



west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Thursday, October 13, 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 PENDLETON S-2HM
47-051-02469-00-00

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.

James A. Martin
Chief

Operator's Well Number: PENDLETON S-2HM
Farm Name: ALPINE FARM, LLC
U.S. WELL NUMBER: 47-051-02469-00-00
Horizontal 6A New Drill
Date Issued: 10/13/2022

Promoting a healthy environment.

10/14/2022

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

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.
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.

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 Franklin Glen Easton 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Pendleton S-2HM Well Pad Name: Pendleton

3) Farm Name/Surface Owner: Alpine Farm, LLC Public Road Access: Rines Ridge Road (County Route 76)

4) Elevation, current ground: 1,296' Elevation, proposed post-construction: 1,271.82'

5) Well Type (a) Gas Oil Underground Storage

Other _____

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No No

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

Marcellus is the target formation at a depth of 6,657' - 6,707', thickness of 50' and anticipated pressure of approx. 3800 psi.

8) Proposed Total Vertical Depth: 6,807'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 17,216'

11) Proposed Horizontal Leg Length: 9,487.53'

12) Approximate Fresh Water Strata Depths: 70; 914'

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

14) Approximate Saltwater Depths: 1,427'

15) Approximate Coal Seam Depths: Sewickley Coal - 816' and Pittsburgh Coal - 908'

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: _____
Depth: _____
Seam: _____
Owner: _____

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John Strader
STRADER COAL
8-25-22

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	120'	120'	259FT^3(CTS)
Fresh Water/Coal	13 3/8"	NEW	J55	54.5#	1,040'	1,040'	1,073FT^3(CTS)
Intermediate	9 5/8"	NEW	J55	36#	2,895'	2,895'	958FT^3(CTS)
Production	5 1/2"	NEW	P110	20#	17,216'	17,216'	4,393FT^3(CTS)
Tubing	2 3/8"	NEW	P110	4.7#		6,905'	
Liners							

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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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. 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 23,800,000 lb proppant and 430,000 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 26.23 acres

22) Area to be disturbed for well pad only, less access road (acres): 6.88 acres

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

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*Note: Attach additional sheets as needed.

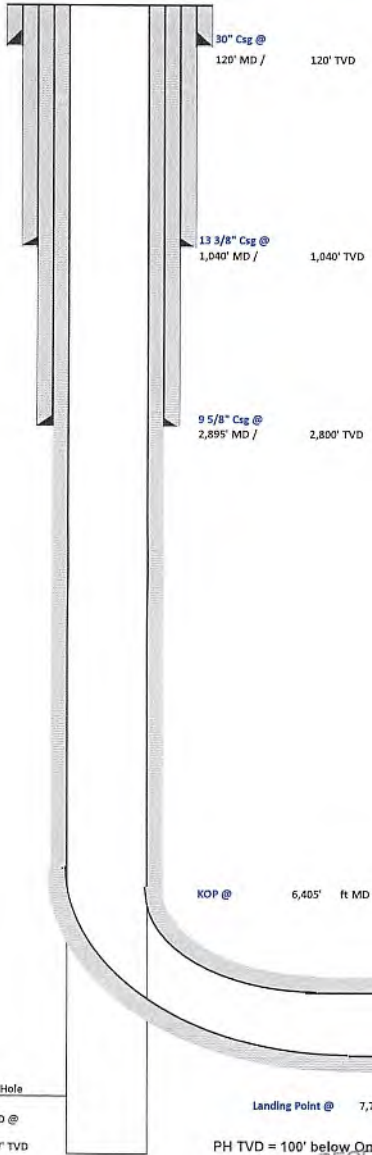


WELL NAME: Pendleton S-2HM
STATE: WV **COUNTY:** Marshall
DISTRICT: Franklin
DF Elev: 1,272' **GL Elev:** 1,272'
TD: 17,216'
TH Latitude: 39.753543
TH Longitude: -80.734147
BH Latitude: 39.736317
BH Longitude: -80.71351

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	914
Sewickley Coal	816
Pittsburgh Coal	908
Big Lime	2175
Weir	2476
Berea	2661
Gordon	2923
Rhinestreet	6018
Genesee/Burkett	6526
Tully	6557
Hamilton	6593
Marcellus	6657
Landing Depth	6690
Onondaga	6707
Pilot Hole TD	6807

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	17 1/2	13 3/8	1,040'	1,040'	54.5	J55	Surface
Intermediate 1	12 1/4	9 5/8	2,895'	2,800'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	17,216'	6,855'	20	CYHP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,082	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	833	A	15	Air	1 Centralizer every other joint
Production	3,814	A	14.5	Air / SOBMM	1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface



Pilot Hole
 PH TD @
 6,807' TVD

Landing Point @ 7,731' MD / 6,690' TVD

PH TVD = 100' below Onondaga Top

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Lateral TD @ 17,216' ft MD
 6,855' ft TVD



Tug Hill Operating, LLC Casing and Cement Program

Pendleton S-2HM

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	13 3/8"	J55	17 1/2"	1,040'	CTS
Intermediate	9 5/8"	J55	12 1/4"	2,895'	CTS
Production	5 1/2"	P110	8 7/8 x 8 3/4"	17,216'	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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Well: Pendleton S-02 HM (slot J)
Site: Pendleton
Project: Marshall County, West Virginia NAD83 UTM 17N
Design: rev2
Rig:

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
2	1200.00	0.00	0.000	1200.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2"/100' build
3	2845.00	32.90	14.000	2756.08	445.81	111.15	2.00	14.00	-250.64	Begin 32.90° tangent
4	6404.85	32.90	14.000	5745.00	2321.99	578.94	0.00	0.00	-1305.47	Begin 8"/100' build/turn
5	7338.52	50.00	145.500	6555.16	2265.00	887.88	8.00	143.50	-1053.28	Begin 10"/100' build/turn
6	7730.67	89.00	150.003	6689.92	1959.40	1078.47	10.00	7.13	-699.73	Begin 89.00° lateral
7	17216.48	89.00	150.003	6855.34	-6254.55	5820.21	0.00	0.00	8543.67	PBHL/TD 17216.48 MD 6855.34

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Pendleton S-02HM LP	6685.00	2187.60	945.9314439289.889	1716082.006	39.759543000	-80.730758000	
- plan misses target center by 57.53ft at 7484.01ft MD (6633.72 TVD, 2163.18 N, 955.09 E)							
Pendleton S-02HM BHL r2	6855.34	-6254.55	5820.2114430846.748	1720956.277	39.736317000	-80.713510000	
- plan hits target center							

Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD83 West Virginia - HARN
 Ellipsoid: GRS 1980
 Zone: Zone 17N (84 W to 78 W)

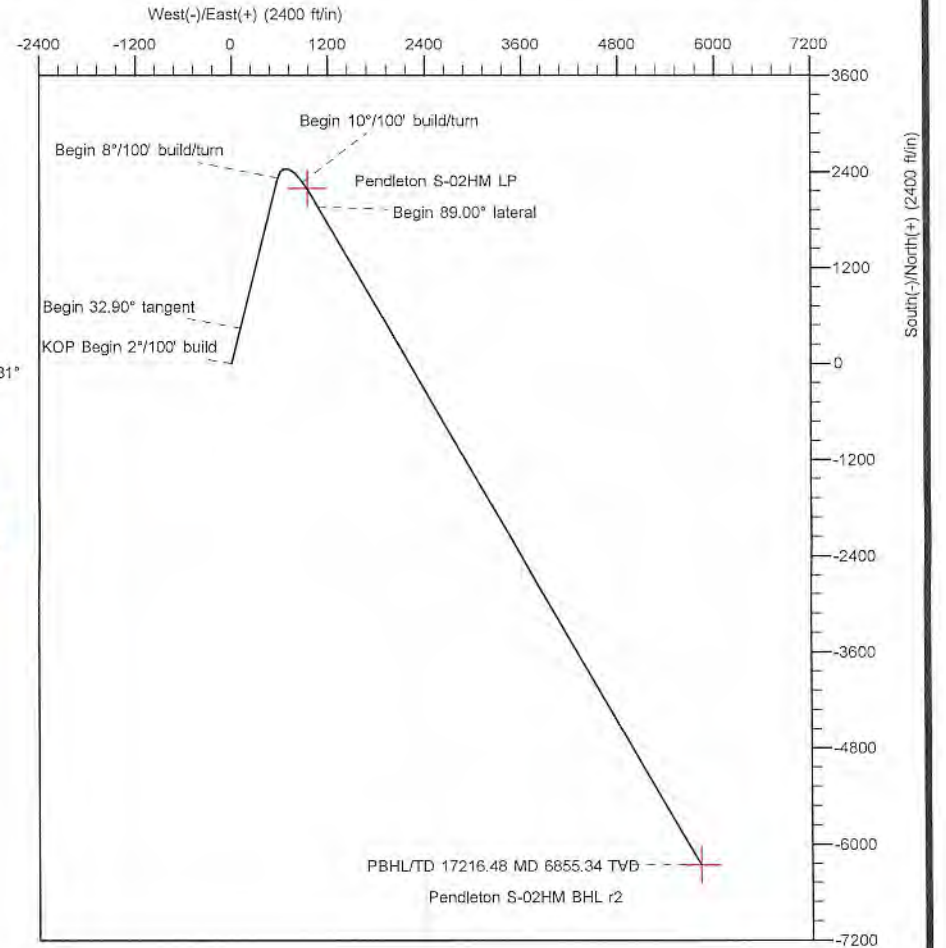
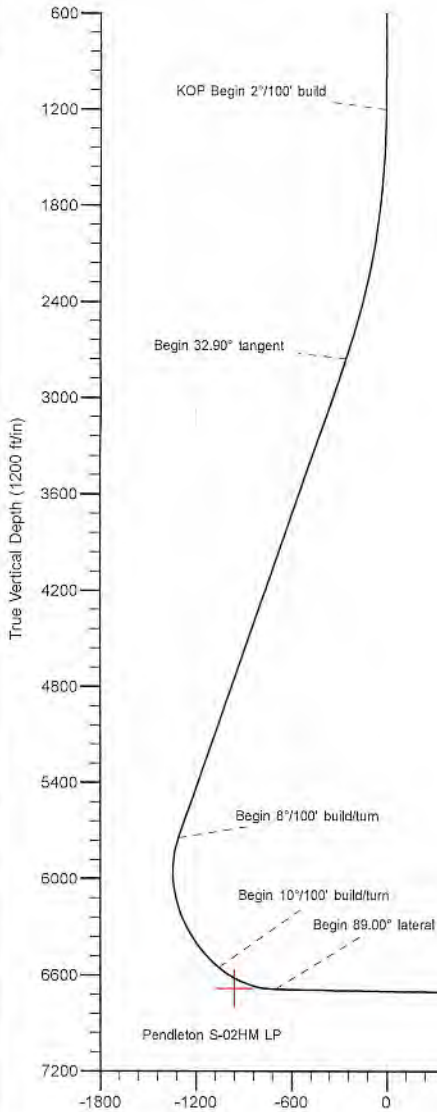
System Datum: Mean Sea Level
 Depth Reference: GL @ 1272.00ft
 Surface location
 Northing Easting Latitude Longitude
 14437101.290 1715136.076 39.753543000 -80.734147000

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.81°



Azimuths to Grid North
 True North: -0.17°
 Magnetic North: -8.81°

Magnetic Field
 Strength: 51623.5nT
 Dip Angle: 66.41°
 Date: 7/5/2022
 Model: IGRF2020



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Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-02 HM (slot J)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton S-02 HM (slot J)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

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

Site	Pendleton				
Site Position:		Northing:	14,437,088.243 usft	Latitude:	39.753506850
From:	Lat/Long	Easting:	1,715,175.249 usft	Longitude:	-80.734007760
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Pendleton S-02 HM (slot J)					
Well Position	+N/-S	0.00 ft	Northing:	14,437,101.290 usft	Latitude:	39.753543000
	+E/-W	0.00 ft	Easting:	1,715,136.075 usft	Longitude:	-80.734147000
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft	Ground Level:	1,272.00 ft	
Grid Convergence:						

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	7/5/2022	-8.64	66.41	51,623.50730734

Design	rev2				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	137.060	

Plan Survey Tool Program	Date				
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	17,216.48 rev2 (Original Hole)			

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.000	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,845.00	32.90	14.000	2,756.08	445.81	111.15	2.00	2.00	0.00	14.00	
6,404.85	32.90	14.000	5,745.00	2,321.99	578.94	0.00	0.00	0.00	0.00	
7,338.52	50.00	145.500	6,555.16	2,265.00	887.88	8.00	1.83	14.08	143.50	
7,730.67	89.00	150.003	6,689.92	1,959.40	1,078.47	10.00	9.95	1.15	7.13	
17,216.48	89.00	150.003	6,855.34	-6,254.55	5,820.21	0.00	0.00	0.00	0.00	Pendleton S-02HM BI



Planning Report - Geographic

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Database: DB_Feb2822
Company: Tug Hill Operating LLC
Project: Marshall County, West Virginia NAD83 UTM
17N
Site: Pendleton
Well: Pendleton S-02 HM (slot J)
Wellbore: Original Hole
Design: rev2

Local Co-ordinate Reference: Well Pendleton S-02 HM (slot J)
TVD Reference: GL @ 1272.00ft
MD Reference: GL @ 1272.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.000	0.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
100.00	0.00	0.000	100.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
200.00	0.00	0.000	200.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
300.00	0.00	0.000	300.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
400.00	0.00	0.000	400.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
500.00	0.00	0.000	500.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
600.00	0.00	0.000	600.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
700.00	0.00	0.000	700.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
800.00	0.00	0.000	800.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
900.00	0.00	0.000	900.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
1,000.00	0.00	0.000	1,000.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
1,100.00	0.00	0.000	1,100.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
1,200.00	0.00	0.000	1,200.00	0.00	0.00	14,437,101.290	1,715,136.075	39.753543000	-80.734147000
KOP Begin 2°/100' build									
1,300.00	2.00	14.000	1,299.98	1.69	0.42	14,437,102.984	1,715,136.498	39.753547647	-80.734145480
1,400.00	4.00	14.000	1,399.84	6.77	1.69	14,437,108.061	1,715,137.764	39.753561582	-80.734140922
1,500.00	6.00	14.000	1,499.45	15.23	3.80	14,437,116.518	1,715,139.872	39.753584788	-80.734133331
1,600.00	8.00	14.000	1,598.70	27.05	6.74	14,437,128.342	1,715,142.820	39.753617237	-80.734122717
1,700.00	10.00	14.000	1,697.47	42.23	10.53	14,437,143.520	1,715,146.605	39.753658889	-80.734109092
1,800.00	12.00	14.000	1,795.62	60.74	15.14	14,437,162.033	1,715,151.220	39.753709694	-80.734092474
1,900.00	14.00	14.000	1,893.06	82.57	20.59	14,437,183.859	1,715,156.662	39.753769589	-80.734072881
2,000.00	16.00	14.000	1,989.64	107.68	26.85	14,437,208.971	1,715,162.923	39.753838502	-80.734050339
2,100.00	18.00	14.000	2,085.27	136.05	33.92	14,437,237.338	1,715,169.996	39.753916349	-80.734024875
2,200.00	20.00	14.000	2,179.82	167.64	41.80	14,437,268.926	1,715,177.872	39.754003034	-80.733996519
2,300.00	22.00	14.000	2,273.17	202.41	50.47	14,437,303.696	1,715,186.541	39.754098453	-80.733965307
2,400.00	24.00	14.000	2,365.21	240.32	59.92	14,437,341.607	1,715,195.993	39.754202489	-80.733931275
2,500.00	26.00	14.000	2,455.84	281.32	70.14	14,437,382.611	1,715,206.217	39.754315015	-80.733894466
2,600.00	28.00	14.000	2,544.94	325.37	81.12	14,437,426.659	1,715,217.199	39.754435894	-80.733854925
2,700.00	30.00	14.000	2,632.39	372.41	92.85	14,437,473.898	1,715,228.927	39.754564979	-80.733812699
2,800.00	32.00	14.000	2,718.11	422.38	105.31	14,437,523.669	1,715,241.386	39.754702112	-80.733767841
2,845.00	32.90	14.000	2,756.08	445.81	111.15	14,437,547.097	1,715,247.228	39.754766404	-80.733746810
Begin 32.90° tangent									
2,900.00	32.90	14.000	2,802.26	474.79	118.38	14,437,576.084	1,715,254.455	39.754845952	-80.733720788
3,000.00	32.90	14.000	2,886.22	527.50	131.52	14,437,628.788	1,715,267.595	39.754990584	-80.733673476
3,100.00	32.90	14.000	2,970.18	580.20	144.66	14,437,681.492	1,715,280.736	39.755135216	-80.733626163
3,200.00	32.90	14.000	3,054.15	632.91	157.80	14,437,734.196	1,715,293.876	39.755279849	-80.733578851
3,300.00	32.90	14.000	3,138.11	685.61	170.94	14,437,786.899	1,715,307.017	39.755424481	-80.733531538
3,400.00	32.90	14.000	3,222.07	738.31	184.08	14,437,839.603	1,715,320.158	39.755569113	-80.733484225
3,500.00	32.90	14.000	3,306.03	791.02	197.22	14,437,892.307	1,715,333.298	39.755713745	-80.733436912
3,600.00	32.90	14.000	3,389.99	843.72	210.36	14,437,945.011	1,715,346.439	39.755858378	-80.733389599
3,700.00	32.90	14.000	3,473.96	896.43	223.50	14,437,997.715	1,715,359.579	39.756003010	-80.733342285
3,800.00	32.90	14.000	3,557.92	949.13	236.64	14,438,050.419	1,715,372.720	39.756147642	-80.733294971
3,900.00	32.90	14.000	3,641.88	1,001.83	249.79	14,438,103.123	1,715,385.860	39.756292274	-80.733247657
4,000.00	32.90	14.000	3,725.84	1,054.54	262.93	14,438,155.827	1,715,399.001	39.756436906	-80.733200343
4,100.00	32.90	14.000	3,809.80	1,107.24	276.07	14,438,208.530	1,715,412.141	39.756581538	-80.733153029
4,200.00	32.90	14.000	3,893.77	1,159.95	289.21	14,438,261.234	1,715,425.282	39.756726170	-80.733105714
4,300.00	32.90	14.000	3,977.73	1,212.65	302.35	14,438,313.938	1,715,438.423	39.756870802	-80.733058400
4,400.00	32.90	14.000	4,061.69	1,265.35	315.49	14,438,366.642	1,715,451.563	39.757015434	-80.733011085
4,500.00	32.90	14.000	4,145.65	1,318.06	328.63	14,438,419.346	1,715,464.704	39.757160066	-80.732963769
4,600.00	32.90	14.000	4,229.61	1,370.76	341.77	14,438,472.050	1,715,477.844	39.757304698	-80.732916454
4,700.00	32.90	14.000	4,313.58	1,423.47	354.91	14,438,524.754	1,715,490.985	39.757449330	-80.732869138
4,800.00	32.90	14.000	4,397.54	1,476.17	368.05	14,438,577.458	1,715,504.125	39.757593962	-80.732821823
4,900.00	32.90	14.000	4,481.50	1,528.87	381.19	14,438,630.161	1,715,517.266	39.757738594	-80.732774507



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-02 HM (slot J)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton S-02 HM (slot J)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,000.00	32.90	14.000	4,565.46	1,581.58	394.33	14,438,682.865	1,715,530.406	39.757883226	-80.732727191
5,100.00	32.90	14.000	4,649.42	1,634.28	407.47	14,438,735.569	1,715,543.547	39.758027858	-80.732679874
5,200.00	32.90	14.000	4,733.39	1,686.99	420.61	14,438,788.273	1,715,556.688	39.758172490	-80.732632558
5,300.00	32.90	14.000	4,817.35	1,739.69	433.75	14,438,840.977	1,715,569.828	39.758317122	-80.732585241
5,400.00	32.90	14.000	4,901.31	1,792.39	446.89	14,438,893.681	1,715,582.969	39.758461753	-80.732537924
5,500.00	32.90	14.000	4,985.27	1,845.10	460.03	14,438,946.385	1,715,596.109	39.758606385	-80.732490607
5,600.00	32.90	14.000	5,069.23	1,897.80	473.18	14,438,999.089	1,715,609.250	39.758751017	-80.732443290
5,700.00	32.90	14.000	5,153.20	1,950.51	486.32	14,439,051.793	1,715,622.390	39.758895649	-80.732395972
5,800.00	32.90	14.000	5,237.16	2,003.21	499.46	14,439,104.496	1,715,635.531	39.759040280	-80.732348654
5,900.00	32.90	14.000	5,321.12	2,055.91	512.60	14,439,157.200	1,715,648.671	39.759184912	-80.732301336
6,000.00	32.90	14.000	5,405.08	2,108.62	525.74	14,439,209.904	1,715,661.812	39.759329544	-80.732254018
6,100.00	32.90	14.000	5,489.04	2,161.32	538.88	14,439,262.608	1,715,674.953	39.759474175	-80.732206700
6,200.00	32.90	14.000	5,573.00	2,214.03	552.02	14,439,315.312	1,715,688.093	39.759618807	-80.732159381
6,300.00	32.90	14.000	5,656.97	2,266.73	565.16	14,439,368.016	1,715,701.234	39.759763438	-80.732112062
6,404.85	32.90	14.000	5,745.00	2,321.99	578.94	14,439,423.275	1,715,715.011	39.759915083	-80.732062449
Begin 8°/100' build/turn									
6,450.00	30.06	18.290	5,783.51	2,344.63	585.46	14,439,445.919	1,715,721.529	39.759977217	-80.732039015
6,500.00	27.12	23.954	5,827.41	2,366.95	594.02	14,439,468.235	1,715,730.090	39.760038430	-80.732008315
6,550.00	24.45	30.815	5,872.44	2,386.26	603.95	14,439,487.544	1,715,740.022	39.760091377	-80.731972770
6,600.00	22.16	39.116	5,918.37	2,402.47	615.20	14,439,503.753	1,715,751.275	39.760135799	-80.731932553
6,650.00	20.37	49.001	5,964.98	2,415.50	627.72	14,439,516.782	1,715,763.797	39.760171479	-80.731887860
6,700.00	19.23	60.340	6,012.04	2,425.28	641.45	14,439,526.569	1,715,777.524	39.760198244	-80.731838908
6,750.00	18.85	72.569	6,059.32	2,431.78	656.32	14,439,533.066	1,715,792.392	39.760215963	-80.731785936
6,800.00	19.28	84.763	6,106.60	2,434.96	672.25	14,439,536.241	1,715,808.326	39.760224551	-80.731729203
6,850.00	20.47	96.016	6,153.64	2,434.79	689.18	14,439,536.078	1,715,825.250	39.760223964	-80.731668984
6,900.00	22.30	105.793	6,200.21	2,431.29	707.01	14,439,532.578	1,715,843.081	39.760214206	-80.731605572
6,950.00	24.62	113.990	6,246.08	2,424.47	725.66	14,439,525.759	1,715,861.732	39.760195325	-80.731539278
7,000.00	27.31	120.761	6,291.04	2,414.37	745.04	14,439,515.653	1,715,881.113	39.760167413	-80.731470423
7,050.00	30.27	126.353	6,334.86	2,401.03	765.05	14,439,502.310	1,715,901.129	39.760130605	-80.731399344
7,100.00	33.43	131.007	6,377.34	2,384.51	785.61	14,439,485.795	1,715,921.682	39.760085081	-80.731326387
7,150.00	36.74	134.929	6,418.25	2,364.90	806.60	14,439,466.188	1,715,942.672	39.760031062	-80.731251907
7,200.00	40.16	138.278	6,457.41	2,342.30	827.92	14,439,443.585	1,715,963.997	39.759968812	-80.731176266
7,250.00	43.65	141.180	6,494.62	2,316.81	849.48	14,439,418.096	1,715,985.554	39.759898634	-80.731099835
7,300.00	47.22	143.730	6,529.70	2,288.56	871.16	14,439,389.845	1,716,007.236	39.759820870	-80.731022984
7,338.52	50.00	145.500	6,555.16	2,265.00	887.88	14,439,366.286	1,716,023.958	39.759756031	-80.730963734
Begin 10°/100' build/turn									
7,350.00	51.14	145.683	6,562.46	2,257.68	892.90	14,439,358.968	1,716,028.970	39.759735893	-80.730945978
7,400.00	56.10	146.418	6,592.10	2,224.29	915.36	14,439,325.581	1,716,051.437	39.759644017	-80.730866389
7,450.00	61.07	147.072	6,618.16	2,188.62	938.75	14,439,289.904	1,716,074.825	39.759545847	-80.730783552
7,500.00	66.05	147.666	6,640.41	2,150.92	962.88	14,439,252.210	1,716,098.954	39.759442130	-80.730698096
7,550.00	71.02	148.215	6,658.71	2,111.50	987.57	14,439,212.786	1,716,123.642	39.759333656	-80.730610672
7,600.00	75.99	148.733	6,672.90	2,070.65	1,012.63	14,439,171.931	1,716,148.700	39.759221251	-80.730521946
7,650.00	80.97	149.229	6,682.88	2,028.67	1,037.86	14,439,129.957	1,716,173.937	39.759105769	-80.730432593
7,700.00	85.95	149.711	6,688.57	1,985.90	1,063.09	14,439,087.182	1,716,199.163	39.758988090	-80.730343292
7,730.67	89.00	150.003	6,689.92	1,959.40	1,078.47	14,439,060.687	1,716,214.548	39.758915198	-80.730288830
Begin 89.00° lateral									
7,800.00	89.00	150.003	6,691.13	1,899.37	1,113.13	14,439,000.655	1,716,249.204	39.758750046	-80.730166161
7,900.00	89.00	150.003	6,692.88	1,812.78	1,163.12	14,438,914.063	1,716,299.191	39.758511827	-80.729989221
8,000.00	89.00	150.003	6,694.62	1,726.18	1,213.10	14,438,827.471	1,716,349.179	39.758273608	-80.729812283
8,100.00	89.00	150.003	6,696.36	1,639.59	1,263.09	14,438,740.879	1,716,399.166	39.758035389	-80.729635345
8,200.00	89.00	150.003	6,698.11	1,553.00	1,313.08	14,438,654.287	1,716,449.154	39.757797169	-80.729458409
8,300.00	89.00	150.003	6,699.85	1,466.41	1,363.07	14,438,567.695	1,716,499.142	39.757558949	-80.729281474
8,400.00	89.00	150.003	6,701.59	1,379.82	1,413.06	14,438,481.103	1,716,549.129	39.757320728	-80.729104541



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-02 HM (slot J)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton S-02 HM (slot J)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
8,500.00	89.00	150.003	6,703.34	1,293.22	1,463.04	14,438,394.511	1,716,599.117	39.757082508	-80.728927608	
8,600.00	89.00	150.003	6,705.08	1,206.63	1,513.03	14,438,307.920	1,716,649.105	39.756844287	-80.728750677	
8,700.00	89.00	150.003	6,706.83	1,120.04	1,563.02	14,438,221.328	1,716,699.092	39.756606065	-80.728573747	
8,800.00	89.00	150.003	6,708.57	1,033.45	1,613.01	14,438,134.736	1,716,749.080	39.756367844	-80.728396818	
8,900.00	89.00	150.003	6,710.31	946.86	1,662.99	14,438,048.144	1,716,799.067	39.756129622	-80.728219891	
9,000.00	89.00	150.003	6,712.06	860.26	1,712.98	14,437,961.552	1,716,849.055	39.755891400	-80.728042964	
9,100.00	89.00	150.003	6,713.80	773.67	1,762.97	14,437,874.960	1,716,899.043	39.755653178	-80.727866039	
9,200.00	89.00	150.003	6,715.55	687.08	1,812.96	14,437,788.368	1,716,949.030	39.755414955	-80.727689115	
9,300.00	89.00	150.003	6,717.29	600.49	1,862.95	14,437,701.776	1,716,999.018	39.755176732	-80.727512192	
9,400.00	89.00	150.003	6,719.03	513.90	1,912.93	14,437,615.184	1,717,049.006	39.754938509	-80.727335271	
9,500.00	89.00	150.003	6,720.78	427.30	1,962.92	14,437,528.593	1,717,099.993	39.754700286	-80.727158351	
9,600.00	89.00	150.003	6,722.52	340.71	2,012.91	14,437,442.001	1,717,149.981	39.754462062	-80.726981431	
9,700.00	89.00	150.003	6,724.26	254.12	2,062.90	14,437,355.409	1,717,199.968	39.754223838	-80.726804514	
9,800.00	89.00	150.003	6,726.01	167.53	2,112.88	14,437,268.817	1,717,249.956	39.753985614	-80.726627597	
9,900.00	89.00	150.003	6,727.75	80.93	2,162.87	14,437,182.225	1,717,299.944	39.753747389	-80.726450682	
10,000.00	89.00	150.003	6,729.50	-6.66	2,212.86	14,437,095.633	1,717,349.931	39.753509165	-80.726273767	
10,100.00	89.00	150.003	6,731.24	-92.25	2,262.85	14,437,009.041	1,717,399.919	39.753270940	-80.726096854	
10,200.00	89.00	150.003	6,732.98	-178.84	2,312.83	14,436,922.449	1,717,449.907	39.753032714	-80.725919942	
10,300.00	89.00	150.003	6,734.73	-265.43	2,362.82	14,436,835.857	1,717,499.894	39.752794489	-80.725743032	
10,400.00	89.00	150.003	6,736.47	-352.03	2,412.81	14,436,749.266	1,717,549.882	39.752556263	-80.725566123	
10,500.00	89.00	150.003	6,738.22	-438.62	2,462.80	14,436,662.674	1,717,599.869	39.752318037	-80.725389214	
10,600.00	89.00	150.003	6,739.96	-525.21	2,512.79	14,436,576.082	1,717,649.857	39.752079810	-80.725212307	
10,700.00	89.00	150.003	6,741.70	-611.80	2,562.77	14,436,489.490	1,717,699.845	39.751841583	-80.725035402	
10,800.00	89.00	150.003	6,743.45	-698.39	2,612.76	14,436,402.898	1,717,749.832	39.751603356	-80.724858497	
10,900.00	89.00	150.003	6,745.19	-784.99	2,662.75	14,436,316.306	1,717,799.820	39.751365129	-80.724681594	
11,000.00	89.00	150.003	6,746.93	-871.58	2,712.74	14,436,229.714	1,717,849.808	39.751126902	-80.724504692	
11,100.00	89.00	150.003	6,748.68	-958.17	2,762.72	14,436,143.122	1,717,899.795	39.750888674	-80.724327791	
11,200.00	89.00	150.003	6,750.42	-1,044.76	2,812.71	14,436,056.530	1,717,949.783	39.750650446	-80.724150891	
11,300.00	89.00	150.003	6,752.17	-1,131.35	2,862.70	14,435,969.938	1,717,999.770	39.750412217	-80.723973993	
11,400.00	89.00	150.003	6,753.91	-1,217.95	2,912.69	14,435,883.347	1,718,049.758	39.750173989	-80.723797096	
11,500.00	89.00	150.003	6,755.65	-1,304.54	2,962.68	14,435,796.755	1,718,099.746	39.749935760	-80.723620200	
11,600.00	89.00	150.003	6,757.40	-1,391.13	3,012.66	14,435,710.163	1,718,149.733	39.749697531	-80.723443305	
11,700.00	89.00	150.003	6,759.14	-1,477.72	3,062.65	14,435,623.571	1,718,199.721	39.749459301	-80.723266411	
11,800.00	89.00	150.003	6,760.89	-1,564.31	3,112.64	14,435,536.979	1,718,249.709	39.749221072	-80.723089519	
11,900.00	89.00	150.003	6,762.63	-1,650.91	3,162.63	14,435,450.387	1,718,299.696	39.748982841	-80.722912626	
12,000.00	89.00	150.003	6,764.37	-1,737.50	3,212.61	14,435,363.795	1,718,349.684	39.748744611	-80.722735738	
12,100.00	89.00	150.003	6,766.12	-1,824.09	3,262.60	14,435,277.203	1,718,399.671	39.748506381	-80.722558849	
12,200.00	89.00	150.003	6,767.86	-1,910.68	3,312.59	14,435,190.611	1,718,449.659	39.748268150	-80.722381962	
12,300.00	89.00	150.003	6,769.60	-1,997.27	3,362.58	14,435,104.020	1,718,499.647	39.748029919	-80.722205076	
12,400.00	89.00	150.003	6,771.35	-2,083.87	3,412.56	14,435,017.428	1,718,549.634	39.747791687	-80.722028191	
12,500.00	89.00	150.003	6,773.09	-2,170.46	3,462.55	14,434,930.836	1,718,599.622	39.747553456	-80.721851307	
12,600.00	89.00	150.003	6,774.84	-2,257.05	3,512.54	14,434,844.244	1,718,649.610	39.747315224	-80.721674424	
12,700.00	89.00	150.003	6,776.58	-2,343.64	3,562.53	14,434,757.652	1,718,699.597	39.747076991	-80.721497543	
12,800.00	89.00	150.003	6,778.32	-2,430.24	3,612.52	14,434,671.060	1,718,749.585	39.746838759	-80.721320662	
12,900.00	89.00	150.003	6,780.07	-2,516.83	3,662.50	14,434,584.468	1,718,799.572	39.746600526	-80.721143784	
13,000.00	89.00	150.003	6,781.81	-2,603.42	3,712.49	14,434,497.876	1,718,849.560	39.746362293	-80.720966906	
13,100.00	89.00	150.003	6,783.56	-2,690.01	3,762.48	14,434,411.284	1,718,899.548	39.746124060	-80.720790029	
13,200.00	89.00	150.003	6,785.30	-2,776.60	3,812.47	14,434,324.693	1,718,949.535	39.745885826	-80.720613154	
13,300.00	89.00	150.003	6,787.04	-2,863.20	3,862.45	14,434,238.101	1,718,999.523	39.745647592	-80.720436280	
13,400.00	89.00	150.003	6,788.79	-2,949.79	3,912.44	14,434,151.509	1,719,049.511	39.745409358	-80.720259407	
13,500.00	89.00	150.003	6,790.53	-3,036.38	3,962.43	14,434,064.917	1,719,099.498	39.745171124	-80.720082535	
13,600.00	89.00	150.003	6,792.27	-3,122.97	4,012.42	14,433,978.325	1,719,149.486	39.744932889	-80.719905665	
13,700.00	89.00	150.003	6,794.02	-3,209.56	4,062.41	14,433,891.733	1,719,199.473	39.744694654	-80.719728795	
13,800.00	89.00	150.003	6,795.76	-3,296.16	4,112.39	14,433,805.141	1,719,249.461	39.744456419	-80.719551927	



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-02 HM (slot J)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton S-02 HM (slot J)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,900.00	89.00	150.003	6,797.51	-3,382.75	4,162.38	14,433,718.549	1,719,298.449	39.744218183	-80.719375061	
14,000.00	89.00	150.003	6,799.25	-3,469.34	4,212.37	14,433,631.957	1,719,348.436	39.743979948	-80.719198195	
14,100.00	89.00	150.003	6,800.99	-3,555.93	4,262.36	14,433,545.366	1,719,398.424	39.743741712	-80.719021331	
14,200.00	89.00	150.003	6,802.74	-3,642.52	4,312.34	14,433,458.774	1,719,448.412	39.743503475	-80.718844467	
14,300.00	89.00	150.003	6,804.48	-3,729.12	4,362.33	14,433,372.182	1,719,498.399	39.743265239	-80.718667605	
14,400.00	89.00	150.003	6,806.23	-3,815.71	4,412.32	14,433,285.590	1,719,548.387	39.743027002	-80.718490745	
14,500.00	89.00	150.003	6,807.97	-3,902.30	4,462.31	14,433,198.998	1,719,598.374	39.742788765	-80.718313885	
14,600.00	89.00	150.003	6,809.71	-3,988.89	4,512.29	14,433,112.406	1,719,648.362	39.742550527	-80.718137027	
14,700.00	89.00	150.003	6,811.46	-4,075.48	4,562.28	14,433,025.814	1,719,698.350	39.742312289	-80.717960170	
14,800.00	89.00	150.003	6,813.20	-4,162.08	4,612.27	14,432,939.222	1,719,748.337	39.742074051	-80.717783314	
14,900.00	89.00	150.003	6,814.94	-4,248.67	4,662.26	14,432,852.630	1,719,798.325	39.741835813	-80.717606459	
15,000.00	89.00	150.003	6,816.69	-4,335.26	4,712.25	14,432,766.039	1,719,848.313	39.741597575	-80.717429606	
15,100.00	89.00	150.003	6,818.43	-4,421.85	4,762.23	14,432,679.447	1,719,898.300	39.741359336	-80.717252753	
15,200.00	89.00	150.003	6,820.18	-4,508.44	4,812.22	14,432,592.855	1,719,948.288	39.741121097	-80.717075902	
15,300.00	89.00	150.003	6,821.92	-4,595.04	4,862.21	14,432,506.263	1,719,998.275	39.740882857	-80.716899053	
15,400.00	89.00	150.003	6,823.66	-4,681.63	4,912.20	14,432,419.671	1,720,048.263	39.740644618	-80.716722204	
15,500.00	89.00	150.003	6,825.41	-4,768.22	4,962.18	14,432,333.078	1,720,098.251	39.740406378	-80.716545357	
15,600.00	89.00	150.003	6,827.15	-4,854.81	5,012.17	14,432,246.486	1,720,148.238	39.740168138	-80.716368510	
15,700.00	89.00	150.003	6,828.90	-4,941.41	5,062.16	14,432,159.894	1,720,198.226	39.739929897	-80.716191665	
15,800.00	89.00	150.003	6,830.64	-5,028.00	5,112.15	14,432,073.302	1,720,248.214	39.739691656	-80.716014822	
15,900.00	89.00	150.003	6,832.38	-5,114.59	5,162.14	14,431,986.711	1,720,298.201	39.739453415	-80.715837979	
16,000.00	89.00	150.003	6,834.13	-5,201.18	5,212.12	14,431,900.119	1,720,348.189	39.739215174	-80.715661138	
16,100.00	89.00	150.003	6,835.87	-5,287.77	5,262.11	14,431,813.527	1,720,398.176	39.738976933	-80.715484298	
16,200.00	89.00	150.003	6,837.61	-5,374.37	5,312.10	14,431,726.935	1,720,448.164	39.738738691	-80.715307459	
16,300.00	89.00	150.003	6,839.36	-5,460.96	5,362.09	14,431,640.343	1,720,498.152	39.738500449	-80.715130621	
16,400.00	89.00	150.003	6,841.10	-5,547.55	5,412.07	14,431,553.751	1,720,548.139	39.738262206	-80.714953785	
16,500.00	89.00	150.003	6,842.85	-5,634.14	5,462.06	14,431,467.159	1,720,598.127	39.738023964	-80.714776949	
16,600.00	89.00	150.003	6,844.59	-5,720.73	5,512.05	14,431,380.567	1,720,648.115	39.737785721	-80.714600115	
16,700.00	89.00	150.003	6,846.33	-5,807.33	5,562.04	14,431,293.975	1,720,698.102	39.737547477	-80.714423283	
16,800.00	89.00	150.003	6,848.08	-5,893.92	5,612.02	14,431,207.384	1,720,748.090	39.737309234	-80.714246451	
16,900.00	89.00	150.003	6,849.82	-5,980.51	5,662.01	14,431,120.792	1,720,798.077	39.737070990	-80.714069621	
17,000.00	89.00	150.003	6,851.57	-6,067.10	5,712.00	14,431,034.200	1,720,848.065	39.736832746	-80.713892791	
17,100.00	89.00	150.003	6,853.31	-6,153.69	5,761.99	14,430,947.608	1,720,898.053	39.736594502	-80.713715963	
17,200.00	89.00	150.003	6,855.05	-6,240.29	5,811.98	14,430,861.016	1,720,948.040	39.736356257	-80.713539137	
17,216.48	89.00	150.003	6,855.34	-6,254.55	5,820.21	14,430,846.748	1,720,956.277	39.736317000	-80.713510000	

PBHL/TD 17216.48 MD 6855.34 TVD

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Pendleton S-02HM LP - hit/miss target - Shape - Point	0.00	0.000	6,685.00	2,187.60	945.93	14,439,288.889	1,716,082.009	39.759543000	-80.730758000	
- plan misses target center by 57.53ft at 7484.01ft MD (6633.72 TVD, 2163.18 N, 955.09 E)										
Pendleton S-02HM BHL - plan hits target center - Point	0.00	0.000	6,855.34	-6,254.55	5,820.21	14,430,846.748	1,720,956.277	39.736317000	-80.713510000	



Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Pendleton S-02 HM (slot J)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1272.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 1272.00ft
Site:	Pendleton	North Reference:	Grid
Well:	Pendleton S-02 HM (slot J)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,200.00	1,200.00	0.00	0.00	KOP Begin 2°/100' build
2,845.00	2,756.08	445.81	111.15	Begin 32.90° tangent
6,404.85	5,745.00	2,321.99	578.94	Begin 8°/100' build/turn
7,338.52	6,555.16	2,265.00	887.88	Begin 10°/100' build/turn
7,730.67	6,689.92	1,959.40	1,078.47	Begin 89.00° lateral
17,216.48	6,855.34	-6,254.55	5,820.21	PBHL/TD 17216.48 MD 6855.34 TVD

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) Middle 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.? ASTs with proper containment

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 _____)

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. Air for vertical

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

Additives to be used in drilling medium? _____

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. All drill cuttings to be disposed of in 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-1021WV0109165) and Westmoreland Sanitary Landfill, LLC (SAN1405/PADEP EC#1356426), 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) James Pancake

Company Official Title Vice President - Geosciences

Subscribed and sworn before me this 22 day of August, 20 22

[Signature]

Commonwealth of Pennsylvania - Notary Seal
David Gabriel Delallo, Notary Public
Washington County
My commission expires February 16, 2024
Commission number 1267492
Member, Pennsylvania Association of Notaries

My commission expires 2/16/204

10/14/2022

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 6.88 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

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Orchard Grass	12
Spring Oats	96	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: *Strader Gower* STRADER GOWER

Comments: _____

Title: Oil and Gas Inspector

Date: 8/25/22

Field Reviewed? () Yes () No

DRAWING NOT TO SCALE

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.

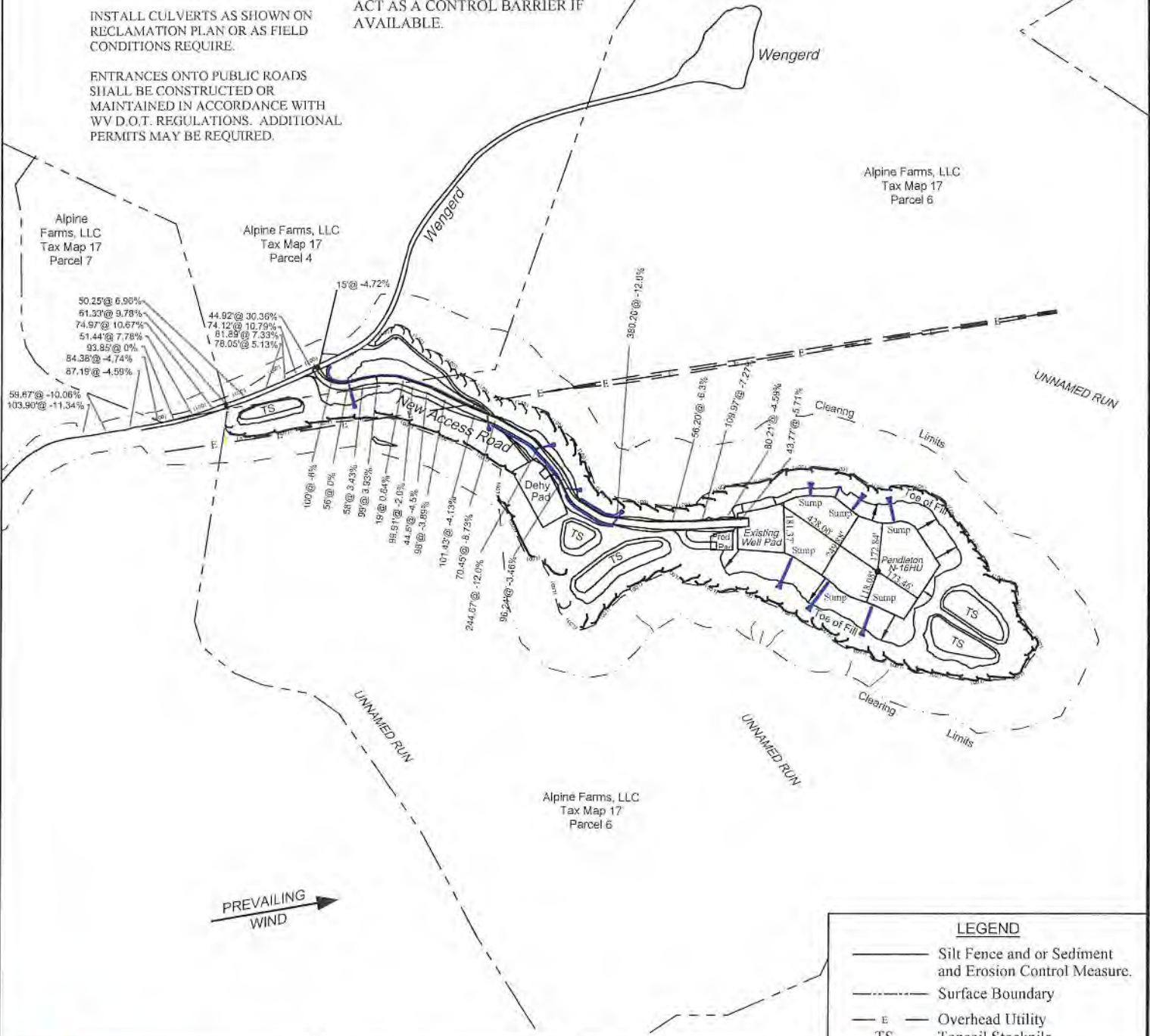
INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.

ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.

TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

ALL CUT AND FILL SLOPES ARE 2H : 1V SLOPE.

ALL TREES 6-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.



LEGEND	
	Silt Fence and or Sediment and Erosion Control Measure.
	Surface Boundary
	Overhead Utility
	Topsoil Stockpile

Jackson Surveying Inc.
 2413 E. Pike St.
 Clarksburg, WV 26301
 Phone: 304-623-6861

TOPO SECTION:	
GLEN EASTON 7.5'	
COUNTY	DISTRICT
MARSHALL	FRANKLIN
DRAWN BY	JOB NO.
J.D.C	494510851

OPERATOR:	
PREPARED FOR:	
TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
DATE	SCALE
03-16-2022	NONE

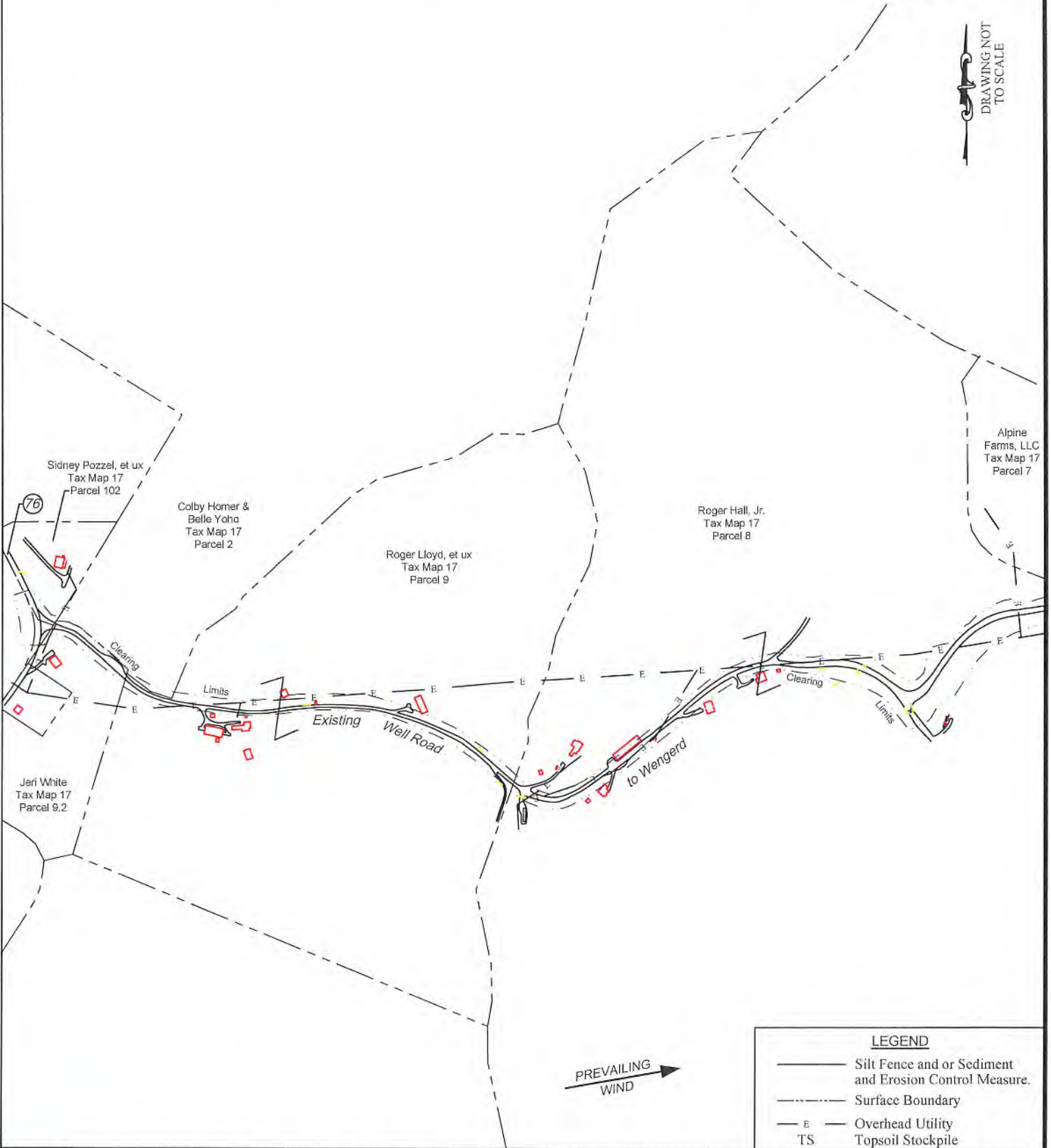
TUG HILL OPERATING
 10/14/2022

PROPOSED PENDLETON

Exhibit 1

Page 2 of 2

DRAWING NOT
TO SCALE



LEGEND	
	Silt Fence and or Sediment and Erosion Control Measure.
	Surface Boundary
	Overhead Utility
	Topsoil Stockpile

Jackson Surveying Inc.
 2413 E. Pike St.
 Clarksburg, WV 26301
 Phone: 304-623-5851

TOPO SECTION:	
GLEN EASTON 7.5'	
COUNTY	DISTRICT
MARSHALL	FRANKLIN
DRAWN BY	JOB NO.
J.D.C.	494510851

OPERATOR:	
PREPARED FOR:	
TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
DATE	SCALE
03-16-2022	NONE

**TUG HILL
OPERATING**

10/14/2022

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, DPS GIS (7/08/2022) 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

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
4705102245	Tug Hill Operating, LLC.	11787' 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.
4705170772	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Marcellus well.	State records are incomplete.
4705170340	Hope Natural Gas Company	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Marcellus well.	State records are incomplete.

WV Geological & Economic Survey:

Well: County = 51 Permit = 02245

Report Time: Wednesday, January 26, 2022 1:14:01 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102245	Marshall	2245	Franklin	Glen Easton	Cameron	39.753455	-80.733897	522795.9	4400427.6

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102245	1 As Proposed	520896.4	4403611.2	-80.755969	39.782188

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
4705102245	-/-	Dvtd Orgnl Loc	Cancelled	Alpine Farm LLC		N-9HU	Pendleton		Eli A & Fannie Mae Wengerd et al	Tug Hill Operating, LLC	11787	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
4705102245	-/-	-/-	1272	Ground Level																

WV Geological & Economic Survey:

Well: County = 51 Permit = 70772

Report Time: Wednesday, January 26, 2022 1:14:21 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170772	Marshall	70772	Meade	Glen Easton	Cameron	39.755751	-80.728825	523229.7	4400683.7

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
4705170772	-/-	unknown	Prply Map	G & M Martin		1248				----- unknown -----			

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
4705170772	-/-	-/-						unclassified	unclassified	not available	unknown	unknown								

WV Geological & Economic Survey:

Well: County = 51 Permit = 70340

Report Time: Wednesday, January 26, 2022 1:14:50 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170340	Marshall	70340	Meade	Wileyville	Littleton	39.738032	-80.716214	524316.3	4398720.5

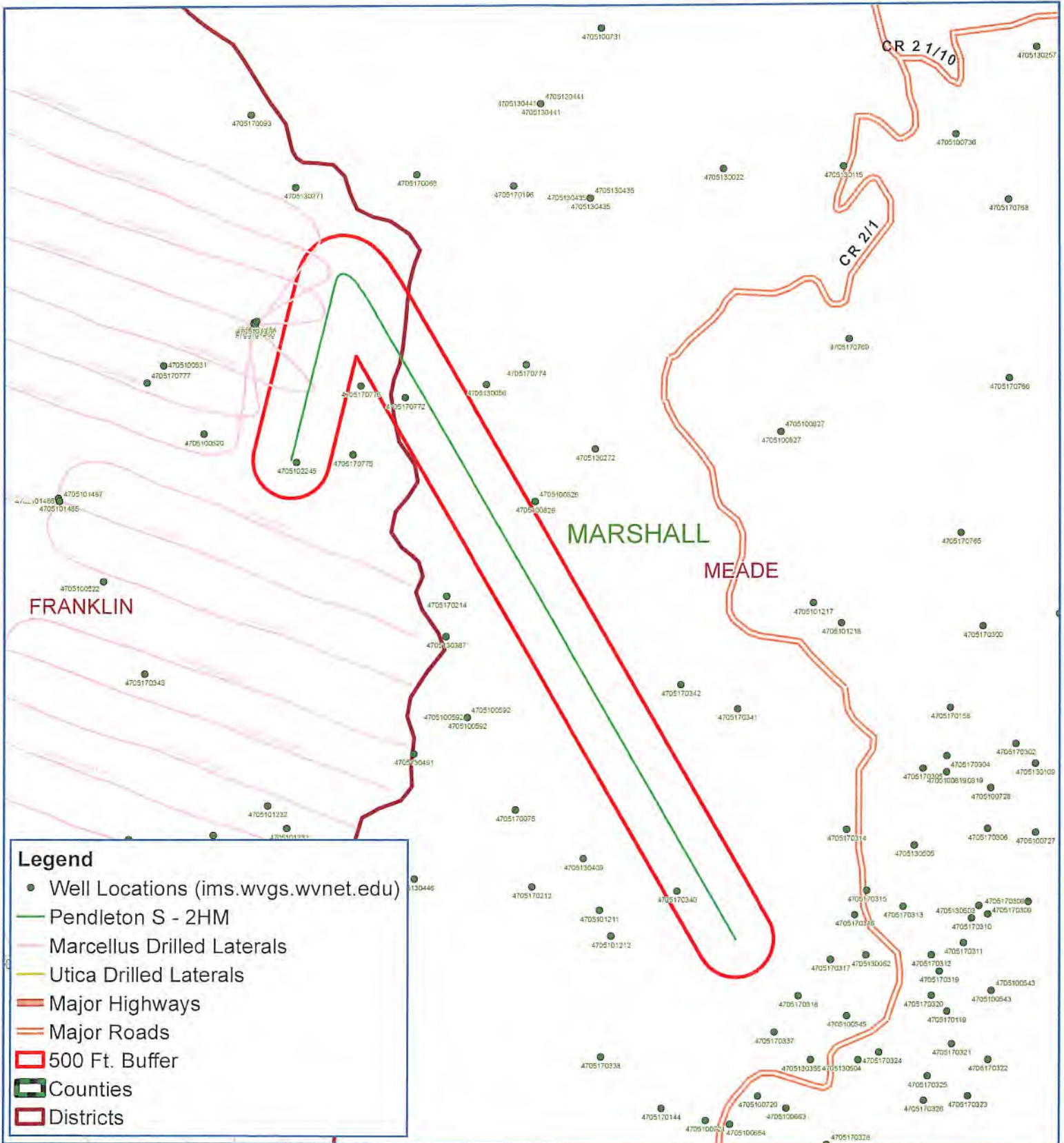
There is no Bottom Hole Location data for this well

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
4705170340	-/-		unknown	Prpty Map A.J Stein				270		Hope Natural Gas 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_BEF
4705170340	-/-	-/-						unclassified	unclassified	not available	unknown	unknown							



Legend

- Well Locations (ims.wvgs.wvnet.edu)
- Pendleton S - 2HM
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- Major Highways
- Major Roads
- 500 Ft. Buffer
- Counties
- Districts



Pendleton S - 2HM Franklin District Marshall County, WV



Notes:
All locations are approximate and are for visualization purposes only.

Map Prepared by:

DPS
LAND SERVICES
10/14/2022

Map Created: July 8, 2022
Map Current As Of: July 8, 2022



TUG HILL
OPERATING

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

Well Name: Pendleton S-2HM

Pad Name: Pendleton

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,400,437.25

Easting: 522,774.51

**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)

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Office of Oil and Gas

SEP 01 2022

WV Department of
Environmental Protection

24-HOUR EMERGENCY PHONE NUMBER

(800) 921-9745

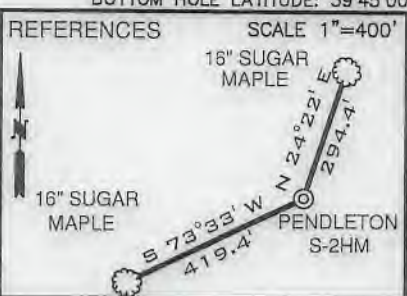
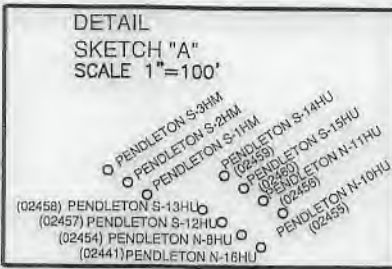
*John P. ...
STRAIGHT COVER
9/28/22*

10/14/2022

**PENDLETON LEASE
WELL S-2HM
923.613± ACRES**

GRID NORTH

(TH) 7,301' (BH) 1,498'
TOP HOLE LATITUDE: 39°47'30"
BOTTOM HOLE LATITUDE: 39°45'00"

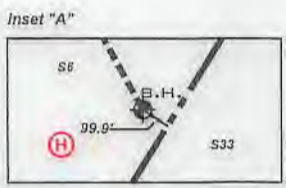
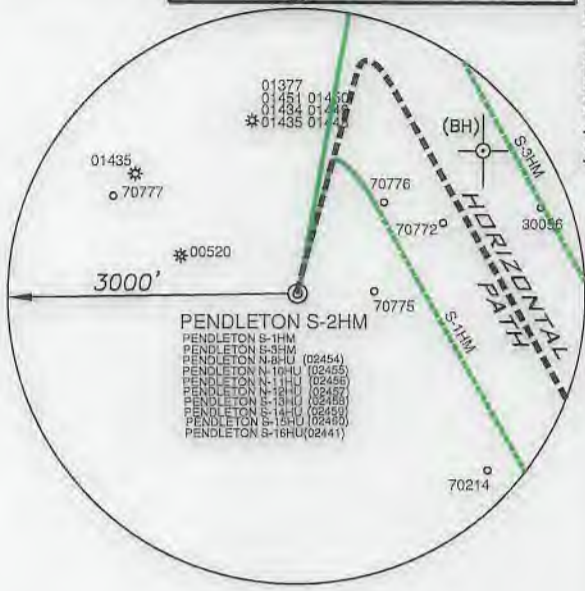


LINE	BEARING	DISTANCE
L1	N 02°54' E	2,815.75'
L2	N 76°55' W	2,298.57'
L3	N 14°57' E	2,393.95'

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,437.26
E) 522,774.51

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,401,034.50
E) 523,103.24

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,398,530.89
E) 524,548.52

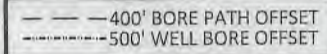


- NOTES**
- BORE PATH BASED ON GRID NORTH.
 - NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
 - OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MAY, 2022. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
 - WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
 - BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCCAMEY & CHILCOTE, P.C. FILE 0058304.0401147

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 25°13' E	88.29'	207.56'	88.97'
C2	N 67°21' E	80.76'	81.41'	84.50'
C3	S 68°57' E	59.50'	146.04'	59.92'
C4	S 50°16' E	78.99'	338.00'	79.17'
C5	S 37°52' E	137.68'	726.85'	137.89'
C6	S 30°56' E	351.42'	4549.64'	351.50'



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS



LEGEND

- LEASED TRACTS
- SURFACE TRACTS
- WELL LATERAL
- MARCELLUS LEGS
- UNIT BOUNDARY
- LEASE # (SEE 6A1 FORM)

FILE NUMBER _____
DRAWING NUMBER: PENDLETON S-2HM REV 2
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING
GRADE GPS

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

David L Jackson

P.S. 708

JACKSON SURVEYING INC.
P.O. Box 1460
Clarksburg, WV 26302
304-623-5851



WVDEP
OFFICE OF OIL & GAS
601 57TH STREET, SE
CHARLESTON, WV 25304

DATE: AUGUST 18, 2022
OPERATORS WELL NO. PENDLETON S-2HM
API WELL NO. 47-051-02469
STATE WV COUNTY MARSHALL PERMIT 10/14/2022

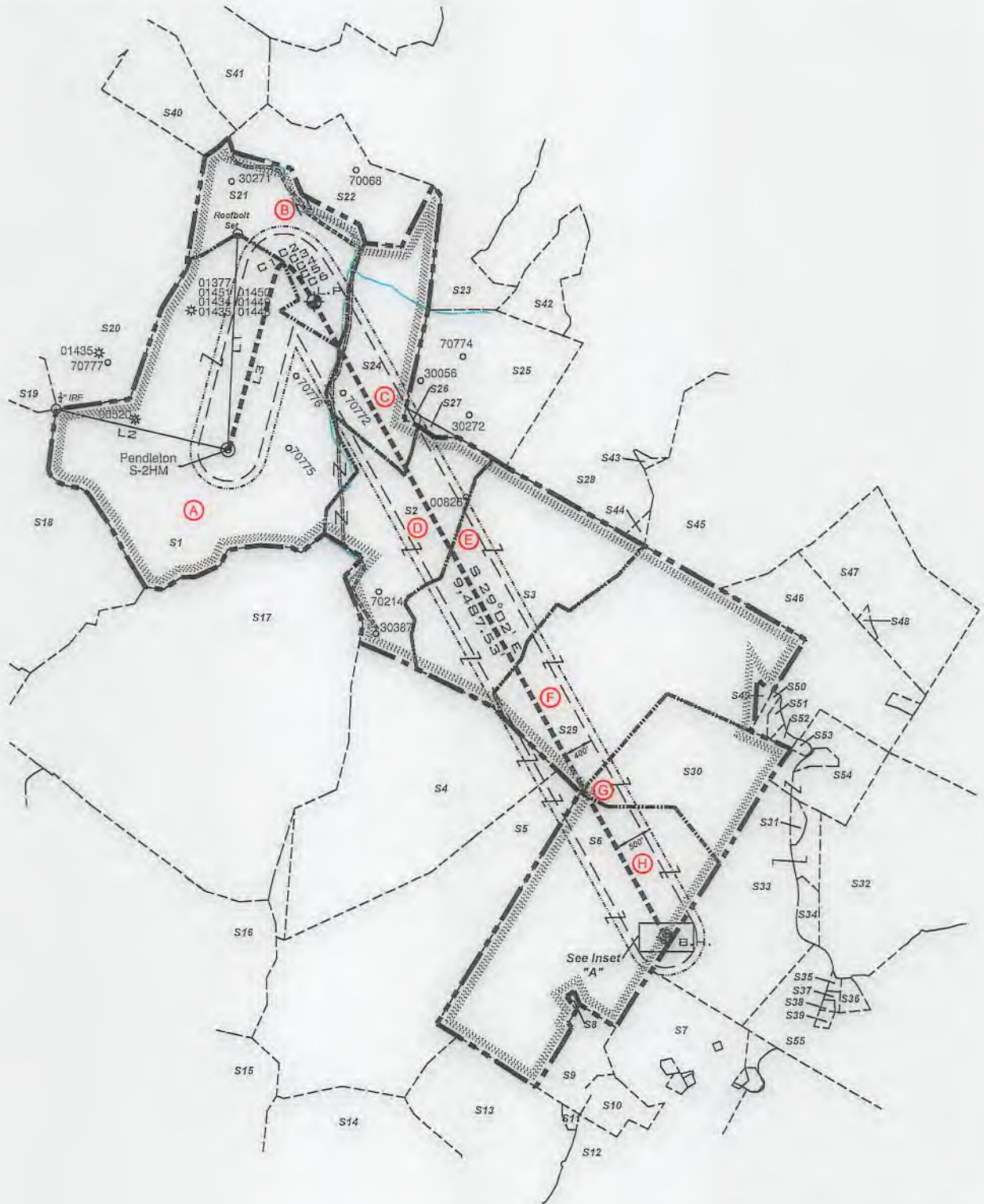
WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
LOCATION ELEVATION 1271.82' WATERSHED (HUC 10) FISH CREEK
DISTRICT FRANKLIN COUNTY MARSHALL
QUADRANGLE GLEN EASTON 7.5' LEASE NUMBER SEE WW-6A1 Form

SURFACE OWNER ALPINE FARM, LLC ACREAGE 249.07
OIL & GAS ROYALTY OWNER ELI A. & FANNIE MAE WENGERD, ET AL LEASE ACREAGE 249.07
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____
TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD: 6,807' TMD: 17,216'
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN, CT CORP
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5098 WASHINGTON STREET WEST, SUITE 407 CHARLESTON, WV 25313-1561

form ww6

GRID NORTH

PENDLETON LEASE WELL S-2HM 923.613± ACRES



LEGEND	
	LEASED TRACTS
	SURFACE TRACTS
	WELL LATERAL
	MARCELLUS LEGS
	UNIT BOUNDARY
	LEASE # (SEE 6A1 FORM)
	400' BORE PATH OFFSET
	500' WELL BORE OFFSET



P.S. 708 *David L Jackson*

10/14/2022



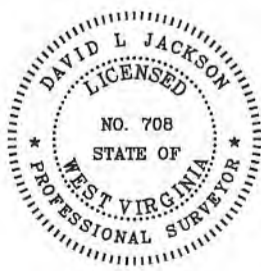
TUG HILL
OPERATING

OPERATOR'S
WELL #: PENDLETON S-2HM
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV

WELL PLAT
PAGE 2 OF 3
DATE: 08/18/2022

**PENDLETON LEASE
WELL S-2HM
923.613± ACRES**

Parcels within Unit Boundary				
Tags	Number	Tax Map -Parcel	Surface Owner	Acres
A	S1	05-17-06	ALPINE FARM LLC	249.07
B	S21	05-17-05	ALPINE FARM LLC	76.96
C	S24	09-16-03	BERTHA L KLUG	71
D	S2	09-18-01	THOMAS THERESA MAE LONG ET AL	58.66
E	S3	09-18-02	BRIAN T KLUG	85.0
F	S29	09-18-18	JAMES D FROHNAPFEL ET UX	154.03
G	S30	09-20-06	KEITH & KRISTY FERRELL REVOCABLE LIVING TRUST	64.75
H	S6	09-20-05	GERALD A FROHNAPFEL ET UX- TRUST	164.143
Adjoining Parcels Ownership Table				
Tags	Number	Tax Map -Parcel	Surface Owner	Acres
	S4	09-20-02	MICHAEL JAMES PEKULA ET UX	138.0
	S5	09-20-04	SHELLIE J PEKULA	171
	S7	09-20-22	JOAN L KLUG, ET AL	70.2398
	S8	09-20-5.2	WHEELING CATHOLIC DIOCESE	0.447
	S9	09-22-04	WHEELING CATHOLIC DIOCESE	20
	S10	09-22-5.1	HILARY G MILLER EST	10.62
	S11	09-22-3.1	MARGARET ANN MYSLIWIEC -LIFE	1.1
	S12	09-22-03	MARK HILARY MILLER	63.73
	S13	09-22-3.2	MARK H MILLER	75
	S14	09-22-01	LOUIS T FOX	124.57
	S15	05-25-03	USA TIMBER & LAND AUCTIONS, LLC	181.548
	S16	05-24-3.3	CHARLES E BERTRAND & DEBRA K BERTRAND	120.43
	S17	05-24-02	ROY FRIEND YOHO	316.8
	S18	05-17-08	ROGER H HALL JR	257.5
	S19	05-17-07	ALPINE FARM LLC	10.8
	S20	05-17-04	ALPINE FARM LLC	212
	S22	09-16-02	ROBERT M & NANCY R MCCARDLE	53.4
	S23	09-16-05	ROBERT M & NANCY R MCCARDLE	133
	S25	09-16-04	BERTHA L KLUG	73.39
	S26	09-18-04	BERTHA L KLUG	1
	S27	09-18-03	BERTHA L KLUG	1.33
	S28	09-18-05	BERTHA L KLUG	122.437
	S31	09-20-7.2	MICKEY R DULANEY JR	2.24
	S32	09-20-11	PATRICK A FROHNAPFEL ET UX	139.88
	S33	09-20-07	SONNY M & LINDA L TAGG	72.828
	S34	09-20-7.1	DAVID PAUL FROHNAPFEL	4.930
	S35	09-20-9.5	JAMES MILLER ET UX	0.666
	S36	09-20-9.6	JAMES MILLER ET UX	2.919
	S37	09-20-9.3	JAMES MILLER ET UX	0.804
	S38	09-20-10	JAMES MILLER ET UX	0.5
	S39	09-20-9.4	HELEN B SHUTLER -LIFE	0.78
	S40	05-16-13	DAVID ALAN RUBCICH ET AL	33.31
	S41	09-16-1	ROBERT M & NANCY R MCCARDLE	46.8
	S42	09-16-7	BERTHA L KLUG	26.105
	S43	09-18-5.2	LOUIS FOX	0.933
	S44	09-18-5.1	LOUIS FOX	1.583
	S45	09-18-6	LOUIS FOX	141.75
	S46	09-18-16	ROBERT F VILLERS	62.893
	S47	09-18-17	VINCENT J WAYMAN ET UX	68.99
	S48	09-18-17.1	VINCENT JOHN WAYMAN	1.010
	S49	09-18-18.1	JOHN F WAYMAN ESTATE	1.1
	S50	09-18-16.2	JOHN F WAYMAN EST	2.17
	S51	09-18-16.3	BERNARD A KLUG ET UX	1.818
	S52	09-18-16.1	NICHOLAS C FROHNAPFEL ET UX	1.50
	S53	09-18-15.1	NICHOLAS C FROHNAPFEL ET UX	0.68
	S54	09-18-15	KEITH & KRISTY FERRELL REVOCABLE LIVING TRUST	29.5
	S55	09-20-9	JOHN G JR & MARILYN S WEIGAND	48.131



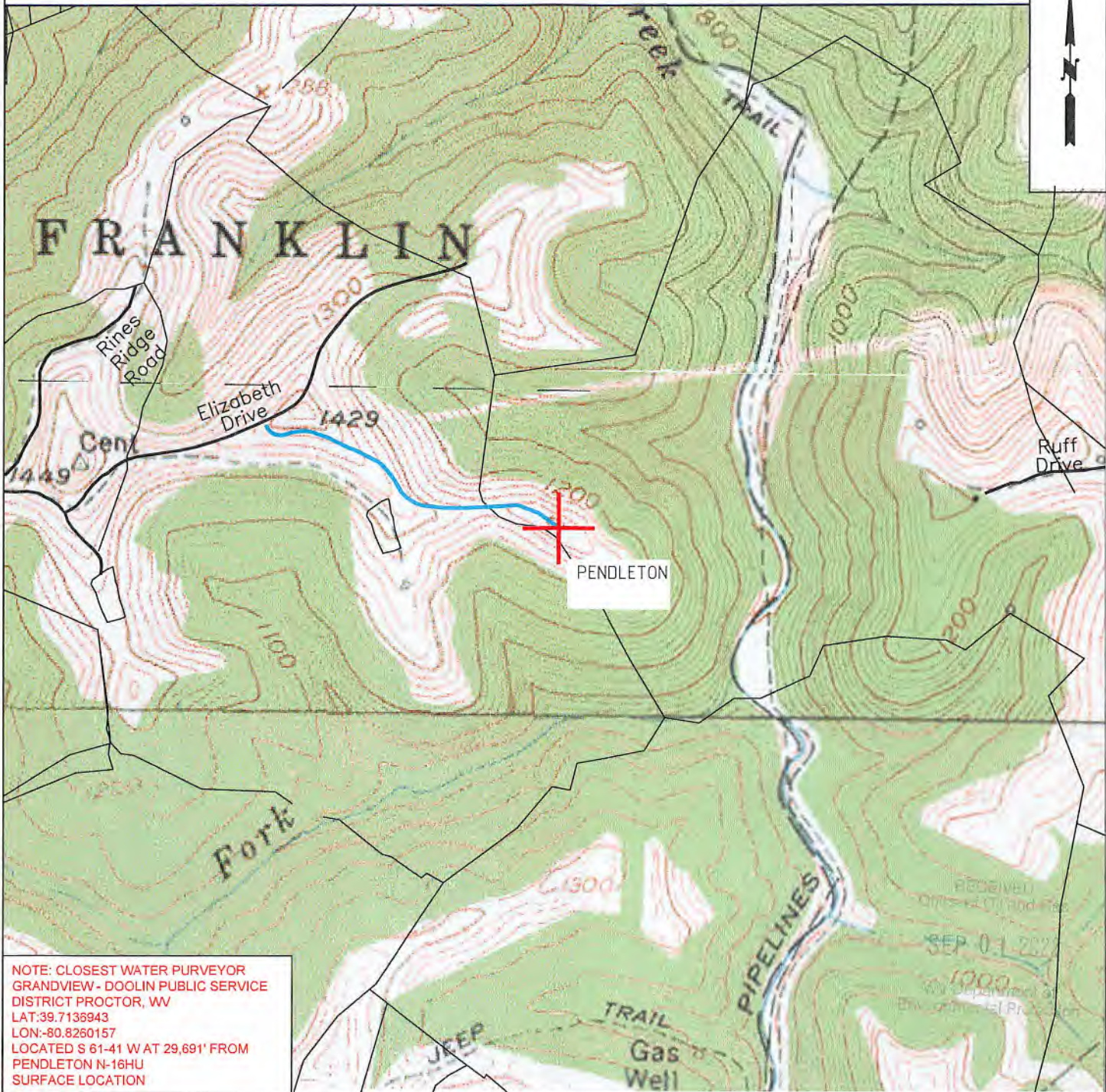
P.S. 708 *David L Jackson*

10/14/2022

 <p>TUG HILL OPERATING</p>	OPERATOR'S	WELL PLAT
	WELL #: <u>PENDLETON S-2HM</u>	PAGE 3 OF 3
	DISTRICT: <u>Franklin</u>	DATE: <u>08/18/2022</u>
	COUNTY: <u>Marshall</u>	
	STATE: <u>WV</u>	

Pendleton Pad

THERE APPEAR TO BE NO (0) RESIDENCES WITHIN 2,000'.



NOTE: CLOSEST WATER PURVEYOR
 GRANDVIEW - DOOLIN PUBLIC SERVICE
 DISTRICT PROCTOR, WW
 LAT: 39.7136943
 LON: -80.8260157
 LOCATED S 61-41 W AT 29.691' FROM
 PENDLETON N-16HU
 SURFACE LOCATION

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 Environmental Protection

 TUG HILL OPERATING	OPERATOR	494510851	TOPO SECTION	LEASE NAME
	TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		GLEN EASTON 7.5'	PENDLETON
			SCALE: 1" = 1000'	DATE: DATE: 03-16-2022

10/14/2022
 S/19/25/22

**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

**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

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Office of Oil and Gas

SEP 01 2022

WV DEPARTMENT OF
Environmental Protection

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

SEP 01 2012

WW - 6A1 Supplement

Operator's Well No. Pendleton S - 2HM

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC.	GRANTEE, LESSEE, ETC.	ROYALTY	FEED BOOK/PAGE	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	
			WV Department of Environmental Protection													
10*14114	5-17-6	A	ELI & FANNIE MAE WENGERD	GASTAR EXPLORATION USA INC	1/8+	671 323	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc & Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14114	5-17-5	B	ELI & FANNIE MAE WENGERD	GASTAR EXPLORATION USA INC	1/8+	671 323	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger of Gastar Exploration Inc & Gastar Exploration USA Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*19845	5-17-5	B	MICHAEL WESLEY HALL	TH EXPLORATION LLC	1/8+	946 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*19846	5-17-5	B	SHARON L SCHULER AND JOSEPH A SCHULER	TH EXPLORATION LLC	1/8+	946 7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1287845-001	5-17-5	B	KENNETH EUGENE DAKAN AKA GENE & MARGARET E. DAKAN	CHESAPEAKE APPALACHIA LLC	1/8+	690 192	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 22/646	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67	
1287845-002	5-17-5	B	DOROTHY SEDOSKY	CHESAPEAKE APPALACHIA LLC	1/8+	690 156	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 22/646	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67	
1287845-003	5-17-5	B	DOLLYE LEE GUZEK A/K/A DOLLY GUZEK	CHESAPEAKE APPALACHIA LLC	1/8+	690 153	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 22/646	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67	
1287845-004	5-17-5	B	GEORGE WILLIAM MCCAIN	CHESAPEAKE APPALACHIA LLC	1/8+	692 342	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 24/338	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67	
1287845-005	5-17-5	B	RITA RAE STEPHENS	CHESAPEAKE APPALACHIA LLC	1/8+	690 229	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 24/338	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67	
1287845-006	5-17-5	B	MICHAEL EARL RICHARDS	CHESAPEAKE APPALACHIA LLC	1/8+	690 257	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 24/338	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67	
1287845-007	5-17-5	B	VIRGINIA MAE SELMON	CHESAPEAKE APPALACHIA LLC	1/8+	690 239	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 24/338	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67	

SEP 01 2022

Operator's Well No. Pendleton S - 2HM

WW - 6A1 Supplement

WV Department of
Environmental Protection

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC.	GRANTEE, LESSEE, ETC.	ROYALTY	FEED BOOK/PAGE	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	
1287845-008	5-17-5	B	LESTER M. MERCER AND HELEN J. MERCER	CHESAPEAKE APPALACHIA LLC	1/8+	690 220	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 24/338	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1287845-009	5-17-5	B	LEROY EUGENE RICHARDS	CHESAPEAKE APPALACHIA LLC	1/8+	690 254	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 24/338	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1287845-010	5-17-5	B	BETTY ANN STROSNIER	CHESAPEAKE APPALACHIA LLC	1/8+	690 147	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 24/338	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1287845-011	5-17-5	B	HILDA IOLA MCCAIN	CHESAPEAKE APPALACHIA LLC	1/8+	692 369	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 24/338	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1287845-012	5-17-5	B	VICTORIA MURPHY	CHESAPEAKE APPALACHIA LLC	1/8+	692 310	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 24/338	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1287845-013	5-17-5	B	HELEN LOUISE MCCAIN GATTS	CHESAPEAKE APPALACHIA LLC	1/8+	690 180	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 24/338	Memorandum of Operating Agreement & Financial Statement between Gastar Exploration USA Inc, Atinum Marcellus I, LLC & Chesapeake Appalachia, LLC: 740/394	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/intro SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Merger of Gastar Exploration USA Inc with and into Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*19638	9-16-3	C	GREGORY J HALL	TH EXPLORATION LLC	1/8+	944 461	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*19639	9-16-3	C	RANDALL S HALL	TH EXPLORATION LLC	1/8+	944 459	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27393	9-16-3	C	VICTOR LEWIS LANHAM	TH EXPLORATION LLC	1/8+	1058 404	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27520	9-16-3	C	MICHAEL L HALL JR AND DIANNE HALL	TH EXPLORATION LLC	1/8+	1060 194	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27558	9-16-3	C	CRYSTAL L CUNNINGHAM AND TIMOTHY CUNNINGHAM	TH EXPLORATION LLC	1/8+	1060 476	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27570	9-16-3	C	ENOCH R HYDE AND ELIZABETH HYDE	TH EXPLORATION LLC	1/8+	1060 478	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27572	9-16-3	C	JOHN W HYDE AND ALYCE F HYDE	TH EXPLORATION LLC	1/8+	1060 481	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27573	9-16-3	C	RUSSELL H HATCHER AND ELIZABETH HATCHER	TH EXPLORATION LLC	1/8+	1061 258	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27833	9-16-3	C	TIMOTHY A HOLLEY AND DEBRA J HOLLEY	TH EXPLORATION LLC	1/8+	1063 256	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29086	9-16-3	C	BETTY L COX	TH EXPLORATION LLC	1/8+	1084 197	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29514	9-16-3	C	NANCY M HYDE	TH EXPLORATION LLC	1/8+	1097 509	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29685	9-16-3	C	FAMILY TREE CORPORATION	TH EXPLORATION LLC	1/8+	1100 252	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29724	9-16-3	C	JANICE GUMP DEBOLT	TH EXPLORATION LLC	1/8+	1100 73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*28262	9-18-1	D	JAMES W MESSEY ET AL	ECLIPSE OIL COMPANY	1/8+	67 487	N/A	Eclipse Oil Company to C.H. Stolzebach: DB 68/507	Wheeling Natural Gas Company to Manufacturers Light & Heat Company: DB 148/389	The Manufacturers Light & Heat Company to A.M. Snider & Duane M Snider dba Hundred Gas Company: AB 4/489	AM Snider, Duane M Snider & Kathleen Rinehart dba Hundred Gas Company to Hundred Gas Company: DB 256/189	Hundred Gas Company to Carl D Perkins: DB 451/132	Amendment - Hundred Gas Company to Carl D Perkins: DB 451/418	Carl D Perkins to Perkins Oil and Gas Inc: DB 583/72	Perkins Oil & Gas Inc to TH Exploration LLC: AB 45/87

LEASE ID	TMP	TAG	GRANTOR, LESSOR, ETC.	GRANTEE, LESSEE, ETC.	ROYALTY	FEED BOOK/PAGE	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT	ASSIGNMENT
10*28262	9-18-2	E	JAMES W MESSEY ET AL	ECLIPSE OIL COMPANY	1/8+	67 487	N/A	Eclipse Oil Company to C.H. Stolzebach: DB 68/507	Wheeling Natural Gas Company to Manufacturers Light & Heat Company: DB 148/389	The Manufacturers Light & Heat Company to A.M. Snider & Duane M Snider dba Hundred Gas Company: AB 4/489	AM Snider, Duane M Snider & Kathleen Rinehart dba Hundred Gas Company to Hundred Gas Company: DB 256/189	Hundred Gas Company to Carl D Perkins: DB 451/132	Amendment - Hundred Gas Company to Carl D Perkins: DB 451/418	Carl D Perkins to Perkins Oil and Gas Inc: DB 583/72	Perkins Oil & Gas Inc to TH Exploration LLC: AB 45/87
10*47051.047.1	9-18-18	F	JAMES E BLATT	TH EXPLORATION LLC	1/8+	869 587	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.047.2	9-18-18	F	JOHN WILLIAM BLATT	TH EXPLORATION LLC	1/8+	869 590	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.047.3	9-18-18	F	CAROL LEE BURNSIDE	TH EXPLORATION LLC	1/8+	869 593	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*47051.047.4	9-18-18	F	LOIS JEAN CECIL	TH EXPLORATION LLC	1/8+	869 596	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17899	9-20-6	G	JOHN CALVERT	TH EXPLORATION LLC	1/8+	924 608	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17900	9-20-6	G	DELORES J MYERS	TH EXPLORATION LLC	1/8+	924 606	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17989	9-20-6	G	JANET F HIGGINS	TH EXPLORATION LLC	1/8+	925 445	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17990	9-20-6	G	EDWARD TYLA AND MARY TYLA	TH EXPLORATION LLC	1/8+	925 385	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17994	9-20-6	G	ELAINE BEAL	TH EXPLORATION LLC	1/8+	943 528	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*17995	9-20-6	G	THOMAS E BEAL AND LOIS BEAL	TH EXPLORATION LLC	1/8+	925 383	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18116	9-20-6	G	SUSANNE KRENTZ	TH EXPLORATION LLC	1/8+	927 80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18277	9-20-6	G	JOHN J ZAGORSKI AND PAMELA L WOODHULL	TH EXPLORATION LLC	1/8+	929 110	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18279	9-20-6	G	ELAINE BOBINCHECK	TH EXPLORATION LLC	1/8+	929 56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18282	9-20-6	G	ROBERT G TAYLOR AND JUDITH B TAYLOR	TH EXPLORATION LLC	1/8+	929 112	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18328	9-20-6	G	ROBERT E BEIFUSS AND PATRICIA J BEIFUSS	TH EXPLORATION LLC	1/8+	929 558	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18365	9-20-6	G	JEAN M JONES	TH EXPLORATION LLC	1/8+	931 309	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18372	9-20-6	G	JAMES RIDER	TH EXPLORATION LLC	1/8+	931 455	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18380	9-20-6	G	LEROY SUMMERHILL AND JUNE E SUMMERHILL	TH EXPLORATION LLC	1/8+	932 443	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18382	9-20-6	G	GAIL V RYBA	TH EXPLORATION LLC	1/8+	932 445	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18383	9-20-6	G	WILLIAM MATUSINEC AND CAROL A MATUSINEC	TH EXPLORATION LLC	1/8+	932 488	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18384	9-20-6	G	GEORGE S AUGUSTIN	TH EXPLORATION LLC	1/8+	932 490	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18431	9-20-6	G	DARYL W ERRICHELLO AND CATHERINE L ERRICHELLO	TH EXPLORATION LLC	1/8+	941 631	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18435	9-20-6	G	JOSEPH E BORK AND SUSAN A BORK	TH EXPLORATION LLC	1/8+	933 75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18441	9-20-6	G	HAROLD SHELDON JR AND ANNETTE M SHELDON	TH EXPLORATION LLC	1/8+	933 89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18442	9-20-6	G	ARTHUR J OCHSNER JR AND SANDRA J OCHSNER	TH EXPLORATION LLC	1/8+	933 91	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18489	9-20-6	G	MARJORIE E KRAUSE	TH EXPLORATION LLC	1/8+	933 73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*18814	9-20-6	G	BEATRICE WAYMAN	TH EXPLORATION LLC	1/8+	938 28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*19556	9-20-6	G	KEITH A FERRELL AND KRISTY J FERRELL	TH EXPLORATION LLC	1/8+	936 544	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21827	9-20-6	G	JANET PUCCI AND JOHN PUCCI	TH EXPLORATION LLC	1/8+	960 218	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21829	9-20-6	G	RONALD ROSE & BARBARA ROSE	TH EXPLORATION LLC	1/8+	960 185	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22591	9-20-6	G	MICHAEL ZAMAGIAS AND ELIZABETH ZAMAGIAS	TH EXPLORATION LLC	1/8+	966 478	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22595	9-20-6	G	DUANE WOLLANT	TH EXPLORATION LLC	1/8+	984 511	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22596	9-20-6	G	DOUGLAS WOLLANT AND LISA M STOEFLER	TH EXPLORATION LLC	1/8+	966 480	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*19555	9-20-5	H	MARY JEAN FROHNAPPEL	TH EXPLORATION LLC	1/8+	936 525	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RECEIVED
Office of Oil and Gas
SEP 01 2022
WW Department of
Environmental Protection

STATE OF WEST VIRGINIA §
 §
COUNTY OF MARSHALL §

ASSIGNMENT, BILL OF SALE AND CONVEYANCE

THIS ASSIGNMENT, BILL OF SALE AND CONVEYANCE (this “*Assignment*”), dated effective as of 7:00 A.M., local time, where the respective Assets are located, on July 1, 2020 (the “*Effective Time*”), is between **Atinum Marcellus I, LLC**, a Delaware limited liability company (“*Assignor*”), whose mailing address is One Riverway, Suite 710, Houston, TX 77056-1988, and **TH Exploration II, LLC**, a Texas limited liability company, whose mailing address is 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 (“*Assignee*”). Assignor and Assignee are each, individually, referred to herein as a “*Party*” and, collectively, as the “*Parties*.”

Capitalized terms used but not defined herein shall have the respective meanings set forth in that certain Asset Purchase Agreement dated as of November 13, 2020, by and among Assignor and Assignee (the “*Purchase Agreement*”).

Section 1. Assignment. The conveyance and assignment herein shall be deemed effective as of the Effective Time.

For Ten Dollars (\$10.00) and other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged), Assignor does hereby forever GRANT, BARGAIN, SELL, CONVEY, ASSIGN, TRANSFER, SET OVER AND DELIVER unto Assignee, and Assignee does hereby acquire, the undivided interests in the Leases (as defined below) set forth on Exhibit A-1, and all other of Assignor’s right, title and interest in and to the interests and properties described in subsections (a) through (k) of this Section 1 (without duplication) (such right, title and interest, less and except the Excluded Assets, collectively, the “*Assets*”):

(a) The oil and gas leases, mineral leases and Royalties located in the Covered Counties (which Covered Counties include, for the avoidance of doubt, the county in which this Assignment is filed of record), including those described on Exhibit A-1 together with any and all other right, title and interest in and to the leasehold estates created thereby, subject to the terms, conditions, covenants and obligations set forth in such leases or other instrument creating such rights or interests or on Exhibit A-1 (such leases, Royalties, and mineral interests, collectively, the “*Leases*”), together with any related interest in the lands covered by the Leases or lands unitized, pooled, communitized or consolidated therewith (the “*Lands*”);

(b) All of the oil and/or gas wells identified on Exhibit A-2 hereto (the “*Wells*”), and any other oil, gas, or other wells located on any of the Leases or the Lands, in each case, whether producing, non-producing, shut-in, temporarily or permanently abandoned or otherwise;

(c) All rights, titles and interests arising under any unitization, pooling and/or communitization agreements, declarations or designations for drilling, spacing and/or production units related to any of the Leases, Wells or Lands, including the units described on Exhibit A-4;

RECEIVED
DIRECTOR OF REVENUE
SEP 01 2022
TAX COLLECTOR

MEMORANDUM OF PARTIAL ASSIGNMENT OF OIL AND GAS LEASES

STATE OF WEST VIRGINIA §
§
COUNTY OF MARSHALL §

This MEMORANDUM OF PARTIAL ASSIGNMENT OF OIL AND GAS LEASES (hereinafter, the "Memorandum") has been executed by and between PERKINS OIL & GAS, INC., a West Virginia corporation, whose address is 2966 Northwest Turnpike, Pennsboro, West Virginia 26415 (hereinafter the "Assignor"), and TH EXPLORATION, LLC, a Texas limited liability company (hereinafter the "Assignee") whose address is 1320 South University Drive, Suite 500, Fort Worth, Texas 76107. Assignor and Assignee are sometimes referred to herein, collectively, as the "Parties" and, individually, as a "Party." This Memorandum is being executed for the purpose of providing notice to third parties of the execution of a certain Partial Assignment of Oil and Gas Leases (hereinafter, the "Assignment"), by and between the Parties.

WHEREAS, Assignor is the current owner and lessee of certain oil and gas leases located in Marshall County, West Virginia, covering specific parcels and being more particularly described on Exhibit "A" attached hereto and made a part hereof (collectively, the "Oil and Gas Leases").

In the Assignment dated, effective as of the 21st day of January, 2020 (hereinafter, the "Effective Date") and this Memorandum, Assignor does hereby GRANT, BARGAIN, SELL, CONVEY, TRANSFER and ASSIGN unto Assignee, all right, title and interest in and to the Oil and Gas Leases INsofar AND ONLY INsofar as each lease and parcel covers those formations lying between two hundred (200) feet above and two hundred (200) feet below the formations commonly known to as the Utica/Point Pleasant Shale formations, or the stratigraphic equivalent thereof (such depths and formations being referred to as the "Assigned Formations"). The Assigned Formations are included with and part of the Assigned Rights as defined in the Assignment.

EXCLUDING THEREFROM AND EXCEPTING AND RESERVING UNTO THE ASSIGNOR, ITS SUCCESSORS AND ASSIGNS, THE OVERRIDING ROYALTY INTEREST, as defined in the Assignment.

The Assignment contains various other terms, provisions and conditions, all of which are incorporated herein by reference, and made a part hereof in all respects as though the same were fully set forth herein. To the extent that there are any inconsistencies between this Memorandum and the Assignment, the terms and provisions of the Assignment shall prevail.

Assignor does hereby bind itself and its successors and assigns to warrant and forever defend all and singular title to the Assigned Formations unto Assignee and Assignee's successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by through, or under Assignor, but not otherwise.

This Memorandum is made expressly subject to the terms and conditions of the Purchase and Sale Agreement dated September 23, 2019, by and between the Parties, all of which are fully incorporated herein by reference (the "Purchase Agreement").

This Memorandum may be executed in multiple counterparts, each of which shall be deemed an original instrument, but all such counterparts together shall constitute but one agreement.

[TWO SIGNATURE PAGES TO FOLLOW]



August 24, 2022

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

RE: Pendleton S-2HM

Subject: Road Crossing Letter

Dear Taylor:

Tug Hill Operating, LLC will not be drilling, extracting or producing any minerals under any WV County or State Routes in the area reflected on the Pendleton S-2HM 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.

Sincerely,

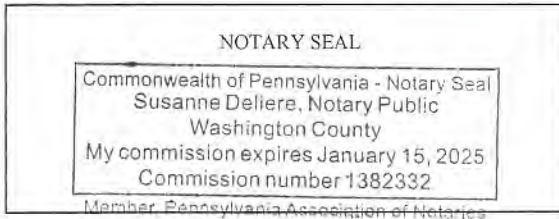
A handwritten signature in blue ink that reads "Amy L. Morris".

Amy L. Morris
Permitting Specialist – Appalachia Region

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 Boulevard, Plaza II, Suite 200</u>
By:	<u>Amy L. Morris <i>Amy L. Morris</i></u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Permitting Specialist - Appalachia Region</u>	Facsimile:	<u>724-338-2030</u>
Telephone:	<u>724-749-8388</u>	Email:	<u>amorris@tug-hillop.com</u>



Subscribed and sworn before me this 24th day of August, 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 deprivacyofficer@wv.gov.

RECEIVED
 Office of Oil and Gas
 SEP 01 2022
 WYDOWING
 Environmental Protection

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: 8/24/2022 **Date Permit Application Filed:** 8/25/2022

Notice of:

- 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: Alpine Farm, LLC (Well Pad and Access Road)
 Address: 7932 TWP Road 662
Dundee, OH 44624-9602
 Name: _____
 Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
 Name: Ray J. Miller
 Address: 1538 Township Road 660
Dundee, OH 44624
 Name: _____
 Address: _____

SURFACE OWNER(s) (Impoundments or Pits)
 Name: _____
 Address: _____

COAL OWNER OR LESSEE
 Name: Consol Energy, LLC Attn: Casey Saunders
 Address: 275 Technology Drive, Suite 101
Canonsburg, PA 15317-9565

COAL OPERATOR
 Name: _____
 Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
 Name: No water purveyors within 2000'
 Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
 Name: _____
 Address: _____

*Please attach additional forms if necessary

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting 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

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 57th St. SE
Charleston, WV 25304
(304) 926-0450

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.**

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.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a 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)

API NO. 47- 051 -
OPERATOR WELL NO. Pendleton S-2HM
Well Pad Name: Pendleton

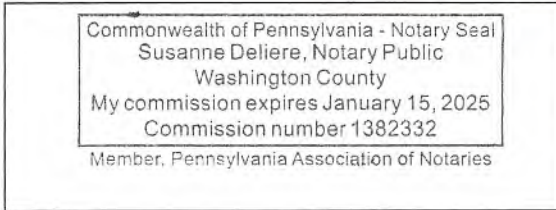
Notice is hereby given by:

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

Address: 380 Southpointe Boulevard, 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.



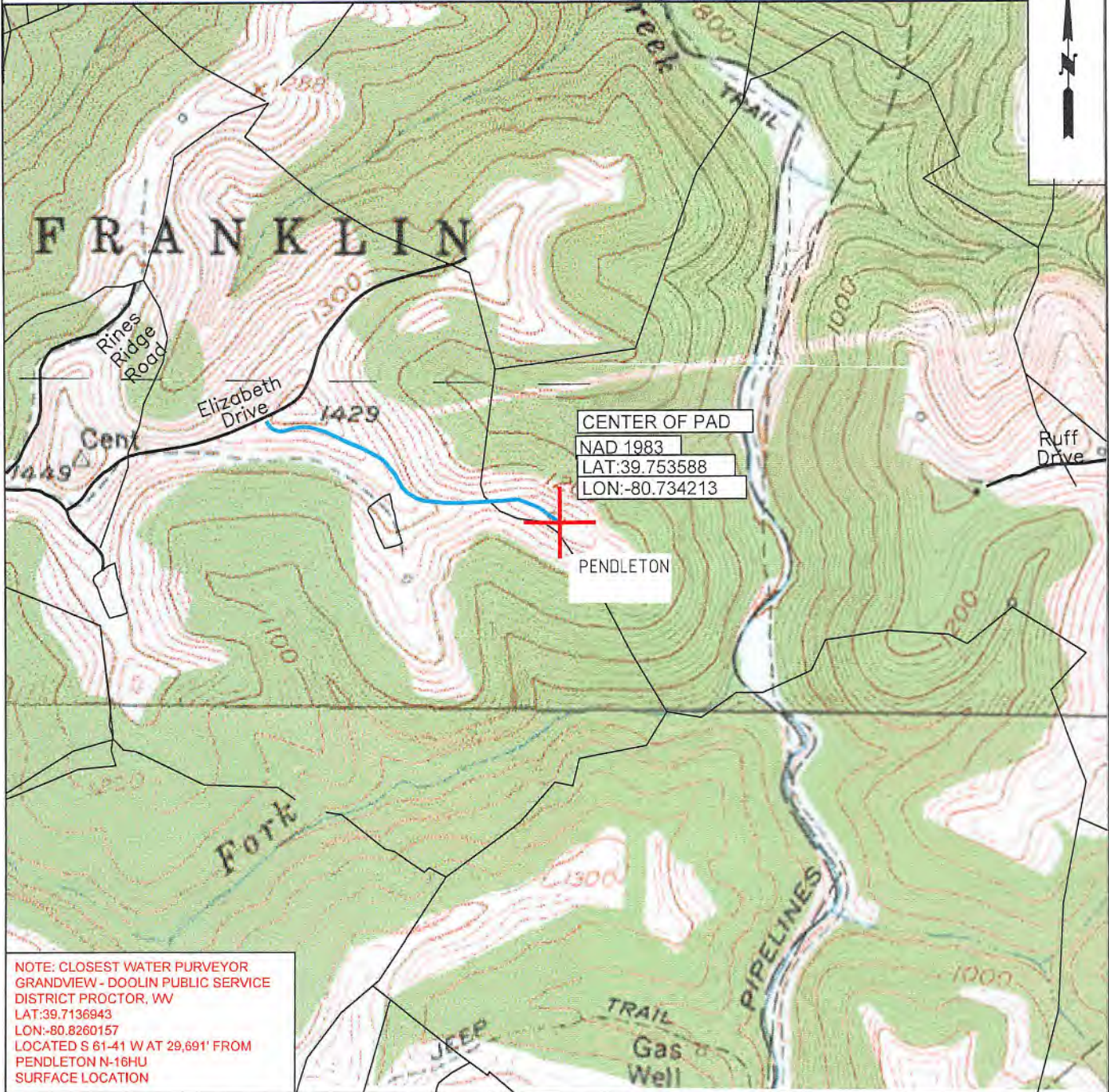
Subscribed and sworn before me this 24th day of August, 2022.

Susanne Deliere Notary Public


My Commission Expires 1/15/2025

Pendleton Pad

THERE APPEAR TO BE NO (0) RESIDENCES WITHIN 2,000'.



NOTE: CLOSEST WATER PURVEYOR
 GRANDVIEW - DOOLIN PUBLIC SERVICE
 DISTRICT PROCTOR, WV
 LAT: 39.7136943
 LON: -80.8260157
 LOCATED S 61-41 W AT 29,691' FROM
 PENDLETON N-16HU
 SURFACE LOCATION

 TUG HILL OPERATING	OPERATOR	494510851	TOPO SECTION	LEASE NAME
	TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		GLEN EASTON 7.5'	PENDLETON
			SCALE:	DATE:
			1" = 1000'	DATE: 03-15-2022

10/14/2022

**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: 07/14/2022 **Date Permit Application Filed:** 07/25/2022

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

- HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

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: Eli and Fannie Mae Wengerd (Well Pad and Access Road)
Address: 7932 TWP Road 662
Dundee, OH 44624-9602

Name: Ray J. Miller (Access Road)
Address: 1538 Township Road 660
Dundee, OH 44624

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: <u>West Virginia</u>	UTM NAD 83 Easting: <u>522,774.51</u>
County: <u>Marshall</u>	Northing: <u>4,400,437.25</u>
District: <u>Franklin</u>	Public Road Access: <u>Rines Ridge Road (County Route 76)</u>
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>Eli and Fannie Mae Wengerd</u>
Watershed: <u>Fish Creek</u>	

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting 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: 724-749-8388
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: ct-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.

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: 08/24/2022 **Date Permit Application Filed:** 08/25/2022

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.

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: Alpine Farm, LLC (Well Pad and Access Road)
Address: 7932 TWP Road 662
Dundee, OH 44624-9602

Name: Ray J. Miller (Access Road)
Address: 1538 Township Road 660
Dundee, OH 44624

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>522,774.51</u>
County:	<u>Marshall</u>		Northing:	<u>4,400,437.26</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Rines Ridge Road (County Route 76)</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>Alpine Farm, LLC</u>	
Watershed:	<u>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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

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

Address: 380 Southpointe Boulevard, 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.



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 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the Pendleton Pad, Marshall County
Pendleton S-2HM Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2010-0110 which has been issued to Tug Hill Operating LLC for access to the State Road for a well site located off Marshall County Route 76 SLS MP 1.91.

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,

A handwritten signature in blue ink that reads "Gary K. Clayton".

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



PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Pendleton 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



Pendleton Well Site

Site Design, Construction Plan, &
Erosion and Sediment Control Plans

Tug Hill Operating
Marshall County
Franklin District

Latitude 39.75358810°
Longitude -80.73421256°
Middle Fish Creek Watershed

Pertinent Site Information
Pendleton Site
Emergency Number: 304-843-1130
Franklin District, Marshall County, WV
Watershed: Middle Fish Creek Watershed
Site 911 Address:

Tug Hill Contact Number: 1-817-632-3400

Exhibit A: Final Design: Issue for Permitting

Property Owner Information - Pendleton Well Site
Franklin District, Marshall County

Owner	151 - 152	153 - 154	155 - 156	157 - 158	159 - 160	161 - 162	163 - 164	165 - 166	167 - 168	169 - 170
WV State Police	1.4	0.08	2.52	2.45	0.00	1.74	2.58	2.41	1.74	2.15
WV State Police	1.4	0.08	2.52	2.45	0.00	1.74	2.58	2.41	1.74	2.15
WV State Police	1.4	0.08	2.52	2.45	0.00	1.74	2.58	2.41	1.74	2.15
Total	4.2	0.16	7.56	7.35	0.00	5.22	7.65	7.22	5.22	6.45

OWNER	151-152	153-154	155-156	157-158	159-160	161-162	163-164	165-166	167-168	169-170
WV STATE POLICE	1.4	0.08	2.52	2.45	0.00	1.74	2.58	2.41	1.74	2.15
WV STATE POLICE	1.4	0.08	2.52	2.45	0.00	1.74	2.58	2.41	1.74	2.15
WV STATE POLICE	1.4	0.08	2.52	2.45	0.00	1.74	2.58	2.41	1.74	2.15
Total	4.2	0.16	7.56	7.35	0.00	5.22	7.65	7.22	5.22	6.45



WV State Plane Coordinate System
NAD 83
Horizontal Datum: NAD 83
Vertical Datum: NAVD 83
Units: Feet

OWNER	151-152	153-154	155-156	157-158	159-160	161-162	163-164	165-166	167-168	169-170
WV STATE POLICE	1.4	0.08	2.52	2.45	0.00	1.74	2.58	2.41	1.74	2.15
WV STATE POLICE	1.4	0.08	2.52	2.45	0.00	1.74	2.58	2.41	1.74	2.15
WV STATE POLICE	1.4	0.08	2.52	2.45	0.00	1.74	2.58	2.41	1.74	2.15
Total	4.2	0.16	7.56	7.35	0.00	5.22	7.65	7.22	5.22	6.45

Access Road

Station	Dist	Dist	Dist
Station	10+	10+	10+
Station	10+	10+	10+
Station	10+	10+	10+
Station	10+	10+	10+

Disturbed Area

Activity	Area	Area
Disturbed Area	100 sq ft	100 sq ft
Disturbed Area	100 sq ft	100 sq ft
Disturbed Area	100 sq ft	100 sq ft
Disturbed Area	100 sq ft	100 sq ft

Pendleton Well Site Quantities

Item	Quantity	Quantity	Quantity	Quantity	Quantity
Excavation	100 cu yd	100 cu yd	100 cu yd	100 cu yd	100 cu yd
Backfill	100 cu yd	100 cu yd	100 cu yd	100 cu yd	100 cu yd
Gravel	100 cu yd	100 cu yd	100 cu yd	100 cu yd	100 cu yd
Asphalt	100 cu yd	100 cu yd	100 cu yd	100 cu yd	100 cu yd
Concrete	100 cu yd	100 cu yd	100 cu yd	100 cu yd	100 cu yd

APPROVED WVDEP OOG
Updated
4/13/2022

Project Contacts

Site Observation
Ivanhoe White - Site Development Ltd
324-405-2000 Cell / 304-632-3300 Cell
Chris Starnes - Construction Manager
304-291-6100
Race - Shop - Construction Manager
304-291-6100

Site Design
Kurtis Smith - Tug Hill Operating
304-632-3400

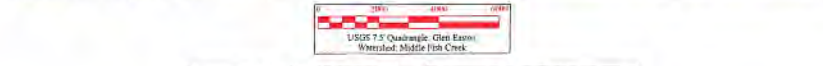
Site Inspection
WV State Police - 304-632-3400
WV State Police - 304-632-3400
WV State Police - 304-632-3400
WV State Police - 304-632-3400

Permitting (WVDEP)
The WVDEP (Division of Environmental Protection) is located at: WVDEP, P.O. Box 2015, Raleigh, North Carolina, NC 27602.

MISS UTILITY OF WEST VIRGINIA
1-800-244-8488
www.wvutilities.com

811
Know what's below. Call before you dig.

WVDEP Website: https://www.wvdeprules.com/

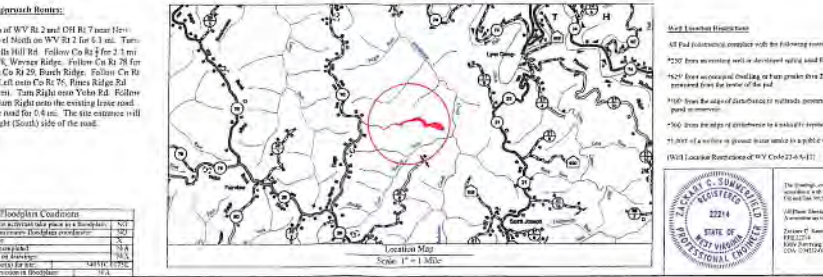


Site Location (CND 27)

Station	Latitude (NAD 83)	Longitude (WGS 84)
Center Point	39.75358810	-80.73421256
Corner of W of Lot	39.75358810	-80.73421256

Site Location (NAD 83)

Station	Latitude (NAD 83)	Longitude (WGS 84)
Center Point	39.75358810	-80.73421256
Corner of W of Lot	39.75358810	-80.73421256



Work Location Description

All field activities conducted within the following limits:

1. 50' from existing well in all directions unless otherwise approved.

2. 10' from existing well in all directions unless otherwise approved.

3. 10' from any existing well in all directions unless otherwise approved.

4. 10' from any existing well in all directions unless otherwise approved.

5. 10' from any existing well in all directions unless otherwise approved.

6. 10' from any existing well in all directions unless otherwise approved.

7. 10' from any existing well in all directions unless otherwise approved.

8. 10' from any existing well in all directions unless otherwise approved.

9. 10' from any existing well in all directions unless otherwise approved.

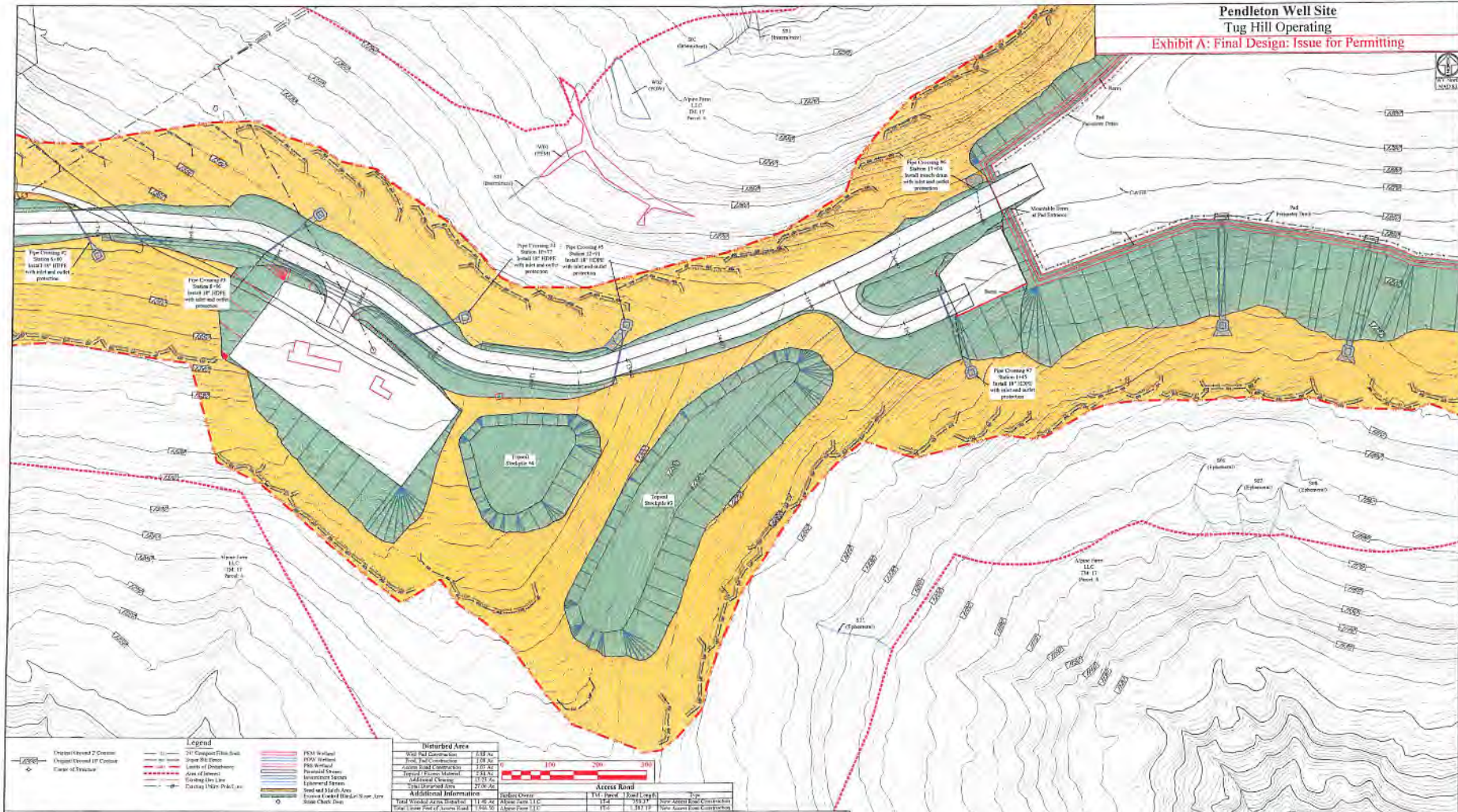
10. 10' from any existing well in all directions unless otherwise approved.

Disturbance Area

Activity	Area	Area
Disturbance Area	100 sq ft	100 sq ft
Disturbance Area	100 sq ft	100 sq ft
Disturbance Area	100 sq ft	100 sq ft
Disturbance Area	100 sq ft	100 sq ft

Cover Sheet
TUG HILL OPERATING
 THIS DOCUMENT PREPARED FOR TUG HILL OPERATING
 K&S Surveying
 2100 Marshall Avenue, Inc., Charleston, WV 25302
 Pendleton Well Site
 Franklin District
 Marshall County, WV
 Date: 02/15/2021
 Scale: As Shown
 Designed By: ZS
 Rev: 1 of 20

Pendleton Well Site
Tug Hill Operating
Exhibit A: Final Design: Issue for Permitting



Legend

- Orange Hatched 2' Contour
- Orange Hatched 10' Contour
- Orange Hatched 50' Contour
- 24\"/>

Disturbed Area

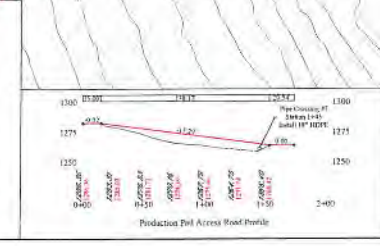
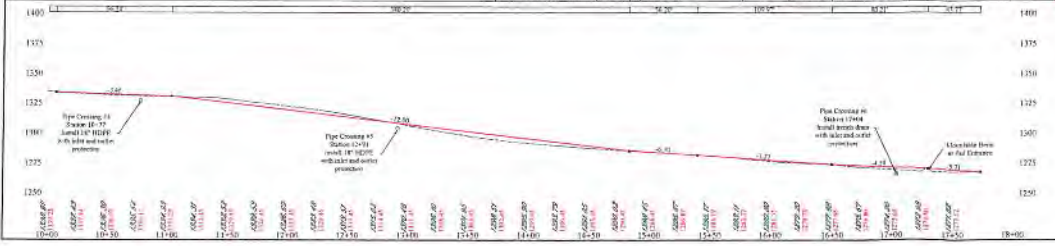
100' x 100' Disturbed Area	1.00 AC
100' x 200' Disturbed Area	2.00 AC
200' x 200' Disturbed Area	4.00 AC
200' x 300' Disturbed Area	6.00 AC
300' x 300' Disturbed Area	9.00 AC
300' x 400' Disturbed Area	12.00 AC
400' x 400' Disturbed Area	16.00 AC
400' x 500' Disturbed Area	20.00 AC
500' x 500' Disturbed Area	25.00 AC
500' x 600' Disturbed Area	30.00 AC
600' x 600' Disturbed Area	36.00 AC
600' x 700' Disturbed Area	42.00 AC
700' x 700' Disturbed Area	49.00 AC
700' x 800' Disturbed Area	56.00 AC
800' x 800' Disturbed Area	64.00 AC
800' x 900' Disturbed Area	72.00 AC
900' x 900' Disturbed Area	81.00 AC
900' x 1000' Disturbed Area	90.00 AC
1000' x 1000' Disturbed Area	100.00 AC

Access Road

10' Wide	1.00 AC
15' Wide	1.50 AC
20' Wide	2.00 AC
25' Wide	2.50 AC
30' Wide	3.00 AC
35' Wide	3.50 AC
40' Wide	4.00 AC
45' Wide	4.50 AC
50' Wide	5.00 AC
55' Wide	5.50 AC
60' Wide	6.00 AC
65' Wide	6.50 AC
70' Wide	7.00 AC
75' Wide	7.50 AC
80' Wide	8.00 AC
85' Wide	8.50 AC
90' Wide	9.00 AC
95' Wide	9.50 AC
100' Wide	10.00 AC

Additional Information

100' x 100' Disturbed Area	1.00 AC
100' x 200' Disturbed Area	2.00 AC
200' x 200' Disturbed Area	4.00 AC
200' x 300' Disturbed Area	6.00 AC
300' x 300' Disturbed Area	9.00 AC
300' x 400' Disturbed Area	12.00 AC
400' x 400' Disturbed Area	16.00 AC
400' x 500' Disturbed Area	20.00 AC
500' x 500' Disturbed Area	25.00 AC
500' x 600' Disturbed Area	30.00 AC
600' x 600' Disturbed Area	36.00 AC
600' x 700' Disturbed Area	42.00 AC
700' x 700' Disturbed Area	49.00 AC
700' x 800' Disturbed Area	56.00 AC
800' x 800' Disturbed Area	64.00 AC
800' x 900' Disturbed Area	72.00 AC
900' x 900' Disturbed Area	81.00 AC
900' x 1000' Disturbed Area	90.00 AC
1000' x 1000' Disturbed Area	100.00 AC



APPROVED
WVDEP OOG
 Updated
 4/13/2022

TUG HILL OPERATING

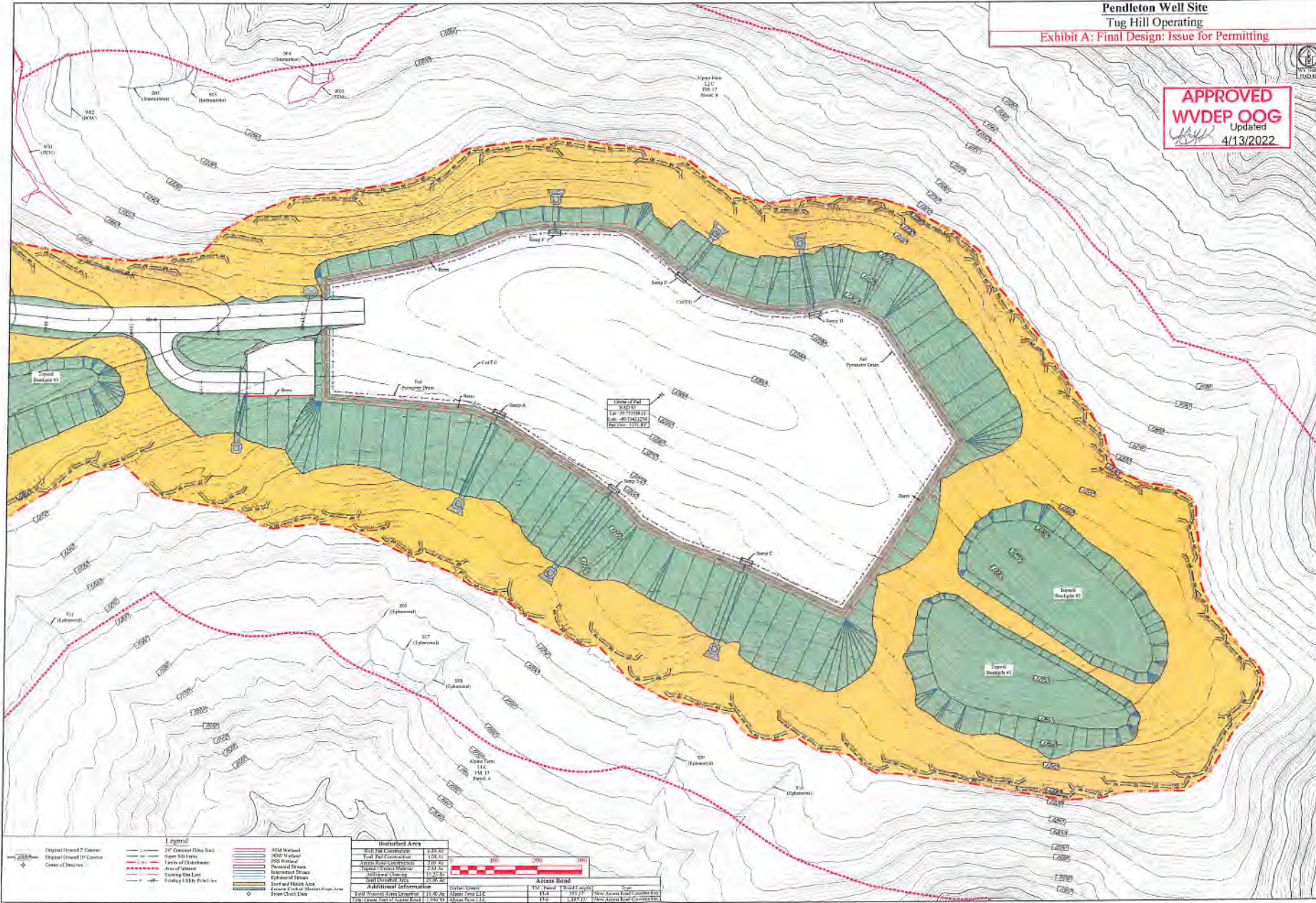
THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

Kelly S. Swann
 Project Engineer

Erosion and Sediment Control Plan
Pendleton Well Site
 Franklin District
 Marshall County, WV

Date: 10/19/2021
 Scale: As Shown
 Designed By: ZS
 Plo No.
 Sheet 7 of 20

APPROVED
WVDEP OOG
Updated
4/13/2022



TUG HILL OPERATING
 THIS DOCUMENT PREPARED FOR TUG HILL OPERATING
 K&S CONSULTANTS
 Erosion and Sediment Control Plan
 Pendleton Well Site
 Franklin District
 Marshall County, WV
 Date: 12/12/2021
 Scale: As Shown
 Drawn By: ZS
 Title No.
 Sheet 8 of 20