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west virginia department of environmental protection

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

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

Tuesday, May 11, 2021  
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 HUDSON S-10HM  
47-051-02381-00-00

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: HUDSON S-10HM  
Farm Name: CNX LAND LLC  
U.S. WELL NUMBER: 47-051-02381-00-00  
Horizontal 6A New Drill  
Date Issued: 5/11/2021

# PERMIT CONDITIONS

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

## CONDITIONS

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

API Number: \_\_\_\_\_

## PERMIT CONDITIONS

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

05/14/2021

WW-6B  
(04/15)

API NO. 47-051 -  
OPERATOR WELL NO. Hudson S-10HM  
Well Pad Name: Hudson

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

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

2) Operator's Well Number: Hudson S-10HM Well Pad Name: Hudson

3) Farm Name/Surface Owner: CNX Land, LLC Public Road Access: Roberts Ridge Road (CR 21)

4) Elevation, current ground: 1,346' Elevation, proposed post-construction: 1,346'

5) Well Type (a) Gas  Oil  Underground Storage

Other \_\_\_\_\_

(b) If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No Yes *Bony Steps 3-16-21*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus is the target formation at a depth of 6772' - 6824', thickness of 52' and anticipated pressure of approx. 3800 psi.

8) Proposed Total Vertical Depth: 6,924'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 20,159'

11) Proposed Horizontal Leg Length: 11,325.97'

12) Approximate Fresh Water Strata Depths: 70; 980'

13) Method to Determine Fresh Water Depths: Offset well reports or noticeable flow at the flowline or when need to start soaping

14) Approximate Saltwater Depths: 1,444'

15) Approximate Coal Seam Depths: Sewickley Coal - 888' and Pittsburgh Coal - 974'

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

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

(a) If Yes, provide Mine Info: Name: Marshall County Coal Co./Marshall County Mine  
Depth: Pittsburgh coal TVD - 974'; and 372' subsea level  
Seam: Pittsburgh  
Owner: Murray Energy / Consolidated Coal Company

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05/14/2021

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'	259^3(CTS)
Fresh Water	13 3/8"	NEW	J55	54.5#	1,080'	1,080'	1,100^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	1,080'	1,080'	1,100^3(CTS)
Intermediate	9 5/8"	NEW	J55	36#	3,077'	3,077'	1,017^3(CTS)
Production	5 1/2"	NEW	P110	20#	20,159'	20,159'	5,148 ^3(CTS)
Tubing	2 3/8"	NEW	N80	4.7#	8,117'		
Liners							

B.S. 3-16-21

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	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate	9 5/8"	12 1/4"	.352	3,520	2,816	SEE #24	1.19
Production	5 1/2"	8 7/8" _ 8 3/4"	.361	12,640	10,112	SEE #24	1.17/1.19
Tubing	2 3/8"		.19	11,200	8,960		
Liners							

PACKERS

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

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WW-6B  
(10/14)

API NO. 47-051 - 02381  
OPERATOR WELL NO. Hudson S-10HM  
Well Pad Name: Hudson

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.

*B.S. 3-16-21*

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

Well to be completed with approximately 28,310,000 lb proppant and 510,000 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 22.94 acres

22) Area to be disturbed for well pad only, less access road (acres): 6.18 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.

4705102381



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

#### Hudson S-10HM

#### Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	13 3/8"	J55	17 1/2"	1,080'	CTS
Intermediate	9 5/8"	J55	12 1/4"	3,077'	CTS
Production	5 1/2"	CYHP110	8 7/8 x 8 3/4"	20,159'	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 15.6 ppg, Y=1.19
- 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 15.2ppg, Y = 1.19

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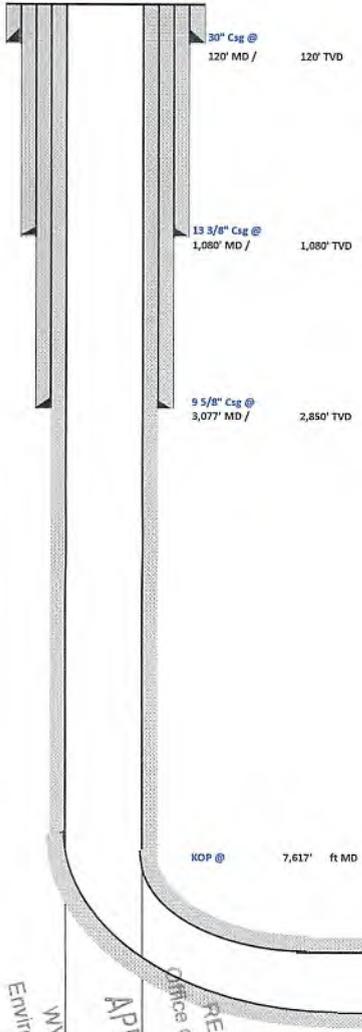


WELL NAME: Hudson S-10HM  
 STATE: WV COUNTY: Marshall  
 DISTRICT: Meade  
 DF Elev: 1,346' GL Elev: 1,346'  
 TD: 20,159'  
 TH Latitude: 39.828892  
 TH Longitude: -80.672621  
 BH Latitude: 39.810464  
 BH Longitude: -80.642611

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	980
Sewickley Coal	888
Pittsburgh Coal	974
Big Lime	2095
Weir	2516
Berea	2713
Gordon	2965
Rhinstreet	6093
Genesee/Burkett	6626
Tully	6659
Hamilton	6690
Marcellus	6772
Landing Depth	6805
Onondaga	6824
Pilot Hole Depth	6924

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	17.5	13 3/8	1,080'	1,080'	54.5	J55	Surface
Intermediate 1	12 1/4	9 5/8	3,077'	2,850'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	20,159'	7,004'	20	CYHP110	Surface

CEMENT SUMMARY			DRILLING DETAILS		
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,113	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	1,026	A	15	Air	1 Centralizer every other jt
Production	4,728	A	14.5	Air / SOBMM	1 every other Joint in lateral; 1 per Joint in curve; 1 every other jt to sfc



Landing Point @ 8,835' MD / 6,805' TVD  
 PH TD @ 6,924' TVD  
 PH TVD = 100' below Onondaga Top

Lateral TD @ 20,159' ft MD  
 7,004' ft TVD

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B.S. 3-10-21

4705102381



**TUG HILL**  
OPERATING

**Well: Hudson S-10 HM (slot I)**  
**Site: Hudson Alt North**  
**Project: Marshall County, West Virginia**  
**Design: rev5**

**Rig:**  
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
2	1301.75	0.00	0.00	1301.75	0.00	0.00	0.00	0.000	0.00	KOP Begin 3°/100' build
3	2766.23	43.93	31.49	2626.88	455.80	279.17	3.00	31.487	-63.52	Begin 43.93° tangent
4	7617.16	43.93	31.49	6120.19	3325.97	2037.12	0.00	0.000	-463.49	Begin 8°/100' build/turn
5	8277.28	50.00	106.04	6604.85	3461.10	2427.79	8.00	112.049	-240.73	Begin 10°/100' build/turn
6	8835.35	89.00	150.07	6805.20	3133.98	2802.54	10.00	57.151	256.11	Begin 89.00° lateral
7	20159.28	89.00	150.07	7003.75	-6677.96	8452.12	0.00	0.000	0771.88	PBHL/TD 20159.28 MD 7003.75 TVD

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Latitude	Longitude
Hudson 10HM LP r1	6805.00	3122.03	2794.37	39.83743728	-80.66262596
- plan misses target center by 13.04ft at 8841.62ft MD (6805.31 TVD, 3128.55 N, 2805.67 E)					
Hudson 10HM PBHL r5	7003.75	-6677.96	8452.12	39.81046400	-80.64261100
- 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 @ 1346.00ft

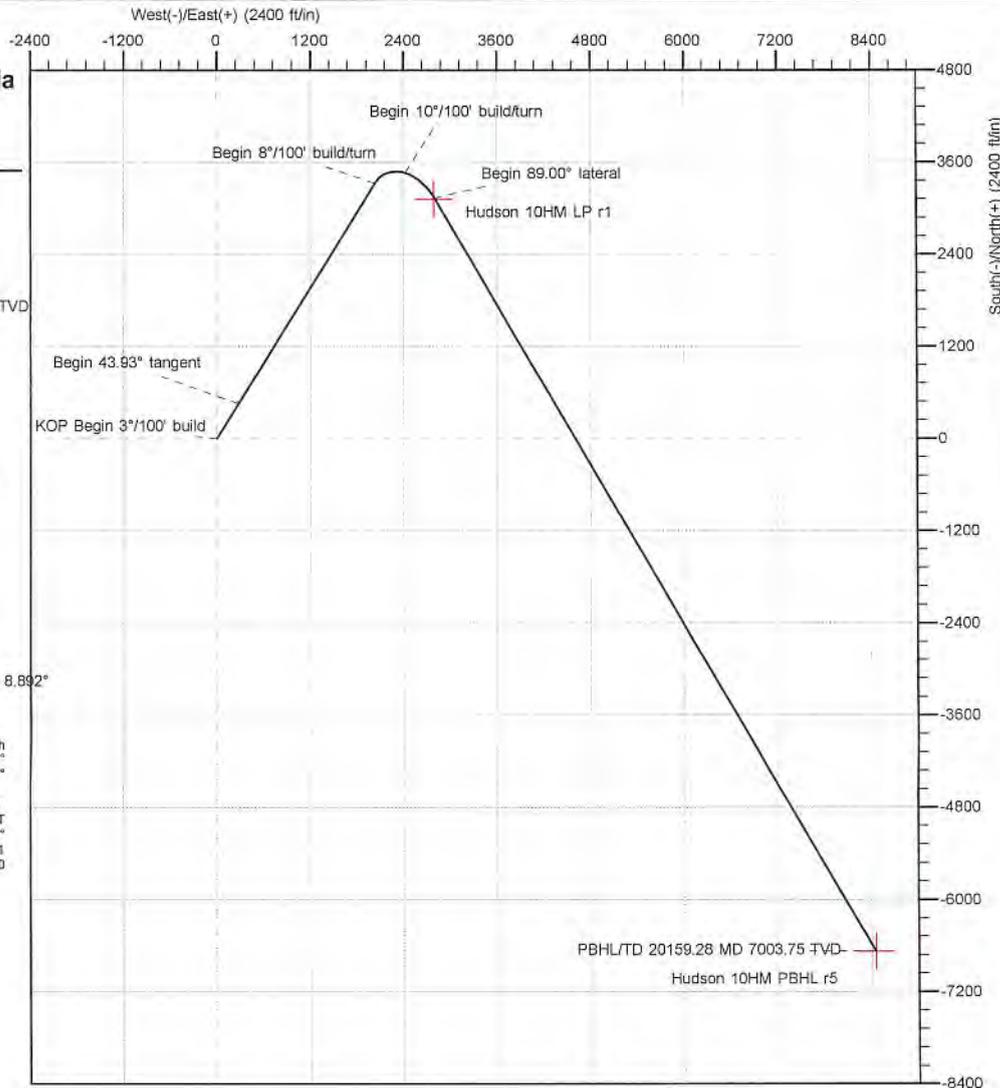
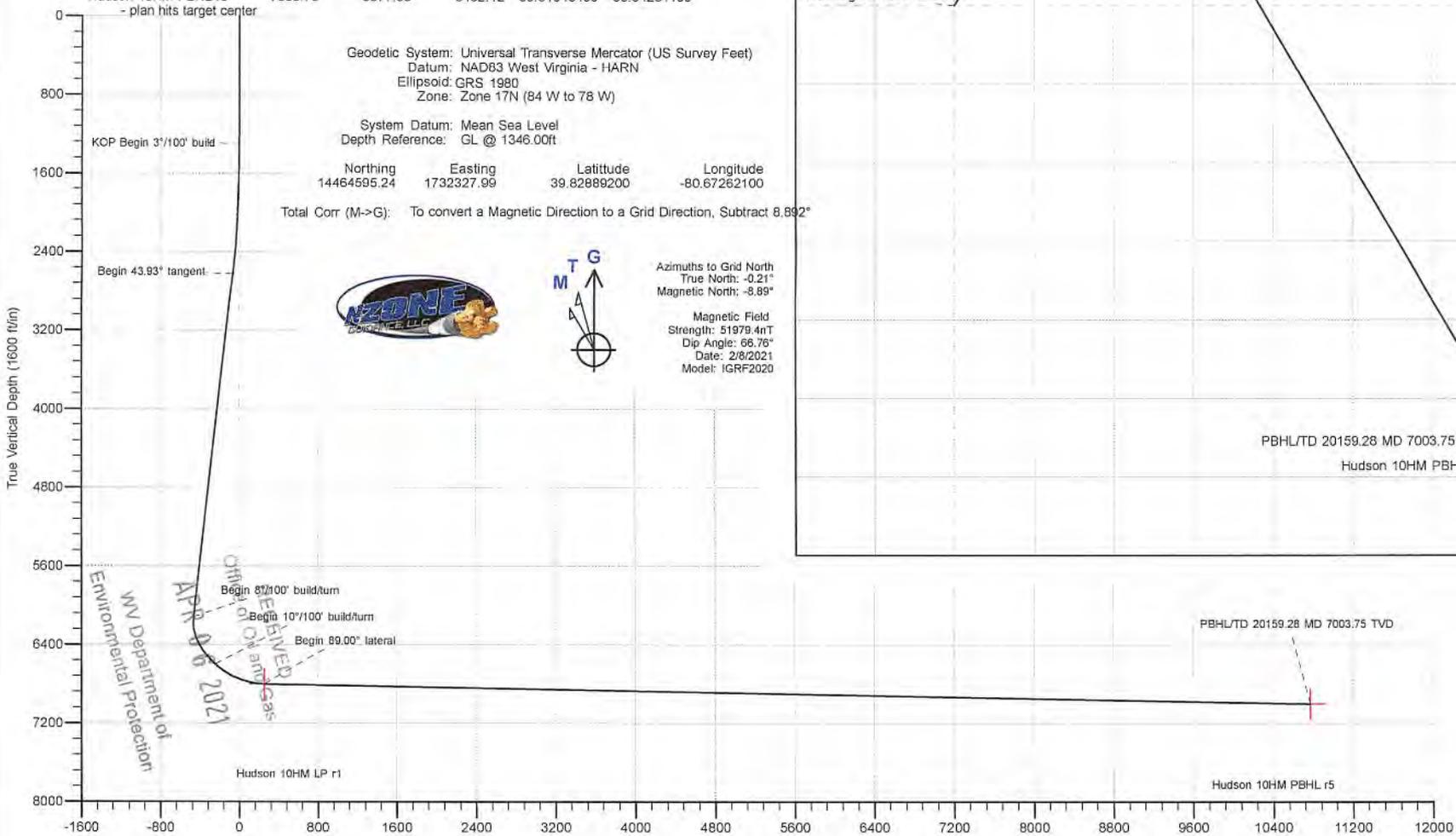
Northing	Easting	Latitude	Longitude
14464595.24	1732327.99	39.82889200	-80.67262100

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.892°



Azimuths to Grid North  
True North: -0.21°  
Magnetic North: -8.89°

Magnetic Field  
Strength: 51979.4nT  
Dip Angle: 66.76°  
Date: 2/8/2021  
Model: IGRF2020



Vertical Section at 128.31° (16000 ft/in)

4705102381

Planning Report - Geographic

<b>Database:</b>	Win10Lt_Dec2820_v16	<b>Local Co-ordinate Reference:</b>	Well Hudson S-10 HM (slot I)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 1346.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 1346.00ft
<b>Site:</b>	Hudson Alt North	<b>North Reference:</b>	Grid
<b>Well:</b>	Hudson S-10 HM (slot I)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev5		

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

<b>Site</b>	Hudson Alt North				
<b>Site Position:</b>		<b>Northing:</b>	14,464,552.10 usft	<b>Latitude:</b>	39.82877400
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,732,278.45 usft	<b>Longitude:</b>	-80.67279800
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "		

<b>Well</b>	Hudson S-10 HM (slot I)					
<b>Well Position</b>	<b>+N-S</b>	0.00 ft	<b>Northing:</b>	14,464,595.25 usft	<b>Latitude:</b>	39.82889200
	<b>+E-W</b>	0.00 ft	<b>Easting:</b>	1,732,327.99 usft	<b>Longitude:</b>	-80.67262100
<b>Position Uncertainty</b>	0.00 ft		<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	1,346.00 ft
<b>Grid Convergence:</b>	0.210 °					

<b>Wellbore</b>	Original Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	2/8/2021	-8.683	66.765	51,979.43530543

<b>Design</b>	rev5				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N-S (ft)</b>	<b>+E-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	128.31	

<b>Plan Survey Tool Program</b>	<b>Date</b>	2/19/2021			
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	20,159.24 rev5 (Original Hole)	MWD	MWD - Standard	

<b>Plan Sections</b>											
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N-S (ft)</b>	<b>+E-W (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,301.75	0.00	0.00	1,301.75	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
2,766.23	43.93	31.49	2,626.88	455.80	279.17	3.00	3.00	0.00	31.487		
7,617.16	43.93	31.49	6,120.19	3,325.97	2,037.12	0.00	0.00	0.00	0.000		
8,277.28	50.00	106.04	6,604.85	3,461.10	2,427.79	8.00	0.92	11.29	112.049		
8,835.36	89.00	150.07	6,805.20	3,133.98	2,802.54	10.00	6.99	7.89			
20,159.28	89.00	150.07	7,003.75	-6,677.96	8,452.12	0.00	0.00	0.00			

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Hudson 10HM PBHL  
APR 06 2021  
COMPASS 500016 Build 97  
WV Department of Environmental Protection  
05/14/2021

Planning Report - Geographic

Database:	Win10Lt_Dec2820_v16	Local Co-ordinate Reference:	Well Hudson S-10 HM (slot I)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1346.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1346.00ft
Site:	Hudson Alt North	North Reference:	Grid
Well:	Hudson S-10 HM (slot I)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev5		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
100.00	0.00	0.00	100.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
200.00	0.00	0.00	200.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
300.00	0.00	0.00	300.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
400.00	0.00	0.00	400.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
500.00	0.00	0.00	500.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
600.00	0.00	0.00	600.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
700.00	0.00	0.00	700.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
800.00	0.00	0.00	800.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
900.00	0.00	0.00	900.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
1,301.75	0.00	0.00	1,301.75	0.00	0.00	14,464,595.25	1,732,327.99	39.82889200	-80.67262100	
<b>KOP Begin 3°/100' build</b>										
1,400.00	2.95	31.49	1,399.96	2.15	1.32	14,464,597.40	1,732,329.31	39.82889791	-80.67261627	
1,500.00	5.95	31.49	1,499.64	8.77	5.37	14,464,604.01	1,732,333.36	39.82891602	-80.67260176	
1,600.00	8.95	31.49	1,598.79	19.82	12.14	14,464,615.07	1,732,340.12	39.82894631	-80.67257751	
1,700.00	11.95	31.49	1,697.12	35.28	21.61	14,464,630.53	1,732,349.59	39.82898867	-80.67254357	
1,800.00	14.95	31.49	1,794.37	55.11	33.75	14,464,650.36	1,732,361.74	39.82904301	-80.67250006	
1,900.00	17.95	31.49	1,890.26	79.25	48.54	14,464,674.50	1,732,376.53	39.82910916	-80.67244707	
2,000.00	20.95	31.49	1,984.55	107.64	65.93	14,464,702.89	1,732,393.91	39.82918694	-80.67238477	
2,100.00	23.95	31.49	2,076.96	140.20	85.87	14,464,735.45	1,732,413.86	39.82927615	-80.67231332	
2,200.00	26.95	31.49	2,167.25	176.84	108.31	14,464,772.08	1,732,436.30	39.82937654	-80.67223291	
2,300.00	29.95	31.49	2,255.16	217.45	133.19	14,464,812.70	1,732,461.17	39.82948783	-80.67214377	
2,400.00	32.95	31.49	2,340.47	261.94	160.43	14,464,857.18	1,732,488.42	39.82960973	-80.67204614	
2,500.00	35.95	31.49	2,422.92	310.17	189.97	14,464,905.42	1,732,517.96	39.82974188	-80.67194029	
2,600.00	38.95	31.49	2,502.30	362.01	221.73	14,464,957.26	1,732,549.71	39.82988394	-80.67182651	
2,700.00	41.95	31.49	2,578.39	417.33	255.61	14,465,012.58	1,732,583.59	39.83003551	-80.67170511	
2,766.23	43.93	31.49	2,626.88	455.80	279.17	14,465,051.05	1,732,607.16	39.83014093	-80.67162066	
<b>Begin 43.93° tangent</b>										
2,800.00	43.93	31.49	2,651.19	475.78	291.41	14,465,071.03	1,732,619.40	39.83019568	-80.67157682	
2,900.00	43.93	31.49	2,723.21	534.95	327.65	14,465,130.20	1,732,655.64	39.83035780	-80.67144696	
3,000.00	43.93	31.49	2,795.22	594.12	363.89	14,465,189.36	1,732,691.88	39.83051992	-80.67131710	
3,100.00	43.93	31.49	2,867.24	653.29	400.13	14,465,248.53	1,732,728.12	39.83068204	-80.67118725	
3,200.00	43.93	31.49	2,939.25	712.45	436.37	14,465,307.70	1,732,764.35	39.83084416	-80.67105739	
3,300.00	43.93	31.49	3,011.26	771.62	472.61	14,465,366.87	1,732,800.59	39.83100628	-80.67092753	
3,400.00	43.93	31.49	3,083.28	830.79	508.85	14,465,426.03	1,732,836.83	39.83116840	-80.67079767	
3,500.00	43.93	31.49	3,155.29	889.95	545.09	14,465,485.20	1,732,873.07	39.83133052	-80.67066781	
3,600.00	43.93	31.49	3,227.30	949.12	581.33	14,465,544.37	1,732,909.31	39.83149264	-80.67053796	
3,700.00	43.93	31.49	3,299.32	1,008.29	617.57	14,465,603.54	1,732,945.55	39.83165476	-80.67040810	
3,800.00	43.93	31.49	3,371.33	1,067.46	653.81	14,465,662.70	1,732,981.79	39.83181688	-80.67027823	
3,900.00	43.93	31.49	3,443.34	1,126.62	690.05	14,465,721.87	1,733,018.03	39.83197900	-80.67014837	
4,000.00	43.93	31.49	3,515.36	1,185.79	726.28	14,465,781.04	1,733,054.27	39.83214112	-80.67001851	
4,100.00	43.93	31.49	3,587.37	1,244.96	762.52	14,465,840.20	1,733,090.51	39.83230324	-80.66988865	
4,200.00	43.93	31.49	3,659.38	1,304.13	798.76	14,465,899.37	1,733,126.75	39.83246536	-80.66975878	
4,300.00	43.93	31.49	3,731.40	1,363.29	835.00	14,465,958.54	1,733,162.99	39.83262748	-80.66962892	
4,400.00	43.93	31.49	3,803.41	1,422.46	871.24	14,466,017.71	1,733,199.23	39.83278960	-80.66949906	
4,500.00	43.93	31.49	3,875.42	1,481.63	907.48	14,466,076.87	1,733,235.47	39.83295172	-80.66936919	
4,600.00	43.93	31.49	3,947.44	1,540.80	943.72	14,466,136.04	1,733,271.71	39.83311384	-80.66923933	
4,700.00	43.93	31.49	4,019.45	1,599.96	979.96	14,466,195.21	1,733,307.94	39.83327596	-80.66910946	
4,800.00	43.93	31.49	4,091.46	1,659.13	1,016.20	14,466,254.38	1,733,344.18	39.83343807	-80.66897959	
4,900.00	43.93	31.49	4,163.48	1,718.30	1,052.44	14,466,313.54	1,733,380.42	39.83360019	-80.66884972	

Planning Report - Geographic

Database: Win10Lt\_Dec2820\_v16  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: Hudson Alt North  
 Well: Hudson S-10 HM (slot I)  
 Wellbore: Original Hole  
 Design: rev5

Local Co-ordinate Reference: Well Hudson S-10 HM (slot I)  
 TVD Reference: GL @ 1346.00ft  
 MD Reference: GL @ 1346.00ft  
 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
5,000.00	43.93	31.49	4,235.49	1,777.47	1,088.68	14,466,372.71	1,733,416.66	39.83376231	-80.66871986
5,100.00	43.93	31.49	4,307.50	1,836.63	1,124.92	14,466,431.88	1,733,452.90	39.83392443	-80.66858999
5,200.00	43.93	31.49	4,379.52	1,895.80	1,161.16	14,466,491.04	1,733,489.14	39.83408655	-80.66846012
5,300.00	43.93	31.49	4,451.53	1,954.97	1,197.40	14,466,550.21	1,733,525.38	39.83424866	-80.66833025
5,400.00	43.93	31.49	4,523.54	2,014.13	1,233.64	14,466,609.38	1,733,561.62	39.83441078	-80.66820038
5,500.00	43.93	31.49	4,595.56	2,073.30	1,269.88	14,466,668.55	1,733,597.86	39.83457290	-80.66807051
5,600.00	43.93	31.49	4,667.57	2,132.47	1,306.12	14,466,727.71	1,733,634.10	39.83473502	-80.66794063
5,700.00	43.93	31.49	4,739.58	2,191.64	1,342.35	14,466,786.88	1,733,670.34	39.83489713	-80.66781076
5,800.00	43.93	31.49	4,811.60	2,250.80	1,378.59	14,466,846.05	1,733,706.58	39.83505925	-80.66768089
5,900.00	43.93	31.49	4,883.61	2,309.97	1,414.83	14,466,905.22	1,733,742.82	39.83522137	-80.66755101
6,000.00	43.93	31.49	4,955.62	2,369.14	1,451.07	14,466,964.38	1,733,779.06	39.83538348	-80.66742114
6,100.00	43.93	31.49	5,027.64	2,428.31	1,487.31	14,467,023.55	1,733,815.29	39.83554560	-80.66729126
6,200.00	43.93	31.49	5,099.65	2,487.47	1,523.55	14,467,082.72	1,733,851.53	39.83570772	-80.66716139
6,300.00	43.93	31.49	5,171.66	2,546.64	1,559.79	14,467,141.88	1,733,887.77	39.83586983	-80.66703151
6,400.00	43.93	31.49	5,243.68	2,605.81	1,596.03	14,467,201.05	1,733,924.01	39.83603195	-80.66690164
6,500.00	43.93	31.49	5,315.69	2,664.98	1,632.27	14,467,260.22	1,733,960.25	39.83619406	-80.66677176
6,600.00	43.93	31.49	5,387.70	2,724.14	1,668.51	14,467,319.39	1,733,996.49	39.83635618	-80.66664188
6,700.00	43.93	31.49	5,459.72	2,783.31	1,704.75	14,467,378.55	1,734,032.73	39.83651830	-80.66651200
6,800.00	43.93	31.49	5,531.73	2,842.48	1,740.99	14,467,437.72	1,734,068.97	39.83668041	-80.66638212
6,900.00	43.93	31.49	5,603.74	2,901.65	1,777.23	14,467,496.89	1,734,105.21	39.83684253	-80.66625224
7,000.00	43.93	31.49	5,675.76	2,960.81	1,813.47	14,467,556.05	1,734,141.45	39.83700464	-80.66612236
7,100.00	43.93	31.49	5,747.77	3,019.98	1,849.71	14,467,615.22	1,734,177.69	39.83716676	-80.66599248
7,200.00	43.93	31.49	5,819.78	3,079.15	1,885.95	14,467,674.39	1,734,213.93	39.83732887	-80.66586260
7,300.00	43.93	31.49	5,891.80	3,138.31	1,922.18	14,467,733.56	1,734,250.17	39.83749099	-80.66573272
7,400.00	43.93	31.49	5,963.81	3,197.48	1,958.42	14,467,792.72	1,734,286.41	39.83765310	-80.66560283
7,500.00	43.93	31.49	6,035.82	3,256.65	1,994.66	14,467,851.89	1,734,322.65	39.83781521	-80.66547295
7,600.00	43.93	31.49	6,107.84	3,315.82	2,030.90	14,467,911.06	1,734,358.88	39.83797733	-80.66534307
7,617.16	43.93	31.49	6,120.19	3,325.97	2,037.12	14,467,921.21	1,734,365.10	39.83800514	-80.66532078
<b>Begin 8°/100' build/tum</b>									
7,700.00	41.81	40.72	6,180.96	3,371.45	2,070.18	14,467,966.70	1,734,398.16	39.83812972	-80.66520240
7,800.00	40.31	52.70	6,256.49	3,416.39	2,117.73	14,468,011.63	1,734,445.72	39.83825263	-80.66503241
7,900.00	40.10	65.10	6,332.98	3,449.61	2,172.77	14,468,044.85	1,734,500.75	39.83834328	-80.66483592
8,000.00	41.20	77.28	6,408.97	3,470.45	2,234.21	14,468,065.69	1,734,562.19	39.83839990	-80.66461677
8,100.00	43.52	88.66	6,482.97	3,478.52	2,300.86	14,468,073.76	1,734,628.85	39.83842138	-80.66437921
8,200.00	46.85	98.92	6,553.54	3,473.66	2,371.44	14,468,068.90	1,734,699.42	39.83840730	-80.66412787
8,277.28	50.00	106.04	6,604.85	3,461.10	2,427.79	14,468,056.34	1,734,755.77	39.83837222	-80.66392729
<b>Begin 10°/100' build/tum</b>									
8,300.00	51.26	108.49	6,619.26	3,455.89	2,444.56	14,468,051.13	1,734,772.54	39.83835773	-80.66386763
8,400.00	57.33	118.29	6,677.69	3,423.49	2,518.80	14,468,018.73	1,734,846.78	39.83826800	-80.66360360
8,500.00	64.07	126.78	6,726.67	3,376.51	2,592.06	14,467,971.75	1,734,920.04	39.83813821	-80.66334323
8,600.00	71.24	134.32	6,764.72	3,316.36	2,662.13	14,467,911.60	1,734,990.11	39.83797231	-80.66309444
8,700.00	78.69	141.23	6,790.67	3,244.88	2,726.87	14,467,840.12	1,735,054.85	39.83777533	-80.66286478
8,800.00	86.29	147.79	6,803.75	3,164.23	2,784.31	14,467,759.47	1,735,112.29	39.83755327	-80.66266122
8,835.35	88.99	150.07	6,805.20	3,133.98	2,802.54	14,467,729.22	1,735,130.52	39.83747001	-80.66259670
<b>Begin 89.00° lateral</b>									
8,900.00	89.00	150.07	6,806.33	3,077.96	2,834.79	14,467,673.21	1,735,162.77	39.83731584	-80.66248256
9,000.00	89.00	150.07	6,808.09	2,991.32	2,884.69	14,467,586.56	1,735,212.67	39.83707737	-80.66230600
9,100.00	89.00	150.07	6,809.84	2,904.67	2,934.58	14,467,499.91	1,735,262.56	39.83683890	-80.66212944
9,200.00	89.00	150.07	6,811.59	2,818.02	2,984.47	14,467,413.26	1,735,312.45	39.83660042	-80.66195289
9,300.00	89.00	150.07	6,813.35	2,731.37	3,034.36	14,467,326.62	1,735,362.34	39.83636195	-80.66177633
9,400.00	89.00	150.07	6,815.10	2,644.73	3,084.25	14,467,239.97	1,735,412.23	39.83612845	-80.66159978
9,500.00	89.00	150.07	6,816.85	2,558.08	3,134.14	14,467,153.32	1,735,462.12	39.83588501	-80.66142323
9,600.00	89.00	150.07	6,818.61	2,471.43	3,184.03	14,467,066.67	1,735,512.01	39.83564654	-80.66124668
9,700.00	89.00	150.07	6,820.36	2,384.78	3,233.92	14,466,980.03	1,735,561.90	39.83540806	-80.66107013

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 Office of Oil and Gas  
 APR 06 2021

Planning Report - Geographic

Database: Win10Lt\_Dec2820\_v16  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: Hudson Alt North  
 Well: Hudson S-10 HM (slot I)  
 Wellbore: Original Hole  
 Design: rev5

Local Co-ordinate Reference: Well Hudson S-10 HM (slot I)  
 TVD Reference: GL @ 1346.00ft  
 MD Reference: GL @ 1346.00ft  
 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
9,800.00	89.00	150.07	6,822.11	2,298.13	3,283.81	14,466,893.38	1,735,611.79	39.83516959	-80.66089358
9,900.00	89.00	150.07	6,823.87	2,211.49	3,333.70	14,466,806.73	1,735,661.68	39.83493112	-80.66071703
10,000.00	89.00	150.07	6,825.62	2,124.84	3,383.59	14,466,720.08	1,735,711.57	39.83469264	-80.66054048
10,100.00	89.00	150.07	6,827.37	2,038.19	3,433.48	14,466,633.43	1,735,761.46	39.83445417	-80.66036394
10,200.00	89.00	150.07	6,829.13	1,951.54	3,483.37	14,466,546.79	1,735,811.35	39.83421569	-80.66018739
10,300.00	89.00	150.07	6,830.88	1,864.89	3,533.26	14,466,460.14	1,735,861.24	39.83397722	-80.66001085
10,400.00	89.00	150.07	6,832.63	1,778.25	3,583.15	14,466,373.49	1,735,911.13	39.83373874	-80.65983431
10,500.00	89.00	150.07	6,834.39	1,691.60	3,633.04	14,466,286.84	1,735,961.02	39.83350027	-80.65965777
10,600.00	89.00	150.07	6,836.14	1,604.95	3,682.93	14,466,200.20	1,736,010.91	39.83326179	-80.65948123
10,700.00	89.00	150.07	6,837.89	1,518.30	3,732.83	14,466,113.55	1,736,060.80	39.83302332	-80.65930469
10,800.00	89.00	150.07	6,839.65	1,431.66	3,782.72	14,466,026.90	1,736,110.69	39.83278484	-80.65912816
10,900.00	89.00	150.07	6,841.40	1,345.01	3,832.61	14,465,940.25	1,736,160.58	39.83254637	-80.65895162
11,000.00	89.00	150.07	6,843.15	1,258.36	3,882.50	14,465,853.61	1,736,210.48	39.83230789	-80.65877509
11,100.00	89.00	150.07	6,844.91	1,171.71	3,932.39	14,465,766.96	1,736,260.37	39.83206941	-80.65859855
11,200.00	89.00	150.07	6,846.66	1,085.06	3,982.28	14,465,680.31	1,736,310.26	39.83183094	-80.65842202
11,300.00	89.00	150.07	6,848.41	998.42	4,032.17	14,465,593.66	1,736,360.15	39.83159246	-80.65824549
11,400.00	89.00	150.07	6,850.17	911.77	4,082.06	14,465,507.01	1,736,410.04	39.83135398	-80.65806896
11,500.00	89.00	150.07	6,851.92	825.12	4,131.95	14,465,420.37	1,736,459.93	39.83111550	-80.65789244
11,600.00	89.00	150.07	6,853.67	738.47	4,181.84	14,465,333.72	1,736,509.82	39.83087702	-80.65771591
11,700.00	89.00	150.07	6,855.43	651.82	4,231.73	14,465,247.07	1,736,559.71	39.83063855	-80.65753938
11,800.00	89.00	150.07	6,857.18	565.18	4,281.62	14,465,160.42	1,736,609.60	39.83040007	-80.65736286
11,900.00	89.00	150.07	6,858.93	478.53	4,331.51	14,465,073.78	1,736,659.49	39.83016159	-80.65718634
12,000.00	89.00	150.07	6,860.69	391.88	4,381.40	14,464,987.13	1,736,709.38	39.82992311	-80.65700981
12,100.00	89.00	150.07	6,862.44	305.23	4,431.29	14,464,900.48	1,736,759.27	39.82968463	-80.65683329
12,200.00	89.00	150.07	6,864.19	218.59	4,481.18	14,464,813.83	1,736,809.16	39.82944615	-80.65665677
12,300.00	89.00	150.07	6,865.95	131.94	4,531.08	14,464,727.19	1,736,859.05	39.82920767	-80.65648026
12,400.00	89.00	150.07	6,867.70	45.29	4,580.97	14,464,640.54	1,736,908.94	39.82896919	-80.65630374
12,500.00	89.00	150.07	6,869.45	-41.36	4,630.86	14,464,553.89	1,736,958.83	39.82873071	-80.65612722
12,600.00	89.00	150.07	6,871.21	-128.01	4,680.75	14,464,467.24	1,737,008.72	39.82849223	-80.65595071
12,700.00	89.00	150.07	6,872.96	-214.65	4,730.64	14,464,380.59	1,737,058.61	39.82825375	-80.65577419
12,800.00	89.00	150.07	6,874.71	-301.30	4,780.53	14,464,293.95	1,737,108.50	39.82801526	-80.65559768
12,900.00	89.00	150.07	6,876.47	-387.95	4,830.42	14,464,207.30	1,737,158.39	39.82777678	-80.65542117
13,000.00	89.00	150.07	6,878.22	-474.60	4,880.31	14,464,120.65	1,737,208.29	39.82753830	-80.65524466
13,100.00	89.00	150.07	6,879.97	-561.25	4,930.20	14,464,034.00	1,737,258.18	39.82729982	-80.65506815
13,200.00	89.00	150.07	6,881.73	-647.89	4,980.09	14,463,947.36	1,737,308.07	39.82706134	-80.65489165
13,300.00	89.00	150.07	6,883.48	-734.54	5,029.98	14,463,860.71	1,737,357.96	39.82682285	-80.65471514
13,400.00	89.00	150.07	6,885.23	-821.19	5,079.87	14,463,774.06	1,737,407.85	39.82658437	-80.65453864
13,500.00	89.00	150.07	6,886.99	-907.84	5,129.76	14,463,687.41	1,737,457.74	39.82634589	-80.65436213
13,600.00	89.00	150.07	6,888.74	-994.48	5,179.65	14,463,600.77	1,737,507.63	39.82610740	-80.65418563
13,700.00	89.00	150.07	6,890.49	-1,081.13	5,229.54	14,463,514.12	1,737,557.52	39.82586892	-80.65400913
13,800.00	89.00	150.07	6,892.25	-1,167.78	5,279.43	14,463,427.47	1,737,607.41	39.82563044	-80.65383263
13,900.00	89.00	150.07	6,894.00	-1,254.43	5,329.32	14,463,340.82	1,737,657.30	39.82539195	-80.65365613
14,000.00	89.00	150.07	6,895.76	-1,341.08	5,379.22	14,463,254.17	1,737,707.19	39.82515347	-80.65347963
14,100.00	89.00	150.07	6,897.51	-1,427.72	5,429.11	14,463,167.53	1,737,757.08	39.82491498	-80.65330314
14,200.00	89.00	150.07	6,899.26	-1,514.37	5,479.00	14,463,080.88	1,737,806.97	39.82467650	-80.65312664
14,300.00	89.00	150.07	6,901.02	-1,601.02	5,528.89	14,462,994.23	1,737,856.86	39.82443801	-80.65295015
14,400.00	89.00	150.07	6,902.77	-1,687.67	5,578.78	14,462,907.58	1,737,906.75	39.82419952	-80.65277365
14,500.00	89.00	150.07	6,904.52	-1,774.32	5,628.67	14,462,820.94	1,737,956.64	39.82396104	-80.65259716
14,600.00	89.00	150.07	6,906.28	-1,860.96	5,678.56	14,462,734.29	1,738,006.53	39.82372255	-80.65242067
14,700.00	89.00	150.07	6,908.03	-1,947.61	5,728.45	14,462,647.64	1,738,056.42	39.82348407	-80.65224418
14,800.00	89.00	150.07	6,909.78	-2,034.26	5,778.34	14,462,560.99	1,738,106.31	39.82324558	-80.65206769
14,900.00	89.00	150.07	6,911.54	-2,120.91	5,828.23	14,462,474.35	1,738,156.21	39.82300709	-80.65189121
15,000.00	89.00	150.07	6,913.29	-2,207.56	5,878.12	14,462,387.70	1,738,206.10	39.82276860	-80.65171472
15,100.00	89.00	150.07	6,915.04	-2,294.20	5,928.01	14,462,301.05	1,738,255.99	39.82253012	-80.65153824
15,200.00	89.00	150.07	6,916.80	-2,380.85	5,977.90	14,462,214.40	1,738,305.88	39.82229163	-80.65136176

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 APR 06 2021

Planning Report - Geographic

Database: Win10Lt\_Dec2820\_v16  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: Hudson Alt North  
 Well: Hudson S-10 HM (slot I)  
 Wellbore: Original Hole  
 Design: rev5

Local Co-ordinate Reference: Well Hudson S-10 HM (slot I)  
 TVD Reference: GL @ 1346.00ft  
 MD Reference: GL @ 1346.00ft  
 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	
15,300.00	89.00	150.07	6,918.55	-2,467.50	6,027.79	14,462,127.75	1,738,355.77	39.82205314	-80.65118527	
15,400.00	89.00	150.07	6,920.30	-2,554.15	6,077.68	14,462,041.11	1,738,405.66	39.82181465	-80.65100879	
15,500.00	89.00	150.07	6,922.06	-2,640.79	6,127.57	14,461,954.46	1,738,455.55	39.82157616	-80.65083231	
15,600.00	89.00	150.07	6,923.81	-2,727.44	6,177.47	14,461,867.81	1,738,505.44	39.82133767	-80.65065584	
15,700.00	89.00	150.07	6,925.56	-2,814.09	6,227.36	14,461,781.16	1,738,555.33	39.82109918	-80.65047936	
15,800.00	89.00	150.07	6,927.32	-2,900.74	6,277.25	14,461,694.52	1,738,605.22	39.82086069	-80.65030288	
15,900.00	89.00	150.07	6,929.07	-2,987.39	6,327.14	14,461,607.87	1,738,655.11	39.82062220	-80.65012641	
16,000.00	89.00	150.07	6,930.82	-3,074.03	6,377.03	14,461,521.22	1,738,705.00	39.82038371	-80.64994994	
16,100.00	89.00	150.07	6,932.58	-3,160.68	6,426.92	14,461,434.57	1,738,754.89	39.82014522	-80.64977346	
16,200.00	89.00	150.07	6,934.33	-3,247.33	6,476.81	14,461,347.92	1,738,804.78	39.81990673	-80.64959699	
16,300.00	89.00	150.07	6,936.08	-3,333.98	6,526.70	14,461,261.28	1,738,854.67	39.81966824	-80.64942052	
16,400.00	89.00	150.07	6,937.84	-3,420.63	6,576.59	14,461,174.63	1,738,904.56	39.81942975	-80.64924406	
16,500.00	89.00	150.07	6,939.59	-3,507.27	6,626.48	14,461,087.98	1,738,954.45	39.81919126	-80.64906759	
16,600.00	89.00	150.07	6,941.34	-3,593.92	6,676.37	14,461,001.33	1,739,004.34	39.81895277	-80.64889112	
16,700.00	89.00	150.07	6,943.10	-3,680.57	6,726.26	14,460,914.69	1,739,054.23	39.81871427	-80.64871466	
16,800.00	89.00	150.07	6,944.85	-3,767.22	6,776.15	14,460,828.04	1,739,104.12	39.81847578	-80.64853819	
16,900.00	89.00	150.07	6,946.60	-3,853.86	6,826.04	14,460,741.39	1,739,154.02	39.81823729	-80.64836173	
17,000.00	89.00	150.07	6,948.36	-3,940.51	6,875.93	14,460,654.74	1,739,203.91	39.81799880	-80.64818527	
17,100.00	89.00	150.07	6,950.11	-4,027.16	6,925.82	14,460,568.10	1,739,253.80	39.81776030	-80.64800881	
17,200.00	89.00	150.07	6,951.86	-4,113.81	6,975.71	14,460,481.45	1,739,303.69	39.81752181	-80.64783235	
17,300.00	89.00	150.07	6,953.62	-4,200.46	7,025.61	14,460,394.80	1,739,353.58	39.81728332	-80.64765589	
17,400.00	89.00	150.07	6,955.37	-4,287.10	7,075.50	14,460,308.15	1,739,403.47	39.81704482	-80.64747944	
17,500.00	89.00	150.07	6,957.12	-4,373.75	7,125.39	14,460,221.50	1,739,453.36	39.81680633	-80.64730298	
17,600.00	89.00	150.07	6,958.88	-4,460.40	7,175.28	14,460,134.86	1,739,503.25	39.81656783	-80.64712653	
17,700.00	89.00	150.07	6,960.63	-4,547.05	7,225.17	14,460,048.21	1,739,553.14	39.81632934	-80.64695008	
17,800.00	89.00	150.07	6,962.38	-4,633.70	7,275.06	14,459,961.56	1,739,603.03	39.81609084	-80.64677363	
17,900.00	89.00	150.07	6,964.14	-4,720.34	7,324.95	14,459,874.91	1,739,652.92	39.81585235	-80.64659718	
18,000.00	89.00	150.07	6,965.89	-4,806.99	7,374.84	14,459,788.27	1,739,702.81	39.81561385	-80.64642073	
18,100.00	89.00	150.07	6,967.64	-4,893.64	7,424.73	14,459,701.62	1,739,752.70	39.81537536	-80.64624428	
18,200.00	89.00	150.07	6,969.40	-4,980.29	7,474.62	14,459,614.97	1,739,802.59	39.81513686	-80.64606783	
18,300.00	89.00	150.07	6,971.15	-5,066.93	7,524.51	14,459,528.32	1,739,852.48	39.81489836	-80.64589139	
18,400.00	89.00	150.07	6,972.90	-5,153.58	7,574.40	14,459,441.68	1,739,902.37	39.81465987	-80.64571494	
18,500.00	89.00	150.07	6,974.66	-5,240.23	7,624.29	14,459,355.03	1,739,952.26	39.81442137	-80.64553850	
18,600.00	89.00	150.07	6,976.41	-5,326.88	7,674.18	14,459,268.38	1,740,002.15	39.81418287	-80.64536206	
18,700.00	89.00	150.07	6,978.16	-5,413.53	7,724.07	14,459,181.73	1,740,052.04	39.81394438	-80.64518562	
18,800.00	89.00	150.07	6,979.92	-5,500.17	7,773.96	14,459,095.08	1,740,101.93	39.81370588	-80.64500918	
18,900.00	89.00	150.07	6,981.67	-5,586.82	7,823.86	14,459,008.44	1,740,151.83	39.81346738	-80.64483274	
19,000.00	89.00	150.07	6,983.42	-5,673.47	7,873.75	14,458,921.79	1,740,201.72	39.81322888	-80.64465630	
19,100.00	89.00	150.07	6,985.18	-5,760.12	7,923.64	14,458,835.14	1,740,251.61	39.81299038	-80.64447987	
19,200.00	89.00	150.07	6,986.93	-5,846.77	7,973.53	14,458,748.49	1,740,301.50	39.81275188	-80.64430343	
19,300.00	89.00	150.07	6,988.68	-5,933.41	8,023.42	14,458,661.85	1,740,351.39	39.81251338	-80.64412700	
19,400.00	89.00	150.07	6,990.44	-6,020.06	8,073.31	14,458,575.20	1,740,401.28	39.81227489	-80.64395057	
19,500.00	89.00	150.07	6,992.19	-6,106.71	8,123.20	14,458,488.55	1,740,451.17	39.81203639	-80.64377414	
19,600.00	89.00	150.07	6,993.94	-6,193.36	8,173.09	14,458,401.90	1,740,501.06	39.81179789	-80.64359771	
19,700.00	89.00	150.07	6,995.70	-6,280.01	8,222.98	14,458,315.26	1,740,550.95	39.81155939	-80.64342128	
19,800.00	89.00	150.07	6,997.45	-6,366.65	8,272.87	14,458,228.61	1,740,600.84	39.81132089	-80.64324485	
19,900.00	89.00	150.07	6,999.20	-6,453.30	8,322.76	14,458,141.96	1,740,650.73	39.81108238	-80.64306843	
20,000.00	89.00	150.07	7,000.96	-6,539.95	8,372.65	14,458,055.31	1,740,700.62	39.81084388	-80.64289200	
20,100.00	89.00	150.07	7,002.71	-6,626.60	8,422.54	14,457,968.66	1,740,750.51	39.81060538	-80.64271558	
20,159.28	89.00	150.07	7,003.75	-6,677.96	8,452.12	14,457,917.30	1,740,780.09	39.81046400	-80.64261100	

PBHLTD 20159.28 MD 7003.76 TVD

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 05/14/2021

Planning Report - Geographic

<b>Database:</b>	Win10Lt_Dec2820_v16	<b>Local Co-ordinate Reference:</b>	Well Hudson S-10 HM (slot I)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 1346.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 1346.00ft
<b>Site:</b>	Hudson Alt North	<b>North Reference:</b>	Grid
<b>Well:</b>	Hudson S-10 HM (slot I)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev5		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Hudson 10HM LP r1	0.00	0.00	6,805.00	3,122.03	2,794.37	14,467,717.28	1,735,122.35	39.83743728	-80.66262596
- plan misses target center by 13.04ft at 8841.62ft MD (6805.31 TVD, 3128.55 N, 2805.67 E)									
- Point									
Hudson 10HM PBHL r5	0.00	0.00	7,003.75	-6,677.96	8,452.12	14,457,917.30	1,740,780.09	39.81046400	-80.64261100
- plan hits target center									
- Point									

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,301.75	1,301.75	0.00	0.00	KOP Begin 3°/100' build	
2,766.23	2,626.88	455.80	279.17	Begin 43.93° tangent	
7,617.16	6,120.19	3,325.97	2,037.12	Begin 8°/100' build/turn	
8,277.28	6,604.85	3,461.10	2,427.79	Begin 10°/100' build/turn	
8,835.35	6,805.20	3,133.98	2,802.54	Begin 89.00° lateral	
20,159.28	7,003.75	-6,677.96	8,452.12	PBHL/TD 20159.28 MD 7003.75 TVD	

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Environmental Protection

WW-9  
(4/16)

API Number 47- 051 - 02381  
Operator's Well No. Hudson S-10HM

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) Grave 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 water for frac and flow back water

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Undergound 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 and Horizontal Drilling

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air for vertical / Oil for Horizontal

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Oil Base

Additives to be used in drilling medium? Barite for weight

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

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

-Landfill or offsite name/permit number? Welzel County Sanitary Landfill (SWF-1021 / WV0109185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP EC#1386426)

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 [Signature]  
Company Official (Typed Name) James Pancake  
Company Official Title Vice President - Geoscience

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Subscribed and sworn before me this 25<sup>th</sup> day of March, 2021  
[Signature] Notary Public

WV Department of Environmental Protection

My commission expires 1/15/2025

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

4705102381

Form WW-9

Operator's Well No. Hudson S-10HM

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 22.94 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: Benny Stiles

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Title: Oil and Gas Inspector

Date: 3-24-21

Field Reviewed? (  ) Yes (  ) No

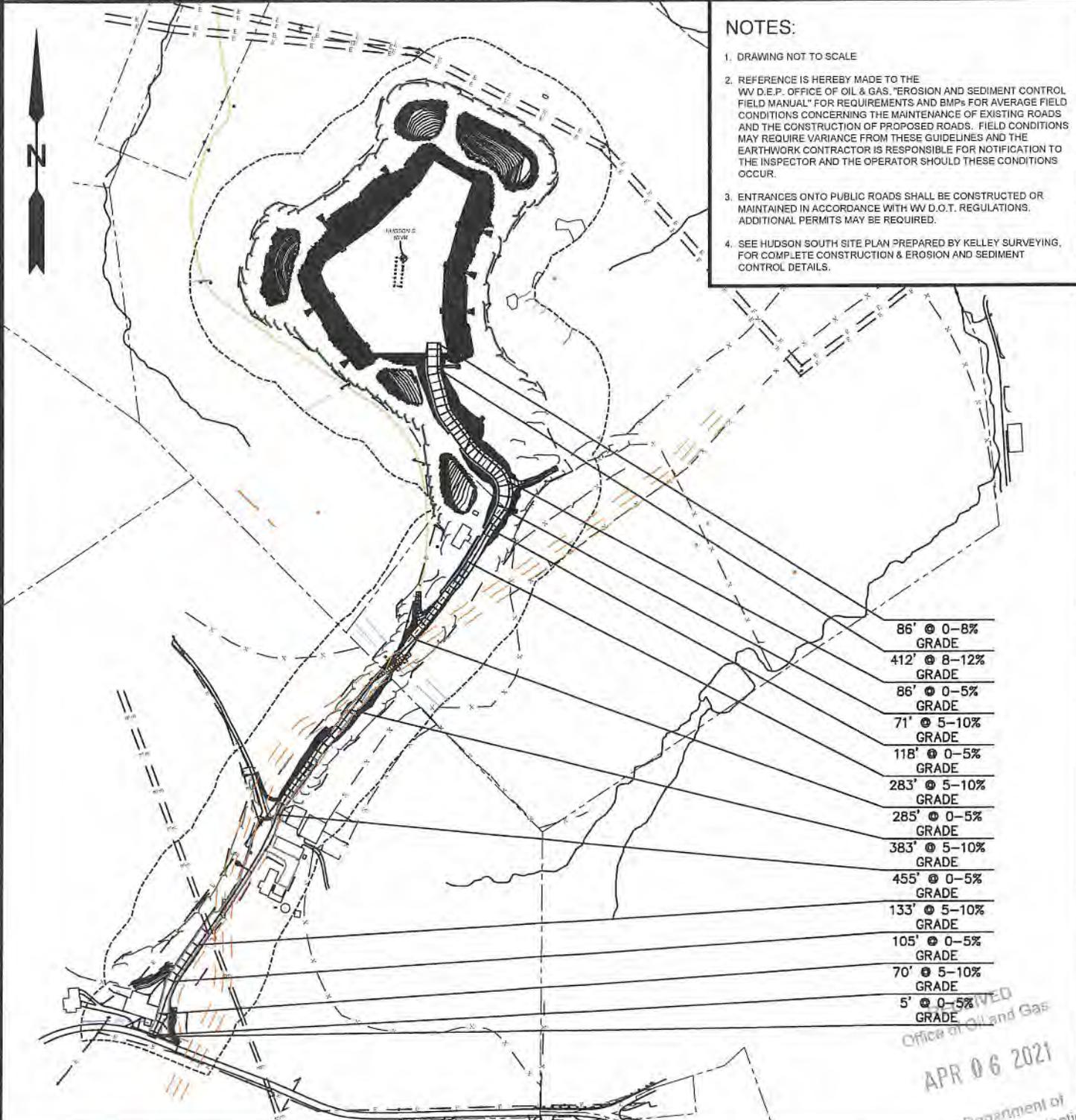
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05/14/2021

# PROPOSED HUDSON S - 10HM

**NOTES:**

1. DRAWING NOT TO SCALE
2. 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.
3. ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.
4. SEE HUDSON SOUTH SITE PLAN PREPARED BY KELLEY SURVEYING, FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.



Office of Oil and Gas  
 APR 06 2021  
 WV Department of Environmental Protection



12 Vanborn Drive | P.O. Box 153 | Glenville, WV 26351 | 304.463.5634  
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
 slswv.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	MEADE		
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8911	02/18/21	NONE



**TUG HILL OPERATING**

05/14/2021

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

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

## Data Sources Reviewed:

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

Contacted Adam Picard 724-485-9331, [apicard@dpslandservices.com](mailto:apicard@dpslandservices.com), DPS GIS (02/16/2021) 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 IHS All Wells Layer
2. Map with Farm lines overlain and any well spots identified on Farm Maps
3. More recent (1970s vintage) topos and older topos

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

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

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05/14/2021

**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
4705102248	Tug Hill Operating, LLC	6848' TVD, proposed	none	none	Yes, this is a proposed well in the Marcellus. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A permitted well on the pad that is not drilled or perforated.
4705102249	Tug Hill Operating, LLC	6862' TVD, proposed	none	none	Yes, this is a proposed well in the Marcellus. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A permitted well on the pad that is not drilled or perforated.
4705102250	Tug Hill Operating, LLC	6870' TVD, proposed	none	none	Yes, this is a proposed well in the Marcellus. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A permitted well on the pad that is not drilled or perforated.
4705102251	Tug Hill Operating, LLC	6886' TVD, proposed	none	none	Yes, this is a proposed well in the Marcellus. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A permitted well on the pad that is not drilled or perforated.

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API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705102291	Tug Hill Operating, LLC	6914' TVD, proposed	none	none	Yes, this is a proposed well in the Marcellus. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A permitted well on the pad that is not drilled or perforated.
4705102292	Tug Hill Operating, LLC	11923' TVD, proposed	none	none	No, this is a proposed well in the Point Pleasant. Once completed the well will not be deep enough to be within the expected fracture propagation from a Marcellus stimulation.	A permitted well on the pad that is not drilled or perforated.
4705102293	Tug Hill Operating, LLC	11961' TVD, proposed	none	none	No, this is a proposed well in the Point Pleasant. Once completed the well will not be deep enough to be within the expected fracture propagation from a Marcellus stimulation.	A permitted well on the pad that is not drilled or perforated.
4705102296	Tug Hill Operating, LLC	11901' TVD, proposed	none	none	No, this is a proposed well in the Point Pleasant. Once completed the well will not be deep enough to be within the expected fracture propagation from a Marcellus stimulation.	A permitted well on the pad that is not drilled or perforated.
4705170167	Hope Natural Gas Company	4206' TVD	Unknown	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation.	

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API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101006	Consolidation Coal Co.	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well. Well is plugged.	Well was plugged 5/22/2006.
4705100662	Cabot Oil & Gas of West Virginia (COGC of WV)	3201' TVD	Gordon	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation. Well is plugged.	Well was plugged 5/22/1984.
4705101085	CNX Gas Co. LLC (North)	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Marcellus well.	

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WV Geological & Economic Survey:

**Well: County = 51 Permit = 02248**

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102248	Marshall	2248	Meade	Glen Easton	Cameron	39.828765	-80.672708	528007.2	4408803.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102248	1 As Proposed	528915	4405589.9	-80.662243	39.799602

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
4705102248	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-1HM	Hudson		Charlene L Barker et al	Tug Hill Operating, LLC	6848	Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT
4705102248	-/-	-/-	1370	Ground Level														

WV Geological & Economic Survey:

**Well: County = 51 Permit = 02249**

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102249	Marshall	2249	Meade	Glen Easton	Cameron	39.828798	-80.672705	528007.5	4408807

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102249	1 As Proposed	528095.5	4405714.6	-80.660128	39.800899

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
4705102249	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-2HM	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	6862	Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT
4705102249	-/-	-/-	1370	Ground Level														

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WV Geological & Economic Survey

Well: County = 51 Permit = 02250

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102250	Marshall	2250	Meade	Glen Easton	Cameron	39.828831	-80.672702	528007.7	4408810.7

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102250	1 As Proposed	528759.9	4406752.9	-80.664003	39.810266

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
4705102250	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-3HM	Hudson		Charlene L Barker et al	Tug Hill Operating, LLC	6870	Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_I
4705102250	-/-	-/-	1370	Ground Level															

WV Geological & Economic Survey

Well: County = 51 Permit = 02251

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102251	Marshall	2251	Meade	Glen Easton	Cameron	39.828864	-80.672698	528008.1	4408814.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102251	1 As Proposed	528811.5	4407120.8	-80.663384	39.813579

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
4705102251	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-4HM	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	6886	Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_I
4705102251	-/-	-/-	1370	Ground Level															

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WV Geological & Economic Survey

Well: County = 51 Permit = 02291

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102291	Marshall	2291	Meade	Glen Easton	Cameron	39.828761	-80.672633	528013.7	4408802.9

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102291	1 As Proposed	528013.7	4408802.9	-80.672633	39.828761

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	T
4705102291	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-5HM	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	6914	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O
4705102291	-/-	-/-	1366	Ground Level															

WV Geological & Economic Survey

Well: County = 51 Permit = 02292

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102292	Marshall	2292	Meade	Glen Easton	Cameron	39.828733	-80.672711	528007	4408799.8

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102292	1 As Proposed	528726.7	4406996.2	-80.66438	39.812459

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	T
4705102292	-/-	Dvtd Wrkd Ovr	Permitted	CNX Land LLC		S-12HU	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	11923	Pt Pleasant Fm	
4705102292	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-12HU	Hudson		C L Baker et al	Tug Hill Operating, LLC	11923	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
4705102292	-/-	-/-	1370	Ground Level															
4705102292	-/-	-/-	1370	Ground Level															

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WV Geological & Economic Survey:

Well: County = 51 Permit = 02293

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102293	Marshall	2293	Meade	Gen Easton	Cameron	39.828667	-80.672718	528006.4	4408792.5

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102293	1 As Proposed	528974.7	4407331.6	-80.661468	39.815472

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
4705102293	-/-	Dvtd Wrkld Ovr	Permitted	CNX Land LLC		S-13HU	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	11957	Pt Pleasant Fm
4705102293	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-13HU	Hudson		C L Baker et al	Tug Hill Operating, LLC	11961	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_BEFO	G_AFT	O
4705102293	-/-	-/-	1370	Ground Level															
4705102293	-/-	-/-	1370	Ground Level															

WV Geological & Economic Survey:

Well: County = 51 Permit = 02296

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102296	Marshall	2296	Meade	Glen Easton	Cameron	39.8287	-80.672714	528006.8	4408796.1

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102296	1 As Proposed	529023.4	4405715.4	-80.66097	39.800909

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
4705102296	-/-	Dvtd Orgnl Loc	Permitted	CNX Land LLC		S-11HU	Hudson		C L Baker et al	Tug Hill Operating, LLC	11901	Pt Pleasant Fm
4705102296	-/-	Dvtd Wrkld Ovr	Permitted	CNX Land LLC		S-11HU	Hudson		Charlene L Baker et al	Tug Hill Operating, LLC	11901	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_BEFO	G_AFT	O
4705102296	-/-	-/-	1370	Ground Level															
4705102296	-/-	-/-	1370	Ground Level															

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WV Geological & Economic Survey:

**Well: County = 51 Permit = 70167**

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170167	Marshall	70167	Meade	Glen Easton	Cameron	39.826451	-80.654706	529548.7	4408552.3

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
4705170167	-/-		Original Loc	Completed	Mary V Wilson	1	M-39			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	O_AFT
4705170167	-/-	-/-						unclassified	unclassified	Dry	unknown	unknown	4206		4206					

There is no Pay data for this well

WV Geological & Economic Survey:

**Well: County = 51 Permit = 01006**

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101006	Marshall	1006	Meade	Glen Easton	Cameron	39.821086	-80.650566	529905.3	4407958.2

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
4705101006	5/22/2006	Plugging	Completed	Kenneth L & Carol J Neely		M-98			Kenneth & Carol Neely	Consolidation Coal Co.			

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
4705101006	5/22/2006	5/1/2006	1375	Ground Level				unclassified	unclassified	not available	unknown	UnFinWStm								

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705101006	5/22/2006	0

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WV Geological & Economic Survey

Well: County = 51 Permit = 00662

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100662	Marshall	662	Meade	Glen Easton	Cameron	39.820361	-80.65113	529857.3	4407877.6

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_F
4705100662	8/10/1979	Original Loc	Completed	Kenneth L Neely	1		Hally J Hubbs		Hally J Hubbs	Appalachian Exploration & Development, Inc.		
4705100662	5/22/1984	Plugging	Completed	Kenneth L Neely	1		Hally J Hubbs			Cabot Oil & Gas of West Virginia (COGC of WV)		

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	KO
4705100662	8/10/1979	8/3/1979	1369	Ground Level	Cameron-Garner	Gordon	Gordon	Outpost (Extension) Test	Outpost (Extension) Well	Gas	Rotary	Acid+Frac	3201		3201	
4705100662	5/22/1984	5/22/1984	1369	Ground Level						Gas	unknown	unknown				

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_ONTY
4705100662	8/10/1979	Water	Fresh Water	Vertical			100						0
4705100662	8/10/1979	Show	Gas	Vertical			1560	Pennsylvanian System	0	0			
4705100662	8/10/1979	Water	Salt Water	Vertical			1910						0
4705100662	8/10/1979	Pay	Gas	Vertical	3050		3060	Gordon	0	0			

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705100662	Original Loc	unidentified coal	Well Record	814	Reasonable	2	Reasonable	1369	Ground Level
4705100662	Original Loc	unidentified coal	Well Record	980	Reasonable	2	Reasonable	1369	Ground Level
4705100662	Original Loc	Pittsburgh coal	CBM: Drillers Pick	1031	Reasonable	3	Reasonable	1369	Ground Level
4705100662	Original Loc	unidentified coal	Well Record	1066	Reasonable	4	Reasonable	1369	Ground Level
4705100662	Original Loc	Greenbrier Group	Well Record	2164	Reasonable	56	Reasonable	1369	Ground Level
4705100662	Original Loc	Big Lime	Well Record	2164	Reasonable	56	Reasonable	1369	Ground Level
4705100662	Original Loc	Big Injun (Price&eq)	Well Record	2278	Reasonable	162	Reasonable	1369	Ground Level
4705100662	Original Loc	Berea Ss	Well Record	2762	Reasonable	22	Reasonable	1369	Ground Level
4705100662	Original Loc	Gordon	Well Record	3037	Reasonable	49	Reasonable	1369	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100662	5/22/1984	0

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WV Geological & Economic Survey:

Well: County = 51 Permit = 01085

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101085	Marshall	1085	Meade	Glen Easton	Cameron	39.820361	-80.647934	530130.9	4407878.6

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
4705101085	--		Original Loc	Permitted	Larry Neely		5A1		Larry Neely	CNX Gas Co. LLC (North)	980	Pittsburgh coal	

Completion Information:

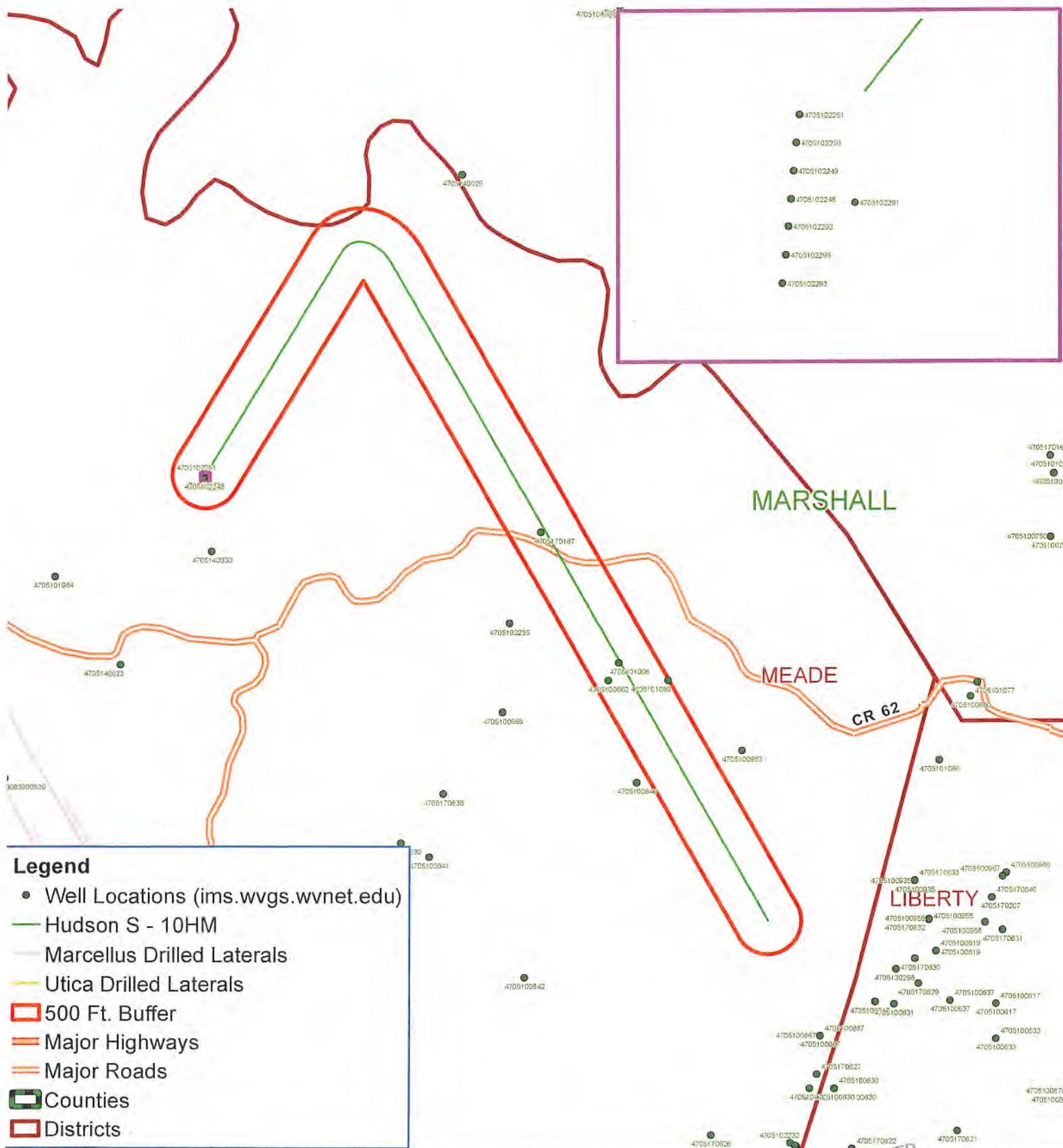
API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_
4705101085	--	--	1364	Ground Level				unclassified	unclassified	Methane (CBM)	unknown	unknown							

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101085	CNX Gas Co. LLC (North)	2008	87,786	0	3,425	7,702	6,164	8,876	9,799	10,135	9,703	5,719	9,161	8,966	8,136
4705101085	CNX Gas Co. LLC (North)	2009	53,114	7,295	5,386	5,043	5,610	8,349	8,192	6,145	1,191	1,393	1,608	1,477	1,425
4705101085	CNX Gas Co. LLC (North)	2010	10,771	1,441	1,289	1,437	1,311	1,030	909	299	8	431	669	687	1,260
4705101085	CNX Gas Co. LLC (North)	2011	5,138	891	605	724	712	496	228	1	8	166	468	394	445
4705101085	CNX Gas Co. LLC (North)	2012	2,416	540	540	410	368	261	121	30	2	2	0	28	114
4705101085	CNX Gas Co. LLC (North)	2013	122	16	53	42	11	0	0	0	0	0	0	0	0
4705101085	CNX Gas Co. LLC (North)	2014	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101085	CNX Gas Co. LLC (North)	2015	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101085	CNX Gas Co. LLC (North)	2016	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101085	CNX Gas Co. LLC (North)	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101085	CNX Gas Co. LLC (North)	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101085	CNX Gas Co. LLC (North)	2019	0	0	0	0	0	0	0	0	0	0	0	0	0

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- Legend**
- Well Locations (ims.wvgs.wvnet.edu)
  - Hudson S - 10HM
  - Marcellus Drilled Laterals
  - Utica Drilled Laterals
  - ▭ 500 Ft. Buffer
  - Major Highways
  - Major Roads
  - ▭ Counties
  - ▭ Districts



# Hudson S - 10HM Meade District Marshall County, WV



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

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Environmental Protection  
Map Prepared by:  
**EPS**  
LAND SERVICES  
05/14/2021



# Well Site Safety Plan

## Tug Hill Operating, LLC

*Bay Step 3-16-21*

Well Name: Hudson S-10HM

Pad Location: Hudson Pad

Marshall County, West Virginia

UTM (meters , NAD83, Zone 17:

Northing: 4,408,817.50

Easting: 528,014.67

February 2021

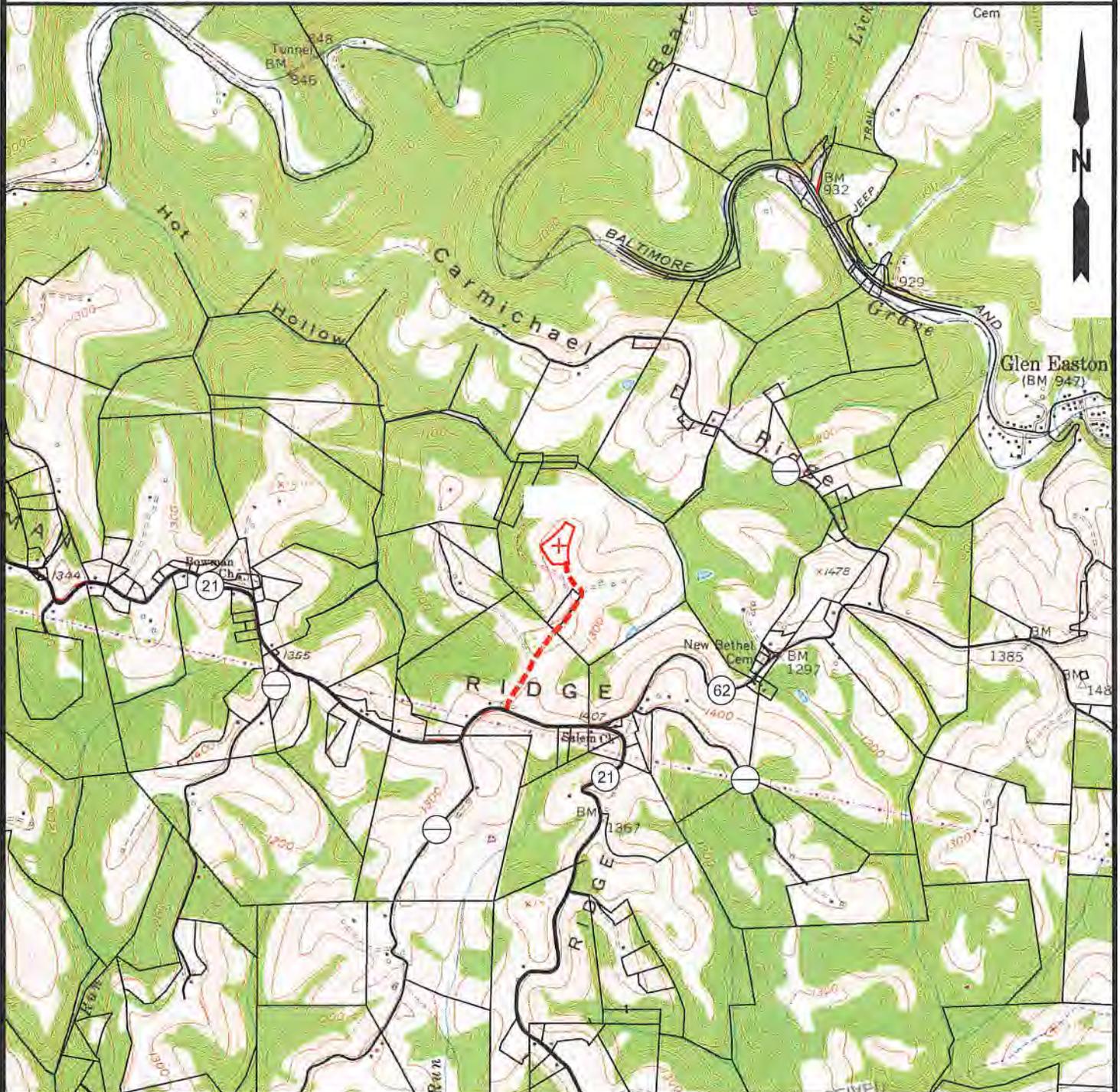
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# PROPOSED HUDSON S - 10HM



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

LAT: 39.829865  
LON: -80.573724  
LOCATED: N 89°55'26" E AT 27,779.45' FROM THE CENTER OF HUDSON S WELL PAD LOCATION.

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APR 16 2021



12 Vanlorst Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.9634  
1412 Knowlton Boulevard, East | Charleston, WV 25301 | 304.348.3952  
254 East Backley Bypass | Beckley, WV 25801 | 304.253.5295  
slsw.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8911	02/18/2021	1" = 2000'



05/14/2021

**HUDSON S  
WELL 10HM  
TUG HILL OPERATING**

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
3-12-22	MARSHALL COUNTY COAL COMPANY	6.80
3-12-22.1	CNX LAND, LLC	145' X 130' LOT
3-12-24.1	CNX LAND, LLC	50' X 200' LOT
9-2-9.2	CONSOLIDATION COAL CO.	1.00
9-2-10.1	CONSOLIDATION COAL CO.	2.00
9-3-1.1	CONSOLIDATION COAL CO.	5.00
9-3-1.2	CONSOLIDATION COAL CO.	1.00
9-3-2.1	FEDERAL HOME LOAN MORT CORP	0.940
9-3-2.2	JOHN W. & RACHEL A. HOLPP	0.483
9-3-2.3	STEPHEN W. JOHNSON, III	0.591
9-3-2.4	JOHN W. & RACHEL A. HOLPP	0.618
9-3-4	GRANT M. & MALISSA D. CARTER	7.507
9-3-4.1	DANIEL WEST, ET UX	0.986
9-3-4.2	GRANT M. & MALISSA D. CARTER	0.720
9-3-4.3	JOHN & RACHEL HOLPP	0.870
9-3-6.1	LSF9 MASTER PARTICIPATION TRUST	1.0468
9-3-18.1	LLOYD ANDREW BEE, ET UX	1.010

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

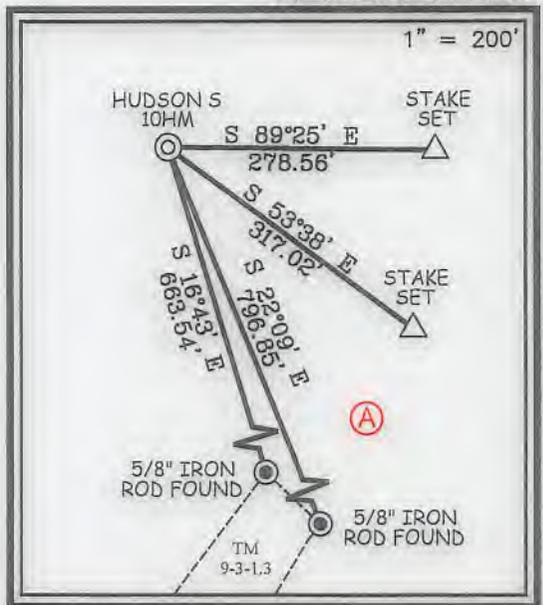
T.H. LONGITUDE 80°40'00"  
B.H. LONGITUDE 80°37'30"

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

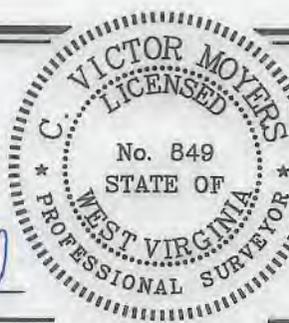
NAD'83 S.P.C.(FT)	N. 486,174.08	E. 1,639,183.25
NAD'83 GEO.	LAT-(N) 39.828892	LONG-(W) 80.672621
NAD'83 UTM (M)	N. 4,408,817.45	E. 528,014.63
<b>LANDING POINT</b>		
NAD'83 S.P.C.(FT)	N. 489,261.8	E. 1,642,038.7
NAD'83 GEO.	LAT-(N) 39.837470	LONG-(W) 80.662597
NAD'83 UTM (M)	N. 4,409,772.7	E. 528,868.8
<b>BOTTOM HOLE</b>		
NAD'83 S.P.C.(FT)	N. 479,353.5	E. 1,647,525.4
NAD'83 GEO.	LAT-(N) 39.810464	LONG-(W) 80.642611
NAD'83 UTM (M)	N. 4,406,782.0	E. 530,590.8

B.H.

**REFERENCES**



12 Vainhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.9296  
slswv.com



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

P.S. 849

*C. Victor Moyers*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE FEBRUARY 22, 20 21  
REVISED \_\_\_\_\_, 20 \_\_\_\_  
OPERATORS WELL NO. HUDSON S-10HM  
API WELL NO. 47 - 051 - 02381 HGA  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8911P10HM.dwg HUDSON S-10HM REV5  
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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

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

LOCATION: ELEVATION 1,346.26' WATERSHED GRAVE CREEK (HUC 10)  
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER CNX LAND LLC ACREAGE 106.935±  
ROYALTY OWNER CHARLENE L. BAKER, ET AL ACREAGE 106.935±

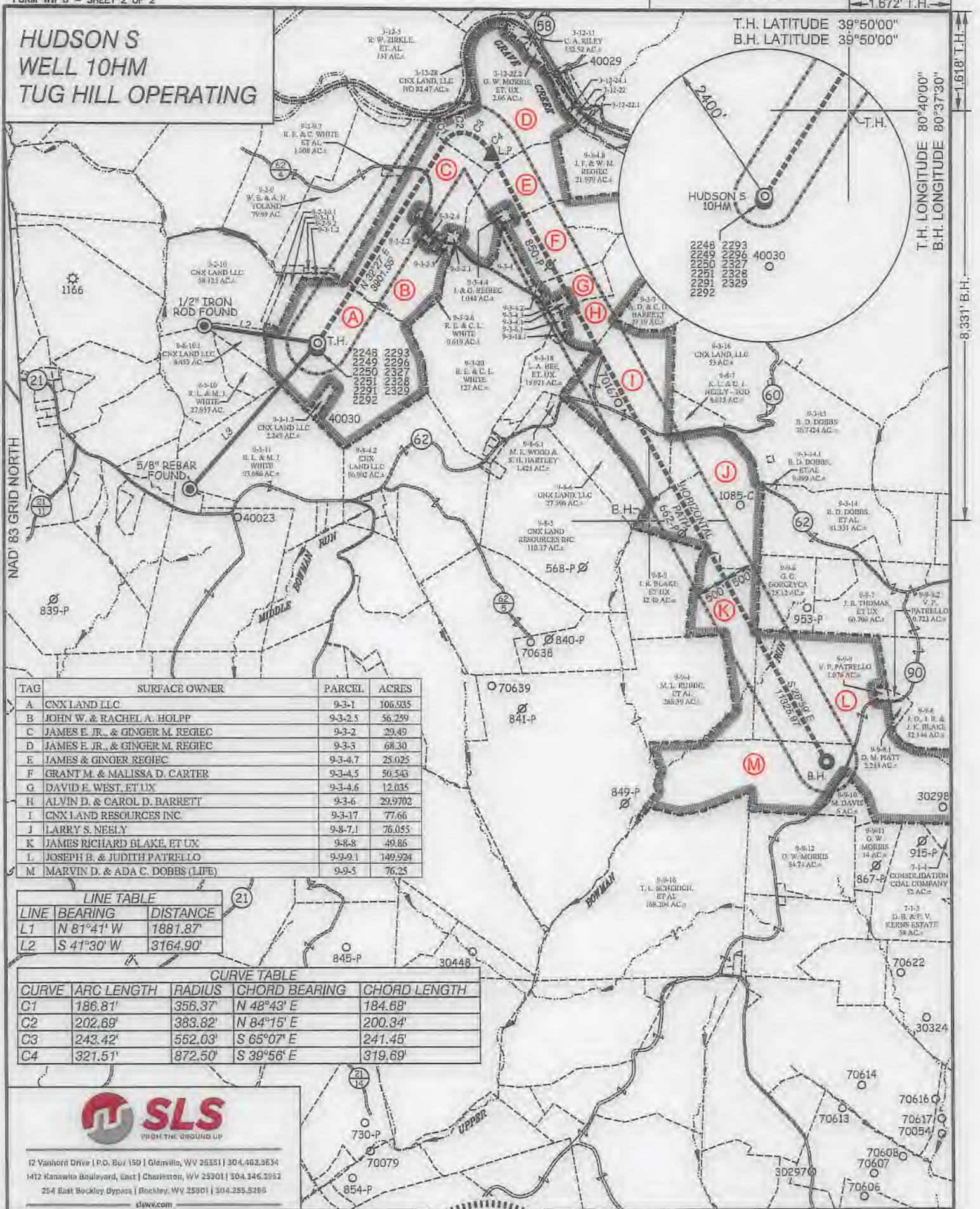
PROPOSED WORK: DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_ OTHER \_\_\_  
PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD: 6,924' / TMD: 20,159'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5400 D BIG TYLER ROAD  
FORT WORTH, TX 76107 CHARLESTON, WV 25313

COUNTY NAME PERMIT

05/14/2021

**HUDSON S  
WELL 10HM  
TUG HILL OPERATING**

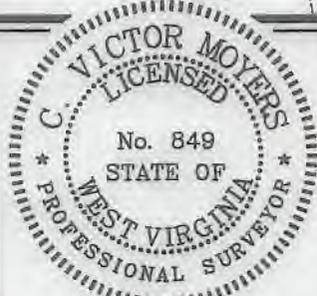


TAG	SURFACE OWNER	PARCEL	ACRES
A	CNX LAND LLC	9-3-1	106.935
B	JOHN W. & RACHEL A. HOLPP	9-3-2.5	56.259
C	JAMES E. JR. & GINGER M. REGIEC	9-3-2	29.49
D	JAMES E. JR., & GINGER M. REGIEC	9-3-3	68.30
E	JAMES & GINGER REGIEC	9-3-4.7	25.025
F	GRANT M. & MALISSA D. CARTER	9-3-4.5	50.543
G	DAVID E. WEST, ET UX	9-3-4.6	12.035
H	ALVIN D. & CAROL D. BARRETT	9-3-6	29.9702
I	CNX LAND RESOURCES INC.	9-3-17	77.66
J	LARRY S. NEELY	9-8-7.1	76.055
K	JAMES RICHARD BLAKE, ET UX	9-8-8	49.86
L	JOSEPH B. & JUDITH PATRELLO	9-9-1	149.924
M	MARVIN D. & ADA C. DOBBS (LIFE)	9-9-5	76.25

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 81°41' W	1881.87'
L2	S 41°30' W	3164.90'

CURVE TABLE				
CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	186.81'	356.37'	N 48°43' E	184.68'
C2	202.69'	383.82'	N 84°15' E	200.34'
C3	243.42'	552.03'	S 65°07' E	241.45'
C4	321.51'	872.50'	S 39°56' E	319.69'

12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634  
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.2952  
 254 East Bockley Bypass | Beckley, WV 25801 | 304.255.5286  
 slsw.com



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

P.S. 849 *C. Victor Moyers*

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

SCALE 1" = 2000'	FILE NO. 8911P10HM.dwg
	HUDSON S-10HM REV5
DATE FEBRUARY 22, 20 21	
REVISED	
OPERATORS WELL NO. HUDSON S-10HM	
API WELL NO. 47-051-02381 HGA	
NO. STATE COUNTY PERMIT	

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

WELL OPERATOR TUG HILL OPERATING, LLC	DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500	CT CORPORATION SYSTEM
FORT WORTH, TX 76107	ADDRESS 5400 D BIG TYLER ROAD
	CHARLESTON, WV 25313

COUNTY NAME PERMIT

WW-6A1  
(5/13)

Operator's Well No. Hudson S-10HM

**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

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WV Department of  
Environmental Protection

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

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

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

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

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

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*26041	9-3-1	A	FREDDIE C WHITE AND VIOLET L WHITE	CHEESAPEAKE APPALACHIA LLC	1/8+	728	527	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 27/386	Statoil USA Onshore Properties Inc to Chevron USA Inc: 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26044	9-3-1	A	JOYCE A WALLACE	CHEVRON USA INC	1/8+	863	296	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26047	9-3-1	A	ROBERT D BLAKE AND ATHENA LIBERTY BLAKE	CHEVRON USA INC	1/8+	863	138	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26048	9-3-1	A	LOIS J ELIAS AND LOUIS J ELIAS	CHEVRON USA INC	1/8+	861	599	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26049	9-3-1	A	MARY H HUBBS	CHEVRON USA INC	1/8+	863	560	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26050	9-3-1	A	BERNARD O CROW AND KAREN S CROW	CHEVRON USA INC	1/8+	863	627	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26051	9-3-1	A	ROBERT W KIDNER	CHEVRON USA INC	1/8+	863	644	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26052	9-3-1	A	BETTY J BLAKE	CHEVRON USA INC	1/8+	863	545	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26057	9-3-1	A	JOHN PURDY AND BRENDA S PURDY	CHEVRON USA INC	1/8+	854	420	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26058	9-3-1	A	CAROLE J WOOD	CHEVRON USA INC	1/8+	854	415	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26059	9-3-1	A	TERRY L BLAKE	CHEVRON USA INC	1/8+	854	215	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26060	9-3-1	A	ROBERT C BLAKE AND LYN BLAKE	CHEVRON USA INC	1/8+	854	333	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95

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WV Department of Environmental Protection

WW-6A1 Supplement

| Lease ID | TMP   | Tag | Grantor, Lessor, Etc.            | Grantee, Lessee, Etc. | Royalty | Deed Book/Page |     | Assignment |                                                                      |
|----------|-------|-----|----------------------------------|-----------------------|---------|----------------|-----|------------|------------|------------|------------|------------|------------|------------|----------------------------------------------------------------------|
| 10*26061 | 9-3-1 | A   | RODNEY W AND LINDA L HUBBS       | CHEVRON USA INC       | 1/8+    | 854            | 435 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26062 | 9-3-1 | A   | SHANNON ROGER AND LORRAINE HUBBS | CHEVRON USA INC       | 1/8+    | 854            | 233 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26063 | 9-3-1 | A   | PATTY L RINE AND FLOYD D RINE    | CHEVRON USA INC       | 1/8+    | 854            | 238 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26064 | 9-3-1 | A   | CATHARINE LEE BLAKE              | CHEVRON USA INC       | 1/8+    | 863            | 550 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26066 | 9-3-1 | A   | DANNY E AND MARVA L BEYSER       | CHEVRON USA INC       | 1/8+    | 858            | 36  | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26067 | 9-3-1 | A   | DONALD DEAN BEYSER               | CHEVRON USA INC       | 1/8+    | 858            | 41  | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26068 | 9-3-1 | A   | GARY F BLAKE AND DORIS E BLAKE   | CHEVRON USA INC       | 1/8+    | 858            | 31  | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26069 | 9-3-1 | A   | MARILYN SUE REILLEY              | CHEVRON USA INC       | 1/8+    | 857            | 597 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26070 | 9-3-1 | A   | MARY W HOLMES                    | CHEVRON USA INC       | 1/8+    | 857            | 602 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26071 | 9-3-1 | A   | CHARLENE LORRAINE BAKER          | CHEVRON USA INC       | 1/8+    | 857            | 607 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26072 | 9-3-1 | A   | JAMES L BLAKE                    | CHEVRON USA INC       | 1/8+    | 857            | 616 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26073 | 9-3-1 | A   | DARLENE L BEYSER                 | CHEVRON USA INC       | 1/8+    | 860            | 176 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |

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APR 06 2021  
WV Department of Environmental Protection

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment						
10*26075	9-3-1	A	BETTY JOANN CECIL	CHEVRON USA INC	1/8+	860	119	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26076	9-3-1	A	DORIS IMOGENE GARRISON	CHEVRON USA INC	1/8+	860	114	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26077	9-3-1	A	DOROTHY J AND ROBERT M BLAKE	CHEVRON USA INC	1/8+	860	104	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26078	9-3-1	A	VELMA RUTH HARRIS	CHEVRON USA INC	1/8+	860	228	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26079	9-3-1	A	MARY O'DESSA HARRIS LOUDEN	CHEVRON USA INC	1/8+	860	109	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26080	9-3-1	A	SHARON DIANE HOLMES JAHN AND WILLIAM HENRY JAHN III - W/H	CHEVRON USA INC	1/8+	860	217	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26081	9-3-1	A	CYNTHIA JEAN AND EDDIE W WILSON	CHEVRON USA INC	1/8+	861	545	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26082	9-3-1	A	BRIAN C AND SARA M LUTZ	CHEVRON USA INC	1/8+	861	550	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26083	9-3-1	A	WILLIAM S BLAKE JR	CHEVRON USA INC	1/8+	861	535	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26084	9-3-1	A	CYNTHIA A AND JAMES O DAVIDSON	CHEVRON USA INC	1/8+	889	46	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26085	9-3-1	A	CLYDE R AND JANA HIGGINS	CHEVRON USA INC	1/8+	861	508	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95
10*26086	9-3-1	A	DELMAS W AND ROSE HIGGINS	CHEVRON USA INC	1/8+	861	503	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95

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|----------|-------|-----|------------------------------------------|-----------------------|---------|----------------|-----|------------|------------|------------|------------|------------|------------|------------|----------------------------------------------------------------------|
| 10*26087 | 9-3-1 | A   | JERRY L AND DENISE HIGGINS               | CHEVRON USA INC       | 1/8+    | 861            | 526 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26088 | 9-3-1 | A   | SHIRL W AND DORIS HIGGINS                | CHEVRON USA INC       | 1/8+    | 861            | 540 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26089 | 9-3-1 | A   | ALVA L AND SHIRLEY HIGGINS               | CHEVRON USA INC       | 1/8+    | 861            | 521 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26090 | 9-3-1 | A   | H DEAN AND KAREN HIGGINS                 | CHEVRON USA INC       | 1/8+    | 861            | 516 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26091 | 9-3-1 | A   | JOELENE M MANN                           | CHEVRON USA INC       | 1/8+    | 864            | 55  | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26092 | 9-3-1 | A   | SHAWN J AND SARAH E CREWS                | CHEVRON USA INC       | 1/8+    | 864            | 50  | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26093 | 9-3-1 | A   | JOYCE HOLMES CONE AND WILLIAM CONE - W/H | CHEVRON USA INC       | 1/8+    | 861            | 493 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26094 | 9-3-1 | A   | MARK L CURRY                             | CHEVRON USA INC       | 1/8+    | 865            | 102 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26095 | 9-3-1 | A   | CHRISTINA C MUNSON                       | CHEVRON USA INC       | 1/8+    | 865            | 107 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26097 | 9-3-1 | A   | DAVID L BEYSER                           | CHEVRON USA INC       | 1/8+    | 865            | 173 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26098 | 9-3-1 | A   | KIMBERLY J HOLDER                        | CHEVRON USA INC       | 1/8+    | 867            | 87  | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26099 | 9-3-1 | A   | CAROL TROWBRIDGE ET VIR                  | CHEVRON USA INC       | 1/8+    | 866            | 138 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |

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|----------|-------|-----|--------------------------------------|-----------------------|---------|----------------|-----|------------|------------|------------|------------|------------|------------|------------|----------------------------------------------------------------------|
| 10*26100 | 9-3-1 | A   | JOSEPH L AND ROSE MARIE MAUPIN       | CHEVRON USA INC       | 1/8+    | 866            | 67  | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26120 | 9-3-1 | A   | JAMES D AND LINDA D YOCUM            | CHEVRON USA INC       | 1/8+    | 884            | 635 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26121 | 9-3-1 | A   | BETTY BRYNER                         | CHEVRON USA INC       | 1/8+    | 871            | 64  | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26236 | 9-3-1 | A   | GERALD W QUIGLEY AND VICKI L QUIGLEY | CHEVRON USA INC       | 1/8+    | 884            | 50  | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26237 | 9-3-1 | A   | FREDA L CAMPBELL                     | CHEVRON USA INC       | 1/8+    | 889            | 40  | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26238 | 9-3-1 | A   | MARSHA L MERCER                      | CHEVRON USA INC       | 1/8+    | 883            | 639 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26287 | 9-3-1 | A   | IVAN R AND MARY A BLAKE              | CHEVRON USA INC       | 1/8+    | 888            | 542 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26288 | 9-3-1 | A   | REBECCA J BLAKE                      | CHEVRON USA INC       | 1/8+    | 888            | 571 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26289 | 9-3-1 | A   | DUANETTA B BLAKE FROMHART            | CHEVRON USA INC       | 1/8+    | 888            | 574 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26291 | 9-3-1 | A   | BARBARA A BLAKE MASON                | CHEVRON USA INC       | 1/8+    | 901            | 125 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26292 | 9-3-1 | A   | JUDITH L BLAKE                       | CHEVRON USA INC       | 1/8+    | 882            | 329 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26293 | 9-3-1 | A   | JAY C CURRY                          | CHEVRON USA INC       | 1/8+    | 882            | 433 | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |

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|----------|---------|-----|----------------------------------------|-----------------------|---------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|----------------------------------------------------------------------|
| 10*26294 | 9-3-1   | A   | JOAN A GIEGER                          | CHEVRON USA INC       | 1/8+    | 880 509        | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26295 | 9-3-1   | A   | ARTHUR LEE WARYCK                      | CHEVRON USA INC       | 1/8+    | 880 512        | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26296 | 9-3-1   | A   | CARL G CALDWELL                        | CHEVRON USA INC       | 1/8+    | 883 530        | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26297 | 9-3-1   | A   | DIANA L MCKINNEY                       | CHEVRON USA INC       | 1/8+    | 885 560        | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26298 | 9-3-1   | A   | JANE HENDRICKSON                       | CHEVRON USA INC       | 1/8+    | 886 429        | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26299 | 9-3-1   | A   | BETTY WILKINSON DANIEL A MCVANE AIF    | CHEVRON USA INC       | 1/8+    | 886 432        | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*26300 | 9-3-1   | A   | JILL LORI HENNEN BARNETT               | CHEVRON USA INC       | 1/8+    | 886 439        | N/A        | Chevron USA Inc to TH Exploration II LLC & TH Exploration LLC: 43/95 |
| 10*27180 | 9-3-1   | A   | TAMALA SCOLICK                         | TH EXPLORATION LLC    | 1/8+    | 1053 1         | N/A                                                                  |
| 10*27181 | 9-3-1   | A   | CRYSTAL THOMAS                         | TH EXPLORATION LLC    | 1/8+    | 1052 648       | N/A                                                                  |
| 10*27703 | 9-3-1   | A   | DOROTHY MAXINE MOORE TRUST             | TH EXPLORATION LLC    | 1/8+    | 1061 255       | N/A                                                                  |
| 10*28190 | 9-3-2.5 | B   | J RUSSELL LOGSDON                      | TH EXPLORATION LLC    | 1/8+    | 1068 309       | N/A                                                                  |
| 10*28191 | 9-3-2.5 | B   | JANICE L EARNEST                       | TH EXPLORATION LLC    | 1/8+    | 1068 307       | N/A                                                                  |
| 10*28192 | 9-3-2.5 | B   | SHAREE SAMS                            | TH EXPLORATION LLC    | 1/8+    | 1068 305       | N/A                                                                  |
| 10*28193 | 9-3-2.5 | B   | SHIRLEY E BURTON AND OKLA D BURTON     | TH EXPLORATION LLC    | 1/8+    | 1068 303       | N/A                                                                  |
| 10*28194 | 9-3-2.5 | B   | LLOYD L & DONNA F EARNEST              | TH EXPLORATION LLC    | 1/8+    | 1068 301       | N/A                                                                  |
| 10*28442 | 9-3-2.5 | B   | WILLIAM N LOSDON AND SHIRLEY A LOGSDON | TH EXPLORATION LLC    | 1/8+    | 1072 377       | N/A                                                                  |
| 10*28190 | 9-3-2   | C   | J RUSSELL LOGSDON                      | TH EXPLORATION LLC    | 1/8+    | 1068 309       | N/A                                                                  |
| 10*28191 | 9-3-2   | C   | JANICE L EARNEST                       | TH EXPLORATION LLC    | 1/8+    | 1068 307       | N/A                                                                  |
| 10*28192 | 9-3-2   | C   | SHAREE SAMS                            | TH EXPLORATION LLC    | 1/8+    | 1068 305       | N/A                                                                  |

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10*28193	9-3-2	C	SHIRLEY E BURTON AND OKLA D BURTON	TH EXPLORATION LLC	1/8+	1068	303	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*28194	9-3-2	C	LLOYD L & DONNA F EARNEST	TH EXPLORATION LLC	1/8+	1068	301	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*28442	9-3-2	C	WILLIAM N LOSDON AND SHIRLEY A LOGSDON	TH EXPLORATION LLC	1/8+	1072	377	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*18339	9-3-3	D	RESOURCE MINERALS HEADWATER I LP	TH EXPLORATION LLC	1/8+	940	448	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*31219	9-3-4.7	E	DONNA FAYE EARNEST	CHESAPEAKE APPALACHIA LLC	1/8+	690	341	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31220	9-3-4.7	E	SHIRLEY E BURTON	CHESAPEAKE APPALACHIA LLC	1/8+	690	344	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31221	9-3-4.7	E	J RUSSELL LOGSDON	CHESAPEAKE APPALACHIA LLC	1/8+	688	580	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31222	9-3-4.7	E	WILLIAM N LOGSDON	CHESAPEAKE APPALACHIA LLC	1/8+	590	347	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87

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10*31223	9-3-4.7	E	JANICE LEE EARNEST	CHESAPEAKE APPALACHIA LLC	1/8+	690	350	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31224	9-3-4.7	E	DOROTHY L HARRIS	CHESAPEAKE APPALACHIA LLC	1/8+	690	483	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/132	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31219	9-3-4.5	F	DONNA FAYE EARNEST	CHESAPEAKE APPALACHIA LLC	1/8+	690	341	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31220	9-3-4.5	F	SHIRLEY E BURTON	CHESAPEAKE APPALACHIA LLC	1/8+	690	344	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31221	9-3-4.5	F	J RUSSELL LOGSDON	CHESAPEAKE APPALACHIA LLC	1/8+	688	580	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31222	9-3-4.5	F	WILLIAM N LOGSDON	CHESAPEAKE APPALACHIA LLC	1/8+	590	347	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31223	9-3-4.5	F	JANICE LEE EARNEST	CHESAPEAKE APPALACHIA LLC	1/8+	690	350	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31224	9-3-4.5	F	DOROTHY L HARRIS	CHESAPEAKE APPALACHIA LLC	1/8+	690	483	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/132	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87

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10*31220	9-3-4.6	G	SHIRLEY E BURTON	CHESAPEAKE APPALACHIA LLC	1/8+	690 344	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31221	9-3-4.6	G	J RUSSELL LOGSDON	CHESAPEAKE APPALACHIA LLC	1/8+	688 580	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31222	9-3-4.6	G	WILLIAM N LOGSDON	CHESAPEAKE APPALACHIA LLC	1/8+	590 347	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31223	9-3-4.6	G	JANICE LEE EARNEST	CHESAPEAKE APPALACHIA LLC	1/8+	690 350	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/31	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31224	9-3-4.6	G	DOROTHY L HARRIS	CHESAPEAKE APPALACHIA LLC	1/8+	690 483	N/A	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/132	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 and into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*31225	9-3-6	H	ALVIN D BARRETT AND CAROL D CARRETT	CHESAPEAKE APPALACHIA LLC	1/8+	727 112	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 27/386	Statoil USA Onshore Properties Inc to Chevron USA Inc: 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to SWN Production Company LLC and Statoil USA Onshore Properties Inc: 36/204	Chesapeake Appalachia LLC to SWN Production Company LLC: 38/35	Statoil USA Onshore Properties Inc changed its name to Equinor USA Onshore Properties Inc: 2/427	Equinor USA Onshore Properties Inc to TH Exploration LLC: 46/76	SWN Production Company LLC to TH Exploration LLC: 46/87
10*21602	9-3-17	I	CAROL STACY SAUNDERS	TH EXPLORATION LLC	1/8+	959 289	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21604	9-3-17	I	WILLIAM EDWARD STACY AND JACQUELINE L STACY	TH EXPLORATION LLC	1/8+	958 428	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22616	9-3-17	I	JAMES YOHO AND SANDRA YOHO	TH EXPLORATION LLC	1/8+	968 281	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22618	9-3-17	I	DANIEL YOHO	TH EXPLORATION LLC	1/8+	966 636	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22721	9-3-17	I	WINIFRED G TURNER	TH EXPLORATION LLC	1/8+	988 134	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22796	9-3-17	I	MARLENE YOHO	TH EXPLORATION LLC	1/8+	972 87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22880	9-3-17	I	GREGORY K GLOVER	TH EXPLORATION LLC	1/8+	977 85	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22881	9-3-17	I	MARLIS GLOVER	TH EXPLORATION LLC	1/8+	977 87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23033	9-3-17	I	MAXINE BEYSER	TH EXPLORATION LLC	1/8+	977 346	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23034	9-3-17	I	NINA L KOVACS	TH EXPLORATION LLC	1/8+	977 348	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23107	9-3-17	I	JOEL DAMON GLOVER	TH EXPLORATION LLC	1/8+	983 620	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23141	9-3-17	I	DEBORAH A LOMBARDO	TH EXPLORATION LLC	1/8+	984 7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23142	9-3-17	I	KIMBERLY S GLOVER	TH EXPLORATION LLC	1/8+	984 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23161	9-3-17	I	KATHLEEN J GLOVER	TH EXPLORATION LLC	1/8+	983 618	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23162	9-3-17	I	AARON BOYLES AND TRACI BOYLES	TH EXPLORATION LLC	1/8+	983 622	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23163	9-3-17	I	EDWIN WOOLLEY AND DEBORAH L WOOLLEY	TH EXPLORATION LLC	1/8+	983 571	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23176	9-3-17	I	CAROL M YOHO	TH EXPLORATION LLC	1/8+	984 9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23181	9-3-17	I	MICHAEL L GREENWOOD AND PEGGY ANNE GREENWOOD	TH EXPLORATION LLC	1/8+	983 627	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23192	9-3-17	I	JEFFREY C YOHO	TH EXPLORATION LLC	1/8+	984 472	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23313	9-3-17	I	DIANE DEVAULT	TH EXPLORATION LLC	1/8+	988 136	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23419	9-3-17	I	GARY MCPHERON AND SHELLEY ANN MCPHERON	TH EXPLORATION LLC	1/8+	988 492	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23420	9-3-17	I	SALLY LEE ORTIZ RIVERA	TH EXPLORATION LLC	1/8+	988 490	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	
10*24781	9-3-17	I	DENISE MARIE ROGERS AND GEORGE M ROGERS	TH EXPLORATION LLC	1/8+	1027 578	N/A	
10*24782	9-3-17	I	RICHARD A HEUSER	TH EXPLORATION LLC	1/8+	1027 572	N/A	
10*24783	9-3-17	I	BRUCE W JOHNSON AND TERRI L JOHNSON	TH EXPLORATION LLC	1/8+	1027 569	N/A	
10*25224	9-3-17	I	MAUREEN WILSON	TH EXPLORATION LLC	1/8+	1030 141	N/A	
10*25701	9-3-17	I	TIMOTHY KRUS AND BARBARA KRUS	TH EXPLORATION LLC	1/8+	1034 239	N/A	
10*25716	9-3-17	I	RUSSELL BREDENNER	TH EXPLORATION LLC	1/8+	1035 23	N/A	
10*26406	9-3-17	I	PURPLEBURGH VENTURES, LLC	TH EXPLORATION LLC	1/8+	1033 117	N/A	
10*26410	9-3-17	I	MARCELLUS TX MINERAL PRTRNR LTD	TH EXPLORATION LLC	1/8+	1034 242	N/A	
10*26411	9-3-17	I	PENNMARC RESOURCES II LP	TH EXPLORATION LLC	1/8+	1034 244	N/A	
10*26412	9-3-17	I	MCCROW ENERGY PARTNERS II LLC	TH EXPLORATION LLC	1/8+	1034 247	N/A	
10*26413	9-3-17	I	WILDES MINERAL INTERESTS LLC	TH EXPLORATION LLC	1/8+	1034 250	N/A	
10*26414	9-3-17	I	APPALACHIAN BASIN MINERALS LP	TH EXPLORATION LLC	1/8+	1034 218	N/A	
10*26631	9-3-17	I	JOSEPH R ZBOZIEN	TH EXPLORATION LLC	1/8+	1039 322	N/A	
10*27106	9-3-17	I	JASMINE LEIGH HALL PENA C/O ROBERT HALL	TH EXPLORATION LLC	1/8+	1050 217	N/A	
10*27229	9-3-17	I	KENNETH ANDERSON	TH EXPLORATION LLC	1/8+	1068 311	N/A	
10*28092	9-3-17	I	WV DEPT OF TRANSPORTATION DIV OF HIGHWAYS	TH EXPLORATION LLC	1/8+	1073 370	N/A	
10*28647	9-3-17	I	BRYAN S LEHNER	TH EXPLORATION LLC	1/8+	1076 65	N/A	
10*29613	9-3-17	I	JANE D BEARDEN AND WILLIAM L BEARDEN	TH EXPLORATION LLC	1/8+	1096 374	N/A	
10*29615	9-3-17	I	WVSTO UNCLAIMED PROPERTY	TH EXPLORATION LLC	1/8+	1096 343	N/A	
10*29621	9-3-17	I	BRADLEY B LEHNER	TH EXPLORATION LLC	1/8+	1096 362	N/A	
10*29623	9-3-17	I	RACHAEL MARIA MCLARDY	TH EXPLORATION LLC	1/8+	1096 356	N/A	
10*29625	9-3-17	I	HARRY ALBERT RICHARDSON	TH EXPLORATION LLC	1/8+	1096 368	N/A	
10*29627	9-3-17	I	JANET M SMITH	TH EXPLORATION LLC	1/8+	1096 350	N/A	
10*29629	9-3-17	I	WVSTO UNCLAIMED PROPERTY	TH EXPLORATION LLC	1/8+	1096 335	N/A	
10*29631	9-3-17	I	WVSTO UNCLAIMED PROPERTY	TH EXPLORATION LLC	1/8+	1096 327	N/A	
10*31002	9-3-17	I	MARK F HEUSER	CHEVRON USA INC	1/8+	791 247	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31005	9-3-17	I	GARY KEITH BERGER	CHEVRON USA INC	1/8+	793 358	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31006	9-3-17	I	JAMES S WILSON	CHEVRON USA INC	1/8+	793 375	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31007	9-3-17	I	CAROL D ELMORE	CHEVRON USA INC	1/8+	793 383	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31008	9-3-17	I	NORMA V PRATICO	CHEVRON USA INC	1/8+	794 532	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31009	9-3-17	I	MARGARET LEE HALL	CHEVRON USA INC	1/8+	795 414	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31010	9-3-17	I	JULIANNE ERDOS	CHEVRON USA INC	1/8+	795 57	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31011	9-3-17	I	MARVIN C WILSON	CHEVRON USA INC	1/8+	795 350	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31012	9-3-17	I	JAMES P OVIES	CHEVRON USA INC	1/8+	797 368	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31013	9-3-17	I	BERTHA LYNN KLUG	CHEVRON USA INC	1/8+	797 548	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31014	9-3-17	I	CHERYL FOX BRAUCH	CHEVRON USA INC	1/8+	800 489	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593

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10*31015	9-3-17	I	CAROL FOX VALLANDINGHAM	CHEVRON USA INC	1/8+	800 564	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31016	9-3-17	I	JESSICA M CHAVEZ	CHEVRON USA INC	1/8+	804 393	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31017	9-3-17	I	PHILIP A WILSON	CHEVRON USA INC	1/8+	805 421	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31018	9-3-17	I	JUANITA S HATCH LIVING TRUST DTD 2/16/1998	CHEVRON USA INC	1/8+	831 438	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31019	9-3-17	I	EDWARD F WILSON	CHEVRON USA INC	1/8+	813 564	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31020	9-3-17	I	MATTHEW L GROSSAINT	CHEVRON USA INC	1/8+	818 6	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31021	9-3-17	I	TROY THOMAS WILSON	CHEVRON USA INC	1/8+	828 352	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31022	9-3-17	I	ELLA JEAN MCCARDLE	CHEVRON USA INC	1/8+	828 374	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31027	9-3-17	I	LOU ANN GROSSAINT	CHEVRON USA INC	1/8+	829 470	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31029	9-3-17	I	JESSE ALLEN WILSON	CHEVRON USA INC	1/8+	831 355	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31034	9-3-17	I	APRIL DAWN HOGAN	CHEVRON USA INC	1/8+	835 248	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31035	9-3-17	I	KIMBERLY SUE PIERSON	CHEVRON USA INC	1/8+	835 271	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31036	9-3-17	I	JOSEPH RICHARD FOX	CHEVRON USA INC	1/8+	800 546	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31043	9-3-17	I	DIANE M BAYLESS	CHEVRON USA INC	1/8+	798 97	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31044	9-3-17	I	DENNIS M WILSON	CHEVRON USA INC	1/8+	798 97	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31045	9-3-17	I	DAVID H WILSON	CHEVRON USA INC	1/8+	798 77	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31046	9-3-17	I	SANDRA JEAN WILSON	CHEVRON USA INC	1/8+	794 605	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31047	9-3-17	I	MARY CHRISTINE MCKENNA	CHEVRON USA INC	1/8+	795 49	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31048	9-3-17	I	LAURENCE E WILSON JR	CHEVRON USA INC	1/8+	800 154	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31049	9-3-17	I	ROBERT L ARCHER	CHEVRON USA INC	1/8+	803 45	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593

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10*31050	9-3-17	I	KATHERINE JEAN CONNELLY	CHEVRON USA INC	1/8+	803 30	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31051	9-3-17	I	STEVEN M ARCHER	CHEVRON USA INC	1/8+	803 38	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31052	9-3-17	I	WILLIAM R WISE	CHEVRON USA INC	1/8+	805 407	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*28092	9-8-7.1	J	WV DEPT OF TRANSPORTATION DIV OF HIGHWAYS	TH EXPLORATION LLC	1/8+	1073 370	N/A						
10*28808	9-8-7.1	J	HOLLY MARIE EBERSOLE	TH EXPLORATION LLC	1/8+	1078 47	N/A						
10*22055	9-8-8	K	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1010 226	N/A						
10*28649	9-8-8	K	KENNETH M MCCARDLE AND DELORES MCCARDLE	TH EXPLORATION LLC	1/8+	1075 483	N/A						
10*28809	9-8-8	K	LUCY MCCARDLE	TH EXPLORATION LLC	1/8+	1077 468	N/A						
10*28810	9-8-8	K	LEROY ANDERSON AND DONNA KAY ANDERSON	TH EXPLORATION LLC	1/8+	1077 261	N/A						
10*28866	9-8-8	K	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1072 230	N/A						
10*28987	9-8-8	K	ALLDALE MINERALS II LP	TH EXPLORATION LLC	1/8+	1080 558	N/A						
10*47051.086.12	9-8-8	K	ROBERT GENE WILLIAMS	TH EXPLORATION LLC	1/8+	957 86	N/A						
10*47051.086.13	9-8-8	K	WILLIAM O TURNER AND LISA ANN TURNER	TH EXPLORATION LLC	1/8+	941 401	N/A						
10*47051.086.14	9-8-8	K	KATHE A TURNER	TH EXPLORATION LLC	1/8+	941 429	N/A						
10*47051.086.15	9-8-8	K	REBA J CURTIS	TH EXPLORATION LLC	1/8+	1023 540	N/A						
10*47051.086.16	9-8-8	K	LORETTA L FREEOVE	TH EXPLORATION LLC	1/8+	941 433	N/A						
10*22615	9-9-9.1	L	DAVID D MURRAY AND MARY ANN MURRAY	TH EXPLORATION LLC	1/8+	965 591	N/A						
10*22745	9-9-9.1	L	BONNIE J JENKINS	TH EXPLORATION LLC	1/8+	968 288	N/A						
10*23314	9-9-9.1	L	CYNTHIA WATSON	TH EXPLORATION LLC	1/8+	988 499	N/A						
10*23353	9-9-9.1	L	SHARON E MCDONALD AND HAROLD S MCDONALD	TH EXPLORATION LLC	1/8+	988 495	N/A						
10*25718	9-9-9.1	L	KATHLEEN JEANNE B JENKINS	TH EXPLORATION LLC	1/8+	1035 13	N/A						
10*25719	9-9-9.1	L	NICHOLE M JENKINS	TH EXPLORATION LLC	1/8+	1035 17	N/A						
10*26494	9-9-9.1	L	JOHN P JENKINS	TH EXPLORATION LLC	1/8+	1037 434	N/A						
10*29231	9-9-9.1	L	COLE DALE GRIMM	TH EXPLORATION LLC	1/8+	1078 45	N/A						
10*29244	9-9-9.1	L	GELLNER LAW OFFICES GREGORY A GELLNER	TH EXPLORATION LLC	1/8+	1086 501	N/A						
10*29833	9-9-9.1	L	SKYPOINT RESOURCES LLC	TH EXPLORATION LLC	1/8+	1103 556	N/A						
10*31023	9-9-9.1	L	LUANN N HIMMELFARB	CHEVRON USA INC	1/8+	828 403	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31024	9-9-9.1	L	DOUGLAS A WAYSON	CHEVRON USA INC	1/8+	828 610	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31025	9-9-9.1	L	DAWNETTA MARIE WAYSON	CHEVRON USA INC	1/8+	828 616	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31026	9-9-9.1	L	DONALD CARMICHAEL	CHEVRON USA INC	1/8+	829 225	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31028	9-9-9.1	L	DAVID W CHAPMAN	CHEVRON USA INC	1/8+	829 470	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31030	9-9-9.1	L	ROBERT BRANDT WAYSON	CHEVRON USA INC	1/8+	831 362	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31031	9-9-9.1	L	GREGORY L CHAPMAN	CHEVRON USA INC	1/8+	831 490	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31032	9-9-9.1	L	SARAH LEONA MCGLONE	CHEVRON USA INC	1/8+	831 537	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31033	9-9-9.1	L	JUDITH ELLEN DOTY	CHEVRON USA INC	1/8+	834 426	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593

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|----------|---------|-----|--------------------------------------------|-----------------------|---------|----------------|-----|------------|------------|------------|------------|------------|------------|------------|--------------------------------------------------|
| 10*31037 | 9-9-9.1 | L   | LINDA S COLEMAN                            | CHEVRON USA INC       | 1/8+    | 836            | 319 | N/A        | Chevron USA Inc to TH Exploration II LLC: 45/593 |
| 10*31038 | 9-9-9.1 | L   | MARGARET ANN JONES                         | CHEVRON USA INC       | 1/8+    | 837            | 364 | N/A        | Chevron USA Inc to TH Exploration II LLC: 45/593 |
| 10*31039 | 9-9-9.1 | L   | PATRICK P TRUEX                            | CHEVRON USA INC       | 1/8+    | 847            | 514 | N/A        | Chevron USA Inc to TH Exploration II LLC: 45/593 |
| 10*31040 | 9-9-9.1 | L   | JOSEPH B PATRELLO AND JUDITH M PATRELLO    | CHEVRON USA INC       | 1/8+    | 848            | 472 | N/A        | Chevron USA Inc to TH Exploration II LLC: 45/593 |
| 10*31042 | 9-9-9.1 | L   | DANIEL W CHAPMAN                           | CHEVRON USA INC       | 1/8+    | 915            | 564 | N/A        | Chevron USA Inc to TH Exploration II LLC: 45/593 |
| 10*28244 | 9-9-5   | M   | MICHAEL D DOBBS AND STEPHANIE J DOBBS      | TH EXPLORATION LLC    | 1/8+    | 1068           | 569 | N/A                                              |
| 10*28340 | 9-9-5   | M   | PAMELA POSTLETHWAIT AND SCOTT POSTLETHWAIT | TH EXPLORATION LLC    | 1/8+    | 1071           | 427 | N/A                                              |

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## ASSIGNMENT AND CONVEYANCE

This Assignment and Conveyance (this "Assignment") is from SWN PRODUCTION COMPANY, LLC, a Texas limited liability company ("Assignor"), to TH Exploration, LLC, a Texas limited liability company ("Assignee"), and is executed on August 26th, 2020 (the "Effective Date"). Assignor and Assignee may be referred to herein collectively as the "Parties," or individually as a "Party." Capitalized terms used herein but not otherwise defined herein (including in Section 3.7) shall have the meanings given such terms in that certain Acreage Trade Agreement between the Assignor and the Assignee dated May 18, 2020 (the "Acreage Trade Agreement").

### ARTICLE 1 ASSIGNMENT OF ASSETS

**Section 1.1 Assignment.** For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor hereby GRANTS, BARGAINS, ASSIGNS, CONVEYS AND TRANSFERS unto Assignee all of Assignor's right, title and interest in and to (i) the oil and gas leases described in more detail on Exhibit A attached hereto (the "Leases") IN SO FAR AND ONLY IN SO FAR as they cover those lands described on Exhibit A and Exhibit A-1 (the "Leasehold Rights") and (ii) any surface use agreements that relate to such Leasehold Rights (collectively with the Leasehold Rights, the "Conveyed Assets").

**TO HAVE AND TO HOLD** the Conveyed Assets, together with all and singular the rights, privileges, contracts and appurtenances, in any way appertaining or belonging thereto, unto Assignee, its successors and assigns, forever, subject, to the terms and conditions of this Assignment.

**Section 1.2 Assignment Subject to Acreage Trade Agreement.** This Assignment is made in accordance with and is subject to the terms, covenants and conditions contained in that certain Acreage Trade Agreement. In the event of a conflict between the provisions of the Acreage Trade Agreement and this Assignment, the provisions of the Acreage Trade Agreement shall control. The execution and delivery of this Assignment by Assignor, and the execution and acceptance of this Assignment by Assignee, shall not operate to release or impair any surviving rights or obligations of either Party with respect to the other under the Acreage Trade Agreement.

In the event that the Marcellus Shale Formation (as further described in the definition of "Marcellus" below) or the Utica/Point Pleasant Formation (as further described in the definition of "Utica" below) is defined within the vesting language of the Leases or any other associated documents vesting Assignor with rights in such formations to a greater extent than the definitions of "Marcellus" or "Utica" as provided in this Assignment, this Assignment shall convey all right, title, and interest into the Conveyed Depths (as listed on the attached Exhibit A and Exhibit A-1) to the greatest extent possible whether as defined in this Assignment or as defined in the Leases or any other associated documents, whichever is broader.

### ARTICLE 2 SPECIAL WARRANTY OF TITLE AND DISCLAIMERS

**Section 2.1 Special Warranty of Title.** Assignor hereby agrees to warrant and defend Defensible Title to the Leases unto Assignee, its successors and assigns, against every Person whomsoever lawfully claiming or to claim the same or any part thereof by, through or under Assignor or any of its Affiliates, but not otherwise.

**Section 2.2 Disclaimers of Warranties and Representations.**

(a) EXCEPT AS EXPRESSLY REPRESENTED OTHERWISE IN SECTION VI OF THE ACREAGE TRADE AGREEMENT OR THIS ASSIGNMENT, ASSIGNOR MAKES NO, AND HEREBY EXPRESSLY DISCLAIMS, ANY REPRESENTATION OR WARRANTY, EXPRESS, IMPLIED OR STATUTORY, INCLUDING AS TO (I) TITLE TO THE LEASEHOLD RIGHTS, (II) THE CONTENTS, CHARACTER OR NATURE OF ANY DESCRIPTIVE MEMORANDUM, OR ANY REPORT OF ANY OF ITS PETROLEUM ENGINEERING CONSULTANTS, OR ANY GEOLOGICAL OR SEISMIC DATA OR INTERPRETATION, RELATING TO THE LEASEHOLD RIGHTS, (III) THE QUANTITY

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STATE OF WEST VIRGINIA     §  
                                          §  
COUNTY OF MARSHALL     §

**ASSIGNMENT AND CONVEYANCE**

**THIS ASSIGNMENT AND CONVEYANCE** (the "**Assignment**") is made and entered into this 24<sup>th</sup> day of June 2020 (the "**Effective Date**"), by and between **CHEVRON U.S.A. INC.**, a Pennsylvania corporation, with an address at 700 Cherrington Parkway, Coraopolis, PA 15108 (hereinafter "**Assignor**") and **TH EXPLORATION II, LLC**, a Texas limited liability company, with an address at 1320 S. University Drive, Suite 500, Fort Worth, TX 76107 (hereinafter "**Assignee**").

**WITNESSETH:**

**WHEREAS**, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to those certain oil and gas Leases situated in Marshall County, West Virginia, as described in **Exhibit "A"**, attached hereto and made a part hereof (hereinafter the "**Leases**"), subject to any applicable overriding royalty interests and midstream obligations;

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

1. **Assignment.** Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over and transfer, as of the Effective Date, to Assignee, its respective successors and assigns, forever, all of Assignor's right, title and interest in and to the Leases, and the lands covered thereby, together with all rights incident thereto and appurtenances thereon.

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

2. **Payment.** Within 15 days of execution of this Assignment by both parties, Assignee agrees to tender payment to Assignor in the amount and manner described in **Exhibit "B"**.

3. **No Warranty.** The Assignment is made on an "as is, where is" basis without warranty of any kind and is subject to any existing liens, encumbrances or burdens, including specifically any overriding royalty interests or midstream dedications, attached to or affecting the Leases. Assignor makes no, and expressly disclaims any, representation or warranty to Assignee regarding the Leases or title thereto, whether express, statutory or implied, in fact, at law, common law, in equity or otherwise.

4. **Existing Obligations.** This Assignment is made subject to and Assignee agrees to accept and perform all obligations under any existing agreements that affect the Leases, including Assignor's remaining obligations under any gathering, processing or other midstream contracts as those contracts relate specifically to the Leases.

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05/14/2021



TUG HILL

4705102381

March 29, 2021

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

RE: Hudson S-10HM

Subject: Road Crossing Letter

Dear Taylor:

Tug Hill Operating, LLC (THO) hereby submits this letter as confirmation that THO has obtained the right to drill, extract and produce the minerals under Marshall County Route 62/4 and Route 60 in the area reflected on the Hudson S-10HM well plat. THO has conducted a full title search in the relevant Court House to confirm its ownership under said County Routes and is not currently aware of any recorded document that would suggest an ownership other than THO.

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-hillop.com](mailto:amorris@tug-hillop.com).

Sincerely,

Amy Morris  
Permit Specialist – Appalachia Region

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

**Date of Notice Certification:** 03/29/2021

**API No.** 47- 051 - \_\_\_\_\_

**Operator's Well No.** Hudson S-10HM

**Well Pad Name:** Hudson

**Notice has been given:**

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>528,014.63</u>
County:	<u>Marshall</u>		Northing:	<u>4,408,817.45</u>
District:	<u>Meade</u>	Public Road Access:	<u>Roberts Ridge Road (CR 21)</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>CNX Land, LLC</u>	
Watershed:	<u>Grave Creek (HUC 10)</u>			

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

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 40px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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**Required Attachments:**

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

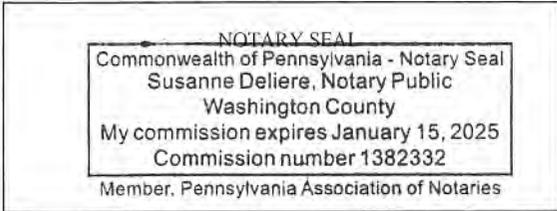
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**Certification of Notice is hereby given:**

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: Tug Hill Operating, LLC  
By: *Amy L. Morris*  
Its: Permitting Specialist - Appalachia Region  
Telephone: 724-749-8388

Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317  
Facsimile: 724-338-2030  
Email: amorris@tug-hillop.com



Subscribed and sworn before me this 27<sup>th</sup> day of March, 2021  
*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](mailto:deprivacyofficer@wv.gov).

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**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:** 3/26/2021 **Date Permit Application Filed:** 3/29/2021

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: CNX Land Resources, LLC Attn: Casey Saunders (Well Pad)  
 Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
 Name: Consolidation Coal Company  
 Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317

SURFACE OWNER(s) (Road and/or Other Disturbance)  
 Name: Robert L. and Melinda J. White (Access Road)  
 Address: 129 Freddie's Lane  
Glen Easton, WV 26039  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

COAL OPERATOR  
 Name: Murray American Energy, Inc. attn: Mason Smith  
 Address: 46226 National Road  
St. Clairsville, OH 43905

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)  
 Name: \*See attached list  
 Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

\*Please attach additional forms if necessary

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 05/14/2021

**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

**Well Location Restrictions**

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

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

**Water Well Testing:**

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

**Water Testing Laboratories:**

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

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

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

**Written Comment:**

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

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

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

WV Department of  
Environmental Protection

### **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.

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WW-6A  
(8-13)

API NO. 47-051 -  
OPERATOR WELL NO. Hudson S-10HM  
Well Pad Name: Hudson

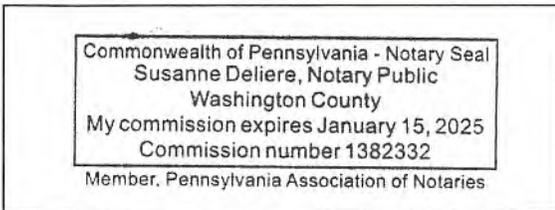
**Notice is hereby given by:**

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

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](mailto:depprivacyofficer@wv.gov).



Subscribed and sworn before me this 26<sup>th</sup> day of March, 2021.  
*Susanne Deliere* Notary Public  
My Commission Expires 1/15/2025

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**Exhibit WW-6A****Supplement Pg. 1A**

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

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

Well: Hudson S – 10HM  
 District: Meade  
 State: WV

There are four (4) residences, no business or commercial sites, no churches, no schools or no emergency facilities within two-thousand feet (2,000') of the above referenced well location. ✓

<p><b>Residence (#1)</b>            TM 3 Pcl. 1.3            CNX Land LLC  <b>Phone:</b> None Found  <b>Physical Address:</b>            143 Freddies Ln            Proctor, WV 26055  <b>Tax Address:</b>            1000 Consol Energy Dr.            Canonsburg, PA 15317-6506</p>	<p><b>Residence (#2)</b>            TM 5 Pcl. 11            Robert L. &amp; Melinda J. White  <b>Phone:</b> 740-667-3018; 304-845-2703            (Robert Andrew Williams – Reverse Address); 304-845-3756 (Melinda J. White); 304-845-4858 (Robert L. White)  <b>Physical Address:</b>            129 Freddies Ln            Proctor, WV 26055  <b>Tax Address:</b>            129 Freddies Ln            Glen Easton, WV 26039</p>	<p><b>Residence (#3)</b>            TM 5 Pcl. 10            Robert L. &amp; Melinda J. White  <b>Phone:</b> 304-845-0562 (Charlotte A. Streight – Reverse Address)  <b>Physical Address:</b>            443 Freddies Ln            Proctor, WV 26055  <b>Tax Address:</b>            129 Freddies Ln            Glen Easton, WV 26039</p>
<p><b>Residence (#4)</b>            TM 5 Pcl. 10            Robert L. &amp; Melinda J. White  <b>Phone:</b> 304-845-6068; 304-845-3756            (Robert L. White Jr. – Reverse Address);            304-845-3759 (Melinda J. White)  <b>Physical Address:</b>            642 Freddies Ln            Proctor, WV 26055  <b>Tax Address:</b>            129 Freddies Ln            Glen Easton, WV 26039</p>		

# PROPOSED HUDSON S - 10HM



NOTE: THERE APPEARS TO BE FOUR (4) POSSIBLE WATER SOURCES WITHIN 2,000'.

12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634  
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
 slsw.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8911	02/18/2021	1" = 1000'

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STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least SEVEN (7) days but no more than FORTY-FIVE (45) days prior to entry

Date of Notice: 6/4/2019 Date of Planned Entry: 6/11/2019

Delivery method pursuant to West Virginia Code § 22-6A-10a

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

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

- SURFACE OWNER(s)
Name: CNX Land Resources, LLC Attn: Casey Saunders (Well Pad)
Address: 1000 Consol Energy Drive Canonsburg, PA 15317
Name: Robert L. and Melinda J. White (Access Road)
Address: 129 Freddie's Lane Glen Easton, WV 26039
Name:
Address:
COAL OWNER OR LESSEE
Name: Consolidation Coal Company
Address: 1000 Consol Energy Drive Canonsburg, PA 15317
MINERAL OWNER(s)
Name: Charlene L. Baker \*See attached list
Address: 5523 Roberts Ridge Road Moundsville, WV 26041
\*please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: West Virginia Approx. Latitude & Longitude: 39.82881036; -80.67262857
County: Marshall Public Road Access: Co. Route 21
District: Meade Watershed: Grave Creek
Quadrangle: Glen Easton Generally used farm name: CNX Land Resources, LLC

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production 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). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary 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
Telephone: 724-749-8388 Canonsburg, PA 15317
Email: amiller@tug-hilltop.com 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.

**Additional Mineral Owners for Notice**  
**WW-6A3**  
**Hudson Pad**

✓ OK

Black Gold Group  
P.O. Box 85  
Strasburg, OH 44680

Catherine Lee Blake  
101 Tomlinson Ave.  
Moundsville, WV 26041

Ivan R. Blake  
2315 Wolf Run Rd.  
Cameron, WV 26033

Judith L. Blake  
515 Meade Ave.  
Akron, OH 44305

Robert C. Blake  
1400 Third St.  
Moundsville, WV 26041

Terry L. Blake  
213 Birch Ave.  
Moundsville, WV 26041

Betty Joan Cecil  
200 Simmons Dr.  
Moundsville, WV 26041

Bernard R. Crow  
78 Dwight Ave.  
Moundsville, WV 26041

Mark L. Curry  
14 Pilgrims Way  
Bentonville, VA 22610

Lois J. Elias  
17 East Paxton Ave.  
Wheeling, WV 26033

Dorothy J. Harris  
2212 Turkey Run Rd.  
Buckhannon, WV 26201

Jane Lynn Hendrickson  
236 Westwood Dr.  
Circleville, OH 43113

Betty J. Blake  
2 Portsmouth Rd.  
Front Royal, VA 22630

Gary F. Blake  
3801 Needham Rd.  
Mansfield, OH 44904

James L. Blake  
P.O. Box 124  
Farson, WY 82932

Rebecca J. Blake  
1506 6th St.  
Moundsville, WV 26041

Robert D. Blake  
3757 Main St.  
Weirton, WV 26062

William S. Blake Jr.  
P.O. Box 349  
Comfort, WV 25049

Shawn J. Crews  
39 Branch Ln.  
Broadway, NC 27505

Jay C. Curry  
635 Minebanck Rd.  
Middletown, VA 22645

Cynthia A. Davidson  
7079 Hayes Orangeville Road NE  
Burghill, OH 44404

Daunetta B. Fromhart  
1309 Center St.  
Moundsville, WV 26041

Velma Ruth Harris  
3307 Bowman Ridge Rd.  
Glen Easton, WV 26039

Jill Lori Hennen  
2004 Baxter Ave.  
Orlando, FL 32806

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✓  
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Alva L. Higgins  
4466 Templeton Road NW  
Warren, OH 44481

Clyde R. Higgins  
2601 Milton Newton Rd.  
Newton Falls, OH 44444

H. Dean Higgins  
9729 Gladstone Rd.  
North Jackson, OH 44451

Delmas W. Higgins  
7316 Elm St.  
Newton Falls, OH 44444

Jerry L. Higgins  
3460 Park Avenue Ext.  
Warren, OH 44481

Shirl W. Higgins  
5241 Pritchard Ohltown Rd.  
Newton Falls, OH 44444

Kimberly J. Holder  
5815 Highway 217  
Erwin, NC 28339

Mary H. Hubbs  
17 Hubbs Ln.  
Moundsville, WV 26041

Rodney W. Hubbs  
305 Sentimental Dr.  
Moundsville, WV 26041

Shannon Roger Hubbs  
27 Bowman Ridge  
Moundsville, WV 26041

Robert W. Kidner  
7757 Hansgrove Ct.  
Dublin, OH 43016

Mary O. Louden  
10 Sandy Ave.  
Moundsville, WV 26041

Brian C. Lutz  
364 Roseberry Ln.  
Wheeling, WV 26003

Jolene M. Mann  
494 Longfellow Ave.  
Worthington, OH 43085

Barbara A. Mason  
363 Ridgeview Lane  
Moundsville, WV 26041

Master Mineral Holdings II, L.P.  
P.O. Box 10886  
Midland, TX 79702

Joseph L. Maupin  
34626 Morning Glory Glen  
Zephyrhills, FL 33541

Diana L. McKinney  
275 Skyline Dr.  
Moundsville, WV 26041

Christina C. Munson  
14 Pilgrims Way  
Bentonville, VA 22610

Potomac Mineral Group LLC  
615 Washington Rd. Ste 201  
Pittsburgh, PA 15228

Brenda S. Purdy  
1404 Third St.  
Moundsville, WV 26041

Patty L. Rine  
801 Benton St.  
Apt. 2204  
Searcy, AR 72143

Carol J. Trowbridge  
34710 Morning Glory Glen  
Zephyrhills, FL 33541

Cynthia Jean Wilson  
1709 Bennis Church Place  
Virginia Beach, VA 23455

Carol Jean Wood  
106 Arlington Ave.  
Moundsville, WV 26041

Betty Bryner  
P.O. Box 270  
Bruceton Mills, WV 26525

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✓ OK

Betty Wilkinson  
9271 Barn Swallow Lane  
Marshall, VA 20115

Carl Caldwell  
501 Morgantown Avenue  
Apartment 201  
Barnesville, OH 43713

Doris Garrison  
28 Hickory Avenue  
Moundsville, WV 26041

Crystal Thomas  
1402 Sixth Street  
Moundsville, WV 26041

Arthur Lee Waryck  
912 Tomlinson Avenue  
Glen Dale, WV 26038

Hiram Vernon Moore  
609 Pink Apartment Rd  
Davenport, FL 33837

Larry Vernon Moore, Sr.  
135 Clover Hill Ln  
Newport, VA 24128

Ronald Wayne Moore  
434 Moores Ln  
New Cumberland, WV 26047

Dennis F. Moore  
471 Peal Dr, 104  
Proctor, WV 26055

Anthony T. Moore  
215 Ash Avenue  
Moundsville, WV 26041

Freda L. Campbell  
307 Elizabeth Street  
Glen Dale, WV 26038

James D. Yocum  
5200 NW 31st Avenue  
Apartment B 38  
Ft. Lauderdale, FL 33309

Joan A. Gieger  
621 Pepperdine Avenue  
Edmond, OK 33013

Joyce Elaine Cone  
1831 Old Westminster Pike  
Finksburg, MD 21048

Mary W. Holmes  
197 Spindle Lane  
Moundsville, WV 26041

Marilyn Sue Reilly  
197 Spindle Lane  
Moundsville, WV 26041

Freddie C. White  
RR 1 Box 59A  
Glen Easton, WV 26039

Sharon Diane Jahn  
2802 Spindle Lane  
Bowie, MD 20715

Joyce A. Wallace  
4107 Shoemaker Hollow Road  
New Philadelphia, OH 44663

Tamala Schollick  
112 Jennifer Drive  
Moundsville, WV 26041

Linda G. Moore  
720 3<sup>rd</sup> Avenue  
Apt. 312  
New Cumberland, WV 26047

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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:** 03/26/2021      **Date Permit Application Filed:** 03/29/2021

**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: CNX Land Resources, LLC Attn: Casey Saunders(Well Pad)  
Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317

Name: Robert L. and Melinda J. White (Access Road)  
Address: 129 Freddie's Lane  
Glen Easton, WV 26039

**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>528,014.63</u>
County:	<u>Marshall</u>		Northing:	<u>4,408,817.45</u>
District:	<u>Meade</u>	Public Road Access:	<u>Roberts Ridge Road (CR 21)</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>CNX Land, LLC</u>	
Watershed:	<u>Grave Creek (HUC 10)</u>			

**This Notice Shall Include:**

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

Well Operator: Tug Hill Operating, LLC  
Telephone: 724-749-8388  
Email: amiller@tug-hillop.com

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

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

**Division of Highways**

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

**Byrd E. White, III**  
Secretary of Transportation

February 17, 2021

**Jimmy Wriston, P. E.**  
Deputy Secretary/  
Acting Commissioner

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

Subject: DOH Permit for the Hudson Pad, Marshall County  
Hudson S-10HM Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2019-0353 issued to Tug Hill Operating for access to the State Road for a well site located off Marshall County Route 21 SLS MP10.57.

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

Very Truly Yours,

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

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

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**PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION**

**Hudson Wells**

<b>PRODUCT NAME:</b>	<b>CHEMICAL DESCRIPTION:</b>	<b>PRODUCT USE:</b>	<b>HAZARDOUS COMPONENT:</b>
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

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