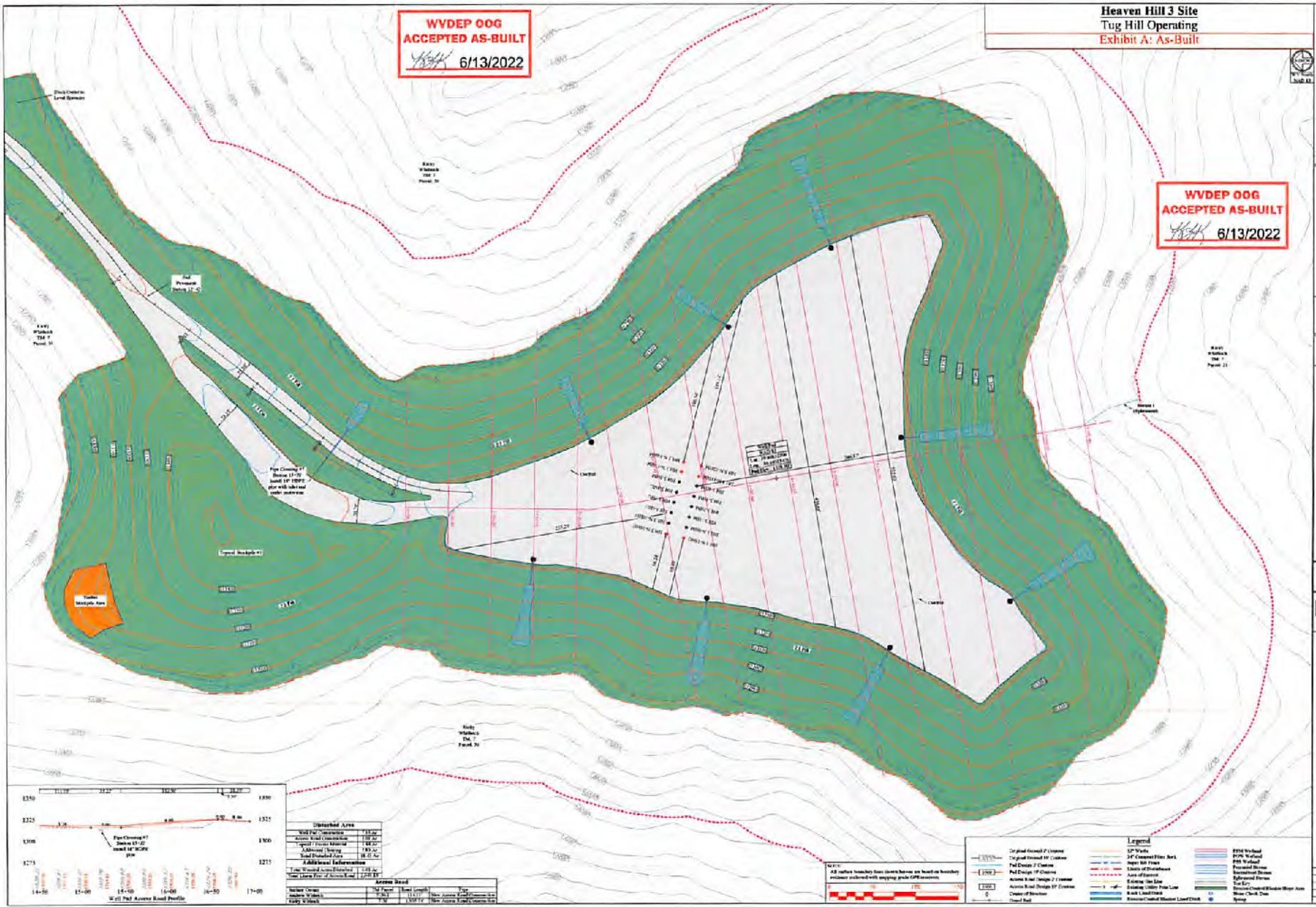
RECEIVED  
Office of Oil and Gas  
JUN 15 2022  
WV Department of  
Environmental Protection



**WVDEP OOG  
ACCEPTED AS-BUILT**  
*[Signature]* 6/13/2022

**Heaven Hill 3 Site  
Tug Hill Operating  
Exhibit A: As-Built**

**WVDEP OOG  
ACCEPTED AS-BUILT**  
*[Signature]* 6/13/2022



Disturbed Area	
W of 7th Avenue	135.00
Access Road Construction	118.00
Original Forest Material	118.00
Additional Logging	143.00
Soil Stockpiled Area	14.00
<b>Additional Information</b>	
Top of Wooded Area Elevation	1178.00
Top of Stone Pit of Access Road	1228.00

Station	Disturbance	Area
1350+00	Disturbance	135.00
1340+00	Disturbance	118.00
1330+00	Disturbance	118.00
1320+00	Disturbance	143.00
1310+00	Disturbance	14.00
1300+00	Disturbance	135.00
1290+00	Disturbance	118.00
1280+00	Disturbance	118.00
1275+00	Disturbance	143.00
1270+00	Disturbance	14.00

Legend	
Original Forest 2' Contour	SP Wells
Original Forest 10' Contour	2" P Connected Filter Bed
2' Contour 2' Contour	Super 800 Fabric
2' Contour 10' Contour	10' W of Road
Access Road Design 2' Contour	Proposed Drains
Access Road Design 10' Contour	Subsistence Drains
Access Road Design 15' Contour	Additional Drains
Center of Structure	Top Soil
Ground Slope	Proposed Channel Slope/Flow Area
Proposed Channel Slope/Flow Area	Proposed Check Dam
Proposed Check Dam	Proposed Stormwater Load/Drain

TUG HILL OPERATING  
 THIS DOCUMENT PREPARED FOR TUG HILL OPERATING  
 K&S CONSULTANTS  
 Site Plan  
 Heaven Hill 3 Site  
 Meade District  
 Marshall County, WV  
 Date: 12/1/2021  
 Scale: As Shown  
 Drawn By: J.S.  
 Size: 11x17  
 Sheet 7 of 11