



west virginia department of environmental protection

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

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

Wednesday, January 26, 2022
WELL WORK PERMIT
Horizontal 6A / New Drill

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

Re: Permit approval for WILLETT S-17HU
47-051-02424-00-00

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

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

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

A blue ink signature of James A. Martin, Chief.

James A. Martin
Chief

Operator's Well Number: WILLETT S-17HU
Farm Name: CNX LAND LLC
U.S. WELL NUMBER: 47-051-02424-00-00
Horizontal 6A New Drill
Date Issued: 1/26/2022



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-414-1239

Randall M. Albert, Chairman
dep.wv.gov

January 5, 2022

Department of Environmental Protection
Office of Oil and Gas
Charleston, WV 25304

RE: Application for Deep Well Permit – API #47-051-02424

COMPANY: Tug Hill Operating, LLC

FARM: CNX Land, LLC Willett S-17HU

COUNTY: Marshall DISTRICT: Meade QUAD: Glen Easton

The deep well review of the application for the above company is Approved to drill to Trenton for Point Pleasant completion.

The applicant has complied with the provision of Chapter 22C-9, of the Code of West Virginia, nineteen hundred and thirty-one (1931), as amended, Oil and Gas Conservation Commission as follows:

1. Comments to Notice of Deviation filed? No.
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: **yes
4. Provided a plat showing that the productive interval of the well meets the requirements of the Rules of the Commission W. Va. C.S.R. § 39-1-4.2.

Sincerely,


Susan Rose
Administrator

**Hudson S-15HU 47-051-02328; Hudson S-16HU 47-051-02329; Breckenridge S-19HU 47-051-02398; Breckenridge S-18HU 47-051-02397; Breckenridge S-17HU 47-051-02396; Fitzgerald S-17HU 47-051-02324; Fitzgerald S-18HU 47-051-02325; Fitzgerald S-19HU 47-051-02326; Hudson S-12HU 47-051-02292; Hudson S-13HU 47-051-02293; Hudson S-14HU 47-051-02327

01/28/2022

PERMIT CONDITIONS

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

CONDITIONS

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

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.

01/28/2022

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: Willett S-17HU Well Pad Name: Willett

3) Farm Name/Surface Owner: CNX Land, LLC Public Road Access: CR 62 New Bethel Road

4) Elevation, current ground: 1,310.03' Elevation, proposed post-construction: 1,310.03'

5) Well Type (a) Gas X Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow _____ Deep X _____

Horizontal X _____

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,825' - 11,947', thickness of 122' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 12,097' ✓

9) Formation at Total Vertical Depth: Trenton, plug back to Reedsville

10) Proposed Total Measured Depth: 24,309' ✓

11) Proposed Horizontal Leg Length: 11,051.91' ✓

12) Approximate Fresh Water Strata Depths: 70; 992' ✓

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

14) Approximate Saltwater Depths: 1,464' ✓

15) Approximate Coal Seam Depths: Sewickley Coal - 888' and Pittsburgh Coal - 986'

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 X No _____

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

Depth: 986' TVD and 324' subsea level

Seam: Pittsburgh

Owner: Marshall County Coal Resources, Inc.

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120' ✓	259ft^3(CTS)
Fresh Water/Coal	20"	NEW	J55	106.5#	1,100'	1,100' ✓	1764ft^3(CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2,875'	2,875' ✓	2026ft^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	11,403'	11,403' ✓	3714ft^3(CTS)
Production	5 1/2"	NEW	HCP110	23#	24,309'	24,309' ✓	5762ft^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		12,614' ✓	
Liners							

B.S. 10-14-21

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/Coal	20"	26#	.5	2,410	1,928	SEE #24	1.2
Intermediate 1	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate 2	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.33
Production	5 1/2"	8 1/2"	.415	16,510	13,208	SEE #24	1.17/1.19
Tubing	2 7/8"			14,530	11,624		
Liners							

PACKERS

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

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

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP (12,114'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform DBL from 60 deg to surface, make cleanout run, and stimulate.

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

Well to be completed with approximately 27,700,000 lb. proppant and 500,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

B.S. 10-14-21

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 15.60 acres

22) Area to be disturbed for well pad only, less access road (acres): 5.44 acres

23) Describe centralizer placement for each casing string:

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

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

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

25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.



Tug Hill Operating, LLC Casing and Cement Program

Willett S-17HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	1,100'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,875'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	11,403'	CTS
Production	5 1/2"	HCP110	8 1/2"	24,309'	CTS

Cement

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

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

Intermediate 2: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 14.5 ppg, Y=1.99

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 16.5 ppg, Y = 1.18

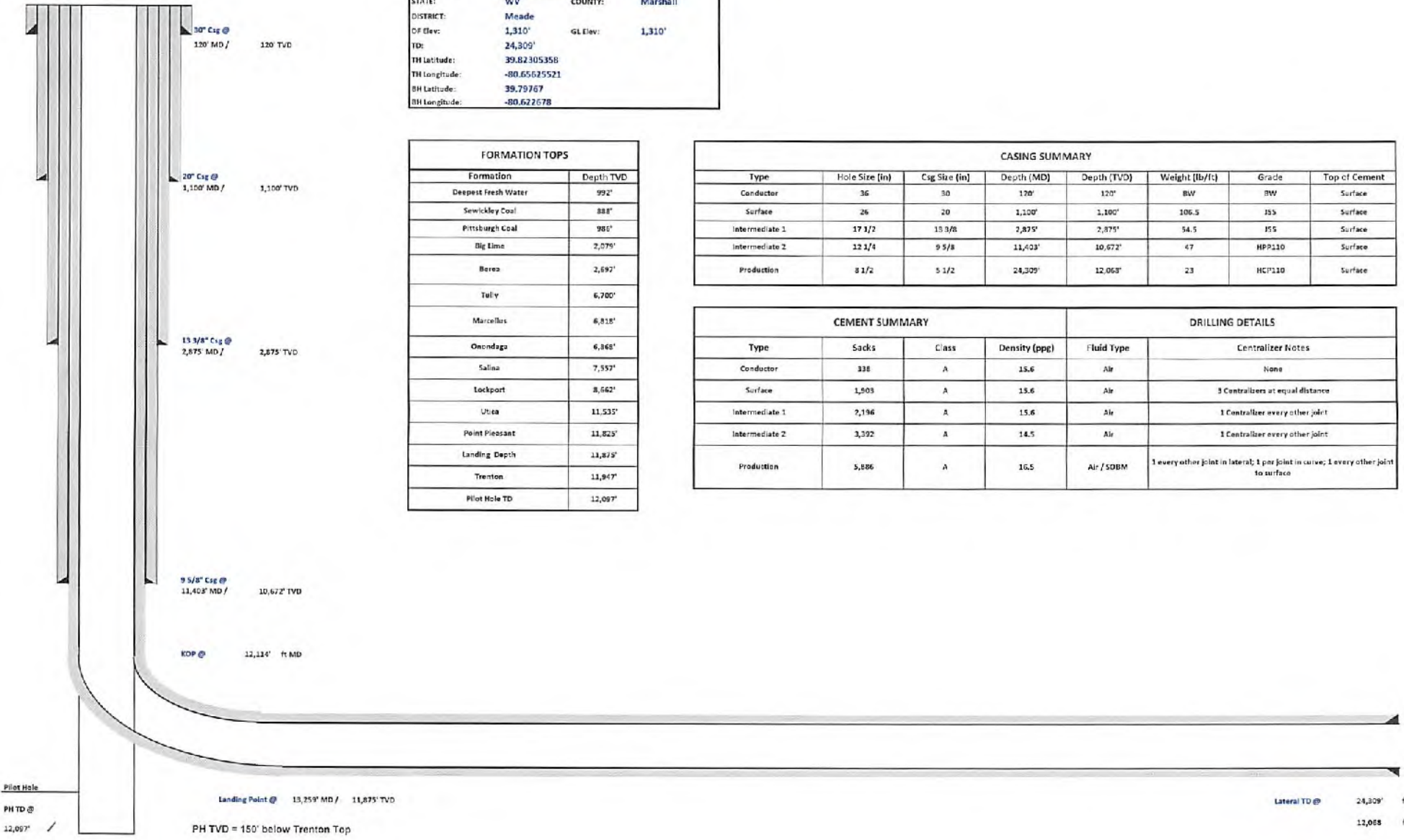


WELL NAME: Willett S-17HU
STATE: WV **COUNTY:** Marshall
DISTRICT: Meade
OP Elev: 1,310' **GL Elev:** 1,310'
TD: 24,309'
TH Latitude: 39.82305358
TH Longitude: -80.65625521
BH Latitude: 39.79767
BH Longitude: -80.622678

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	992'
Sewickley Coal	888'
Pittsburgh Coal	986'
Big Lime	2,079'
Berea	2,697'
Tully	6,700'
Marcellus	6,818'
Onondaga	6,868'
Salina	7,557'
Lockport	8,562'
Utica	11,535'
Point Pleasant	11,825'
Landing Depth	13,875'
Trenton	13,947'
Pilot Hole TD	12,097'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	170'	120'	8W	8W	Surface
Surface	26	20	1,100'	1,100'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,875'	2,875'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	11,403'	10,672'	47	HPP110	Surface
Production	8 1/2	5 1/2	24,309'	12,068'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,503	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,196	A	15.6	Air	1 Centralizer every other joint
Intermediate 2	3,392	A	14.5	Air	1 Centralizer every other joint
Production	5,886	A	16.5	Air / SOBDM	1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface



Pilot Hole PH TD @ 12,097' / Lateral TD @ 24,309' ft MD / 12,068' ft TVD
 Landing Point @ 13,259' MD / 11,875' TVD
 PH TVD = 150' below Trenton Top



Well: Willett S-17 HU (slot K)
 Site: Willett
 Project: Marshall County, West Virginia
 Design: rev2
 Rig:

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
2	3101.00	0.00	0.00	3101.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2°/100' build
3	3701.00	12.00	76.23	3698.82	14.90	80.80	2.00	78.230	33.20	Begin 12.00° tangent
4	7079.20	12.00	76.23	7001.00	182.06	742.98	0.00	0.000	405.74	Begin 2°/100' build/turn
5	8192.60	34.26	75.05	8018.46	291.96	1163.53	2.00	-1.749	630.72	Begin 34.26° tangent
6	12114.15	34.26	75.05	11259.42	631.34	3296.70	0.00	0.000	1763.09	Begin 6°/100' build/turn
7	12643.33	50.00	117.33	11658.43	805.26	3629.25	6.00	78.320	2040.60	Begin 6°/100' build/turn
8	13258.88	89.00	150.43	11875.14	404.38	4014.57	8.00	45.124	2595.32	Begin 89.00° lateral
9	24308.80	89.00	150.43	12058.00	-9204.95	9466.58	0.00	0.000	13204.05	PBHL/TD 24307.80 MD 12067.00 TVD

DESIGN TARGET DETAILS

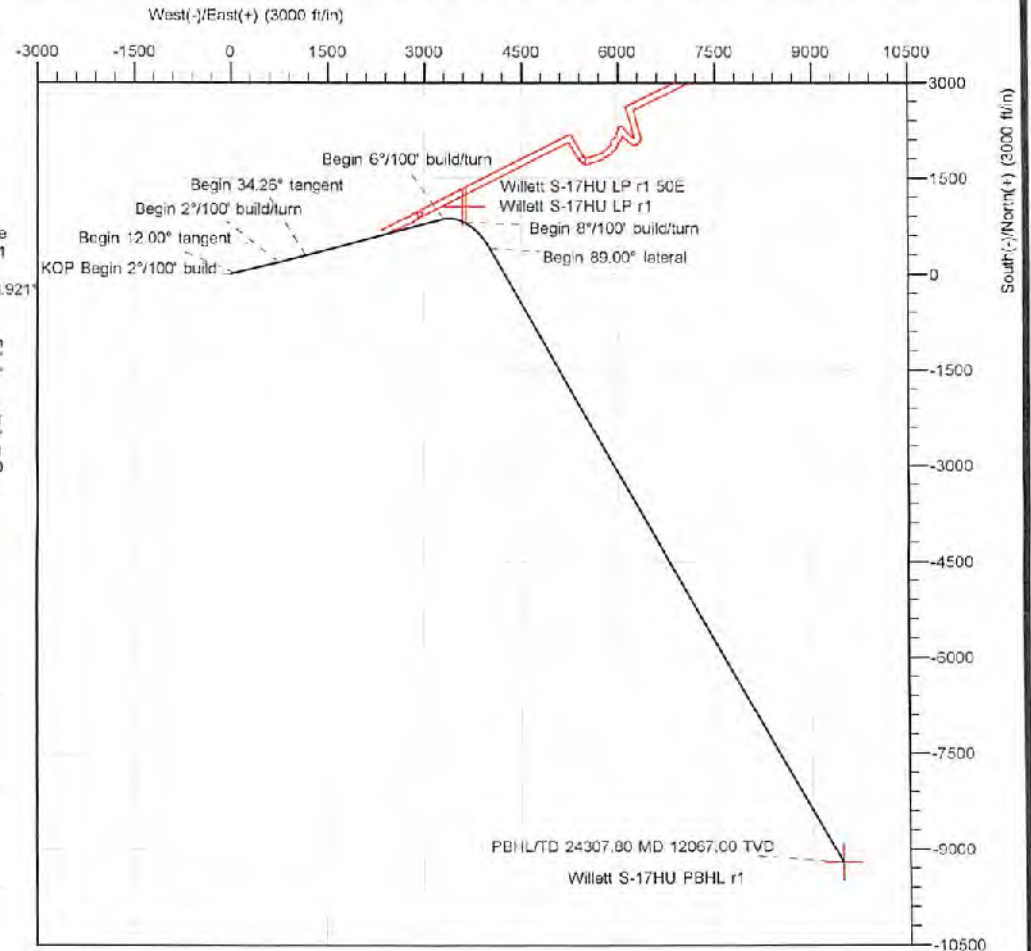
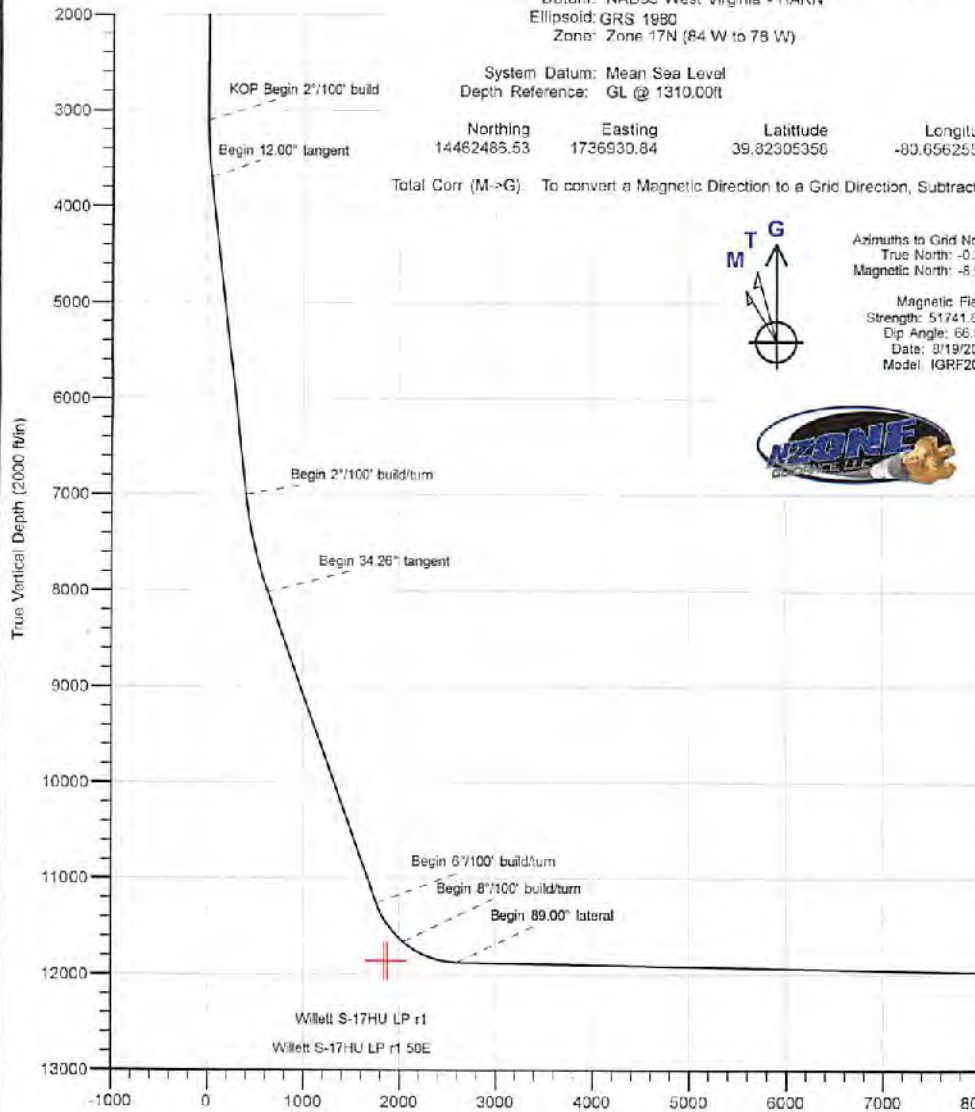
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Willett S-17HU LP r1	11862.00	1052.74	3595.44	14463539.27	1740526.28	39.82590600	-80.64343500
- plan misses target center by 321.90ft at 12650.00ft MD (11652.70 TVD, 802.89 N, 3633.79 E)							
Willett S-17HU LP r1 50E	11862.00	1052.74	3545.44	14463539.27	1740576.28	39.82590545	-80.64325692
- plan misses target center by 317.61ft at 12884.15ft MD (11884.03 TVD, 789.93 N, 3657.09 E)							
Willett S-17HU PBHL r1	12068.00	-9204.95	9466.58	14453281.60	1746397.41	39.79767000	-80.62267800
- 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 @ 1310.00ft

Northing: 14462485.53
 Easting: 1736930.84
 Latitude: 39.82305356
 Longitude: -80.65626521

Total Corr (M->G) To convert a Magnetic Direction to a Grid Direction, Subtract 8.921°

Azimuths to Grid North
 True North: -0.22°
 Magnetic North: -8.92°
 Magnetic Field
 Strength: 51741.8nT
 Dip Angle: 66.54°
 Date: 8/19/2021
 Model: IGRF2020





Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Willett S-17 HU (slot K)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1310.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1310.00ft
Site:	Willett	North Reference:	Grid
Well:	Willett S-17 HU (slot K)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

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

Site	Willett				
Site Position:		Northing:	14,462,447.53 usft	Latitude:	39.82294609
From:	Lat/Long	Easting:	1,736,965.80 usft	Longitude:	-80.65613126
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Willett S-17 HU (slot K)					
Well Position	+N/-S	0.00 ft	Northing:	14,462,486.54 usft	Latitude:	39.82305358
	+E/-W	0.00 ft	Easting:	1,736,930.84 usft	Longitude:	-80.65625521
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	1,310.00 ft
Grid Convergence:						

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	8/19/2021	-8.701	66.542	51,741.82317102

Design	rev2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	134.20

Plan Survey Tool Program		Date		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	24,308.80 rev2 (Original Hole)		



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Willett S-17 HU (slot K)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1310.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1310.00ft
Site:	Willett	North Reference:	Grid
Well:	Willett S-17 HU (slot K)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
3,101.00	0.00	0.00	3,101.00	0.00	0.00	0.00	0.00	0.00	0.000	
3,701.00	12.00	76.23	3,696.62	14.90	60.80	2.00	2.00	0.00	76.230	
7,079.20	12.00	76.23	7,001.00	182.06	742.96	0.00	0.00	0.00	0.000	
8,192.60	34.26	75.05	8,018.46	291.86	1,163.53	2.00	2.00	-0.11	-1.749	
12,114.15	34.26	75.05	11,259.42	861.34	3,296.70	0.00	0.00	0.00	0.000	
12,643.33	50.00	117.33	11,656.43	805.26	3,629.25	6.00	2.97	7.99	78.320	
13,258.88	89.00	150.43	11,875.14	404.36	4,014.57	6.00	6.34	5.38	46.124	
24,308.80	89.00	150.43	12,068.00	-9,204.95	9,466.58	0.00	0.00	0.00	0.000	Willett S-17HU PBHL



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Willett S-17 HU (slot K)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1310.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1310.00ft
Site:	Willett	North Reference:	Grid
Well:	Willett S-17 HU (slot K)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
100.00	0.00	0.00	100.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
200.00	0.00	0.00	200.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
300.00	0.00	0.00	300.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
400.00	0.00	0.00	400.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
500.00	0.00	0.00	500.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
600.00	0.00	0.00	600.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
700.00	0.00	0.00	700.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
800.00	0.00	0.00	800.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
900.00	0.00	0.00	900.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
3,101.00	0.00	0.00	3,101.00	0.00	0.00	14,462,486.54	1,736,930.84	39.82305358	-80.65625521	
KOP Begin 2°/100' build										
3,200.00	1.98	76.23	3,199.98	0.41	1.66	14,462,486.94	1,736,932.50	39.82305468	-80.65624929	
3,300.00	3.98	76.23	3,299.84	1.64	6.71	14,462,488.18	1,736,937.55	39.82305803	-80.65623129	
3,400.00	5.98	76.23	3,399.46	3.71	15.14	14,462,490.25	1,736,945.98	39.82306361	-80.65620123	
3,500.00	7.98	76.23	3,498.71	6.60	26.94	14,462,493.14	1,736,957.79	39.82307143	-80.65615916	
3,600.00	9.98	76.23	3,597.48	10.32	42.10	14,462,496.85	1,736,972.95	39.82308147	-80.65610512	
3,701.00	12.00	76.23	3,696.62	14.90	60.80	14,462,501.44	1,736,991.65	39.82309366	-80.65608845	
Begin 12.00° tangent										
3,800.00	12.00	76.23	3,793.46	19.80	80.79	14,462,506.34	1,737,011.64	39.82310711	-80.65596719	
3,900.00	12.00	76.23	3,891.27	24.75	100.99	14,462,511.29	1,737,031.83	39.82312048	-80.65589520	
4,000.00	12.00	76.23	3,989.09	29.70	121.18	14,462,516.23	1,737,052.03	39.82313386	-80.65582321	
4,100.00	12.00	76.23	4,086.90	34.65	141.38	14,462,521.18	1,737,072.22	39.82314724	-80.65575122	
4,200.00	12.00	76.23	4,184.72	39.60	161.57	14,462,526.13	1,737,092.41	39.82316061	-80.65567923	
4,300.00	12.00	76.23	4,282.53	44.54	181.76	14,462,531.08	1,737,112.61	39.82317399	-80.65560724	
4,400.00	12.00	76.23	4,380.35	49.49	201.96	14,462,536.03	1,737,132.80	39.82318737	-80.65553526	
4,500.00	12.00	76.23	4,478.16	54.44	222.15	14,462,540.98	1,737,152.99	39.82320075	-80.65546327	
4,600.00	12.00	76.23	4,575.98	59.39	242.34	14,462,545.93	1,737,173.19	39.82321412	-80.65539128	
4,700.00	12.00	76.23	4,673.79	64.34	262.54	14,462,550.88	1,737,193.38	39.82322750	-80.65531929	
4,800.00	12.00	76.23	4,771.61	69.29	282.73	14,462,555.82	1,737,213.57	39.82324088	-80.65524730	
4,900.00	12.00	76.23	4,869.42	74.24	302.92	14,462,560.77	1,737,233.77	39.82325425	-80.65517532	
5,000.00	12.00	76.23	4,967.24	79.19	323.12	14,462,565.72	1,737,253.96	39.82326763	-80.65510333	
5,100.00	12.00	76.23	5,065.05	84.13	343.31	14,462,570.67	1,737,274.15	39.82328101	-80.65503134	

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Willett S-17 HU (slot K)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1310.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1310.00ft
Site:	Willett	North Reference:	Grid
Well:	Willett S-17 HU (slot K)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,200.00	12.00	76.23	5,162.87	89.08	363.51	14,462,575.62	1,737,294.35	39.82329438	-80.65495935	
5,300.00	12.00	76.23	5,260.68	94.03	383.70	14,462,580.57	1,737,314.54	39.82330776	-80.65488736	
5,400.00	12.00	76.23	5,358.50	98.98	403.89	14,462,585.52	1,737,334.74	39.82332114	-80.65481537	
5,500.00	12.00	76.23	5,456.31	103.93	424.09	14,462,590.47	1,737,354.93	39.82333451	-80.65474339	
5,600.00	12.00	76.23	5,554.13	108.88	444.28	14,462,595.41	1,737,375.12	39.82334789	-80.65467140	
5,700.00	12.00	76.23	5,651.94	113.83	464.47	14,462,600.36	1,737,395.32	39.82336127	-80.65459941	
5,800.00	12.00	76.23	5,749.76	118.78	484.67	14,462,605.31	1,737,415.51	39.82337464	-80.65452742	
5,900.00	12.00	76.23	5,847.57	123.73	504.86	14,462,610.26	1,737,435.70	39.82338802	-80.65445543	
6,000.00	12.00	76.23	5,945.38	128.67	525.05	14,462,615.21	1,737,455.90	39.82340139	-80.65438344	
6,100.00	12.00	76.23	6,043.20	133.62	545.25	14,462,620.16	1,737,476.09	39.82341477	-80.65431145	
6,200.00	12.00	76.23	6,141.01	138.57	565.44	14,462,625.11	1,737,496.28	39.82342815	-80.65423947	
6,300.00	12.00	76.23	6,238.83	143.52	585.64	14,462,630.06	1,737,516.48	39.82344152	-80.65416748	
6,400.00	12.00	76.23	6,336.64	148.47	605.83	14,462,635.01	1,737,536.67	39.82345490	-80.65409549	
6,500.00	12.00	76.23	6,434.46	153.42	626.02	14,462,639.95	1,737,556.86	39.82346828	-80.65402350	
6,600.00	12.00	76.23	6,532.27	158.37	646.22	14,462,644.90	1,737,577.06	39.82348165	-80.65395151	
6,700.00	12.00	76.23	6,630.09	163.32	666.41	14,462,649.85	1,737,597.25	39.82349503	-80.65387952	
6,800.00	12.00	76.23	6,727.90	168.26	686.60	14,462,654.80	1,737,617.45	39.82350840	-80.65380753	
6,900.00	12.00	76.23	6,825.72	173.21	706.80	14,462,659.75	1,737,637.64	39.82352178	-80.65373554	
7,000.00	12.00	76.23	6,923.53	178.16	726.99	14,462,664.70	1,737,657.83	39.82353516	-80.65366355	
7,079.20	12.00	76.23	7,001.00	182.08	742.98	14,462,668.62	1,737,673.83	39.82354855	-80.65360854	
Begin 2°/100' build/turn										
7,100.00	12.42	76.17	7,021.33	183.13	747.26	14,462,669.67	1,737,678.10	39.82354859	-80.65359131	
7,200.00	14.42	75.93	7,118.60	188.73	769.77	14,462,675.26	1,737,700.61	39.82356371	-80.65351105	
7,300.00	16.41	75.75	7,215.00	195.23	795.54	14,462,681.77	1,737,726.38	39.82358130	-80.65341917	
7,400.00	18.41	75.61	7,310.41	202.63	824.54	14,462,689.17	1,737,755.38	39.82360132	-80.65331580	
7,500.00	20.41	75.50	7,404.72	210.93	856.72	14,462,697.46	1,737,787.57	39.82362375	-80.65320105	
7,600.00	22.41	75.40	7,497.81	220.10	892.06	14,462,706.64	1,737,822.90	39.82364857	-80.65307507	
7,700.00	24.41	75.32	7,589.57	230.14	930.50	14,462,716.68	1,737,861.35	39.82367574	-80.65293801	
7,800.00	26.41	75.25	7,679.89	241.04	972.01	14,462,727.58	1,737,902.65	39.82370523	-80.65279004	
7,900.00	28.41	75.19	7,768.66	252.79	1,016.52	14,462,739.32	1,737,947.36	39.82373701	-80.65263134	
8,000.00	30.41	75.14	7,855.76	265.36	1,063.99	14,462,751.90	1,737,994.83	39.82377104	-80.65246210	
8,100.00	32.41	75.09	7,941.10	278.75	1,114.36	14,462,765.29	1,738,045.20	39.82380727	-80.65228252	
8,192.60	34.26	75.05	8,018.46	291.86	1,163.53	14,462,778.40	1,738,094.37	39.82384274	-80.65210721	
Begin 34.26° tangent										
8,200.00	34.26	75.05	8,024.58	292.93	1,167.56	14,462,779.47	1,738,098.40	39.82384565	-80.65209286	
8,300.00	34.26	75.05	8,107.22	307.48	1,221.95	14,462,793.99	1,738,152.79	39.82388495	-80.65189893	
8,400.00	34.26	75.05	8,189.87	321.98	1,278.35	14,462,808.51	1,738,207.19	39.82392425	-80.65170499	
8,500.00	34.26	75.05	8,272.51	336.50	1,330.75	14,462,823.03	1,738,261.59	39.82396355	-80.65151105	
8,600.00	34.26	75.05	8,355.16	351.02	1,385.14	14,462,837.55	1,738,315.98	39.82400284	-80.65131711	
8,700.00	34.26	75.05	8,437.80	365.54	1,439.54	14,462,852.08	1,738,370.38	39.82404214	-80.65112318	
8,800.00	34.26	75.05	8,520.45	380.06	1,493.93	14,462,866.60	1,738,424.77	39.82408144	-80.65092924	
8,900.00	34.26	75.05	8,603.09	394.59	1,548.33	14,462,881.12	1,738,479.17	39.82412074	-80.65073530	
9,000.00	34.26	75.05	8,685.73	409.11	1,602.73	14,462,895.64	1,738,533.57	39.82416003	-80.65054136	
9,100.00	34.26	75.05	8,768.38	423.63	1,657.12	14,462,910.17	1,738,587.96	39.82419933	-80.65034742	
9,200.00	34.26	75.05	8,851.02	438.15	1,711.52	14,462,924.69	1,738,642.36	39.82423862	-80.65015348	
9,300.00	34.26	75.05	8,933.67	452.67	1,765.92	14,462,939.21	1,738,696.76	39.82427792	-80.64995954	
9,400.00	34.26	75.05	9,016.31	467.20	1,820.31	14,462,953.73	1,738,751.15	39.82431721	-80.64976560	
9,500.00	34.26	75.05	9,098.98	481.72	1,874.71	14,462,968.25	1,738,805.55	39.82435651	-80.64957166	
9,600.00	34.26	75.05	9,181.60	496.24	1,929.10	14,462,982.77	1,738,859.94	39.82439580	-80.64937772	
9,700.00	34.26	75.05	9,264.25	510.76	1,983.50	14,462,997.30	1,738,914.34	39.82443510	-80.64918378	
9,800.00	34.26	75.05	9,346.89	525.28	2,037.90	14,463,011.82	1,738,968.74	39.82447439	-80.64898984	
9,900.00	34.26	75.05	9,429.54	539.80	2,092.29	14,463,026.34	1,739,023.13	39.82451369	-80.64879590	
10,000.00	34.26	75.05	9,512.18	554.33	2,146.69	14,463,040.86	1,739,077.53	39.82455298	-80.64860196	
10,100.00	34.26	75.05	9,594.83	568.85	2,201.08	14,463,055.38	1,739,131.92	39.82459227	-80.64840802	



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Willett S-17 HU (slot K)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1310.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1310.00ft
Site:	Willett	North Reference:	Grid
Well:	Willett S-17 HU (slot K)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
10,200.00	34.26	75.05	9,677.47	583.37	2,255.48	14,463,069.90	1,739,186.32	39.82463156	-80.64821408	
10,300.00	34.26	75.05	9,760.12	597.89	2,309.88	14,463,084.43	1,739,240.72	39.82467036	-80.64802014	
10,400.00	34.26	75.05	9,842.76	612.41	2,364.27	14,463,098.95	1,739,295.11	39.82471015	-80.64782620	
10,500.00	34.26	75.05	9,925.41	626.93	2,418.67	14,463,113.47	1,739,349.51	39.82474944	-80.64763225	
10,600.00	34.26	75.05	10,008.05	641.46	2,473.07	14,463,127.99	1,739,403.90	39.82478873	-80.64743831	
10,700.00	34.26	75.05	10,090.70	655.98	2,527.46	14,463,142.51	1,739,458.30	39.82482802	-80.64724437	
10,800.00	34.26	75.05	10,173.34	670.50	2,581.86	14,463,157.03	1,739,512.70	39.82486731	-80.64705043	
10,900.00	34.26	75.05	10,255.99	685.02	2,636.25	14,463,171.56	1,739,567.09	39.82490660	-80.64685649	
11,000.00	34.26	75.05	10,338.63	699.54	2,690.65	14,463,186.08	1,739,621.49	39.82494589	-80.64666254	
11,100.00	34.26	75.05	10,421.28	714.06	2,745.05	14,463,200.60	1,739,675.88	39.82498518	-80.64646860	
11,200.00	34.26	75.05	10,503.92	728.59	2,799.44	14,463,215.12	1,739,730.28	39.82502447	-80.64627466	
11,300.00	34.26	75.05	10,586.57	743.11	2,853.84	14,463,229.64	1,739,784.68	39.82506376	-80.64608071	
11,400.00	34.26	75.05	10,669.21	757.63	2,908.23	14,463,244.16	1,739,839.07	39.82510305	-80.64588677	
11,500.00	34.26	75.05	10,751.86	772.15	2,962.63	14,463,258.69	1,739,893.47	39.82514234	-80.64569282	
11,600.00	34.26	75.05	10,834.50	786.67	3,017.03	14,463,273.21	1,739,947.86	39.82518163	-80.64549888	
11,700.00	34.26	75.05	10,917.15	801.20	3,071.42	14,463,287.73	1,740,002.26	39.82522091	-80.64530494	
11,800.00	34.26	75.05	10,999.79	815.72	3,125.82	14,463,302.25	1,740,056.66	39.82526020	-80.64511099	
11,900.00	34.26	75.05	11,082.44	830.24	3,180.22	14,463,316.77	1,740,111.05	39.82529949	-80.64491705	
12,000.00	34.26	75.05	11,165.08	844.76	3,234.61	14,463,331.29	1,740,165.45	39.82533878	-80.64472310	
12,100.00	34.26	75.05	11,247.73	859.28	3,289.01	14,463,345.82	1,740,219.85	39.82537806	-80.64452916	
12,114.15	34.26	75.05	11,259.42	861.34	3,296.70	14,463,347.87	1,740,227.54	39.82538362	-80.64450171	
Begin 6°/100' build/turn										
12,150.00	34.76	78.75	11,288.95	865.93	3,318.48	14,463,352.47	1,740,247.32	39.82539503	-80.64443121	
12,200.00	35.62	83.74	11,329.84	870.30	3,344.94	14,463,356.84	1,740,275.78	39.82540772	-80.64432979	
12,250.00	36.68	88.49	11,370.22	872.29	3,374.35	14,463,358.82	1,740,305.19	39.82541264	-80.64422502	
12,300.00	37.93	93.00	11,409.99	871.88	3,404.63	14,463,358.41	1,740,335.47	39.82541138	-80.64411717	
12,350.00	39.33	97.25	11,449.06	869.07	3,435.70	14,463,355.61	1,740,366.54	39.82540335	-80.64400855	
12,400.00	40.88	101.24	11,487.31	863.88	3,467.48	14,463,350.42	1,740,398.31	39.82538875	-80.64389345	
12,450.00	42.56	104.97	11,524.63	856.32	3,499.87	14,463,342.86	1,740,430.70	39.82536764	-80.64377820	
12,500.00	44.35	108.47	11,560.93	846.42	3,532.78	14,463,332.95	1,740,463.62	39.82534007	-80.64366110	
12,550.00	46.24	111.75	11,596.11	834.19	3,566.14	14,463,320.72	1,740,496.97	39.82530611	-80.64354248	
12,600.00	48.22	114.82	11,630.06	819.66	3,599.84	14,463,306.20	1,740,530.67	39.82526587	-80.64342266	
12,643.33	50.00	117.33	11,658.43	805.26	3,629.25	14,463,291.79	1,740,560.09	39.82522599	-80.64331810	
Begin 8°/100' build/turn										
12,650.00	50.37	117.83	11,652.70	802.89	3,633.79	14,463,289.42	1,740,564.63	39.82521942	-80.64330196	
12,700.00	53.22	121.41	11,693.63	783.46	3,667.92	14,463,269.99	1,740,598.76	39.82516569	-80.64318066	
12,750.00	56.16	124.73	11,722.53	761.18	3,702.09	14,463,247.72	1,740,632.92	39.82510415	-80.64305930	
12,800.00	59.19	127.82	11,749.27	736.18	3,736.13	14,463,222.71	1,740,666.96	39.82503510	-80.64293843	
12,850.00	62.26	130.73	11,773.72	708.56	3,769.87	14,463,195.09	1,740,700.71	39.82495888	-80.64281863	
12,900.00	65.44	133.47	11,795.75	678.46	3,803.16	14,463,165.00	1,740,733.99	39.82487587	-80.64270051	
12,950.00	68.64	136.08	11,815.25	646.04	3,835.82	14,463,132.57	1,740,766.66	39.82478646	-80.64258463	
13,000.00	71.87	138.57	11,832.15	611.44	3,867.71	14,463,097.97	1,740,798.54	39.82469110	-80.64247156	
13,050.00	75.14	140.97	11,846.34	574.84	3,898.66	14,463,061.37	1,740,829.49	39.82459024	-80.64236185	
13,100.00	78.44	143.31	11,857.76	536.41	3,928.52	14,463,022.95	1,740,859.35	39.82448439	-80.64225604	
13,150.00	81.75	145.58	11,866.36	496.34	3,957.15	14,462,982.88	1,740,887.99	39.82437404	-80.64215464	
13,200.00	85.08	147.82	11,872.10	454.84	3,984.41	14,462,941.37	1,740,915.25	39.82425975	-80.64205814	
13,250.00	88.41	150.04	11,874.94	412.09	4,010.17	14,462,898.82	1,740,941.00	39.82414207	-80.64196702	
13,258.88	89.00	150.43	11,875.14	404.36	4,014.57	14,462,890.92	1,740,945.41	39.82412086	-80.64195144	
Begin 89.00° lateral										
13,300.00	89.00	150.43	11,875.86	368.62	4,034.88	14,462,855.16	1,740,955.70	39.82402243	-80.64187969	
13,400.00	89.00	150.43	11,877.60	281.66	4,084.20	14,462,788.19	1,741,015.04	39.82378307	-80.64170520	
13,500.00	89.00	150.43	11,879.35	194.69	4,133.54	14,462,681.23	1,741,064.38	39.82354371	-80.64153071	
13,600.00	89.00	150.43	11,881.10	107.73	4,182.88	14,462,594.27	1,741,113.72	39.82330434	-80.64135623	
13,700.00	89.00	150.43	11,882.84	20.77	4,232.22	14,462,507.30	1,741,163.06	39.82306496	-80.64118174	



Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Willett
 Well: Willett S-17 HU (slot K)
 Wellbore: Original Hole
 Design: rev2

Local Co-ordinate Reference: Well Willett S-17 HU (slot K)
 TVD Reference: GL @ 1310.00ft
 MD Reference: GL @ 1310.00ft
 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
13,800.00	89.00	150.43	11,884.59	86.19	4,281.56	14,462,420.34	1,741,212.40	39.82262562	-80.64100726
13,900.00	89.00	150.43	11,886.33	-153.16	4,330.90	14,462,333.38	1,741,261.73	39.82258626	-80.64083278
14,000.00	89.00	150.43	11,888.08	-240.12	4,380.24	14,462,246.42	1,741,311.07	39.82234689	-80.64065830
14,100.00	89.00	150.43	11,889.82	-327.08	4,429.58	14,462,159.45	1,741,360.41	39.82210753	-80.64048382
14,200.00	89.00	150.43	11,891.57	-414.05	4,478.92	14,462,072.49	1,741,409.75	39.82186817	-80.64030935
14,300.00	89.00	150.43	11,893.31	-501.01	4,528.26	14,461,985.53	1,741,459.09	39.82162880	-80.64013487
14,400.00	89.00	150.43	11,895.06	-587.97	4,577.60	14,461,898.57	1,741,508.43	39.82138944	-80.63996039
14,500.00	89.00	150.43	11,896.80	-674.93	4,626.94	14,461,811.60	1,741,557.77	39.82115007	-80.63978592
14,600.00	89.00	150.43	11,898.55	-761.90	4,676.28	14,461,724.64	1,741,607.11	39.82091071	-80.63961145
14,700.00	89.00	150.43	11,900.29	-848.86	4,725.62	14,461,637.68	1,741,656.45	39.82067134	-80.63943698
14,800.00	89.00	150.43	11,902.04	-935.82	4,774.96	14,461,550.72	1,741,705.79	39.82043198	-80.63926251
14,900.00	89.00	150.43	11,903.78	-1,022.79	4,824.30	14,461,463.76	1,741,755.13	39.82019261	-80.63908804
15,000.00	89.00	150.43	11,905.53	-1,109.75	4,873.64	14,461,376.79	1,741,804.47	39.81995325	-80.63891357
15,100.00	89.00	150.43	11,907.28	-1,196.71	4,922.98	14,461,289.83	1,741,853.81	39.81971388	-80.63873910
15,200.00	89.00	150.43	11,909.02	-1,283.67	4,972.32	14,461,202.86	1,741,903.15	39.81947452	-80.63856464
15,300.00	89.00	150.43	11,910.77	-1,370.64	5,021.66	14,461,115.90	1,741,952.49	39.81923515	-80.63839017
15,400.00	89.00	150.43	11,912.51	-1,457.60	5,071.00	14,461,028.94	1,742,001.83	39.81899578	-80.63821571
15,500.00	89.00	150.43	11,914.26	-1,544.56	5,120.34	14,460,941.98	1,742,051.17	39.81875641	-80.63804125
15,600.00	89.00	150.43	11,916.00	-1,631.53	5,169.68	14,460,855.01	1,742,100.51	39.81851705	-80.63786679
15,700.00	89.00	150.43	11,917.75	-1,718.49	5,219.02	14,460,768.05	1,742,149.85	39.81827768	-80.63769233
15,800.00	89.00	150.43	11,919.49	-1,805.45	5,268.36	14,460,681.09	1,742,199.19	39.81803831	-80.63751787
15,900.00	89.00	150.43	11,921.24	-1,892.41	5,317.70	14,460,594.13	1,742,248.53	39.81779894	-80.63734342
16,000.00	89.00	150.43	11,922.98	-1,979.38	5,367.04	14,460,507.16	1,742,297.87	39.81755958	-80.63716896
16,100.00	89.00	150.43	11,924.73	-2,066.34	5,416.38	14,460,420.20	1,742,347.21	39.81732021	-80.63699451
16,200.00	89.00	150.43	11,926.47	-2,153.30	5,465.72	14,460,333.24	1,742,396.55	39.81708084	-80.63682005
16,300.00	89.00	150.43	11,928.22	-2,240.27	5,515.06	14,460,246.27	1,742,445.89	39.81684147	-80.63664560
16,400.00	89.00	150.43	11,929.96	-2,327.23	5,564.40	14,460,159.31	1,742,495.23	39.81660210	-80.63647115
16,500.00	89.00	150.43	11,931.71	-2,414.19	5,613.73	14,460,072.35	1,742,544.57	39.81636273	-80.63629670
16,600.00	89.00	150.43	11,933.46	-2,501.15	5,663.07	14,459,985.39	1,742,593.91	39.81612336	-80.63612225
16,700.00	89.00	150.43	11,935.20	-2,588.12	5,712.41	14,459,898.42	1,742,643.25	39.81588399	-80.63594780
16,800.00	89.00	150.43	11,936.95	-2,675.08	5,761.75	14,459,811.46	1,742,692.59	39.81564462	-80.63577335
16,900.00	89.00	150.43	11,938.69	-2,762.04	5,811.09	14,459,724.50	1,742,741.93	39.81540525	-80.63559891
17,000.00	89.00	150.43	11,940.44	-2,849.01	5,860.43	14,459,637.54	1,742,791.27	39.81516588	-80.63542447
17,100.00	89.00	150.43	11,942.18	-2,935.97	5,909.77	14,459,550.57	1,742,840.61	39.81492651	-80.63525003
17,200.00	89.00	150.43	11,943.93	-3,022.93	5,959.11	14,459,463.61	1,742,889.95	39.81468713	-80.63507559
17,300.00	89.00	150.43	11,945.67	-3,109.89	6,008.45	14,459,376.65	1,742,939.29	39.81444776	-80.63490115
17,400.00	89.00	150.43	11,947.42	-3,196.85	6,057.79	14,459,289.69	1,742,988.62	39.81420839	-80.63472671
17,500.00	89.00	150.43	11,949.16	-3,283.82	6,107.13	14,459,202.72	1,743,037.96	39.81396902	-80.63455227
17,600.00	89.00	150.43	11,950.91	-3,370.78	6,156.47	14,459,115.76	1,743,087.30	39.81372964	-80.63437783
17,700.00	89.00	150.43	11,952.65	-3,457.75	6,205.81	14,459,028.80	1,743,136.64	39.81349027	-80.63420340
17,800.00	89.00	150.43	11,954.40	-3,544.71	6,255.15	14,458,941.83	1,743,185.98	39.81325090	-80.63402896
17,900.00	89.00	150.43	11,956.14	-3,631.67	6,304.49	14,458,854.87	1,743,235.32	39.81301152	-80.63385453
18,000.00	89.00	150.43	11,957.89	-3,718.63	6,353.83	14,458,767.91	1,743,284.66	39.81277215	-80.63368010
18,100.00	89.00	150.43	11,959.64	-3,805.60	6,403.17	14,458,680.95	1,743,334.00	39.81253278	-80.63350567
18,200.00	89.00	150.43	11,961.38	-3,892.56	6,452.51	14,458,593.98	1,743,383.34	39.81229340	-80.63333124
18,300.00	89.00	150.43	11,963.13	-3,979.52	6,501.85	14,458,507.02	1,743,432.68	39.81205403	-80.63315681
18,400.00	89.00	150.43	11,964.87	-4,066.49	6,551.19	14,458,420.06	1,743,482.02	39.81181465	-80.63298239
18,500.00	89.00	150.43	11,966.62	-4,153.45	6,600.53	14,458,333.10	1,743,531.36	39.81157528	-80.63280796
18,600.00	89.00	150.43	11,968.36	-4,240.41	6,649.87	14,458,246.13	1,743,580.70	39.81133590	-80.63263354
18,700.00	89.00	150.43	11,970.11	-4,327.37	6,699.21	14,458,159.17	1,743,630.04	39.81109653	-80.63245911
18,800.00	89.00	150.43	11,971.85	-4,414.34	6,748.55	14,458,072.21	1,743,679.38	39.81085715	-80.63228469
18,900.00	89.00	150.43	11,973.60	-4,501.30	6,797.89	14,457,985.25	1,743,728.72	39.81061778	-80.63211027
19,000.00	89.00	150.43	11,975.34	-4,588.26	6,847.23	14,457,898.28	1,743,778.06	39.81037840	-80.63193585
19,100.00	89.00	150.43	11,977.09	-4,675.23	6,896.57	14,457,811.32	1,743,827.40	39.81013902	-80.63176143
19,200.00	89.00	150.43	11,978.83	-4,762.19	6,945.91	14,457,724.36	1,743,876.74	39.80989965	-80.63158702



Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Willett
 Well: Willett S-17 HU (slot K)
 Wellbore: Original Hole
 Design: rev2

Local Co-ordinate Reference: Well Willett S-17 HU (slot K)
 TVD Reference: GL @ 1310.00ft
 MD Reference: GL @ 1310.00ft
 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
19,300.00	89.00	150.43	11,980.58	-4,849.15	6,995.25	14,457,637.39	1,743,926.08	39.80966027	-80.63141260
19,400.00	89.00	150.43	11,982.32	-4,936.11	7,044.59	14,457,550.43	1,743,975.42	39.80942089	-80.63123819
19,500.00	89.00	150.43	11,984.07	-5,023.08	7,093.93	14,457,463.47	1,744,024.76	39.80918151	-80.63106377
19,600.00	89.00	150.43	11,985.82	-5,110.04	7,143.27	14,457,376.51	1,744,074.10	39.80894214	-80.63088836
19,700.00	89.00	150.43	11,987.56	-5,197.00	7,192.61	14,457,289.54	1,744,123.44	39.80870276	-80.63071495
19,800.00	89.00	150.43	11,989.31	-5,283.97	7,241.95	14,457,202.58	1,744,172.78	39.80846336	-80.63054054
19,900.00	89.00	150.43	11,991.05	-5,370.93	7,291.29	14,457,115.62	1,744,222.12	39.80822400	-80.63036613
20,000.00	89.00	150.43	11,992.80	-5,457.89	7,340.63	14,457,028.66	1,744,271.46	39.80798462	-80.63019172
20,100.00	89.00	150.43	11,994.54	-5,544.85	7,389.97	14,456,941.69	1,744,320.80	39.80774524	-80.63001732
20,200.00	89.00	150.43	11,996.29	-5,631.82	7,439.31	14,456,854.73	1,744,370.14	39.80750586	-80.62984291
20,300.00	89.00	150.43	11,998.03	-5,718.78	7,488.65	14,456,767.77	1,744,419.48	39.80726648	-80.62966851
20,400.00	89.00	150.43	11,999.78	-5,805.74	7,537.99	14,456,680.80	1,744,468.82	39.80702710	-80.62949410
20,500.00	89.00	150.43	12,001.52	-5,892.71	7,587.33	14,456,593.84	1,744,518.16	39.80678772	-80.62931970
20,600.00	89.00	150.43	12,003.27	-5,979.67	7,636.67	14,456,506.88	1,744,567.49	39.80654834	-80.62914530
20,700.00	89.00	150.43	12,005.01	-6,066.63	7,686.01	14,456,419.92	1,744,616.83	39.80630896	-80.62897090
20,800.00	89.00	150.43	12,006.76	-6,153.59	7,735.35	14,456,332.95	1,744,666.17	39.80606958	-80.62879651
20,900.00	89.00	150.43	12,008.51	-6,240.55	7,784.69	14,456,245.99	1,744,715.51	39.80583020	-80.62862211
21,000.00	89.00	150.43	12,010.25	-6,327.52	7,834.03	14,456,159.03	1,744,764.85	39.80559082	-80.62844771
21,100.00	89.00	150.43	12,012.00	-6,414.48	7,883.37	14,456,072.07	1,744,814.19	39.80535143	-80.62827332
21,200.00	89.00	150.43	12,013.74	-6,501.45	7,932.71	14,455,985.10	1,744,863.53	39.80511205	-80.62809893
21,300.00	89.00	150.43	12,015.49	-6,588.41	7,982.05	14,455,898.14	1,744,912.87	39.80487267	-80.62792454
21,400.00	89.00	150.43	12,017.23	-6,675.37	8,031.39	14,455,811.18	1,744,962.21	39.80463329	-80.62775015
21,500.00	89.00	150.43	12,018.98	-6,762.33	8,080.72	14,455,724.22	1,745,011.55	39.80439390	-80.62757576
21,600.00	89.00	150.43	12,020.72	-6,849.30	8,130.06	14,455,637.25	1,745,060.89	39.80415452	-80.62740137
21,700.00	89.00	150.43	12,022.47	-6,936.26	8,179.40	14,455,550.29	1,745,110.23	39.80391514	-80.62722698
21,800.00	89.00	150.43	12,024.21	-7,023.22	8,228.74	14,455,463.33	1,745,159.57	39.80367575	-80.62705260
21,900.00	89.00	150.43	12,025.96	-7,110.19	8,278.08	14,455,376.36	1,745,208.91	39.80343637	-80.62687821
22,000.00	89.00	150.43	12,027.70	-7,197.15	8,327.42	14,455,289.40	1,745,258.25	39.80319698	-80.62670383
22,100.00	89.00	150.43	12,029.45	-7,284.11	8,376.76	14,455,202.44	1,745,307.59	39.80295760	-80.62652945
22,200.00	89.00	150.43	12,031.19	-7,371.07	8,426.10	14,455,115.48	1,745,356.93	39.80271821	-80.62635506
22,300.00	89.00	150.43	12,032.94	-7,458.04	8,475.44	14,455,028.51	1,745,406.27	39.80247883	-80.62618068
22,400.00	89.00	150.43	12,034.69	-7,545.00	8,524.78	14,454,941.55	1,745,455.61	39.80223944	-80.62600631
22,500.00	89.00	150.43	12,036.43	-7,631.96	8,574.12	14,454,854.59	1,745,504.95	39.80200006	-80.62583193
22,600.00	89.00	150.43	12,038.18	-7,718.93	8,623.46	14,454,767.63	1,745,554.29	39.80176067	-80.62565755
22,700.00	89.00	150.43	12,039.92	-7,805.89	8,672.80	14,454,680.66	1,745,603.63	39.80152129	-80.62548318
22,800.00	89.00	150.43	12,041.67	-7,892.85	8,722.14	14,454,593.70	1,745,652.97	39.80128190	-80.62530880
22,900.00	89.00	150.43	12,043.41	-7,979.81	8,771.48	14,454,506.74	1,745,702.31	39.80104251	-80.62513443
23,000.00	89.00	150.43	12,045.16	-8,066.78	8,820.82	14,454,419.78	1,745,751.65	39.80080312	-80.62496006
23,100.00	89.00	150.43	12,046.90	-8,153.74	8,870.16	14,454,332.81	1,745,800.99	39.80056374	-80.62478569
23,200.00	89.00	150.43	12,048.65	-8,240.70	8,919.50	14,454,245.85	1,745,850.33	39.80032435	-80.62461132
23,300.00	89.00	150.43	12,050.39	-8,327.67	8,968.84	14,454,158.89	1,745,899.67	39.80008498	-80.62443695
23,400.00	89.00	150.43	12,052.14	-8,414.63	9,018.18	14,454,071.92	1,745,949.01	39.79984557	-80.62426259
23,500.00	89.00	150.43	12,053.88	-8,501.59	9,067.52	14,453,984.96	1,745,998.35	39.79960619	-80.62408822
23,600.00	89.00	150.43	12,055.63	-8,588.55	9,116.86	14,453,898.00	1,746,047.69	39.79936680	-80.62391386
23,700.00	89.00	150.43	12,057.37	-8,675.52	9,166.20	14,453,811.04	1,746,097.03	39.79912741	-80.62373950
23,800.00	89.00	150.43	12,059.12	-8,762.48	9,215.54	14,453,724.07	1,746,146.37	39.79888802	-80.62356513
23,900.00	89.00	150.43	12,060.87	-8,849.44	9,264.88	14,453,637.11	1,746,195.71	39.79864863	-80.62339077
24,000.00	89.00	150.43	12,062.61	-8,936.41	9,314.22	14,453,550.15	1,746,245.04	39.79840924	-80.62321641
24,100.00	89.00	150.43	12,064.36	-9,023.37	9,363.56	14,453,463.19	1,746,294.38	39.79816985	-80.62304206
24,200.00	89.00	150.43	12,066.10	-9,110.33	9,412.90	14,453,376.22	1,746,343.72	39.79793046	-80.62286770
24,308.80	89.00	150.43	12,068.00	-9,204.95	9,466.58	14,453,281.61	1,746,393.41	39.79769000	-80.62269300

PBHL/TD 24307.80 MD 12067.00 TVD

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Willett S-17 HU (slot K)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1310.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1310.00ft
Site:	Willett	North Reference:	Grid
Well:	Willett S-17 HU (slot K)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

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									
Willett S-17HU LP r1 - plan misses target center by 321.90ft at 12650.00ft MD (11662.70 TVD, 802.89 N, 3633.79 E) - Point	0.00	0.00	11,862.00	1,052.74	3,595.44	14,463,539.28	1,740,526.26	39.82590600	-80.64343500
Willett S-17HU LP r1 50l - plan misses target center by 317.61ft at 12684.15ft MD (11684.03 TVD, 789.93 N, 3657.09 E) - Point	0.00	0.00	11,862.00	1,052.74	3,645.44	14,463,539.28	1,740,576.26	39.82590545	-80.64325692
Willett S-17HU PBHL r1 - plan hits target center - Point	0.00	0.00	12,068.00	-9,204.95	9,466.58	14,453,281.61	1,746,397.41	39.79767000	-80.62267800

Casing Points					
Measured Depth	Vertical Depth		Name	Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
24,308.80	12,068.00	20" Casing		20	24

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
3,101.00	3,101.00	0.00	0.00	KOP Begin 2"/100' build	
3,701.00	3,696.62	14.90	60.80	Begin 12.00° tangent	
7,079.20	7,001.00	182.08	742.98	Begin 2"/100' build/turn	
8,192.60	8,018.46	291.86	1,163.53	Begin 34.26° tangent	
12,114.15	11,259.42	861.34	3,296.70	Begin 6"/100' build/turn	
12,643.33	11,658.43	805.26	3,629.25	Begin 8"/100' build/turn	
13,258.88	11,875.14	404.38	4,014.57	Begin 89.00° lateral	
24,308.80	12,068.00	-9,204.95	9,466.58	PBHL/TD 24307.80 MD 12067.00 TVD	

Area of Review

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

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

Data Sources Reviewed:

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

Contacted Adam Picard 724-485-9331, apicard@dpslandservices.com, DPS GIS (08/25/2021) 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 Enverus All Wells Layer
2. Map with Farm lines overlain and any well spots identified on Farm Maps
3. More recent (1970s vintage) topos and older topos

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

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

Wells within 500' Buffer

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705102255	Tug Hill Operating, LLC	6870' TVD (proposed)	Marcellus (proposed)	none	Yes, this is a proposed well in the Marcellus. Once completed the well will be within the expected fracture propagation from a Marcellus stimulation. Proper casing and cement should prevent migration of fluids between wellbores.	A Tug Hill Operating, LLC permitted well on the pad that is not drilled or perforated.
4705100935	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 Point Pleasant well. Well is plugged.	Well was plugged 7/7/2004.
4705100955	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 Point Pleasant well. Well is plugged.	Well was plugged 9/23/2005.
4705100958	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 Point Pleasant well. Well is plugged.	Well was plugged 11/15/2005.

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
4705170040	South Penn Oil (S. Penn Nat. Gas)	3112' TVD	Gordon	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.	
4705170207 (reassigned to 4705170040)	South Penn Oil (S. Penn Nat. Gas)	3112' TVD	Gordon	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.	API # 4705170207 reassigned to 4705170040.
4705170632 (reassigned to 4705100955)	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 Point Pleasant well. Well is plugged.	API # 4705170632 reassigned to 4705100955. Well was plugged 9/23/2005.
4705170633 (reassigned to 4705100935)	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 Point Pleasant well. Well is plugged.	API # 4705170633 reassigned to 4705100935. Well was plugged 7/7/2004.
4705170631	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.	State records are incomplete.

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
4705100617	CNX Gas Co. LLC (North)	3015' TVD	Gordon	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Well is plugged.	Well was plugged 10/15/2004.
4705100633	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 Point Pleasant well. Well is plugged.	Well was plugged 7/14/2005.
4705100879	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 Point Pleasant well. Well is plugged.	Well was plugged 11/18/2002.
4705100919	Consolidation Coal Co.	2914' TVD	Gordon	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Well is plugged.	Well was plugged 6/25/2004.
4705130127 (reassigned to 4705100919)	Consolidation Coal Co.	2914' TVD	Gordon	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Well is plugged.	API # 4705130127 reassigned to 4705100919. Well was plugged 6/25/2004.

WV Geological & Economic Survey.

Well: County = 51 Permit = 02255

Report Time: Monday, August 30, 2021 9:22:18 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102255	Marshall	2255	Meade	Glen Easton	Cameron	39.822712	-80.656398	529405.5	4408136.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT
4705102255	-/-		Permitted	CNX Land LLC	21V		Willett		Appalachian Basin Minerals LP et al	Tug Hill Operating, LLC	6870	Marcellus Fr.

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
4705102255	-/-	-/-	1315	Ground Level															

WV Geological & Economic Survey

Well: County = 51 Permit = 00935

Report Time: Monday, August 30, 2021 11:54:04 AM

Well Reassignment Information: Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70633	51	935

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100935	Marshall	935	Liberty	Glen Easton	Cameron	39.812076	-80.634769	531261.3	4406963.6

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
4705100935	7/7/2004	Plugging	Completed	Carroll/A Morris		M-174			Consolidation Coal Co	Consolidation Coal Co			
4705100935	-/-	unknown	Prpty Map	Phillip M Conner						South Penn Oil (S. Penn Nat. Gas)			

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_AF
4705100935	7/7/2004	6/21/2004	1185	Ground Level														
4705100935	-/-	-/-						unclassified	unclassified	not available	unknown	unknown						

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
4705100935	7/7/2004	0

There is no Sample data for this well

WV Geological & Economic Survey

Well: County = 51 Permit = 00955

Report Time: Monday, August 30, 2021 11:54:33 AM

Well Reassignment Information: Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70632	51	955

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705100955	Marshall	955	Liberty	Glen Easton	Cameron	39.81048	-80.634017	531326.4	4406786.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_ES
4705100955	9/23/2005	Plugging	Completed	Joseph B & Judith M Patrello		M-176				Consolidation Coal Co			
4705100955	-/-	unknown	Prpty Map	John Chapman			993			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_BEV	G_AF
4705100955	9/23/2005	9/6/2005	1223	Ground Level				unclassified	unclassified	not available	unknown	UnFin/MSm						
4705100955	-/-	-/-						unclassified	unclassified	not available	unknown	unknown						

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705100955	Original Loc	Pittsburgh coal	Well Record	967	Reasonable	6	Reasonable	1223	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100955	9/23/2005	0

There is no Sample data for this well

WV Geological & Economic Survey

Well: County = 51 Permit = 00958

Report Time: Monday, August 30, 2021 11:54:48 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100958	Marshall	958	Liberty	Glen Easton	Cameron	39.810356	-80.631008	531584	4406774 1

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
4705100958	11/15/2005	Plugging	Completed	James & Linda Hubbs		M-325				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_/
4705100958	11/15/2005	10/28/2005	1272	Ground Level				unclassified	unclassified	not available	unknown	UnFinWIStm						

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705100958	Original Loc	Pittsburgh coal	Well Record	1031	Reasonable	5	Reasonable	1272	Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100958	11/15/2005	0

There is no Sample data for this well

WV Geological & Economic Survey

Well: County = 51 Permit = 70040

Report Time: Monday, August 30, 2021 11:55:04 AM

Well Reassignment Information: Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70207	51	70040

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705170040	Marshall	70040	Liberty	Glen Easton	Cameron	39.811372	-80.630633	531615.7	4406886.9

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_P
4705170040	--		Original Loc	Completed	P M Conner	2	M-74			South Penn Oil (S. Penn Nat. Gas)			

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
4705170040	--	--	1360	Barometer		Gordon (undiff)	Gordon (undiff)	unclassified	unclassified	not available	unknown	unknown	3112		3112			

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

There is no Plugging data for this well

There is no Sample data for this well

WV Geological & Economic Survey:

Well: County = 51 Permit = 70207

Report Time: Monday, August 30, 2021 11:55:20 AM

Well Reassignment Information: Reassigned To

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70207	51	70040

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170207	Marshall	70207	Liberty	Glen Easton	Cameron	39.811371	-80.630633	531615.7	4406886.9

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170207	---	unknown	Reassign							South Penn Oil (S. Penn Nat. Gas)			

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_AF
4705170207	---	---																		

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

There is no Plugging data for this well

There is no Sample data for this well

WV Geological & Economic Survey:

Well: County = 51 Permit = 70632

Report Time: Monday, August 30, 2021 11:55:35 AM

Well Reassignment Information: Reassigned To

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70632	51	855

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170632	Marshall	70632	Liberty	Glen Easton	Cameron	39.810501	-80.634017	531326.4	4406789.1

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
4705170632	-/-	unknown	Reassign							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
4705170632	-/-	-/-																		

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

There is no Plugging data for this well

There is no Sample data for this well

WV Geological & Economic Survey

Well: County = 51 Permit = 70633

Report Time: Monday, August 30, 2021 11:55:49 AM

Well Reassignment Information: Reassigned To

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70633	51	935

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170633	Marshall	70633	Liberty	Glen Easton	Cameron	39.812096	-80.634769	531261.3	4406995.9

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170633	-/-		unknown	Reassign						South Penn Oil (S. Penn Nat. Gas)			

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_AF
4705170633	-/-	-/-																		

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

There is no Plugging data for this well

There is no Sample data for this well

WV Geological & Economic Survey

Well: County = 51 Permit = 70631

Report Time: Monday, August 30, 2021 11:56:04 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170631	Marshall	70631	Liberty	Glen Easton	Cameron	39.810045	-80.630068	531664.6	4406739.9

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170631	-/-	unknown	Prpty Map	Wylie Allen	3					----- unknown -----			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_
4705170631	-/-	-/-						unclassified	unclassified	not available	unknown	unknown							

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

There is no Plugging data for this well

There is no Sample data for this well

WV Geological & Economic Survey

Well: County = 51 Permit = 00617

Report Time: Monday, August 30, 2021 11:56:19 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100617	Marshall	517	Liberty	Glen Easton	Cameron	39.807021	-80.630444	531633.8	4406404.1

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_E
4705100617	2/1/1905	Original Loc	Completed	Allen-Wylie	2					South Penn Oil (S. Penn Nat. Gas)			
4705100617	10/15/2004	Plugging	Completed	J A Hubbs Estate	M-111		Wylie Allen			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_BI
4705100617	2/1/1905	11/16/1904	1260	Topo Estimation	Cameron-Garner	Hampshire Grp	Gordon	unclassified	unclassified	Oil	unknown	Shot	3015		3015	
4705100617	10/15/2004	9/21/2004	1277	Ground Level												

Pay/Show/Water Information

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705100617	2/1/1905	Pay	Oil	Vertical	2958	Gordon	3010	Gordon	0	0			

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
4705100617	Pennzoil Company	1981	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Company	1982	5	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Company	1983	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Company	1984	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Products Company	1993	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Products Company	1994	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Products Company	1995	162	0	162	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Products Company	1996	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Products Company	1997	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Products Company	1998	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Products Company	1999	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	East Resources, Inc.	2000	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	East Resources, Inc.	2001	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	East Resources, Inc.	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2003	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2004	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2005	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2006	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2007	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2008	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2009	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2010	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2011	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Oil Information: (Volumes in Bbl) ** some operators may have reported NGL under Oil

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100617	Pennzoil Company	1981	46	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Company	1982	20	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Company	1983	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Company	1984	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Products Company	1993	178	75	25	0	0	0	0	0	29	17	20	3	9
4705100617	Pennzoil Products Company	1994	155	9	10	9	15	19	21	13	14	10	11	14	10
4705100617	Pennzoil Products Company	1995	115	9	6	12	16	17	13	5	12	12	3	0	10
4705100617	Pennzoil Products Company	1996	141	11	10	11	4	13	10	16	13	13	17	9	14
4705100617	Pennzoil Products Company	1997	198	18	15	21	17	16	15	7	11	16	12	9	11
4705100617	Pennzoil Products Company	1998	23	7	10	6	0	0	0	0	0	0	0	0	0
4705100617	Pennzoil Products Company	1999	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	East Resources, Inc.	2000	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	East Resources, Inc.	2001	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	East Resources, Inc.	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2003	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2004	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2005	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2006	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2007	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2008	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2009	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2010	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100617	CHX Gas Co. LLC (North)	2011	0	0	0	0	0	0	0	0	0	0	0	0	0

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
4705100617	10/15/2004	0

There is no Sample data for this well

WV Geological & Economic Survey

Well: County = 51 Permit = 00633

Report Time: Monday, August 30, 2021 11:58:53 AM

Location Information [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705100633	Marshall	633	Liberty	Glen Easton	Cameron	39.805571	-80.630444	531634.5	4406243.2

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
4705100633	7/14/2005	Plugging	Completed	Consol Coal Co		M-323				Consolidation Coal Co.			
4705100633	--	Original Loc	Completed	J W Rickey	1					Pennzoil 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
4705100633	7/14/2005	6/27/2005	1169	Ground Level		undetermined unit	undetermined unit	unclassified	unclassified	not available	unknown	unknown					
4705100633	--	--			Unnamed			unclassified	unclassified	not available	unknown	unknown					0

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
4705100633	Pennzoil Company	1981	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Company	1982	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Company	1983	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Company	1984	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Products Company	1989	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Products Company	1990	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Products Company	1999	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	East Resources Inc	2000	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	East Resources Inc	2001	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	East Resources Inc	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2003	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2004	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2005	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2006	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2007	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2008	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2009	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2010	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2011	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Oil Information: (Volumes in Bbl) ** some operators may have reported NGL under Oil

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100633	Pennzoil Company	1981	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Company	1982	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Company	1983	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Company	1984	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Products Company	1989	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Products Company	1990	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	Pennzoil Products Company	1999	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	East Resources Inc	2000	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	East Resources Inc	2001	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	East Resources Inc	2002	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2003	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2004	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2005	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2006	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2007	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2008	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2009	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2010	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100633	CNX Gas Co. LLC (North)	2011	0	0	0	0	0	0	0	0	0	0	0	0	0

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
4705100633	Original Loc	Pittsburgh coal	Well Record	931	Reasonable	6	Reasonable		Ground Level

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100633	7/14/2005	0

There is no Sample data for this well

WV Geological & Economic Survey

Well: County = 51 Permit = 00879

Report Time: Monday, August 30, 2021 11:57:23 AM

Well Reassignment Information: Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	70628	51	879

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100879	Marshall	879	Liberty	Glen Easton	Cameron	39.803396	-80.626496	531973.5	4406003.2

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
4705100879	11/18/2002	Plugging	Completed	James A Hubbs Estate		M-327			Consolidation Coal Co	Consolidation Coal Co.			
4705100879	-/-	Original Loc.	Prpty Map	Wylie Allen						----- unknown -----			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEf	G_A
4705100879	11/18/2002	11/10/2002	1227	Ground Level				unclassified	unclassified	not available	unknown	unknown						
4705100879	-/-	-/-						unclassified	unclassified	not available	unknown	unknown						

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
4705100879	11/18/2002	0

There is no Sample data for this well

WV Geological & Economic Survey:

Well: County = 51 Permit = 00919

Report Time: Monday, August 30, 2021 11:57:46 AM

Well Reassignment Information: Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	30127	51	919

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705100919	Marshall	919	Liberty	Glen Easton	Cameron	39.801511	-80.625368	532070.9	4405794.4

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	PRC
4705100919	10/22/1913	Original Loc	Completed	Chas E Carrigan et al	2		John Wilson	65322	Chas E Carrigan et al	South Penn Oil (S. Penn Nat. Gas)		
4705100919	6/25/2004	Plugging	Completed	Shirley M & George A & Paul L Burris		M-351			Consolidation Coal Co	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
4705100919	10/22/1913	5/12/1913	1171	Ground Level	Cameron-Garner	Gordon	Gordon	unclassified	unclassified	Oil	Cable Tool	Shot	2914		2914		0
4705100919	6/25/2004	6/15/2004	1164	Ground Level													

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705100919	10/22/1913	Show	Oil	Vertical		Gordon	2892	Gordon	0	0			
4705100919	10/22/1913	Pay	Oil	Vertical		Gordon	2914	Gordon	0	0			

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

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

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100919	-/-/1940	0
4705100919	6/25/2004	0

There is no Sample data for this well

WV Geological & Economic Survey

Well: County = 51 Permit = 30127

Report Time: Monday, August 30, 2021 11:58:07 AM

Well Reassignment Information: Reassigned To

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	30127	51	919

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705130127	Marshall	30127	Liberty	Glen Easton	Cameron	39.801511	-80.625368	532070.9	4405794.4

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
4705130127	-/-		unknown	Reassign						South Penn Oil (S. Penn Nat. Gas)			

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_AF
4705130127	-/-	-/-																		

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

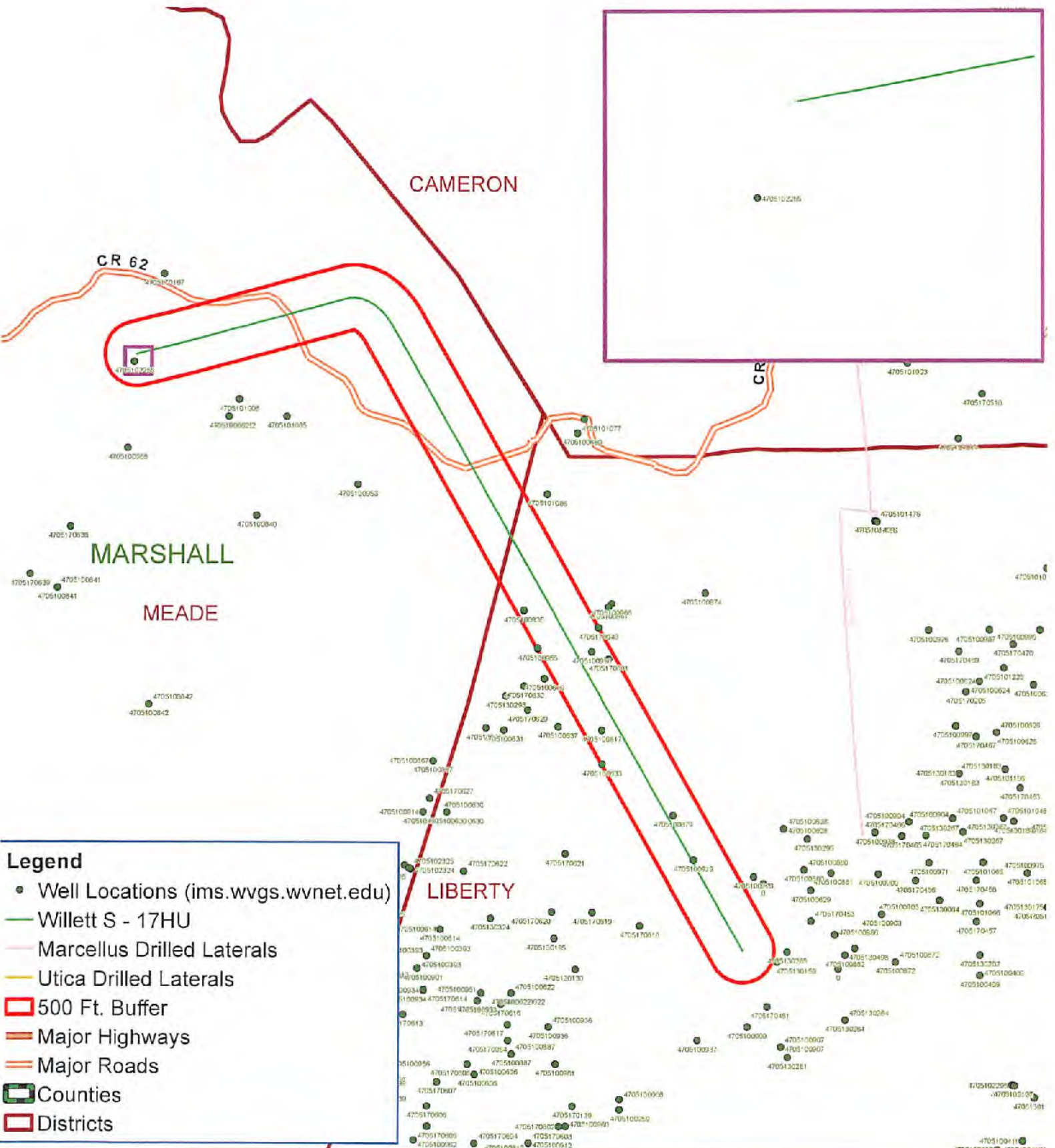
There is no Production Water data for this well

There is no Stratigraphy data for this well

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

There is no Plugging data for this well

There is no Sample data for this well



Legend

- Well Locations (ims.wvgs.wvnet.edu)
- Willett S - 17HU
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- 500 Ft. Buffer
- Major Highways
- Major Roads
- ▭ Counties
- ▭ Districts



Willett S - 17HU Meade District Marshall County, WV



Map Prepared by:

 01/28/2022

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

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

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

Will a pit be used? Yes No

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

Proposed Disposal Method For Treated Pit Wastes:

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

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

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

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

Additives to be used in drilling medium? _____

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

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

-Landfill or offsite name/permit number? Wetzel County Sanitary Landfill (SWF-1021 / 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 *James A. Pancake*

Company Official (Typed Name) Jim Pancake

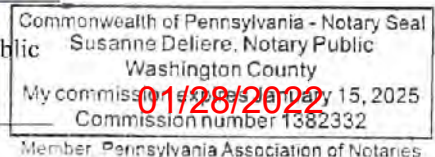
Company Official Title Vice President - Geosciences

Subscribed and sworn before me this 1st day of September, 2021

Susanne Deliere

Notary Public

My commission expires 1/10/2025



Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 5.44 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.

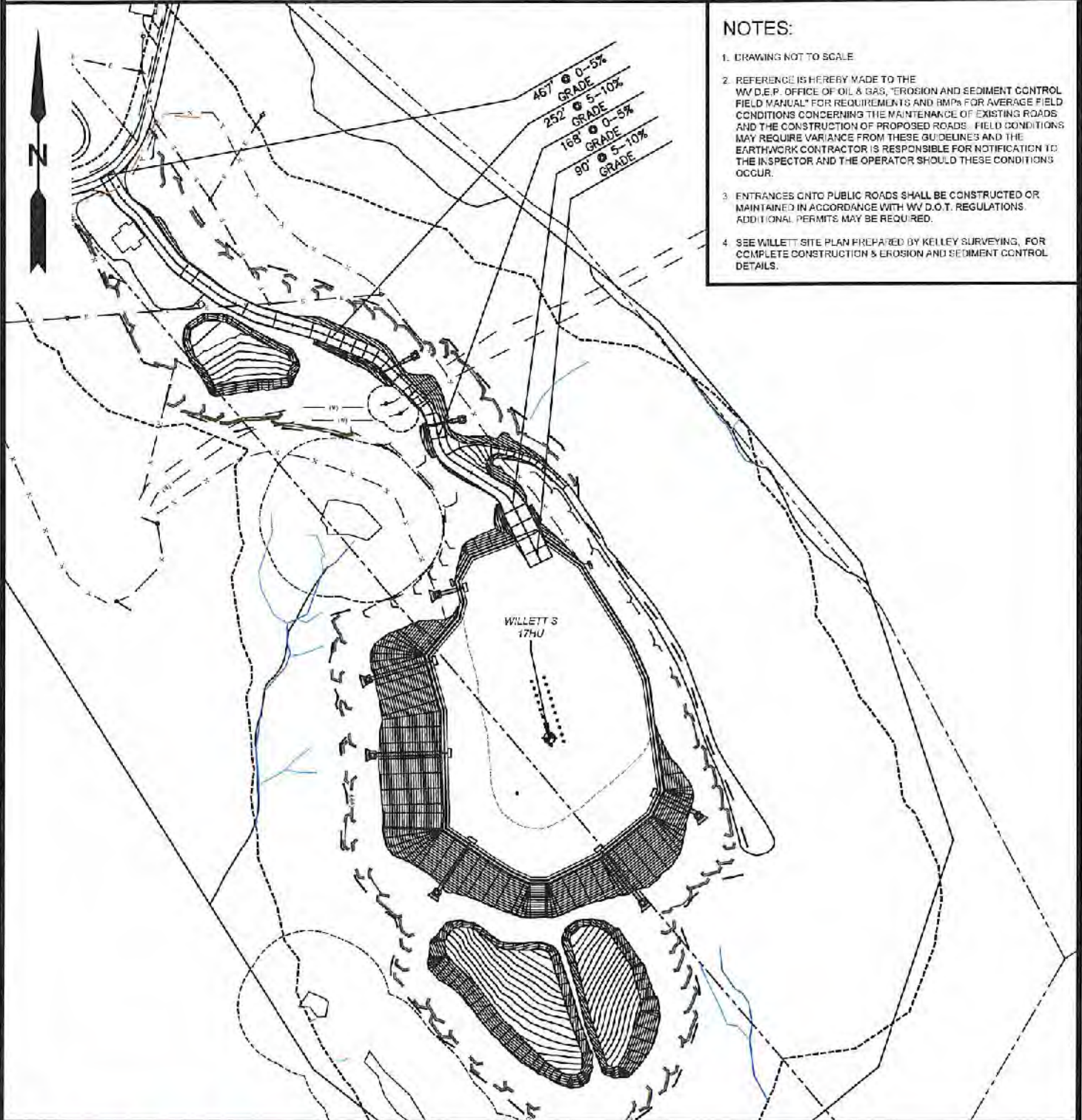
Plan Approved by: Bony Stiles

Comments: _____

Title: Oil and Gas Inspector Date: 10-14-21



Field Reviewed? () Yes () No

PROPOSED WILLETT S - 17HU

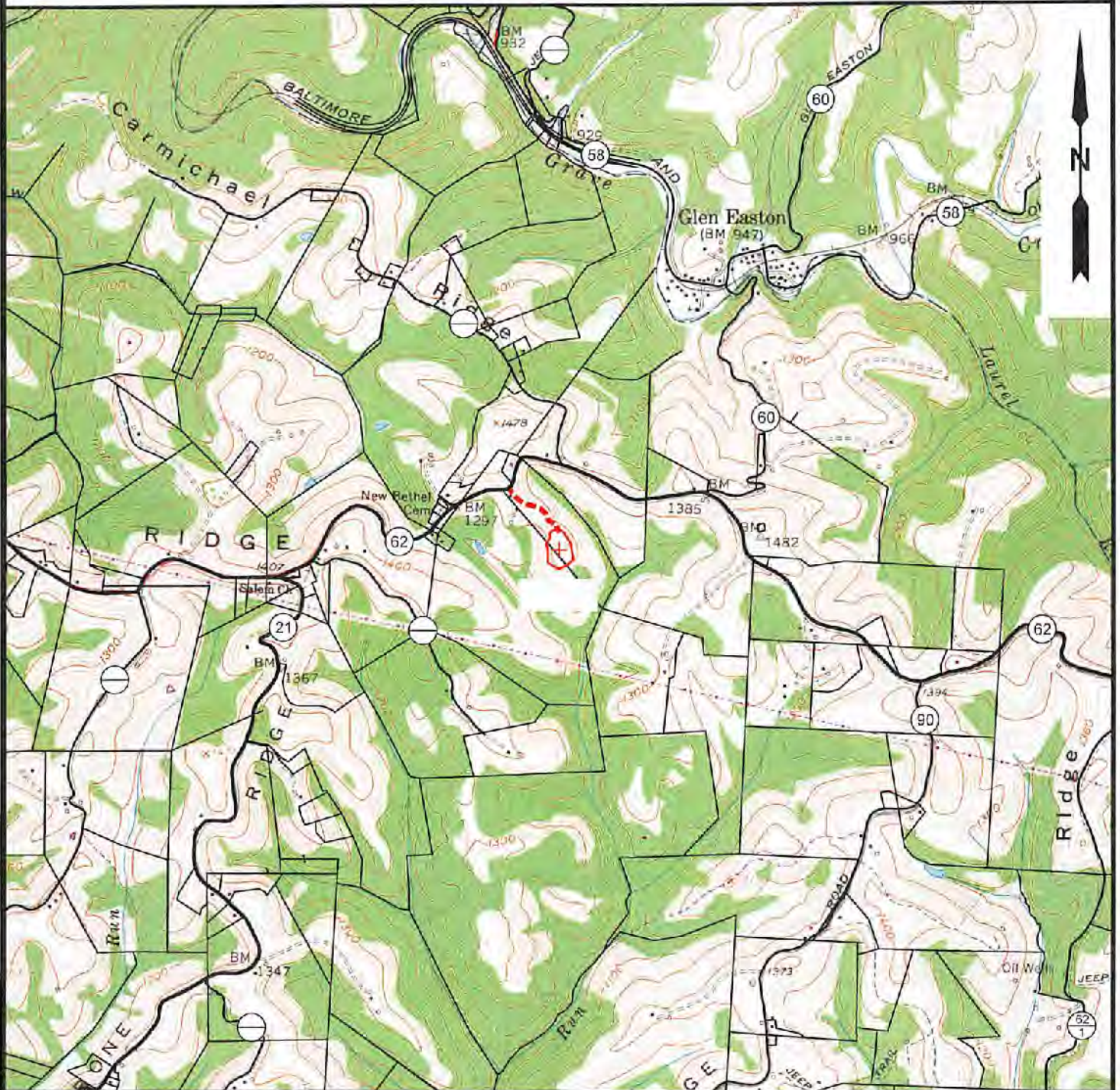


NOTES:

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 WILLETT SITE PLAN PREPARED BY KELLEY SURVEYING, FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.

 <p>12 Vanhorn Drive P.O. Box 150 Glenville, WV 26035 304.462.6654 1412 Kanawha Boulevard, East Charleston, WV 25301 304.346.3952 254 East Beckley Bypass Beckley, WV 25801 304.255.5296 sllsvv.com</p>	<p>TOPO SECTION:</p> <p>GLEN EASTON 7.5'</p>		<p>OPERATOR:</p> <p>PREPARED FOR: TUG HILL OPERATING, L.L.C. 380 SOUTH POINTE BLVD SUITE 200 CANONSBURG, PA 15317</p>		 <p>TUG HILL OPERATING</p>		
	<p>COUNTY</p> <p>MARSHALL</p>	<p>DISTRICT</p> <p>MEADE</p>	<p>DRAWN BY</p> <p>K.G.M.</p>	<p>JOB NO.</p> <p>8939</p>		<p>DATE</p> <p>12/01/21</p>	<p>SCALE</p> <p>NONE</p>
	<p style="text-align: right;">01/28/2022</p>						
	<p>CAD FILE: R:\Data\CADD\WORK\8900-8939\8939 Tug Hill - Willett Plats and Mapping\Survey\8939-17HU_KBC.dwg LAYOUT: Layout1 USLR: kmoyers</p>						

PROPOSED WILLETT S - 17HU



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

LAT: 39.829865
LON: -80.573724
LOCATED: N 84°36'39" E AT 23,313.72' FROM THE CENTER OF WILLETT S WELL PAD LOCATION.



12 Vandoren Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5634
1412 Kinawhs Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Buckley Bypass | Beckley, WV 25801 | 304.252.5296
slswv.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.	8939	12/01/2021	1" = 2000'



TUG HILL
OPERATING

01/28/2022



TUG HILL
OPERATING

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

Well Name: Willett S-17HU

Pad Name: Willett Pad

County: Marshall B.S. 10-14-21

UTM (meters), NAD83, Zone 17

Northing: 4,408,174.65

Easting: 529,417.58

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

Jerry V. DeRosa, Director EH&S Affairs

(724) 338-2029 (office)

(412) 736-5767 (cellular)

24-HOUR EMERGENCY PHONE NUMBER

(800) 921-9745

01/28/2022

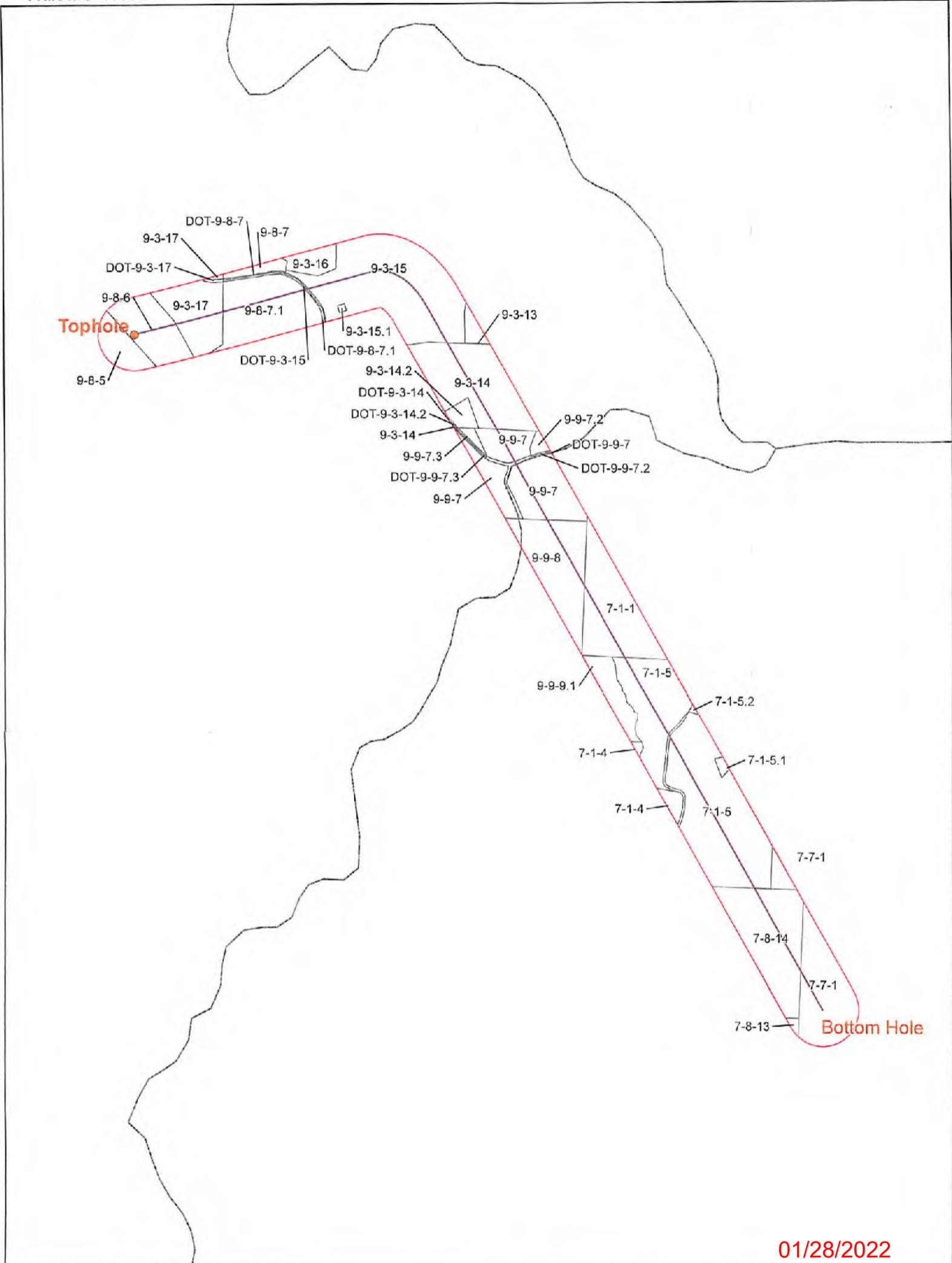
County	District	TMP	Mineral Owner or Lessee	Address
Marshall	Liberty	7-1-1	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Liberty	7-1-4	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Liberty	7-1-5	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Liberty	7-1-5.1	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Liberty	7-1-5.2	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Liberty	7-7-1	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Liberty	7-8-13	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Liberty	7-8-14	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-3-13	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-3-14	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	DOT - 9-3-14	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-3-14.2	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	DOT - 9-3-14.2	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-3-15	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	DOT - 9-3-15	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107

01/28/2022

Marshall	Meade	9-3-15.1	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-3-16	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-3-17	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	DOT - 9-3-17	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-8-5	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-8-6	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-8-7	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	DOT - 9-8-7	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-8-7.1	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	DOT - 9-8-7.1	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-9-7	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	DOT - 9-9-7	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-9-7.2	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	DOT - 9-9-7.2	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-9-7.3	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107

Marshall	Meade	DOT - 9-9-7.3	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-9-8	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107
Marshall	Meade	9-9-9.1	TH EXPLORATION LLC	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107

Willett S-17HU



01/28/2022


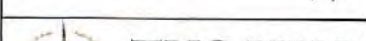

CONFIDENTIAL

-  Utica Well
-  Force Pool
-  500' Buffer

Willett S-17HU
Operators within 500 Feet of Well Borehole



Coordinate System: NAD 1983 UTM Zone 17N
 Horizontal: Transverse Mercator
 Datum: North American 1983
 False Easting: 500,000.0000
 False Northing: 0.0000
 Central Meridian: -81.0000
 Scale Factor: 0.9996
 Latitude Of Origin: 0.0000
 Units: Feet US

11,055' B.H.

8,779' T.H.

**WILLETT S LEASE
UTICA UNIT - 375.17 AC±
WELL 17HU
TUG HILL OPERATING**

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

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

NAD'83 S.P.C.(FT)	N. 483,988.00	E. 1,643,751.76
NAD'83 GEO.	LAT-(N) 39.823054	LONG-(W) 80.656255
NAD'83 UTM (M)	N. 4,408,174.71	E. 529,417.58
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 484,325.3	E. 1,647,773.9
NAD'83 GEO.	LAT-(N) 39.824121	LONG-(W) 80.641951
NAD'83 UTM (M)	N. 4,408,299.0	E. 530,641.2
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 474,623.0	E. 1,653,066.3
NAD'83 GEO.	LAT-(N) 39.797670	LONG-(W) 80.622678
NAD'83 UTM (M)	N. 4,405,369.0	E. 532,303.0

T.H. LONGITUDE 80°37'30"
B.H. LONGITUDE 80°35'00"
3,745' T.H.

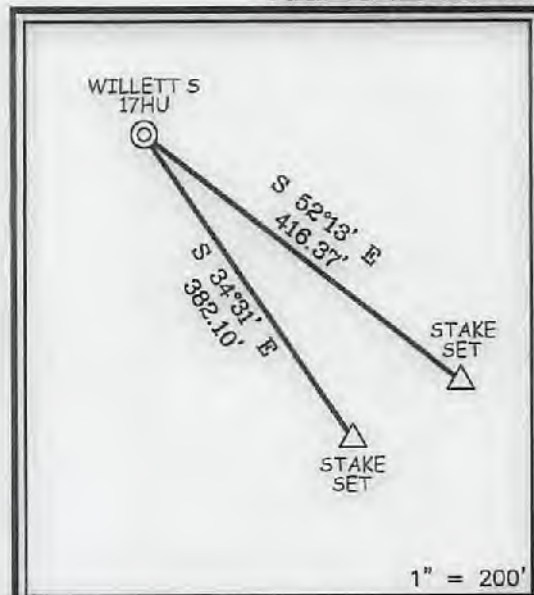
T.H.

TAG	SURFACE OWNER	PARCEL	ACRES
A	CNX LAND, LLC	9-8-5	110.37
B	CNX LAND, LLC	9-8-6	27.596
C	CNX LAND, LLC	9-3-17	65.86
D	LARRY S. NEELY - LIFE	9-8-7.1	76.005
E	RAYMOND DEWAINÉ DOBBS, ET AL	9-3-15	70.7424
F	RAYMOND DEWAINÉ DOBBS	9-3-12	66.843
G	XCL PROCESSING OPERATING LLC	9-3-13	28.00
H	RAYMOND DEWAINÉ DOBBS, ET AL	9-3-14	81.331
I	JEFFREY B. THOMAS	9-3-14.2	2.83
J	RAYMOND DEWAINÉ DOBBS, ET AL	9-9-7.1	9.00
K	JEFFREY B. THOMAS	9-9-7.3	1.297
L	XCL PROCESSING OPERATING LLC	9-3-13.1	10.00
M	XCL PROCESSING OPERATING LLC	9-9-7.2	3.907
N	JAMES R. THOMAS, ET UX	9-9-7	60.796
O	JAMES D. BLAKE, ET AL	9-9-8	52.144
P	ANNA D. MORRIS - TOD	7-1-1	179.00
Q	JOSEPH B. & JUDITH PATRELLO	9-9-9.1	149.924
R	NICHOLAS J. EVANS	7-1-5.2	22.42
S	KAREN S. EVANS & JUDY KAY MATTHEWS	7-1-5	116.915
T	CNX LAND, LLC	7-1-4	52.00
U	LARRY A. PAYNIER, ET UX	7-1-5.1	1.165
V	GEO A. BURRIS	7-8-14	95.44
W	KAREN S. EVANS & JUDY KAY MATTHEWS	7-7-1	124.12
X	BLAINE E. STERN, JR.	7-8-13	104.92

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
3-19-80	XCL PROCESSING OPERATING LLC	30.54
3-19-82	XCL PROCESSING OPERATING LLC	14.89
7-1-5	NANCY L. PARSONS	1.00
7-1-7.1	NANCY L. PARSONS	0.5
7-1-8	NANCY L. PARSONS	33.00
7-1-19	JEAN JAMISON	51.89
7-7-2	KAREN S. EVANS & JUDY KAY MATTHEWS	24.50
7-7-8.1	KENNETH WAYNE STEELE TRUST	79.03
9-3-14.1	RAYMOND DEWAINÉ DOBBS, ET AL	0.499
9-3-15.1	MARSHALL COUNTY PUBLIC SERVICE DISTRICT #4	0.2296
9-3-17.1	BRIAN & LEAH KESTNER	11.8
9-8-5.1	CNX LAND, LLC	1.040
9-8-5.2	AMY EVANS & KAREN WHETZAL	4.586
9-8-6.1	KAYLA E. BRATTON	1.423
9-9-8.1	DIANA MAE PIATT	2.253
9-9-8.2	VINCENT PATRELLO	0.723
9-9-9	VINCENT P. PATRELLO	1.076

12,991' B.H.

REFERENCES



B.H.

NOTES ON SURVEY

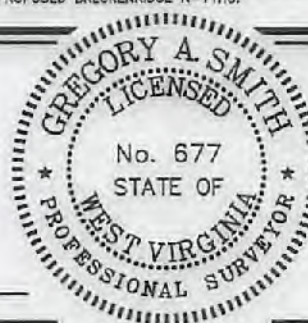
- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOP MARK SCALE ARE 1"=2000'
- PROPOSED LATERAL OR TOP HOLE OF PROPOSED WILLETT S-17HU IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF PROPOSED OR EXISTING WELLS:
 PROPOSED WILLETT S-16HU,
 PROPOSED HUDSON S-13HU (47-051-02293),
 PROPOSED HUDSON S-14HU (47-051-02327),
 PROPOSED HUDSON S-15HU (47-051-02328),
 PROPOSED HUDSON S-16HU (47-051-02329),
 PROPOSED BRECKENRIDGE S-17HU (47-051-02396),
 PROPOSED BRECKENRIDGE S-18HU (47-051-02397),
 PROPOSED BRECKENRIDGE N-11HU.



12 Vinhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
 254 East Beekley Bypass | Beckley, WV 25801 | 304.255.6296
 slsw.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. 677 Gregory A. Smith



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 DATE DECEMBER 1, 20 21
 REVISED _____, 20 ____
 OPERATORS WELL NO. WILLETT S 17HU
 API WELL NO. 47 - 051 - 02424
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. 8939P17HU.dwg
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY: DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'
 WILLETT S 17HU-REV2

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 1,310.03' WATERSHED TRIBUTARY OF UPPER BOWMAN RUN
 DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER CNX LAND LLC ACREAGE 27.596±
 ROYALTY OWNER APPALACHIAN BASIN MINERALS, LP, ET AL ACREAGE 01/28/2022
 PROPOSED WORK: LEASE NO. SEE WV-6A1
 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 POINT PLEASANT
 ESTIMATED DEPTH TVD: 12,097' / TMD: 24,309'

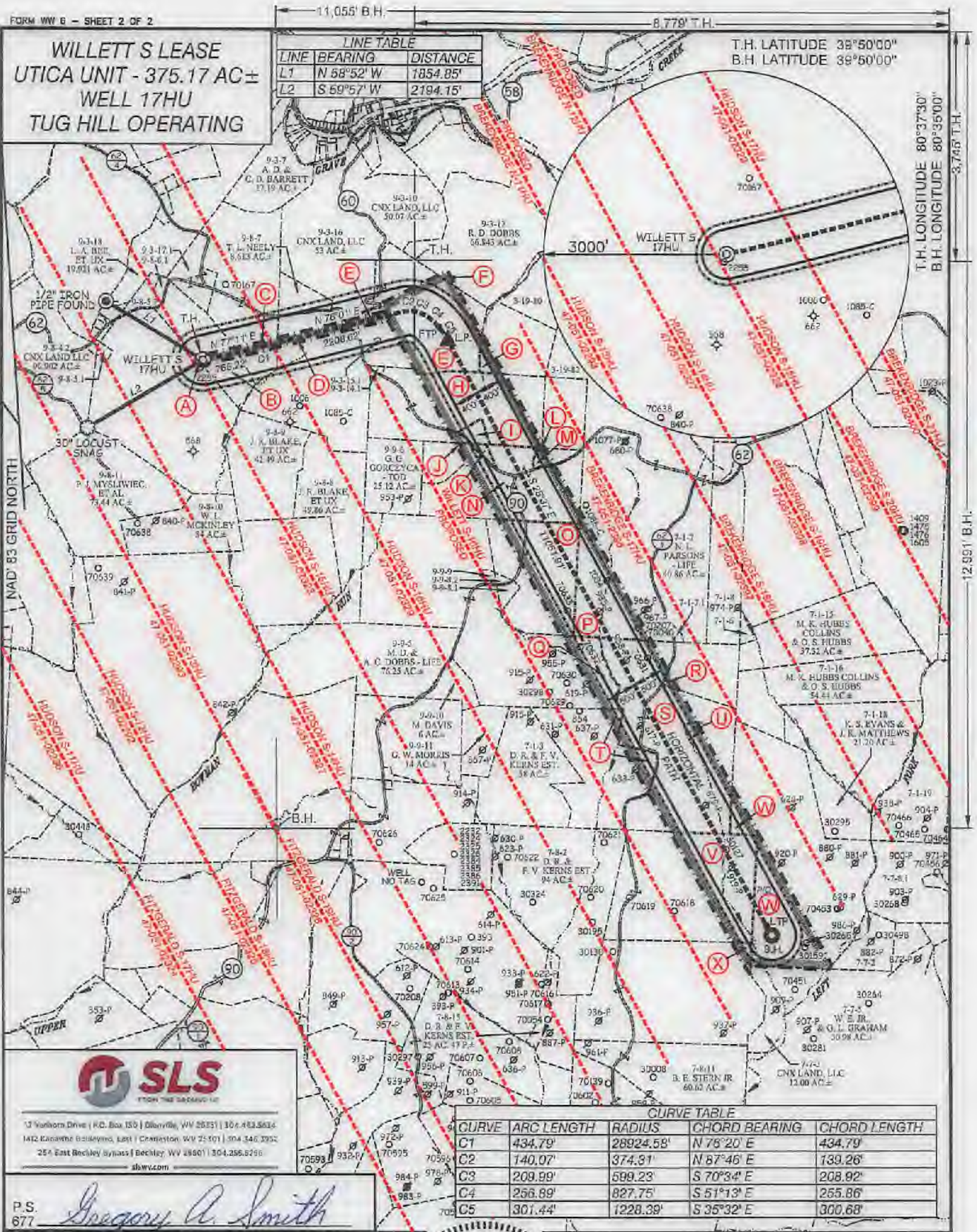
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN - CT CORPORATION
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5098 WASHINGTON ST. W, STE 407
FORT WORTH, TX 76107 CHARLESTON, WV 25313-1561

COUNTY NAME
PERMIT

**WILLETT S LEASE
UTICA UNIT - 375.17 AC±
WELL 17HU
TUG HILL OPERATING**

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 58°52' W	1854.85'
L2	S 69°57' W	2194.15'

T.H. LATITUDE 38°50'00"
B.H. LATITUDE 38°50'00"



CURVE TABLE				
CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	434.79'	28924.58'	N 78°20' E	434.79'
C2	140.07'	374.31'	N 87°46' E	130.26'
C3	209.99'	599.23'	S 70°34' E	208.92'
C4	256.89'	827.75'	S 51°13' E	255.86'
C5	301.44'	1228.39'	S 35°32' E	300.68'



13 Yorktown Drive | P.O. Box 150 | Glenville, WV 25831 | 304.482.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Avenue | Beckley, WV 25801 | 304.286.6796
slsvv.com

P.S. 677 *Gregory A. Smith*



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

LEGEND	
EXTERIOR UNIT BOUNDARY	
INTERIOR LEASE BOUNDARY	
SURFACE LINE	
PROPOSED UTICA	
WELL LATERAL	
400' OFFSET LINE	
500' OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
PROPOSED FIRST TAKE POINT	● F.T.P.
PROPOSED LAST TAKE POINT	● L.T.P.
COUNTY ROUTE	
PROPOSED WELL	
EXISTING WELL	
PERMITTED WELL	
SURFACE OWNER (SEE TABLE)	
LEASE # (SEE ADDITIONAL SHEETS)	

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)		
NAD83 S.P.C. (FT)	N. 483,988.00	E. 1,643,751.76
NAD83 GEO.	LAT. (N) 39.923054	LONG. (W) 80.856256
NAD83 UTM (M)	N. 4,409,174.71	E. 529,417.58
LANDING POINT		
NAD83 S.P.C. (FT)	N. 484,325.3	E. 1,647,773.8
NAD83 GEO.	LAT. (N) 39.824121	LONG. (W) 80.841951
NAD83 UTM (M)	N. 4,409,296.0	E. 530,641.2
BOTTOM HOLE		
NAD83 S.P.C. (FT)	N. 474,823.0	E. 1,653,088.3
NAD83 GEO.	LAT. (N) 39.797070	LONG. (W) 80.822678
NAD83 UTM (M)	N. 4,405,998.0	E. 532,903.0

SCALE	1" = 3000'	FILE NO.	8939P17HU.dwg
			WILLETT S 17HU-REV2
DATE	DECEMBER 1	20	21
REVISED		20	
OPERATORS WELL NO.	WILLETT S 17HU		
API WELL NO.	47	051	02424
	STATE	COUNTY	PERMIT

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



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

COUNTY NAME PERMIT

01/28/2022

**WILLETT S LEASE
UTICA UNIT -375.17 AC±
WELL 17HU
TUG HILL OPERATING**



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
sfsww.com

NO.	Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Deed Book/Page
1	10*23739	9-8-5	A	APPALACHIAN BASIN MINERALS LP, ET AL	1011 538
✓ 2	10*21602	9-8-6	B	CAROL STACY SAUNDERS, ET AL	959 289
✓ 3	10*21602	9-3-17	C	CAROL STACY SAUNDERS, ET AL	959 289
✓ 4	10*28092	9-8-7.1	D	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, ET AL	1073 370
✓ 5	10*38639	9-3-15	E	RAYMOND D DOBBS	677 229
6	10*38524	9-3-12	F	C. WILLIAM HARRIS	670 177
7	10*25188	9-3-13	G	JEFFREY LEE ALBRIGHT AND HYESOO PARK ALBRIGHT, ET AL	1029 505
✓ 8	10*19737	9-3-14	H	ALICE BUZZARD, ET AL	948 195
9	10*19922	9-3-14.2	I	MARLENE GARIN, ET AL	946 320
10	10*22724	9-9-7.1	J	RONI MICHELLE TOWE AND ROBERT T TOWE	968 286
11	10*21244	9-9-7.3	K	JEFFREY B THOMAS AND ASHLEY N THOMAS	988 471
12	10*25188	9-3-13.1	L	JEFFREY LEE ALBRIGHT AND HYESOO PARK ALBRIGHT, ET AL	1029 505
13	10*22767	9-9-7.2	M	DAVID L KINNEY	970 78
✓ 14	10*26738	9-9-7	N	JAMES R THOMAS & DEBORAH L THOMAS	1041 153
✓ 15	10*39474	9-9-8	O	SHERMAN E KNOX SR AND AMARYLISS J KNOX	1120 493
✓ 16	10*39627	7-1-1	P	ANNA D MORRIS	1125 543
17	10*22615	9-9-9.1	Q	DAVID D MURRAY AND MARY ANN MURRAY, ET AL	965 591
18	10*26711	7-1-5.2	R	CNX GAS COMPANY LLC	1074 593
✓ 19	10*31110	7-1-5	S	CNX GAS COMPANY LLC	1098 608
20	10*17969	7-1-4	T	BOUNTY MINERALS LLC, ET AL	928 424
21	10*26711	7-1-5.1	U	CNX GAS COMPANY LLC	1074 593
✓ 22	10*25508	7-8-14	V	THE AMY M TOUPS FAMILY TRUST OF 2013 DATED JUNE 14, 2013, ET AL	827 119
✓ 23	10*25527	7-7-1	W	JUDY K MATTHEWS, ET AL	945 103
24	10*25501	7-8-13	X	AMP FUND III LP, ET AL	925 459

FILE NO. 8939P17HU.dwg
WILLETT S 17HU-REV2

DATE DECEMBER 1, 2021

REVISED _____, 20_____

OPERATORS WELL NO. WILLETT S 17HU

API WELL NO. 47 — 051 — 02424
STATE COUNTY PERMIT



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



01/28/2022

P.S. 677 Gregory A. Smith

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

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

COUNTY NAME

PERMIT

**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
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*See attached pages

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

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

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

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	Tax	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty/Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*21602	9-8-6	B	CAROL STACY SAUNDERS WILLIAM EDWARD STACY AND JACQUELINE L	TH EXPLORATION LLC	1/8+ 959 289	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21604	9-8-6	B	STACY	TH EXPLORATION LLC	1/8+ 958 428	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*22516	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*22618	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*22721	9-8-6	B	WHINFRED 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	N/A	N/A	N/A	N/A	N/A
10*22796	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*22880	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*22881	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23033	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23034	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23107	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23141	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23142	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23161	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23162	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23163	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23176	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23181	9-8-6	B	MICHAEL L 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	N/A	N/A	N/A	N/A	N/A
10*23192	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23313	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23419	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23420	9-8-6	B	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	N/A	N/A	N/A	N/A	N/A
10*23739	9-8-6	B	APPALACHIAN BASIN MINERALS LP	TH EXPLORATION LLC	1/8+ 1011 538	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23740	9-8-6	B	PENNMARCO RESOURCES II LP	TH EXPLORATION LLC	1/8+ 1011 532	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23741	9-8-6	B	MCCROW ENERGY PARTNERS II LLC	TH EXPLORATION LLC	1/8+ 1011 515	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23742	9-8-6	B	PURPLEBURGH VENTURES, LLC	TH EXPLORATION LLC	1/8+ 1011 536	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23743	9-8-6	B	WILDES MINERAL INTERESTS LLC	TH EXPLORATION LLC	1/8+ 1011 534	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*23749	9-8-6	B	MARCELLUS TX MINERAL PRTRN LTD	TH EXPLORATION LLC	1/8+ 1012 193	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*24781	9-8-6	B	DENISE MARIE ROGERS AND GEORGE M ROGERS	TH EXPLORATION LLC	1/8+ 1027 578	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*24782	9-8-6	B	RICHARD A HEUSER	TH EXPLORATION LLC	1/8+ 1027 572	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*24783	9-8-6	B	BRUCE W JOHNSON AND TERRI L JOHNSON	TH EXPLORATION LLC	1/8+ 1027 569	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*25224	9-8-6	B	MAUREEN WILSON	TH EXPLORATION LLC	1/8+ 1030 141	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*25701	9-8-6	B	TIMOTHY KRUS AND BARBARA KRUS	TH EXPLORATION LLC	1/8+ 1034 239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*25716	9-8-6	B	RUSSELL BREDBENNER	TH EXPLORATION LLC	1/8+ 1035 23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*26631	9-8-6	B	JOSEPH R ZBOZIEH	TH EXPLORATION LLC	1/8+ 1039 322	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27106	9-8-6	B	JASMINE LEIGH HALL PENA C/O ROBERT HALL KENNETH ANDERSON BY DAVID C WHITE, SP	TH EXPLORATION LLC	1/8+ 1050 217	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27229	9-8-6	B	COMM WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	TH EXPLORATION LLC	1/8+ 1068 311	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*28092	9-8-6	B	TRANSPORTATION DIVISION OF HIGHWAYS	TH EXPLORATION LLC	1/8+ 1073 370	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*28647	9-8-6	B	BRYAN S LEHNER	TH EXPLORATION LLC	1/8+ 1076 65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29614	9-8-6	B	JANE D BEARDEN AND WILLIAM L BEARDEN UNKNOWN HEIRS AND ASSIGNS OF LAWRENCE B	TH EXPLORATION LLC	1/8+ 1096 371	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29616	9-8-6	B	OSTREY	TH EXPLORATION LLC	1/8+ 1096 339	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29622	9-8-6	B	BRADLEY B LEHNER	TH EXPLORATION LLC	1/8+ 1096 359	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29624	9-8-6	B	RACHAEL MARIA MCLARDY	TH EXPLORATION LLC	1/8+ 1096 353	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29625	9-8-6	B	HARRY ALBERT RICHARDSON	TH EXPLORATION LLC	1/8+ 1096 365	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29628	9-8-6	B	JANET M SMITH	TH EXPLORATION LLC	1/8+ 1096 347	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29630	9-8-6	B	UNKNOWN INTEREST OWNERS OF THE BERNARD E KURLICH FAMILY TRUST	TH EXPLORATION LLC	1/8+ 1096 331	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29632	9-8-6	B	UNKNOWN INTEREST OWNERS OF THE ROBERT WISE LIVING TRUST	TH EXPLORATION LLC	1/8+ 1096 323	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*31002	9-8-6	B	MARK F HEUSER	CHEVRON USA INC	1/8+ 791 247	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*31005	9-8-6	B	GARY KEITH BERGER	CHEVRON USA INC	1/8+ 793 358	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*31006	9-8-6	B	TERRY WITHEROW AND JAY WITHEROW	CHEVRON USA INC	1/8+ 793 375	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*31007	9-8-6	B	CAROL D ELMORE	CHEVRON USA INC	1/8+ 793 383	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*31008	9-8-6	B	NORMA V PRATICO	CHEVRON USA INC	1/8+ 794 532	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*31009	9-8-6	B	MARGARET LEE HALL	CHEVRON USA INC	1/8+ 795 414	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

10*31010	9-8-6	B	JULIANNE ERDOS	CHEVRON USA INC	1/8+	795	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31011	9-8-6	B	MARVIN C WILSON	CHEVRON USA INC	1/8+	795	350	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31012	9-8-6	B	JAMES P OVIES	CHEVRON USA INC	1/8+	797	368	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31013	9-8-6	B	BERTHA LYNN KLUG	CHEVRON USA INC	1/8+	797	548	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31014	9-8-6	B	CHERYL FOX BRAUCH	CHEVRON USA INC	1/8+	800	489	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31015	9-8-6	B	CAROL FOX VALLANDINGHAM	CHEVRON USA INC	1/8+	800	564	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31016	9-8-6	B	JESSICA M CHAVEZ	CHEVRON USA INC	1/8+	804	393	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31017	9-8-6	B	PHILIP A WILSON	CHEVRON USA INC	1/8+	805	421	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31018	9-8-6	B	JUANITA S HATCH LIVING TRUST DTD 2/16/1998 MARY MARTHA HATCH ACTING AS TRUSTEE	CHEVRON USA INC	1/8+	831	438	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31019	9-8-6	B	EDWARD F WILSON	CHEVRON USA INC	1/8+	813	564	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31020	9-8-6	B	MATTHEW L GROSSAINT	CHEVRON USA INC	1/8+	818	6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31021	9-8-6	B	TROY THOMAS WILSON	CHEVRON USA INC	1/8+	828	352	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31022	9-8-6	B	ELLA JEAN MCCARDLE	CHEVRON USA INC	1/8+	828	374	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31027	9-8-6	B	LOU ANN GROSSAINT	CHEVRON USA INC	1/8+	829	470	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31029	9-8-6	B	JESSE ALLEN WILSON	CHEVRON USA INC	1/8+	831	355	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31034	9-8-6	B	APRIL DAWN HOGAN	CHEVRON USA INC	1/8+	835	248	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31035	9-8-6	B	KIMBERLY SUE PIERSON	CHEVRON USA INC	1/8+	835	271	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31036	9-8-6	B	JOSEPH RICHARD FOX	CHEVRON USA INC	1/8+	800	546	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31043	9-8-6	B	DIANE M BAYLESS	CHEVRON USA INC	1/8+	798	97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31044	9-8-6	B	DENNIS M WILSON	CHEVRON USA INC	1/8+	798	97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31045	9-8-6	B	DAVID H WILSON	CHEVRON USA INC	1/8+	798	77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31046	9-8-6	B	SANDRA JEAN WILSON	CHEVRON USA INC	1/8+	794	605	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31047	9-8-6	B	MARY CHRISTINE MCKENNA	CHEVRON USA INC	1/8+	795	49	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31048	9-8-6	B	LAURENCE E WILSON JR	CHEVRON USA INC	1/8+	800	154	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31049	9-8-6	B	ROBERT L ARCHER	CHEVRON USA INC	1/8+	803	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593

10*31050	9-8-6	B	KATHERINE JEAN CONNELLY	CHEVRON USA INC	1/8*	203	30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31051	9-8-6	B	STEVEN M ARCHER	CHEVRON USA INC	1/8*	803	38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31052	9-8-6	B	WILLIAM R WISE	CHEVRON USA INC	1/8*	805	407	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*28092	9-8-6	B	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	TH EXPLORATION LLC	1/8*	1073	370	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*21602	9-3-17	C	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	N/A	N/A	N/A	N/A
10*21604	9-3-17	C	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	N/A	N/A	N/A	N/A
10*22616	9-3-17	C	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	N/A	N/A	N/A	N/A
10*22618	9-3-17	C	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	N/A	N/A	N/A	N/A
10*22721	9-3-17	C	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	N/A	N/A	N/A	N/A
10*22796	9-3-17	C	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	N/A	N/A	N/A	N/A
10*22880	9-3-17	C	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	N/A	N/A	N/A	N/A
10*22881	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23033	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23034	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23107	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23141	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23142	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23161	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23162	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23163	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23176	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23181	9-3-17	C	MICHAEL L 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	N/A	N/A	N/A	N/A
10*23192	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23313	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23419	9-3-17	C	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	N/A	N/A	N/A	N/A
10*23420	9-3-17	C	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	N/A	N/A	N/A	N/A
10*24781	9-3-17	C	DENISE MARIE ROGERS AND GEORGE M ROGERS	TH EXPLORATION LLC	1/8*	1027	578	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*24782	9-3-17	C	RICHARD A HEUSER	TH EXPLORATION LLC	1/8*	1027	572	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*24783	9-3-17	C	BRUCE W JOHNSON AND TERRI L JOHNSON	TH EXPLORATION LLC	1/8*	1027	569	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*25224	9-3-17	C	MAUREEN WILSON	TH EXPLORATION LLC	1/8*	1030	141	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*25701	9-3-17	C	TIMOTHY KRUS AND BARBARA KRUS	TH EXPLORATION LLC	1/8*	1034	239	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*25716	9-3-17	C	RUSSELL BREDBENNER	TH EXPLORATION LLC	1/8*	1035	23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*26406	9-3-17	C	PURPLEBURGH VENTURES, LLC	TH EXPLORATION LLC	1/8*	1033	117	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*26410	9-3-17	C	MARCELLUS TX MINERAL PRYNR LTD	TH EXPLORATION LLC	1/8*	1034	242	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*26411	9-3-17	C	PENNAMARC RESOURCES II LP	TH EXPLORATION LLC	1/8*	1034	244	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*26412	9-3-17	C	MCCROW ENERGY PARTNERS II LLC	TH EXPLORATION LLC	1/8*	1034	247	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*26413	9-3-17	C	WILDES MINERAL INTERESTS LLC	TH EXPLORATION LLC	1/8*	1034	250	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*26414	9-3-17	C	APPALACHIAN BASIN MINERALS LP	TH EXPLORATION LLC	1/8*	1034	218	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*26631	9-3-17	C	JOSEPH R ZBOZIEK	TH EXPLORATION LLC	1/8*	1039	322	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27106	9-3-17	C	JASMINE LEIGH HALL PENA C/O ROBERT HALL KENNETH ANDERSON BY DAVID C WHITE, SP	TH EXPLORATION LLC	1/8*	1050	217	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*27229	9-3-17	C	COMM	TH EXPLORATION LLC	1/8*	1068	311	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*28647	9-3-17	C	BRYAN S LEHNER	TH EXPLORATION LLC	1/8*	1076	65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29614	9-3-17	C	JANE D BEARDEN AND WILLIAM L BEARDEN UNKNOWN HEIRS AND ASSIGNS OF LAWRENCE B	TH EXPLORATION LLC	1/8*	1096	371	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29616	9-3-17	C	OSTREY	TH EXPLORATION LLC	1/8*	1096	339	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29622	9-3-17	C	BRADLEY B LEHNER	TH EXPLORATION LLC	1/8*	1096	359	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29624	9-3-17	C	RACHAEL MARIA MCLARDY	TH EXPLORATION LLC	1/8*	1096	353	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29626	9-3-17	C	HARRY ALBERT RICHARDSON	TH EXPLORATION LLC	1/8*	1096	365	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29628	9-3-17	C	JANET M SMITH	TH EXPLORATION LLC	1/8*	1096	347	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29630	9-3-17	C	UNKNOWN INTEREST OWNERS OF THE BERNARD E KURLICH FAMILY TRUST	TH EXPLORATION LLC	1/8*	1096	331	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*29632	9-3-17	C	UNKNOWN INTEREST OWNERS OF THE ROBERT WISE LIVING TRUST	TH EXPLORATION LLC	1/8*	1096	323	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10*31002	9-3-17	C	MARK F HEUSER	CHEVRON USA INC	1/8*	791	247	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31005	9-3-17	C	GARY KEITH BERGER	CHEVRON USA INC	1/8*	793	358	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31006	9-3-17	C	TERRY WITHEROW AND JAY WITHEROW	CHEVRON USA INC	1/8*	793	375	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31007	9-3-17	C	CAROL D ELMORE	CHEVRON USA INC	1/8*	793	383	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593

10*31008	9-3-17	C	NORMA V PRATICO	CHEVRON USA INC	1/8+	794	532	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31009	9-3-17	C	MARGARET LEE HALL	CHEVRON USA INC	1/8+	795	414	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31010	9-3-17	C	JULIANNE ERDOS	CHEVRON USA INC	1/8+	795	57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31011	9-3-17	C	MARVIN C WILSON	CHEVRON USA INC	1/8+	795	350	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31012	9-3-17	C	JAMES P OWIES	CHEVRON USA INC	1/8+	797	368	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31013	9-3-17	C	BERTHA LYNN KLUG	CHEVRON USA INC	1/8+	797	548	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31014	9-3-17	C	CHERYL FOX BRAUCH	CHEVRON USA INC	1/8+	800	489	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593
10*31015	9-3-17	C	CAROL FOX VALLANDINGHAM	CHEVRON USA INC	1/8+	800	564	N/A	N/A	N/A	N/A	N/A	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	C	JESSICA M CHAVEZ	CHEVRON USA INC	1/8+	804	393	N/A	N/A	N/A	N/A	N/A	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	C	PHILIP A WILSON	CHEVRON USA INC	1/8+	805	421	N/A	N/A	N/A	N/A	N/A	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	C	JUANITA S HATCH LIVING TRUST DTD 2/16/1998 MARY MARTHA HATCH ACTING AS TRUSTEE	CHEVRON USA INC	1/8+	831	438	N/A	N/A	N/A	N/A	N/A	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	C	EDWARD F WILSON	CHEVRON USA INC	1/8+	813	564	N/A	N/A	N/A	N/A	N/A	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	C	MATTHEW L GROSSAINT	CHEVRON USA INC	1/8+	818	6	N/A	N/A	N/A	N/A	N/A	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	C	TROY THOMAS WILSON	CHEVRON USA INC	1/8+	828	352	N/A	N/A	N/A	N/A	N/A	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	C	ELLA JEAN MCCARDLE	CHEVRON USA INC	1/8+	828	374	N/A	N/A	N/A	N/A	N/A	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	C	LOU ANN GROSSAINT	CHEVRON USA INC	1/8+	829	470	N/A	N/A	N/A	N/A	N/A	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	C	JESSE ALLEN WILSON	CHEVRON USA INC	1/8+	831	355	N/A	N/A	N/A	N/A	N/A	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	C	APRIL DAWN HOGAN	CHEVRON USA INC	1/8+	835	248	N/A	N/A	N/A	N/A	N/A	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	C	KIMBERLY SUE PIERSON	CHEVRON USA INC	1/8+	835	271	N/A	N/A	N/A	N/A	N/A	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	C	JOSEPH RICHARD FOX	CHEVRON USA INC	1/8+	800	546	N/A	N/A	N/A	N/A	N/A	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	C	DIANE M BAYLESS	CHEVRON USA INC	1/8+	798	97	N/A	N/A	N/A	N/A	N/A	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	C	DENNIS M WILSON	CHEVRON USA INC	1/8+	798	97	N/A	N/A	N/A	N/A	N/A	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	C	DAVID H WILSON	CHEVRON USA INC	1/8+	798	77	N/A	N/A	N/A	N/A	N/A	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	C	SANDRA JEAN WILSON	CHEVRON USA INC	1/8+	794	605	N/A	N/A	N/A	N/A	N/A	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	C	MARY CHRISTINE MCKENNA	CHEVRON USA INC	1/8+	795	49	N/A	N/A	N/A	N/A	N/A	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	C	LAURENCE E WILSON JR	CHEVRON USA INC	1/8+	800	154	N/A	N/A	N/A	N/A	N/A	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	C	ROBERT L ARCHER	CHEVRON USA INC	1/8+	803	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to TH Exploration II LLC: 45/593	
10*31050	9-3-17	C	KATHERINE JEAN CONNELLY	CHEVRON USA INC	1/8+	803	30	N/A	N/A	N/A	N/A	N/A	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	C	STEVEN M ARCHER	CHEVRON USA INC	1/8+	803	38	N/A	N/A	N/A	N/A	N/A	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	C	WILLIAM R WISE	CHEVRON USA INC	1/8+	805	407	N/A	N/A	N/A	N/A	N/A	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	D	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	TH EXPLORATION LLC	1/8+	1073	370	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*28808	9-8-7.1	D	HOLLY MARIE EBERSOLE	TH EXPLORATION LLC	1/8+	1078	47	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*38639	9-3-15	E	RAYMOND D DOBBS	CHESAPEAKE APPALACHIA LLC	1/8+	677	229	N/A	N/A	N/A	N/A	N/A	N/A	Chesapeake Appalachia LLC to Statoilhydro USA Onshore Properties Inc: 21/565	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	Merger - SWN Exchange Title 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	SWN Production Company LLC to TH Exploration LLC: 49/635	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/615
10*19737	9-3-14	H	ALICE BUZZARD	TH EXPLORATION LLC	1/8+	948	195	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*19738	9-3-14	H	JAMES R BLAIR	TH EXPLORATION LLC	1/8+	946	318	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*19739	9-3-14	H	ROBERT C BLAKE AND LYN BLAKE	TH EXPLORATION LLC	1/8+	946	313	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*19740	9-3-14	H	TERRY L BLAKE	TH EXPLORATION LLC	1/8+	946	311	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*19741	9-3-14	H	JOHN PURDY AND BRENDA S PURDY	TH EXPLORATION LLC	1/8+	946	308	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*19742	9-3-14	H	CAROLE J WOOD	TH EXPLORATION LLC	1/8+	946	316	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*19922	9-3-14	H	MARLENE GARIN	TH EXPLORATION LLC	1/8+	946	320	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*19924	9-3-14	H	CHARLES W DOBBS AND JUDITH M DOBBS	TH EXPLORATION LLC	1/8+	946	322	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*19991	9-3-14	H	BRADLEY S SCHERICH AND LEIGH SCHERICH	TH EXPLORATION LLC	1/8+	948	192	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*19992	9-3-14	H	GARY F BLAKE AND DORIS E BLAKE	TH EXPLORATION LLC	1/8+	948	197	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*21323	9-3-14	H	TODD SCHERICH AND WANDA D SCHERICH	TH EXPLORATION LLC	1/8+	946	324	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*22723	9-3-14	H	LINDA SUE BENNETT AND THOMAS BENNETT	TH EXPLORATION LLC	1/8+	968	276	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*22769	9-3-14	H	NANCY JO FENN	TH EXPLORATION LLC	1/8+	968	274	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*22770	9-3-14	H	REBECCA LYNN RITZ AND THOMAS A RITZ	TH EXPLORATION LLC	1/8+	968	272	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*22822	9-3-14	H	DARLA J KLUKAS	TH EXPLORATION LLC	1/8+	974	182	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*22824	9-3-14	H	GARDNER	TH EXPLORATION LLC	1/8+	974	180	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*23227	9-3-14	H	ROGER F CROSS	TH EXPLORATION LLC	1/8+	984	478	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*24396	9-3-14	H	ELEANOR CHAMBERS	TH EXPLORATION LLC	1/8+	1023	166	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*26711	9-3-14	H	CNX GAS COMPANY LLC	TH EXPLORATION LLC	1/8+	1074	593	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*28446	9-3-14	H	TIMOTHY R LINKOUS	TH EXPLORATION LLC	1/8+	1072	375	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*28700	9-3-14	H	ARTHUR AND VERA WORKMAN IRREVOCABLE TRUST	TH EXPLORATION LLC	1/8+	1077	41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*28854	9-3-14	H	CHARLES HAWKINS AND CONSTANCE HAWKINS	TH EXPLORATION LLC	1/8+	1077	258	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*28949	9-3-14	H	SAMUEL W PHIPPS AND ALLISON M PHIPPS	TH EXPLORATION LLC	1/8+	1078	447	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*26738	9-9-7	N	JAMES R THOMAS & DEBORAH L THOMAS	TH EXPLORATION LLC	1/8+	1041	153	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*39474	9-9-8	O	SHERMAN E KNOX SR AND AMARYLISS J KNOX	TH EXPLORATION LLC	1/8+	1120	493	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*39627	7-1-1	P	ANNA D MORRIS	TH EXPLORATION LLC	1/8+	1125	543	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*31110	7-1-5	S	CNX GAS COMPANY LLC	TH EXPLORATION LLC	1/8+	1098	608	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*25508	7-8-14	V	THE AMY M TOUPS FAMILY TRUST OF 2013 DATED JUNE 14, 2013	FOSSIL CREEK OHIO, LLC	1/8+	827	119	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 32/337	Gulfport Energy Corporation and Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: 36/588	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/515
10*25509	7-8-14	V	ELIZABETH A PADDEN	FOSSIL CREEK OHIO, LLC	1/8+	827	123	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 32/337	Gulfport Energy Corporation and Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: 36/588	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/515
10*25510	7-8-14	V	JOHN M PADDEN	FOSSIL CREEK OHIO, LLC	1/8+	827	121	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fossil Creek Ohio LLC to Gulfport Energy Corporation: 32/337	Gulfport Energy Corporation and Fossil Creek Ohio LLC to American Petroleum Partners Operating LLC: 36/588	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/515

10*25527	7-7-1	W	JUDY K MATTHEWS	PIKEWOOD ENERGY CORPORATION	1/8*	945	103	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Pikewood Energy Corporation to American Petroleum Partners Operating LLC: 43/192	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
10*25530	7-7-1	W	KAREN S WHETZAL	PIKEWOOD ENERGY CORPORATION	1/8*	945	99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Pikewood Energy Corporation to American Petroleum Partners Operating LLC: 43/192	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503

STATE OF WEST VIRGINIA §
 §
COUNTY OF MARSHALL §

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "**Assignment**") is made and entered into this 24th 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.

ASSIGNMENT AND CONVEYANCE

This Assignment and Conveyance (this "*Assignment*") is from EQUINOR USA ONSHORE PROPERTIES, INC., a Delaware corporation ("*Assignor*"), to TH Exploration, LLC, a Texas limited liability company ("*Assignee*"), and is executed on October 18, 2021 (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 June 15, 2021 (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*") INsofar AND ONLY INsofar 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.

**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.

STATE OF WEST VIRGINIA §
§
COUNTY OF MARSHALL §

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "**Assignment**") is made and entered into this 23rd day of April, 2019 (the "**Effective Date**"), by and between **AMERICAN PETROLEUM PARTNERS OPERATING, LLC**, (hereinafter "**Assignor**") and **TH EXPLORATION, LLC** (hereinafter "**Assignee**") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated November 15, 2018 (the "**Acreage Trade Agreement**"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

WITNESSETH:

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

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

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

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

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

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

Assignor represents and warrants that Assignor has paid any and all bonuses, rentals, royalties, overriding royalties, and other payments required by the Leases which were due for the period in which Assignor held its interests in the Leases, and that Assignor has fully performed all conditions necessary to maintain the Leases in full force and effect during such period, free and clear of all Encumbrances, except for and subject only to Permitted Encumbrances.

3. **Successors and Assigns**. The terms of this Assignment shall be binding upon and inure to the benefit of the parties hereto and each of their respective successors

COPY

STATE OF WEST VIRGINIA
COUNTY OF MARSHALL

Marshall County
Jan Pest, Clerk
Instrument 1453305
04/24/2019 @ 11:51:22 AM
ASSIGNMENTS
Book 43 @ Page 503
Pages Recorded 10
Recording Cost \$ 17.00

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 23rd day of April, 2019 (the "Effective Date"), by and between AMERICAN PETROLEUM PARTNERS OPERATING, LLC, (hereinafter "Assignor") and TH EXPLORATION, LLC (hereinafter "Assignee") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated November 15, 2018 (the "Acreage Trade Agreement"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

WITNESSETH:

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

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

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

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

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

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

Assignor represents and warrants that Assignor has paid any and all bonuses, rentals, royalties, overriding royalties, and other payments required by the Leases which were due for the period in which Assignor held its interests in the Leases, and that Assignor has fully performed all conditions necessary to maintain the Leases in full force and effect during such period, free and clear of all Encumbrances, except for and subject only to Permitted Encumbrances.

3. Successors and Assigns. The terms of this Assignment shall be binding upon and inure to the benefit of the parties hereto and each of their respective successors

01/28/2022



December 2, 2021

WV Department of Environmental Protection
Office of Oil & Gas
601 57th Street, SE
Charleston, WV 25304
Attention: Susan Rose

RE: Willett S-17HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

Tug Hill Operating, LLC is authorized through, either lease or other agreement, to unitize and pool all lands falling within the boundaries of the proposed voluntary unit included with this submission.

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 724-749-8388, or by email at amorris@tug-hillop.com.

Sincerely,

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

Amy L. Morris
Permitting Specialist – Appalachia Region
Tug Hill Operating

CERTIFICATE OF CONSENT AND EASEMENT

The undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being all the owners of the surface of that certain lot, tract or parcel of land located in Meade District, Marshall County, State of West Virginia, shown on the attached plat or survey, hereby consents and grants an easement, pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Conservation Commission, to TH Exploration LLC, its successors or assigns, for the drilling and operation of a deep well for the production of oil or gas at the location shown on the attached plat or survey (parcels 9-8-5 and 9-8-6).

Executed this 9th day of May, 2019.

LLC
CNX LAND, INC.
By: [Signature]
Name: ERIC A. LAUSE
Title: ASSIST VICE PRESIDENT

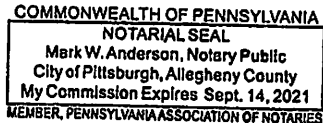
Marshall County
Jan Pest, Clerk
Instrument 1454068
05/13/2019 @ 01:53:39 PM
RIGHT OF WAY W/O CONSIDERATION
Book 1040 @ Page 561
Pages Recorded 2
Recording Cost \$ 11.00

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF WASHINGTON

SS:

On this, the 9th day of May, 2019, before me, a notary public, the undersigned officer, personally appeared Eric A. Lause who acknowledged himself/herself to be the Assistant Vice President of CNX Land, Inc. and that he/she as such, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the company by himself/herself as Assistant Vice President.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.



My Commission Expires: 9/14/2021
Signature/Notary Public: [Signature]
Name/Notary Public (print): Mark W. Anderson

This instrument prepared by:
WV Oil and Gas Conservation Commission
601 57th Street
Charleston, WV 25304

4838-2618-8605v2

ERC 1526 - Willet Pad

PLAT



4838-2618-8605v2

ERC 1526 - Willet Pad

STATE OF WEST VIRGINIA, MARSHALL COUNTY, SCT.:

I, JAN PEST, Clerk of the County Commission of said County, do hereby certify that the annexed writing, bearing date on the 9th day of May, 2019, was presented for and by me, admitted to record in my office upon the above certificate as to the parties therein named this 13th day of May, 2019 at 1:53 o'clock P.M.

TESTE: Jan Pest Clerk



September 1, 2021

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

RE: Willett S-17HU

Subject: Marshall County Route 62/1 and County Route 62

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 62/1 and County Route 62 in the area reflected on the Willett S-17HU 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-hilop.com.

Sincerely,

A handwritten signature in cursive script that reads "Amy Morris".

Amy Morris
Permit Specialist – Appalachia Region
Cell 304-376-0111
Email: amorris@tug-hilop.com

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

Date of Notice Certification: 12/02/2021

API No. 47- 051 - _____
Operator's Well No. Willlett S-17HU
Well Pad Name: Willlett

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>529,417.58</u>
County:	<u>Marshall</u>		Northing:	<u>4,408,174.65</u>
District:	<u>Meade</u>	Public Road Access:	<u>CR 62 New Bethel Road</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>CNX Land, LLC</u>	
Watershed:	<u>Middle Fish 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: 100px;"><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>OOG OFFICE USE ONLY</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>
--	---

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 notified 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.

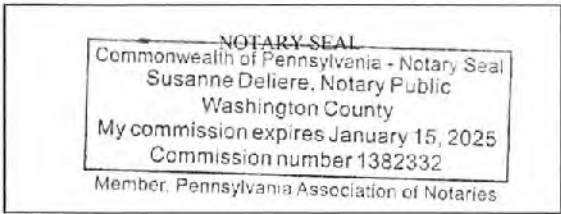
01/28/2022

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 *Amy L. Morris*
Its: Permitting Specialist - Appalachia Region
Telephone: 724-749-8388

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



Subscribed and sworn before me this 2nd day of December, 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.

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: 12/1/2021 **Date Permit Application Filed:** 12/2/2021

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 /
 Address: 1000 Consol Energy Drive
1000 Consol Energy Drive
 Name: _____
 Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
 Name: _____
 Address: _____
 Name: _____
 Address: _____

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

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

COAL OPERATOR
 Name: Marshall County Coal Resources, Inc/ Attn: Steve Bair
 Address: 46226 National Road
St. Clairsville, OH 43950

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
 Name: *see attached
 Address: _____

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

*Please attach additional forms if necessary

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

01/28/2022

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

WW-6A
(8-13)

API NO. 47-051 -
OPERATOR WELL NO. Willett S-17HU
Well Pad Name: Willett

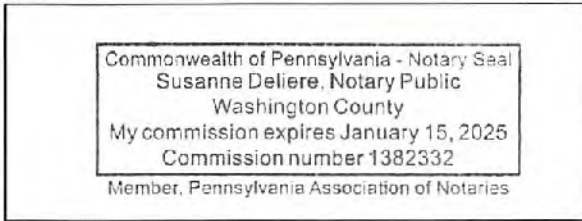
Notice is hereby given by:

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

Address: 380 Southpointe Boulevard, Plaza II, Suite 200
Canonsburg, PA 15317
Facsimile: 724-336-2030

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 12th day of November 2021
Susanne Deliere Notary Public
My Commission Expires 1/15/2025

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

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

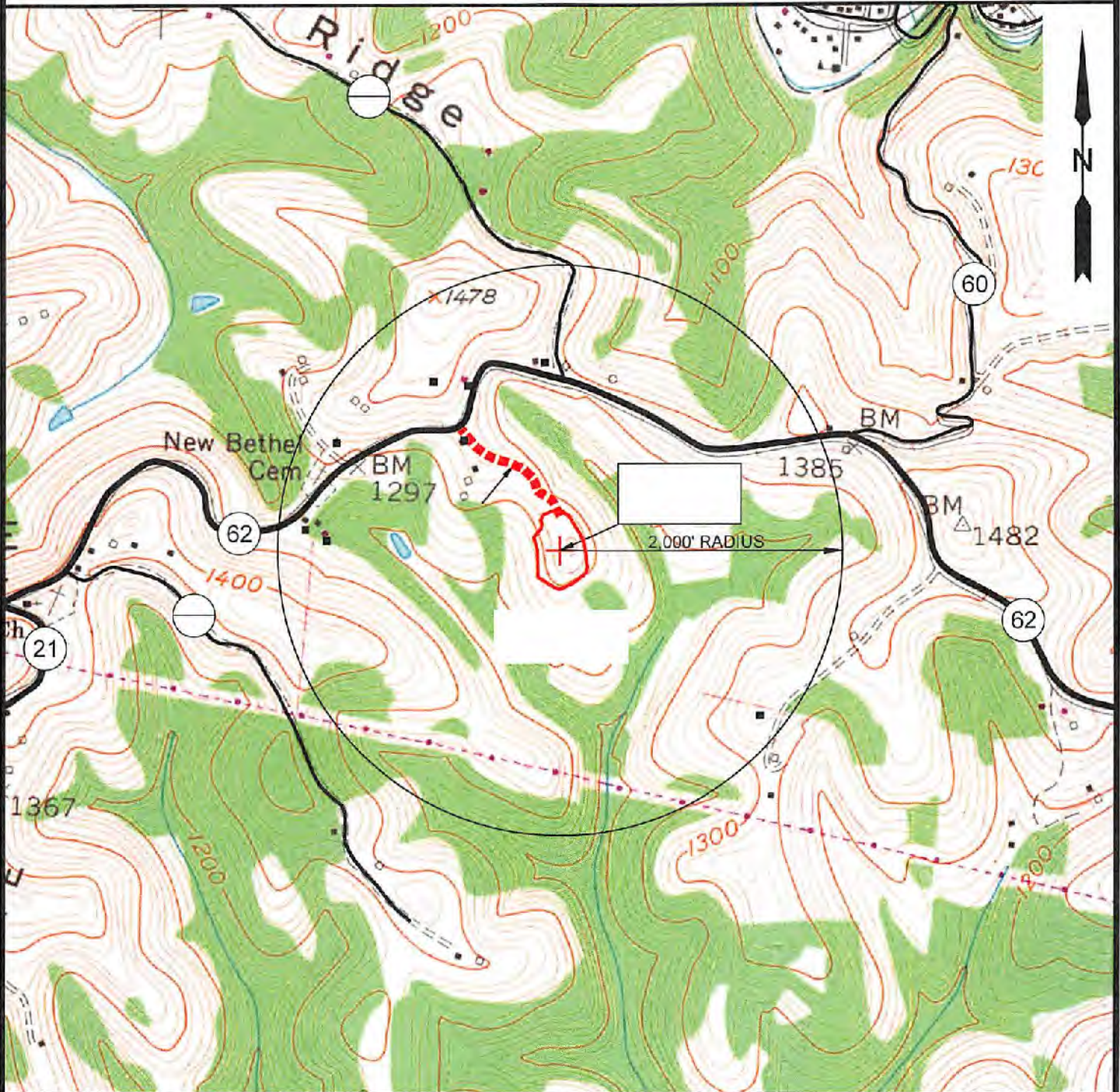
Residences within Two-Thousand Feet (2,000')

Well: Willett S – 17HU
 District: Meade
 State: WV



There are eight (8) residences, no business or commercial sites, no churches, no schools or emergency facilities within two-thousand feet (2,000') of the above referenced well location.

Residence (#1) TM 8 Pcl. 6 CNX Land, LLC Phone: None Found Physical Address: 819 New Bethel Rd Glen Easton, WV 26039 Tax Address: 1000 Consol Energy Dr. Canonsburg, PA 15317-6506	Residence (#2) TM 8 Pcl. 6.1 Kayla E. Bratton Phone: 304-845-8266 Physical Address: Kayla Bratton (Reverse Address) / 860 New Bethel Rd Glen Easton, WV 26039 Tax Address: Same	Residence (#3) TM 8 Pcl. 5.2 Amy Evans & Karen Whetzal ✓ Phone: 304-686-2827; 304-843-0902 (Larry Conkle) Physical Address: Larry Conkle (Reverse Address) 756 New Bethel Rd Glen Easton, WV 26039 Tax Address: Same
Residence (#4) TM 3 Pcl. 17 CNX Land, LLC Phone: 304-845-0038 (Leah Kestner) Physical Address: Leah Kestner (Reverse Address) ✓ 40 Carmichael Ln Glen Easton, WV 26039 Tax Address: 1000 Consol Energy Dr. Canonsburg, PA 15317-6506	Residence (#5) TM 8 Pcl. 9 James Richard Blake, Et Ux ✓ Phone: None Found – Reverse Address Physical Address: 295 Homestead Ln. Glen Easton, WV 26039 Tax Address: Same	Residence (#6) TM 8 Pcl. 5.1 Raymond E. & Cindy L. White ✓ Phone: 304-845-4529 (Raymond White) Physical Address: Ruth Siburt (Reverse Address) 575 New Bethel Rd Glen Easton, WV 26039 Tax Address: 656 New Bethel Rd. Glen Easton, WV 26039
Residence (#7) TM 3 Pcl. 19 Raymond E. & Cindy L. White ✓ Phone: 304-845-4529 (Raymond White); 903-276-5846 (Gary Whitlatch) Physical Address: Gary Whitlatch (Reverse Address) 569 New Bethel Rd Glen Easton, WV 26039 Tax Address: 656 New Bethel Rd. Glen Easton, WV 26039	Residence (#8) TM 3 Pcl. 18.2 Raymond E. & Cindy L. White ✓ Phone: 304-845-4529; 304-843-5087 (Matthew Meyer) Physical Address: Matthew Meyer (Reverse Address) 692 New Bethel Rd Glen Easton, WV 26039 Tax Address: 656 New Bethel Rd Glen Easton, WV 26039	

PROPOSED WILLETT S - 17HU



NOTE: THERE APPEARS TO BE EIGHT (8) POSSIBLE WATER SOURCES WITHIN 2,000'.

 <p>12 Vanhorn Drive P.O. Box 150 Glenville, WV 26351 304.462.5634 1412 Kanawha Boulevard, East Charleston, WV 25301 304.346.3932 254 East Beckley Bypass Beckley, WV 25801 304.255.5296 sllsw.com</p>	TOPO SECTION: GLEN EASTON 7.5'		OPERATOR: PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		 <p>TUG HILL OPERATING</p>		
	COUNTY MARSHALL	DISTRICT MEADE	DRAWN BY K.G.M.	JOB NO. 8939		DATE 12/01/2021	SCALE 1" = 1000'
	01/28/2022						
	CAD FILE: F:\Data\CADD\WGRK 8900-8999\8939 Tug Hill - Willett Plats and Mapping\Survey\8939-17HU Exhibits.dwg LAYOUT: Layout4 USER: kmoyers						

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

Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

Name: _____

Address: _____

Name: _____

Address: _____

COAL OWNER OR LESSEE ✓

Name: Consolidation Coal Company

Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

MINERAL OWNER(S) ✓

Name: Appalachian Basin Minerals, LP *See attached list

Address: 8235 Douglas Avenue, Suite B15
Dallas, TX 75225

*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: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.82306349; -80.65626349</u>
County: <u>Marshall</u>	Public Road Access: <u>New Bethel Road (County Route 62)</u>
District: <u>Meade</u>	Watershed: <u>Middle Fish Creek</u>
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>CNX Land Resources, LLC</u>

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: <u>Tug Hill Operating, LLC</u>	Address: <u>380 Southpointe Boulevard, Plaza II, Suite 200</u>
Telephone: <u>724-749-8388</u>	<u>Canonsburg, PA 15317</u>
Email: <u>amiller@tug-hilltop.com</u>	Facsimile: <u>724-338-2030</u>

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.

01/28/2022

WW-6A3 Notice of Entry for Plat Survey

Willet Pad

Additional Mineral Owners

Carol Vallandingham
2430 Venetian Way
Burlington, KY 41005

Cheryl Brauch
6670 Snead Ln.
Florence, KY 41042

Teresa R. Fox
106 Brookside Ave
Ewing, NJ 08638

Juanita S. Hatch
1437 North Overland Trails Dr.
Washington, UT 84780

Bruce Johnson
6272 Highland Meadows Dr
Medina, OH 44256

Diane DeVault
9315 Brandywine Rd
Northfield, OH 44067

Bertha Lynn Klug
47 Shutler Ln.
Proctor, WV 26055

Marcellus TX Mineral Partners, Ltd.
307 West 7th St, Ste 1110
Fort Worth, TX 76102

McCrow Energy Partners II, LLC
8235 Douglas Ave., Ste 815
Dallas, TX 75225

Matthew Grossaint
4820 132 PI SE
Mill Creek, WA 96012

Lou Ann Grossaint
1920 S. Atlantic St
Boise, ID 83705

Rachel Marie McLardy
5808 Medusa St
P.O. Box 931
Sechelt, British Columbia, VON 3A0



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PennMarc Resources II, LP
2 East Market St., Ste 1
Clearfield, PA 16830

Purpleburgh Ventures, LLC
4675 Carfefree Trail
Parker, CO 80134

Wildes Mineral Interests, LLC
3517 Gillon Ave.
Dallas, TX 75205

Phillip A. Wilson
1715 Lancaster Dr
Youngstown, OH 44511

Jessica M. Chavez
5525 Alta Verde Cir
Arlington, TX 76017

Edward F. Wilson
2933 Hastings Dr
Grand Prairie, TX 75052

Denise Marie Rogers
9671 King Graves Rd NE
Warren, OH 44484

Julianne Erdos
119 Noran Cir
Bedford, OH 44146

The Robert Wise Living Trust
Trustee: Shirley Hagenbaugh
529 Genoa Dr
Kissimmee, FL 34759

Harry Albert Richardson
19819 10th Ave NW
Shoreline, WA 98177

Rev. Jane D. Bearden
19106 Timothy's Manor Ct
Parkton, MD 21120

Janet M. Smith
122 Kandahar Dr
East Aurora, NY 14052

Brad Lehner
2570 Chasewood Ct
Aurora, IL 60502

Bryan S. Lehner
372 5th Ave Apt 4J
New York, NY 10018

LA3



01/28/2022

6A3

Barbara Krus
421 Fox Chapel Dr
Lutherville Timonium, MD 21093

Maureen Wilson
12 Juliet Ln Apt 102
Nottingham, MD 21236

Russell Bredbenner
965 Seybert St
Hazelton, PA 18201

Joseph R. Zbozien
704 Pontiac Ave
Brooklyn, MD 21225

Jasmine Lee Hall Pena
c/o Robert A Hall
4400 Falls Rd
Baltimore, MD 21211

William Edward Stacy
116 Ocoee Falls Dr
Chapel Hill, NC 27517

Carol Stacy Saunders
4149 Andros Way
Oceanside, CA 92056

Carol D. Elmore
6461 Mesquite Dr
Midlothian, TX 76065

James S. Wilson
6306 Farley Dr
San Diego, CA 92122

Margaret Lee Hall
2910 Avenida De Autlan
Camarillo, CA 93010

Marvin Wilson
214 Saint Andrews Cir
Oxford, MS 38655

James Ovies
1204 5th St
Moundsville, WV 26041

Rick Heuser
162 Lawrence Lane
Reynoldsburg, OH 43068

Mark Heuser
209 Cherokee Ct
Pickerington, OH 43147

01/28/2022

Cindy Lee Richmond
157 Richmond Ln
Glen Easton, WV 26039

Berger Boys, LLC
1305 Center St
Moundsville, WV 26041

Ella Jean McCardle
348 Fairmont Ave
Wheeling, WV 26003

Jesse Allen Wilson
49 Forest Hill Dr
Glen Dale, WV 26038

Troy Thomas Wilson
49 Forest Hill Dr
Glen Dale, WV 26038

April Dawn Hogan
5032 Castleman Run Rd
Bethany, WV 26032

Kimberly Sue Pierson
30 Forest Hill Dr
Glen Dale, WV 26038

Kenneth R. Anderson
1706 N Washington Ave
Springfield, MO 65803

Charles Pratico
25 Hamilton Ave
Princeton, NJ 08542

Marietta Agocs
50 Orourke Dr Apt O
Trenton, NJ 08691

Eileen Sennett
10 Orchard Dr
Chesterfield, NJ 08515

Patricia Cassady
46 Heather Narrows
Toms River, NJ 08755

Sharon Bucci
120 7th Ave
Seaside Park, NJ 08752

Amy Pratico
19 E Railroad Ave
Jamesburg, NJ 08831

Abigail Constance
612 East Rd
Middletown, NJ 07748

Rachel Constance
36 Cherokee Ave
Rockaway, NJ 07866

Lawrence Bernard Ostry Estate, by
Rachael Marie McLardy as Trustee
5808 Medusa Street, PO Box 931
Sechely, British Columbia, V0N 3A0

The Bernard E. Kurlich Family Trust
c/o Richard P. Martin Co. L.P.A.
3603 Darrow Rd.
Stow, OH 44224

Joseph Richard Fox
2116 Autumn Way
Melbourne, FL 32935

Norma V. Pratico
821 River Road
Yardley, PA 19067

James R. Blair
1400 10th Street
Moundsville, WV 26041



01/28/2022



PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Willett Wells

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



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/
Commissioner of Highways

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

July 6, 2021

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

Subject: DOH Permit for the Willett Pad, Marshall County
Willett S-17HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2019-0352 which has been issued to Tug Hill Operating for access to the State Road for a well site located off Marshall County Route 62 SLS MP 0.80.

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

Very Truly Yours,

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

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

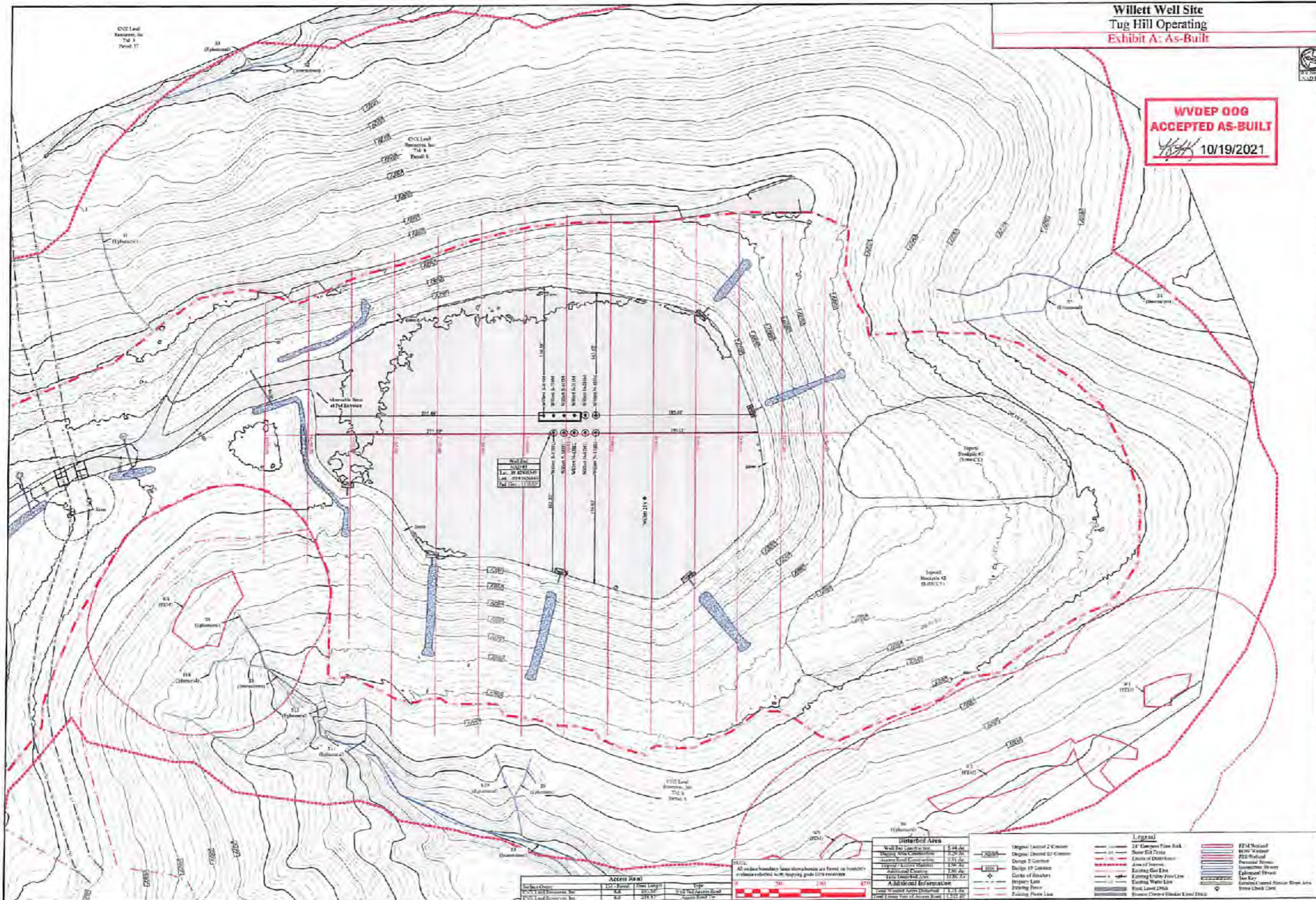
Cc: Amy Morris
Tug Hill Operating
CH, OM, D-6
File

01/28/2022

CVI Lead
Reference to
724 &
Panel 17

**Willett Well Site
Tug Hill Operating
Exhibit A: As-Built**

**WVDEP 000
ACCEPTED AS-BUILT**
[Signature] 10/19/2021



Well No.	Well Type	Well Depth (ft)	Well Diameter (in)	Well Status
W1	Production	100	12	Active
W2	Production	100	12	Active
W3	Production	100	12	Active
W4	Production	100	12	Active
W5	Production	100	12	Active
W6	Production	100	12	Active
W7	Production	100	12	Active
W8	Production	100	12	Active
W9	Production	100	12	Active
W10	Production	100	12	Active
W11	Production	100	12	Active
W12	Production	100	12	Active
W13	Production	100	12	Active
W14	Production	100	12	Active
W15	Production	100	12	Active
W16	Production	100	12	Active
W17	Production	100	12	Active
W18	Production	100	12	Active
W19	Production	100	12	Active
W20	Production	100	12	Active
W21	Production	100	12	Active
W22	Production	100	12	Active
W23	Production	100	12	Active
W24	Production	100	12	Active
W25	Production	100	12	Active
W26	Production	100	12	Active
W27	Production	100	12	Active
W28	Production	100	12	Active
W29	Production	100	12	Active
W30	Production	100	12	Active
W31	Production	100	12	Active
W32	Production	100	12	Active
W33	Production	100	12	Active
W34	Production	100	12	Active
W35	Production	100	12	Active
W36	Production	100	12	Active
W37	Production	100	12	Active
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W41	Production	100	12	Active
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W95	Production	100	12	Active
W96	Production	100	12	Active
W97	Production	100	12	Active
W98	Production	100	12	Active
W99	Production	100	12	Active
W100	Production	100	12	Active

Access Road	Width (ft)	Length (ft)	Type
Access Road 1	12	100	Gravel
Access Road 2	12	100	Gravel
Access Road 3	12	100	Gravel
Access Road 4	12	100	Gravel
Access Road 5	12	100	Gravel
Access Road 6	12	100	Gravel
Access Road 7	12	100	Gravel
Access Road 8	12	100	Gravel
Access Road 9	12	100	Gravel
Access Road 10	12	100	Gravel

NOTES:
1. All wellhead locations shown on this plan are based on field measurements and are subject to change without notice.
2. All wellhead locations are shown on this plan as of the date of this drawing.
3. All wellhead locations are shown on this plan as of the date of this drawing.

Disturbance Area	Area (sq ft)
Well Pad Area	1,200 sq ft
Access Road Area	1,200 sq ft
Drainage Area	1,200 sq ft
Storage Area	1,200 sq ft
Construction Area	1,200 sq ft
Other Disturbance	1,200 sq ft

Legend	Description
—	Original Contour Lines
—	Design Contour Lines
—	Design 10 Contour
—	Design 15 Contour
—	Design 20 Contour
—	Design 25 Contour
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—	Design 1000 Contour

Legend	Description
—	24" Concrete Pipe Risk
—	36" Concrete Pipe Risk
—	48" Concrete Pipe Risk
—	60" Concrete Pipe Risk
—	72" Concrete Pipe Risk
—	84" Concrete Pipe Risk
—	96" Concrete Pipe Risk
—	108" Concrete Pipe Risk
—	120" Concrete Pipe Risk
—	132" Concrete Pipe Risk
—	144" Concrete Pipe Risk
—	156" Concrete Pipe Risk
—	168" Concrete Pipe Risk
—	180" Concrete Pipe Risk
—	192" Concrete Pipe Risk
—	204" Concrete Pipe Risk
—	216" Concrete Pipe Risk
—	228" Concrete Pipe Risk
—	240" Concrete Pipe Risk
—	2