



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

Monday, May 3, 2021
WELL WORK PERMIT
Horizontal 6A / New Drill

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

Re: Permit approval for VAN WINKLE N-18HU
47-051-02351-00-00

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

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

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

James A. Martin
Chief

Operator's Well Number: VAN WINKLE N-18HU
Farm Name: XCL MIDSTREAM OPERATI
U.S. WELL NUMBER: 47-051-02351-00-00
Horizontal 6A New Drill
Date Issued: 5/3/2021



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

April 22, 2021

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

RE: Application for Deep Well Permit – API #47-051-02351

COMPANY: Tug Hill Operating, LLC

FARM: XCL Midstream Operating, LLC

Van Winkle N-18HU

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

** Old Crow N-20HU 47-051-02191; MND 6 HHS 47-051-01732; MND20EU 47-051-02045; Knob Creek N-12HU 47-051-02268; Knob Creek N-11HU 47-051-02287; Hunter 1 47-051-01284

05/07/2021

PERMIT CONDITIONS

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

CONDITIONS

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.

05/07/2021

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: Van Winkle N-18HU Well Pad Name: Hunter Pethtel

3) Farm Name/Surface Owner: XcL Midstream Operating, LLC Public Road Access: County Route 74

4) Elevation, current ground: 754' Elevation, proposed post-construction: 754'

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 10,966' - 11,086', thickness of 120' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,236'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 22,677'

11) Proposed Horizontal Leg Length: 11,187.46'

12) Approximate Fresh Water Strata Depths: 70; 415'

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

14) Approximate Saltwater Depths: 870'

15) Approximate Coal Seam Depths: Sewickley Coal - 314' and Pittsburgh Coal - 409'

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

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

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

WW-6B
(04/15)

API NO. 47-051 -
OPERATOR WELL NO. Van Winkle N-18HU
Well Pad Name: Hunter Pethtel

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	20"	NEW	J55	106.5#	515'	515'	883FT^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2,226'	2,226'	1576FT^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	9,965'	9,965'	3231FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	22,677'	22,677'	5364FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		10,435'	
Liners							

*Buy Stillup
1-21-21*

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	20"	26#	.5	2,410	1,928	SEE #24	1.2
Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate	9 5/8"	12 1/4"	.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			RECEIVED Office of Oil and Gas
Sizes:	N/A			FEB 08 2021
Depths Set:	N/A			WV Department of Environmental Protection

WW-6B
(10/14)

API NO. 47-051 -
OPERATOR WELL NO. Van Winkle N-18HU
Well Pad Name: Hunter Pethel

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. 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.

Bony Hilde 1-21-21

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

Well to be completed with approximately 27,250,000 lb. proppant and 490,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 16.63 acres

22) Area to be disturbed for well pad only, less access road (acres): 4.87 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:

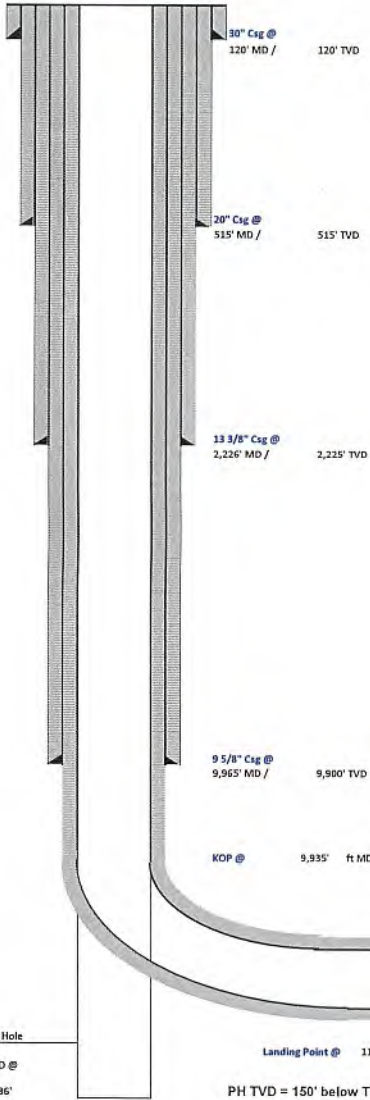
Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, POOH

RECEIVED
Office of General Counsel
FEB 03 2021
WV Department of
Environmental Protection

*Note: Attach additional sheets as needed.



WELL NAME: Van Winkle N-18HU
STATE: WV **COUNTY:** Marshall
DISTRICT: Meade
DF Elev: 754' **GL Elev:** 754'
TD: 22,677'
TH Latitude: 39.781509
TH Longitude: -80.726889
BH Latitude: 39.808276
BH Longitude: -80.748410



FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	415'
Sewickley Coal	314'
Pittsburgh Coal	409'
Big Lime	1,630'
Berea	2,121'
Tully	6,040'
Marcellus	6,143'
Onondaga	6,193'
Salina	6,913'
Lockport	7,974'
Utica	10,700'
Point Pleasant	10,966'
Landing Depth	11,007'
Trenton	11,086'
Pilot Hole TD	11,236'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	8W	BW	Surface
Surface	26	20	515'	515'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,226'	2,225'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	9,965'	9,900'	47	HPP110	Surface
Production	8 1/2	5 1/2	22,677'	10,812'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	949	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	1,708	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,785	A	14.5	Air	1 Centralizer every other jt
Production	4,757	A	15	Air / SOBMM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc

Bay Stiles 1-21-21

Pilot Hole
PH TD @
11,236'

Landing Point @ 11,535' MD / 11,007' TVD
PH TVD = 150' below Trenton Top

Lateral TD @ 22,677' ft MD
10,812' ft TVD

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 Office of Oil and Gas
 WV Department of Environmental Protection
 FEB 03 2021



Tug Hill Operating, LLC Casing and Cement Program

Van Winkle N-18HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	515'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,226'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	9,965'	CTS
Production	5 1/2"	HCP110	8 1/2"	22,677'	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 15.6 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 15.2ppg, Y = 1.18

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Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

05/07/2021



January 15, 2021

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

RE: Van Winkle N-18HU

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, with the exception of the following tract which we intend to force pool.

5-10-8

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,

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

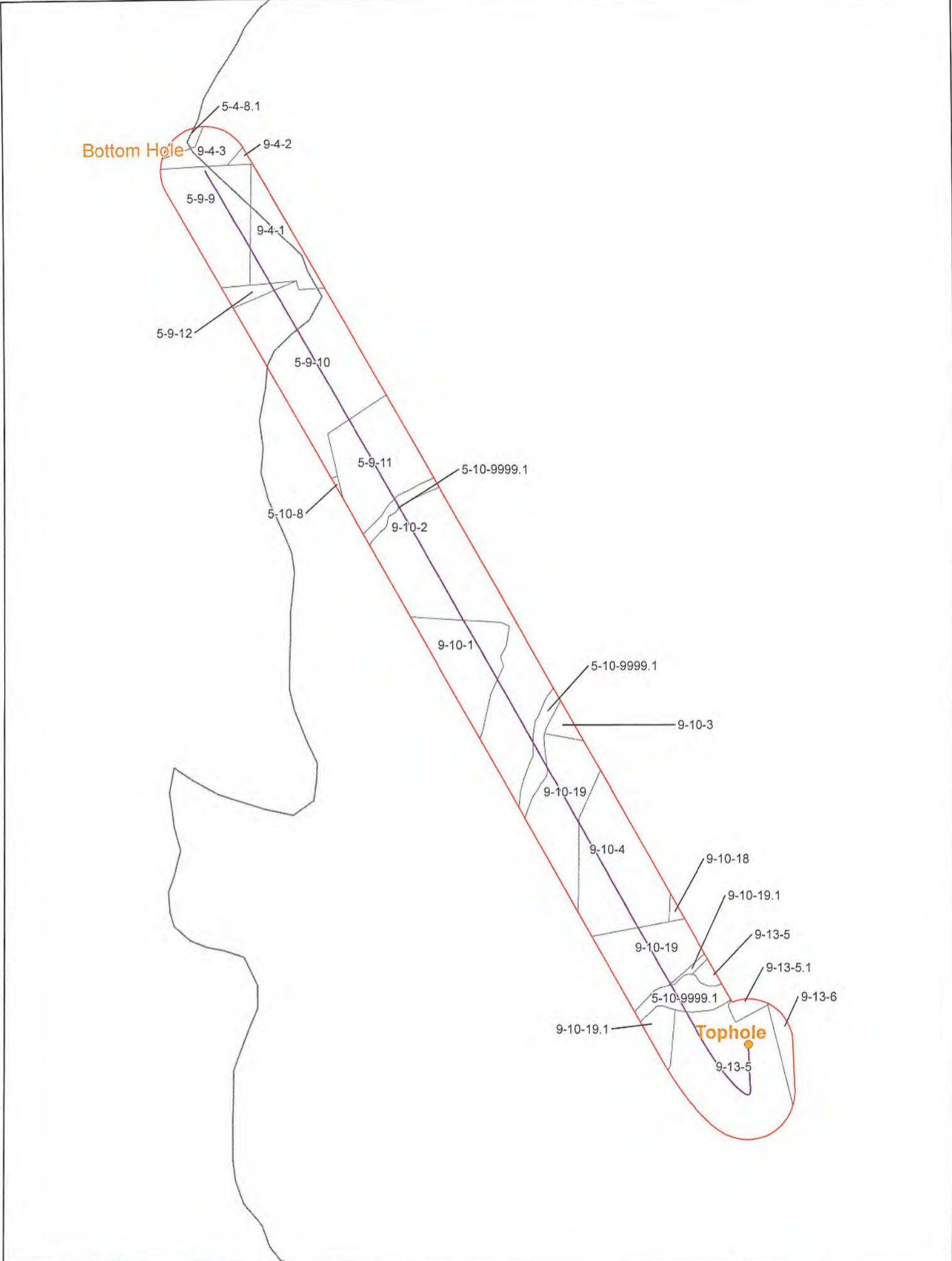
RECEIVED
Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

COUNTY	DISTRICT	PARCEL	OWNER	ADDRESS
Marshall	Franklin	5-10-9999.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-4-8.1	VENABLE ROYALTY, LTC	5910 North Central Expressway Suite 1470 Dallas, TX 75206
Marshall	Franklin	5-4-8.1	VENRO, LTD	5910 North Central Expressway Suite 1470 Dallas, TX 75206
Marshall	Franklin	5-9-10	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-9-11	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	5-9-12	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	5-9-9	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-18	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-19	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-19	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-19.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-3	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-3	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-10-4	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107

05/07/2021

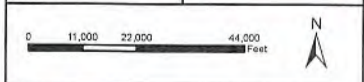
Marshall	Meade	9-13-5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-5.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-13-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-4-1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-4-2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	Meade	9-4-3	EQT PRODUCTION COMPANY	625 Liberty Avenue Suite 1700 Pittsburgh, PA 15222
Marshall	Franklin	5-10-8	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107

Van Winkle N-18HU



Coordinate System: NAD 1983 UTM Zone 17N
 Projection: Transverse Mercator
 Datum: North American 1983
 Spheroid: GRS 1980
 False Northing: 0.0000
 Central Meridian: -81.0000
 Scale Factor: 0.9999
 Latitude Of Origin: 39.0000
 Units: Feet US

CONFIDENTIAL



- Utica Well
- 500' Buffer

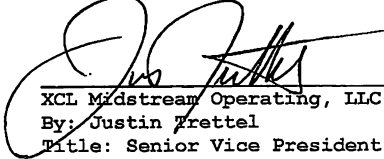
Van Winkle N-18HU
 Operators within 500 Feet of Well Borehole



CERTIFICATE OF CONSENT AND EASEMENT

I, 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, or hereby consent and grant 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.

Executed this 11 day of FEBRUARY, 2021.



XCL Midstream Operating, LLC
By: Justin Trettel
Title: Senior Vice President

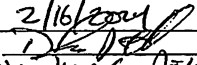
Marshall County
Jan Pest, Clerk
Instrument 1475005
02/18/2021 @ 12:30:42 PM
RIGHT OF WAY W/O CONSIDERATION
Book 1104 @ Page 189
Pages Recorded 2
Recording Cost \$ 11.00

ACKNOWLEDGMENT

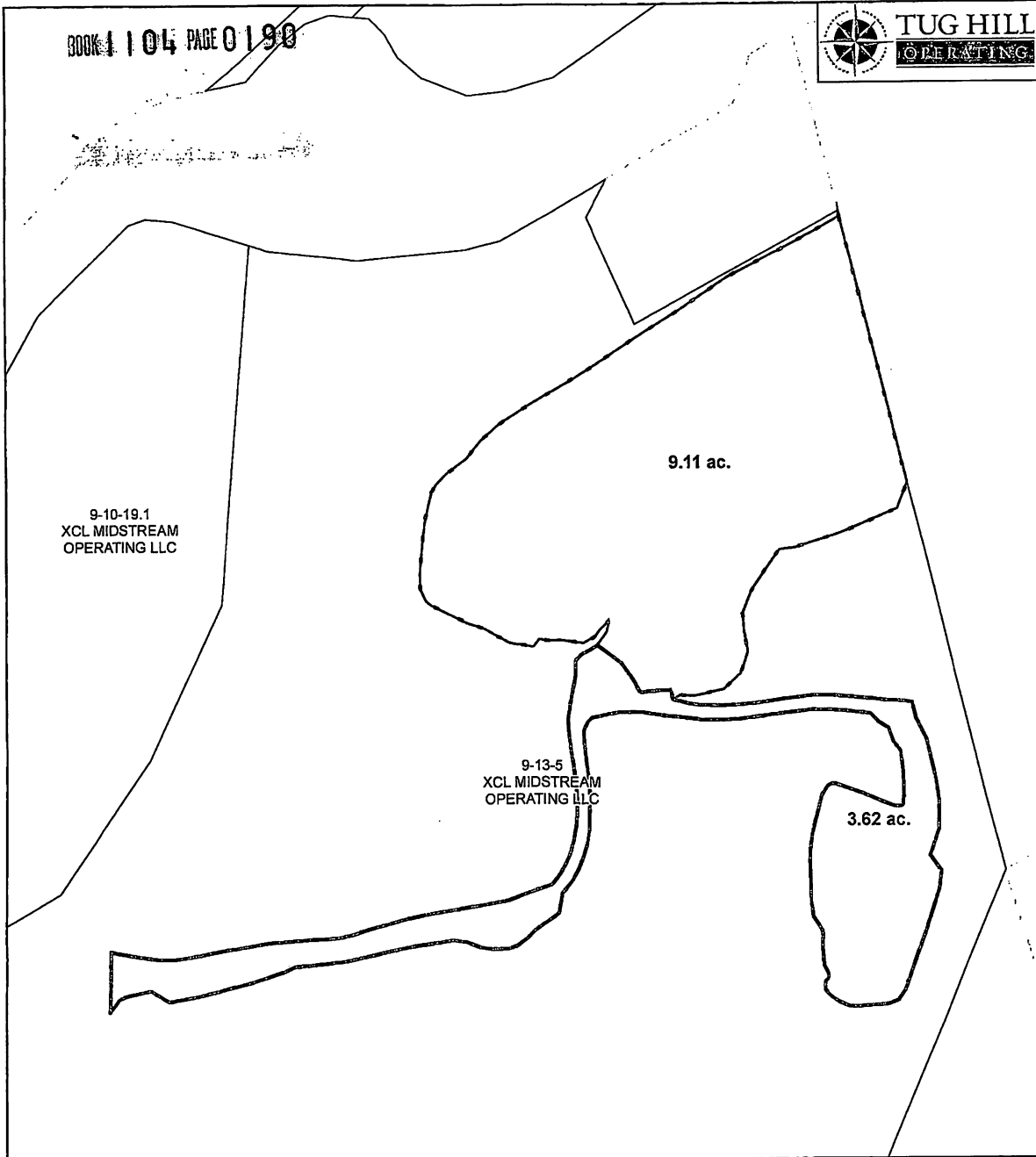
COMMONWEALTH OF PENNSYLVANIA §
§ SS:
COUNTY OF WASHINGTON §

On this, the 11 day of FEBRUARY 2021, before me, a notary public, the undersigned authority, personally appeared Justin Trettel, who acknowledged himself to be the Senior Vice President of XcL Midstream Operating, a Delaware limited liability company, and that he as such Senior Vice President being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the limited liability company by himself as Senior Vice President.

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

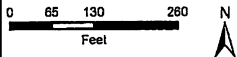
Commonwealth of Pennsylvania - Notary Seal
David Gabriel Delallo, Notary Public
Washington County
My commission expires February 18, 2024
Commission number 1267492
Member, Pennsylvania Association of Notaries
Commission Expires: 2/18/2024
Signature/Notary Public: 
Notary Public (print): David G. Delallo

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



1 inch: 226 feet

Limit of Disturbance - Access Road
Limit of Disturbance - Pad



NOTE: THE APPROVED SITE LOCATION FOR THE SURFACE SITE, ACCESS ROAD, AND/OR PAD AND THE LOCATION OF THE PROPERTY TAX PARCELS ARE AS SHOWN ON THIS PLAT. HOWEVER, THESE ACTUAL LOCATIONS MAY VARY AS THE EXISTENCE OF NOT AN EXACT REPRODUCTION. THE ACTUAL PROPERTY TAX PARCELS SHALL BE AS BOUNDED AND DESCRIBED IN THE DEEDS AS FILED IN THE COUNTY RECORDS AND THE APPROVED SITE LOCATION FOR THE SURFACE SITE, ACCESS ROAD, AND/OR PAD OF THIS PLAT SHALL BE THE LOCATION AS ACTUALLY CONSTRUCTED.

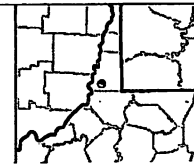
"Plat"

XCL MIDSTREAM OPERATING LLC
Marshall County, WV

Date: _____

Name: _____

Name: _____



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 11th day of February, 2021, was presented for and by me, admitted to record in my office upon the above certificate as to the parties therein named this 18th day of February, 2021 at 12:30 o'clock P M.

TESTE: Jan Pest Clerk

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. IHS 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 (12/04/2020) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

Request maps for:

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

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

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

RECEIVED
Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

Permit well - Van Winkle N-18HU

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
4705101330	Tug Hill Operating	10154' MD, 6151' TVD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well. Tug Hill Operating is considering plugging this well.
4705101284	Tug Hill Operating	6340' TVD	None	None	Yes, existing vertical pilot drilled into Onondaga. Well was not perforated. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	Well is not producing.
4705101859	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101860	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101866	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101846	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101847	EQT Production Company	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705101431	Chief Oil & Gas, LLC	No Depth/Not Drilled	None	None	No, well is a proposed well. The well was not drilled. This is a canceled permit.	A canceled permit.
4705170649	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705170651	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705170652	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete.
4705100530	Manufacturers Light & Heat Co.	1809' TVD	Big Injun	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 7/24/1969.

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705100530	Marshall	530	Meade	Glen Easton	Cameron	39 778984	-80 72656	523415 9	4403262 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_VO	PROP_TRGT_FM	TFM_EST_PR
4705100530	2/25/1966	Original Loc	Completed	John J Goff	1					Manufacturers Light & Heat Co			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY	
4705100530	2/25/1966	1/8/1966	740	Ground Level	Cameron-Garner	Big Injun (undif)	Big Injun (undif)	Development Well	Development Well	Gas	Spudder	Acid-Frac	1809		1609	20	86	0	0	0	0	0	0	360	24			

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
4705100530	2/25/1966	Show	Gas	Vertical			375	Pittsburgh coal	0	0			
4705100530	2/25/1966	Pay	Gas	Vertical	1375	Salt Sands (undif)	1378	Salt Sands (undif)	0	0			

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV DATUM
4705100530	Original Loc	unidentified coal	Well Record	260	Reasonable	4	Reasonable	740
4705100530	Original Loc	Pittsburgh coal	Well Record	367	Reasonable	8	Reasonable	740
4705100530	Original Loc	Maxton	Well Record	1284	Reasonable	118	Reasonable	740

Wireline (E-Log) Information:

API	LOG_TOP	LOG_BOT	DEEPEST_FML	LOGS_AVAIL	SCAN	DIGITIZED	GR_TOP	GR_BOT	D_TOP	D_BOT	N_TOP	N_BOT	L_TOP	L_BOT	T_TOP	T_BOT	S_TOP	S_BOT	O_TOP	O_BOT	INCH2	INCH5	REDUCED	KOP	LOGMD	ELEV_KB	ELEV_GL	ELEV_DF	LOG_MSRD_FROM
4705100530	100	1622	Big Lime	G.D.N.I.T.C.*	Y	N	100	1622	1158	1814	100	1622	1178	1810	950	1808			1156	1814	Y	Y	N						

Comment: *logs: caliper, tension device, casing collars

Downloadable Log Images: We advise you to save the log image file to your PC for viewing. To do so, right-click the .tif image of interest and select the save option. Then you can direct the file to a location of your choice. Please note these images vary in size and some may take several minutes to download, especially if using a 56k or slower dialup connection.

FILENAME
4705100530cvd.tif
4705100530eno.tif
4705100530l.tif
4705100530r.tif
4705100530a.tif

Quick Reference Guide for Log File Names For more info about WVGES scanned logs click [here](#)

geologic log types:

d density (includes bulk density, compensated density, density, density porosity, grain density, matrix density, etc.)

e photoelectric adsorption (PE or Pe, etc.)

g gamma ray

i induction (includes dual induction, medium induction, deep induction, etc.)

l laterolog

m dipmeter

n neutron (includes neutron porosity, sidewall neutron--SWN, etc.)

o other*

s sonic or velocity

l temperature (includes borehole temperature, BHT, differential temperature, etc.)

z spontaneous potential or potential

mechanical log types:

b cement bond

c caliper

o other*

p perforation depth control or perforate

* other logs may include, but are not limited to, such curves as audio, bit size, CCL--casing collar locator, continuous meter, directional survey,

gas detector, guard, NCTL--Nuclear Cement Top Locator, radioactive tracer, tension

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100530	7/24/1969	0

There is no Sample data for this well



Location Information: View Map

Table with columns: API, COUNTY, PERMIT, TAX_DISTRICT, QUAD_76, QUAD_15, LAT_CD, LONG_CD, UTM_E, UTM_N. Row 1: 4705101284, Marshall, 1284, Meads, Glen Easton, Cameron, 39 751904, -80 727576, 523302.4, 4403519.9

There is no Bottom Hole Location data for this well

Owner Information:

Table with columns: 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. Row 1: 4705101284, 11/25/2009, Original Loc., Completed, Dennis W Hunter, 1, Hunter, Dennis W Hunter, Stone Energy Corporation, 8335, Marcellus Fm.

Completion Information:

Table with columns: API, CMP_DT, SPUD_DT, ELEV, DATUM, FIELD, DEEPEST_FM, DEEPEST_FMI, INITIAL_CLASS, FINAL_CLASS, TYPE, RIG, CMP_MTHD, TWD, TMD, NEW_FTO, KOD, G_BEF, O_AFT, O_BEF, O_AFT, NGL_BEF, NGL_AFT, P_BEF, TL_BEF, P_AFT, TL_AFT, BH_P_BEF, INH_P_AFT, G_MSRD_BY. Row 1: 4705101284, 11/25/2009, 782, Ground Level, Cameron-Gamer, Onondaga Ls, Marcellus Fm, Development Well, Development Well, Gas, Rotary, Fractured, 6340, 6340, 250, 280, 1015, 400.

Pay/Show/Water Information:

Table with columns: API, CMP_DT, ACTIVITY, PRODUCT, SECTION, DEPTH_TOP, FM_TOP, DEPTH_BOT, FM_BOT, G_BEF, G_AFT, O_BEF, O_AFT, WATER_QNTY. Rows include Stone Energy Corporation and EQT Production Company for various depths and products like Water and Gas.

Production Gas Information (Volumes in Mcf)

Table with columns: API, PRODUCING_OPERATOR, PRD_YEAR, ANN_GAS, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for Stone Energy Corporation and EQT Production Company from 2018 to 2019.

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

Table with columns: API, PRODUCING_OPERATOR, PRD_YEAR, ANN_OIL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for Stone Energy Corporation and EQT Production Company from 2018 to 2019.

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

Table with columns: API, PRODUCING_OPERATOR, PRD_YEAR, ANN_NGL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for Stone Energy Corporation and EQT Production Company from 2018 to 2019.

Production Water Information (Volumes in Gallons)

Table with columns: API, PRODUCING_OPERATOR, PRD_YEAR, ANN_WTR, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM. Rows show production data for EQT Production Company from 2018 to 2019.

Stratigraphy Information:

Table with columns: API, SUFFIX, FM, FM_QUALITY, DEPTH_TOP, DEPTH_QUALITY, THICKNESS, THICKNESS_QUALITY, ELEV, DATUM. Lists various geological formations like Pittsburgh coal, Little Lime, Greenwater Gp, Big Lime, Big Injun (Pricedon), Berea Sh, Gortals, Lower Huron, Riley, Benson, Java Fm, Argolis Sh Mbr, Alcoa-sh, Rhinestreet Sh, Sonyea Fm, Cash-equa Sh Mbr, Sonyea Fm, Middlesex Sh Mbr, Genesee Fm, West River Sh Mbr, Genesee Fm, Genesee Sh Mbr, Tully Ls, Hamilton Gp, Mahantango Fm, Hamilton Gp, Marcellus Fm, Upper Marcellus Fm, Marcellus Fm, upper Marcellus A, upper Marcellus B, dillers' Cherry Vly, lo Marcellus, Onesqueaway Gp, Onondaga Ls.

Wirelogs (E-Log) Information:

Table with columns: API, LOG_TOP, LOG_BOT, DEEPEST_FM, LOGS_AVAILABLE, SCAN, DIGITIZED, GR_TOP, GR_BOT, D_TOP, D_BOT, N_TOP, N_BOT, L_TOP, L_BOT, T_TOP, T_BOT, S_TOP, S_BOT, O_TOP, O_BOT, INCH2, INCH6, REDUCED, KOP, LOGMD, ELEV_KB, ELEV_GL, ELEV_DF, LOG_MSRD_FROM. Row 1: 4705101284, 100, 6360, 6360, Y, N, N, 6360, 2011, 6365, 2011, 6360, 2037, 6360, 2011, 6367, Y, Y, N.

Comment: *logs, caliper, ps, tension, tt, amplitude, ccl, vdi, bit size.

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Quick Reference Guide for Log File Names: For more info about WVGES scanned logs click [here](#)

Table with columns: FILENAME, LOG TOP, LOG BOT, DEEPEST_FM, LOGS_AVAILABLE, SCAN, DIGITIZED, GR_TOP, GR_BOT, D_TOP, D_BOT, N_TOP, N_BOT, L_TOP, L_BOT, T_TOP, T_BOT, S_TOP, S_BOT, O_TOP, O_BOT, INCH2, INCH6, REDUCED, KOP, LOGMD, ELEV_KB, ELEV_GL, ELEV_DF, LOG_MSRD_FROM. Includes a legend for log types: geologic log types (density, photoelectric adsorption, gamma ray, induction, laterolog, dipmeter, neutron, sonic or velocity, temperature), mechanical log types (cement bond, caliper, other), and perforation depth control or perforator.

*other logs may include, but are not limited to, such curves as audio, bit size, OCL-casing collar locator, continuous meter, directional survey, gas detector, gauge, NCTL-Inverse Cement Top Locator, radioactive tracer, tension

There is no Plugging data for this well

There is no Sample data for this well

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Location Information: View Map

Table with columns: AFI, COUNTY, PERMIT, TAX_DISTRICT, QUAD_76, QUAD_16, LAT_DD, LOG_DD, UTM_E, UTM_N

Bottom Hole Location Information:

Table with columns: AFI, EP_FLAG, UTM_E, UTM_N, LOG_DD, LAT_DD

Owner Information:

Table with columns: AFI, 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

Completion Information:

Table with columns: AFI, CMP_DT, SPUD_DT, ELEV DATUM, FIELD, DEEPEST_FM, DEEPEST_FMT, INITIAL_CLASS, FINAL_CLASS, TYPE, RIG, CMP_MTHD, TVD, TMO, NEW_FTG, KOD, G_BEF, G_AFT, O_BEF, O_AFT, NGL_BEF, NGL_AFT, P_BEF, P_AFT, TLAFT, BH_P_BEF, BH_P_AFT, G_MSRD_BY

Pay/Show/Water Information:

Table with columns: AFI, CMP_DT, ACTIVITY, PRODUCT, SECTION, DEPTH_TOP, FM_TOP, DEPTH_BOT, FM_BOT, G_BEF, G_AFT, O_BEF, O_AFT, WATER_QNTY

Production Gas Information: (Volumes in Mcf)

Table with columns: AFI, PRODUCING_OPERATOR, PRD_YEAR, ANN_GAS, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

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

Table with columns: AFI, PRODUCING_OPERATOR, PRD_YEAR, ANN_OIL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

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

Table with columns: AFI, PRODUCING_OPERATOR, PRD_YEAR, ANN_NGL, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

Production Water Information: (Volumes in Gallons)

Table with columns: AFI, PRODUCING_OPERATOR, PRD_YEAR, ANN_WTR, JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DCM

Stratigraphy Information:

Table with columns: AFI, SUFFIX, FM, FM_QUALITY, DEPTH_TOP, DEPTH_QUALITY, THICKNESS, THICKNESS_QUALITY, ELEV DATUM

Wireline (E-Log) Information:

Table with columns: AFI, LOG_TOP, LOG_BOT, DEEPEST_FML, LOGS_AVAIL, SCAN, DIGITIZED, GR_TOP, GR_BOT, D_TOP, D_BOT, N_TOP, N_BOT, I_TOP, I_BOT, S_TOP, S_BOT, O_TOP, O_BOT, INCH2, INCH5, REDUCED, KOP, LOGMD, ELEV_KB, ELEV_GL, ELEV_DF, LOG_MSRD_FROM

Comment: *logs: ROP, tool temp

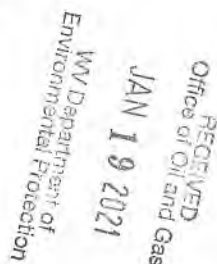
Downloadable Log Images: We advise you to save the log image file to your PC for viewing. To do so, right-click the log image of interest and select the save option.

- Quick Reference Guide for Log File Names
geologic log types:
d density (includes bulk density, compenated density, density, specific porosity, grain density, matrix density, etc.)
e photoelectric adsorption (PE or Pe, etc.)
g gamma ray
i induction (includes dual induction, medium induction, deep induction, etc.)
l laterolog
m dipmeter
n neutron (includes neutron porosity, sidewall neutron-SWN, etc.)
o other
s sonic or velocity
t temperature (includes borehole temperature, BHT, differential temperature, etc.)
z spontaneous potential or potential
mechanical log types:
b cement bond
c caliper
o other
p perforation depth control or perforate

*Other logs may include, but are not limited to: such curves as audio, bit size, CCL-casing collar locator, continuous meter, directional survey, gas detector, guard, NCTL-Nuclear Cement Top Locator, radioactive tracer, tension

There is no Plugging data for this well

There is no Sample data for this well



Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705101431	Marshall	1431	Meads	Glen Easton	Cameron	39.793358	-80.739342	522316.7	4404854.9

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD	
4705101431	1	As Proposed	521295.5	4408371.3	-80.75122	39.807047

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
4705101431	--		Cancelled	Georgia Cunningham LLC	1H		Cunningham		Cunningham/Rufong/McGuire	Chief Oil & Gas, LLC	6140	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_FYD	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705101431	--	--	751	Ground Level																									

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

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101846	Marshall	1846	Meade	Glen Easton	Cameron	39.761827	-80.726602	523411.3	4403578.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101846	1 As Proposed	521973.8	4404978.5	-80.743342	39.794481

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
4705101846	--	Drift Origin Loc	Cancelled	Dennis W Hunter	9H		Hunter Petittel		Dennis W Hunter et al	Stone Energy Corporation	6149	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705101846	--	--	755	Ground Level																									

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
4705101846	EQT Production Company	2018	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
4705101846	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

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

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_NGL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101846	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101846	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101847	Marshall	1847	Meade	Glen Easton	Cameron	39.781755	-80.72847	523422.6	4403570.4

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101847	1	As Proposed	523970	4401941.7	-80.720137

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
4705101847	--		Cancelled	Dennis W Hunter	4H		Hunter Pethtel		Dennis W Hunter et al	Stone Energy Corporation	6250	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TL_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705101847	--	--	795	Ground Level																									

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
4705101847	EQT Production Company	2018	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
4705101847	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

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

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_NGL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101847	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101847	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705101859	Marshall	1859	Meade	Glen Easton	Cameron	39.78156	-80.726875	523388	4403548.6

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101859	1	As Proposed	521903.3	4404681.6	-80.744175

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
4705101859	J-J-		Cancelled	Dennis W Hunter	6H		Hunter Petittel		Dennis W Hunter et al	Stone Energy Corporation		6140	Marcellus Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FYD	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705101859	J-J-	J-J-	755	Ground Level																								

Comment: J-J- Plat coordinates hard to read, blurry Per WVDEP OOG website, well was cancelled 12/11/2017. No cancellation documents available.

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
4705101859	EQT Production Company	2018	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
4705101859	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

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

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_NGL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101859	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101859	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101860	Marshall	1860	Meade	Glen Easton	Cameron	39.781673	-80.726548	523416	4403561.3

Bottom Hole Location Information:

API	EP	FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101860	1	As Proposed	522074.3	4405230.4	-80.74216	39.796748

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
4705101860	--		Cancelled	Dennis W Hunter	10H		Hunter Pethel		Dennis W Hunter et al	Stone Energy Corporation	6140	Marcellus Fin	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT	TL_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705101860	--	--	755	Ground Level																									

Comment: -- Par WVDEP OOG website, well was cancelled 12/11/2017. No cancellation documents available.

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
4705101860	EQT Production Company	2018	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
4705101860	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

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

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_NGL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101860	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101860	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101866	Marshall	1866	Meade	Glen Easton	Cameron	38.781762	-80.726409	523427.8	4403573.4

Bottom Hole Location Information:

API	EP	FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101866	1	As Proposed	524237.2	4402287.1	-80.717095	39.77017

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
4705101866	--	Dvlt Ongrl Loc	Cancelled	Dennis W Hunter	5H		Hunter/Pethiel		Dennis W Hunter et al	Stone Energy Corporation	6250	Marcellus Fm	4200

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRO_BY
4705101866	--	--	755 Ground Level																									

Comment: -- Per WVDEP OOG website, well was cancelled 12/11/2017. No cancellation documents available.

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
4705101866	EQT Production Company	2018	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
4705101866	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

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

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_NGL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101866	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Water Information: (Volumes in Gallons)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_WTR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101866	EQT Production Company	2018	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705170649	Marshall	70649	Meade	Glen Easton	Cameron	39.794368	-80.740106	522250.6	4404968.6

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170649	--		unknown	Prpty Map Woodson Crew	1				OP=AP O Co	Oper in Min. owner fld no code assign(Orphan well proj)			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRO_BY
4705170649	--	--						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

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705170651	Marshall	70651	Meade	Gen Easton	Cameron	39.792337	-80.738414	522396.4	4404741.7

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170651	--		unknown	Prpb Map Woodson Crow						unknown			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705170651	--	--						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

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170652	Marshall	70652	Meads	Glen Easton	Cameron	39.790148	-80.735405	522654 8	4404489 5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170652	--		unknown	Prty Map Woodson Crw						OP-Shr Hill Oper in Min. owner fld no code assign(Orphan well prod)			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT	TI_AFT	BH_P_BEF	BH_P_AFT	G_MSRD_BY
4705170652	--	--						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

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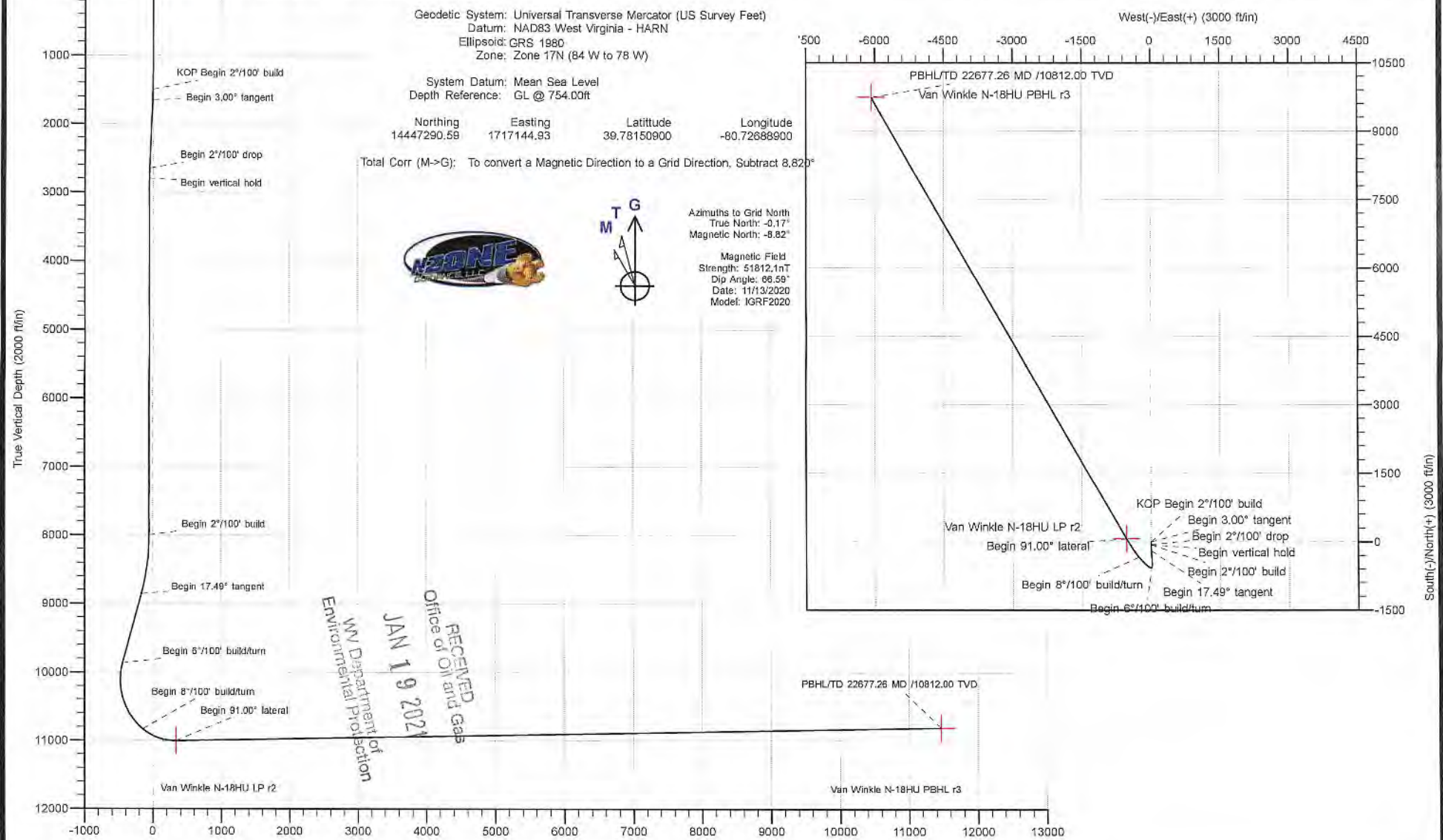
Well: Van Winkle N-18 HU (slot G)
 Site: Van Winkle
 Project: Marshall County, West Virginia
 Design: rev3
 Rig:

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	1650.00	3.00	180.00	1649.93	-3.93	0.00	2.00	180.000	-3.33	Begin 3.00° tangent
4	2650.00	3.00	180.00	2648.56	-56.26	0.00	0.00	0.000	-47.73	Begin 2°/100' drop
5	2800.00	0.00	180.00	2798.49	-60.19	0.00	2.00	180.000	-51.06	Begin vertical hold
6	8001.51	0.00	180.00	8000.00	-60.19	0.00	0.00	180.000	-51.06	Begin 2°/100' build
7	8875.77	17.49	177.01	8860.75	-192.38	6.90	2.00	177.014	-166.84	Begin 17.49° tangent
8	9934.59	17.49	177.01	9870.65	-510.08	23.47	0.00	0.000	-445.11	Begin 6°/100' build/turn
9	11011.98	50.00	320.44	10835.29	-334.55	-261.86	6.00	149.659	-145.12	Begin 8°/100' build/turn
10	11536.43	91.00	330.17	11007.00	65.81	-532.42	8.00	14.641	337.77	Begin 91.00° lateral
11	22677.26	91.00	330.17	10812.00	9728.92	-6073.56	0.00	0.00011469.09		PBHL/TD 22677.26 MD /10812.00 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Van Winkle N-18HU PBHL r3 - plan hits target center	10812.00	9728.92	-6073.56	14457019.49	1711071.38	39.80827600	-80.74841000
Van Winkle N-18HU LP r2 - plan misses target center by 0.07ft at 11536.32ft MD (11007.00 TVD, 65.71 N, -532.37 E)	11007.00	65.75	-532.31	14447356.33	1716612.62	39.78169400	-80.72878300



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 @ 754.00ft

Northing: 14447290.59
 Easting: 1717144.93
 Latitude: 39.78150900
 Longitude: -80.72688900

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.82°



Azimuths to Grid North
 True North: -0.17°
 Magnetic North: -8.82°
 Magnetic Field
 Strength: 51812.1nT
 Dip Angle: 66.59°
 Date: 11/13/2020
 Model: IGRF2020

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Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Van Winkle N-18 HU (slot G)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 754.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 754.00ft
Site:	Van Winkle	North Reference:	Grid
Well:	Van Winkle N-18 HU (slot G)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

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	Van Winkle				
Site Position:		Northing:	14,447,369.50 usft	Latitude:	39.78172533
From:	Lat/Long	Easting:	1,717,188.44 usft	Longitude:	-80.72673327
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Van Winkle N-18 HU (slot G)					
Well Position	+N-S	0.00 ft	Northing:	14,447,290.59 usft	Latitude:	39.78150900
	+E-W	0.00 ft	Easting:	1,717,144.93 usft	Longitude:	-80.72688900
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	754.00 ft
Grid Convergence:	0.175 °					

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	11/13/2020	-8.646	66.595	51,812.13394386

Design	rev3				
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	328.02	

Plan Survey Tool Program	Date	1/5/2021			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	22,677.26 rev3 (Original Hole)	MWD MWD - Standard		

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Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Van Winkle N-18 HU (slot G)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 754.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 754.00ft
Site:	Van Winkle	North Reference:	Grid
Well:	Van Winkle N-18 HU (slot G)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

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		
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.000		
1,650.00	3.00	180.00	1,649.93	-3.93	0.00	2.00	2.00	0.00	180.000		
2,650.00	3.00	180.00	2,648.56	-56.26	0.00	0.00	0.00	0.00	0.000		
2,800.00	0.00	180.00	2,798.49	-60.19	0.00	2.00	-2.00	0.00	180.000		
8,001.51	0.00	180.00	8,000.00	-60.19	0.00	0.00	0.00	0.00	180.000		
8,875.77	17.49	177.01	8,860.75	-192.38	6.90	2.00	2.00	-0.34	177.014		
9,934.59	17.49	177.01	9,870.65	-510.08	23.47	0.00	0.00	0.00	0.000		
11,011.98	50.00	320.44	10,835.29	-334.55	-261.86	6.00	3.02	13.31	149.659		
11,536.43	91.00	330.17	11,007.00	65.81	-532.42	8.00	7.82	1.86	14.641		
22,677.26	91.00	330.17	10,812.00	9,728.92	-6,073.56	0.00	0.00	0.00	0.000	Van Winkle N-18HU F	

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Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Van Winkle
 Well: Van Winkle N-18 HU (slot G)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Van Winkle N-18 HU (slot G)
 TVD Reference: GL @ 754.00ft
 MD Reference: GL @ 754.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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Planned Survey										WV Department of Environmental Protection
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	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
100.00	0.00	0.00	100.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
200.00	0.00	0.00	200.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
300.00	0.00	0.00	300.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
400.00	0.00	0.00	400.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
500.00	0.00	0.00	500.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
600.00	0.00	0.00	600.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
700.00	0.00	0.00	700.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
800.00	0.00	0.00	800.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
900.00	0.00	0.00	900.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,447,290.59	1,717,144.93	39.78150900	-80.72688900	
KOP Begin 2°/100' build										
1,600.00	2.00	180.00	1,599.98	-1.75	0.00	14,447,288.85	1,717,144.93	39.78150421	-80.72688902	
1,650.00	3.00	180.00	1,649.93	-3.93	0.00	14,447,286.66	1,717,144.93	39.78149822	-80.72688904	
Begin 3.00° tangent										
1,700.00	3.00	180.00	1,699.86	-6.54	0.00	14,447,284.05	1,717,144.93	39.78149103	-80.72688907	
1,800.00	3.00	180.00	1,799.73	-11.78	0.00	14,447,278.81	1,717,144.93	39.78147666	-80.72688913	
1,900.00	3.00	180.00	1,899.59	-17.01	0.00	14,447,273.58	1,717,144.93	39.78146229	-80.72688919	
2,000.00	3.00	180.00	1,999.45	-22.24	0.00	14,447,268.35	1,717,144.93	39.78144791	-80.72688924	
2,100.00	3.00	180.00	2,099.31	-27.48	0.00	14,447,263.11	1,717,144.93	39.78143354	-80.72688930	
2,200.00	3.00	180.00	2,199.18	-32.71	0.00	14,447,257.88	1,717,144.93	39.78141917	-80.72688936	
2,300.00	3.00	180.00	2,299.04	-37.94	0.00	14,447,252.65	1,717,144.93	39.78140480	-80.72688941	
2,400.00	3.00	180.00	2,398.90	-43.18	0.00	14,447,247.41	1,717,144.93	39.78139042	-80.72688947	
2,500.00	3.00	180.00	2,498.77	-48.41	0.00	14,447,242.18	1,717,144.93	39.78137605	-80.72688953	
2,600.00	3.00	180.00	2,598.63	-53.65	0.00	14,447,236.95	1,717,144.93	39.78136168	-80.72688958	
2,650.00	3.00	180.00	2,648.56	-56.26	0.00	14,447,234.33	1,717,144.93	39.78135449	-80.72688961	
Begin 2°/100' drop										
2,700.00	2.00	180.00	2,698.51	-58.44	0.00	14,447,232.15	1,717,144.93	39.78134850	-80.72688964	
2,800.00	0.00	180.00	2,798.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
Begin vertical hold										
2,900.00	0.00	0.00	2,898.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
3,000.00	0.00	0.00	2,998.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
3,100.00	0.00	0.00	3,098.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
3,200.00	0.00	0.00	3,198.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
3,300.00	0.00	0.00	3,298.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
3,400.00	0.00	180.00	3,398.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
3,500.00	0.00	0.00	3,498.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
3,600.00	0.00	0.00	3,598.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
3,700.00	0.00	0.00	3,698.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
3,800.00	0.00	180.00	3,798.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
3,900.00	0.00	0.00	3,898.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
4,000.00	0.00	0.00	3,998.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
4,100.00	0.00	0.00	4,098.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
4,200.00	0.00	0.00	4,198.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
4,300.00	0.00	0.00	4,298.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
4,400.00	0.00	180.00	4,398.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
4,500.00	0.00	0.00	4,498.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
4,600.00	0.00	0.00	4,598.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
4,700.00	0.00	0.00	4,698.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	



Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Van Winkle
 Well: Van Winkle N-18 HU (slot G)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Van Winkle N-18 HU (slot G)
 TVD Reference: GL @ 754.00ft
 MD Reference: GL @ 754.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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WV Department of
 Environmental Protection

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,800.00	0.00	0.00	4,798.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
4,900.00	0.00	0.00	4,898.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
5,000.00	0.00	0.00	4,998.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
5,100.00	0.00	0.00	5,098.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
5,200.00	0.00	0.00	5,198.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
5,300.00	0.00	0.00	5,298.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
5,400.00	0.00	180.00	5,398.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
5,500.00	0.00	0.00	5,498.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
5,600.00	0.00	180.00	5,598.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
5,700.00	0.00	0.00	5,698.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
5,800.00	0.00	0.00	5,798.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
5,900.00	0.00	0.00	5,898.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
6,000.00	0.00	0.00	5,998.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
6,100.00	0.00	0.00	6,098.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
6,200.00	0.00	0.00	6,198.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
6,300.00	0.00	0.00	6,298.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
6,400.00	0.00	180.00	6,398.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
6,500.00	0.00	0.00	6,498.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
6,600.00	0.00	0.00	6,598.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
6,700.00	0.00	0.00	6,698.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
6,800.00	0.00	0.00	6,798.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
6,900.00	0.00	0.00	6,898.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
7,000.00	0.00	0.00	6,998.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
7,100.00	0.00	0.00	7,098.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
7,200.00	0.00	0.00	7,198.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
7,300.00	0.00	0.00	7,298.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
7,400.00	0.00	0.00	7,398.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
7,500.00	0.00	180.00	7,498.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
7,600.00	0.00	0.00	7,598.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
7,700.00	0.00	0.00	7,698.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
7,800.00	0.00	0.00	7,798.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
7,900.00	0.00	0.00	7,898.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
8,000.00	0.00	0.00	7,998.49	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
8,001.51	0.00	0.00	8,000.00	-60.19	0.00	14,447,230.40	1,717,144.93	39.78134371	-80.72688965	
Begin 2°/100' build										
8,100.00	1.97	177.01	8,098.47	-61.88	0.09	14,447,228.71	1,717,145.02	39.78133907	-80.72688936	
8,200.00	3.97	177.01	8,198.33	-67.05	0.36	14,447,223.54	1,717,145.29	39.78132486	-80.72688845	
8,300.00	5.97	177.01	8,297.95	-75.70	0.81	14,447,214.89	1,717,145.74	39.78130109	-80.72688694	
8,400.00	7.97	177.01	8,397.21	-87.82	1.44	14,447,202.77	1,717,146.37	39.78126781	-80.72688482	
8,500.00	9.97	177.01	8,495.98	-103.39	2.25	14,447,187.20	1,717,147.18	39.78122505	-80.72688210	
8,600.00	11.97	177.01	8,594.15	-122.39	3.24	14,447,168.20	1,717,148.17	39.78117285	-80.72687878	
8,700.00	13.97	177.01	8,691.59	-144.81	4.41	14,447,145.79	1,717,149.34	39.78111129	-80.72687486	
8,800.00	15.97	177.01	8,788.19	-170.60	5.76	14,447,119.99	1,717,150.69	39.78104044	-80.72687035	
8,875.77	17.49	177.01	8,860.76	-192.38	6.90	14,447,098.21	1,717,151.82	39.78098062	-80.72686654	
Begin 17.49° tangent										
8,900.00	17.49	177.01	8,883.87	-199.65	7.28	14,447,090.94	1,717,152.20	39.78096065	-80.72686527	
9,000.00	17.49	177.01	8,979.25	-229.65	8.84	14,447,060.94	1,717,153.77	39.78087824	-80.72686003	
9,100.00	17.49	177.01	9,074.62	-259.66	10.41	14,447,030.93	1,717,155.33	39.78079582	-80.72685478	
9,200.00	17.49	177.01	9,170.00	-289.66	11.97	14,447,000.93	1,717,156.90	39.78071341	-80.72684954	
9,300.00	17.49	177.01	9,265.38	-319.67	13.54	14,446,970.92	1,717,158.46	39.78063099	-80.72684429	
9,400.00	17.49	177.01	9,360.76	-349.67	15.10	14,446,940.92	1,717,160.03	39.78054858	-80.72683905	
9,500.00	17.49	177.01	9,456.14	-379.68	16.67	14,446,910.91	1,717,161.59	39.78046616	-80.72683380	
9,600.00	17.49	177.01	9,551.52	-409.68	18.23	14,446,880.91	1,717,163.16	39.78038375	-80.72682855	
9,700.00	17.49	177.01	9,646.90	-439.69	19.80	14,446,850.90	1,717,164.72	39.78030133	-80.72682331	



Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Van Winkle
 Well: Van Winkle N-18 HU (slot G)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Van Winkle N-18 HU (slot G)
 TVD Reference: GL @ 754.00ft
 MD Reference: GL @ 754.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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Planned Survey

WV Department of
 Environmental Protection

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,800.00	17.49	177.01	9,742.28	-469.69	21.36	14,446,820.90	1,717,166.29	39.78021892	-80.72681806
9,900.00	17.49	177.01	9,837.66	-499.70	22.93	14,446,790.89	1,717,167.85	39.78013650	-80.72681282
9,934.59	17.49	177.01	9,870.65	-510.08	23.47	14,446,780.51	1,717,168.40	39.78010800	-80.72681100
Begin 6°/100' build/turn									
10,000.00	14.23	185.10	9,933.57	-527.91	23.27	14,446,762.68	1,717,168.19	39.78005903	-80.72681192
10,100.00	10.19	206.48	10,031.34	-548.09	18.22	14,446,742.50	1,717,163.15	39.78000365	-80.72683009
10,200.00	8.76	242.54	10,130.05	-559.53	7.51	14,446,731.06	1,717,152.44	39.77997231	-80.72686834
10,300.00	11.00	275.64	10,228.64	-562.11	-8.75	14,446,728.48	1,717,136.18	39.77996538	-80.72692625
10,400.00	15.38	293.91	10,326.02	-555.79	-30.39	14,446,734.80	1,717,114.54	39.77998292	-80.72700320
10,500.00	20.58	303.71	10,421.13	-540.64	-57.16	14,446,749.95	1,717,087.77	39.78002474	-80.72709833
10,600.00	26.12	309.59	10,512.91	-516.83	-88.78	14,446,773.76	1,717,056.15	39.78009038	-80.72721060
10,700.00	31.81	313.51	10,600.37	-484.63	-124.89	14,446,805.96	1,717,020.04	39.78017913	-80.72733879
10,800.00	37.60	316.34	10,682.55	-444.38	-165.10	14,446,846.22	1,716,979.82	39.78029001	-80.72748149
10,900.00	43.43	318.51	10,758.55	-396.52	-208.98	14,446,894.07	1,716,935.95	39.78042181	-80.72763713
11,000.00	49.30	320.25	10,827.53	-341.58	-256.03	14,446,949.01	1,716,888.89	39.78057307	-80.72780402
11,011.98	50.00	320.44	10,835.29	-334.55	-261.86	14,446,956.04	1,716,883.07	39.78059243	-80.72782468
Begin 8°/100' build/turn									
11,100.00	56.83	322.56	10,887.72	-279.24	-305.78	14,447,011.35	1,716,839.14	39.78074469	-80.72798043
11,200.00	64.63	324.60	10,936.58	-209.07	-357.48	14,447,081.52	1,716,787.45	39.78093783	-80.72816369
11,300.00	72.46	326.39	10,973.13	-132.41	-410.13	14,447,158.18	1,716,734.80	39.78114880	-80.72835024
11,400.00	80.30	328.04	10,996.66	-50.76	-462.69	14,447,239.83	1,716,682.24	39.78137347	-80.72853645
11,500.00	88.14	329.60	11,006.73	34.30	-514.15	14,447,324.89	1,716,630.78	39.78160748	-80.72871869
11,536.43	91.00	330.17	11,007.00	65.81	-532.42	14,447,356.40	1,716,612.51	39.78169417	-80.72878340
Begin 91.00° lateral									
11,600.00	91.00	330.17	11,005.89	120.94	-564.04	14,447,411.53	1,716,580.89	39.78184585	-80.72889535
11,700.00	91.00	330.17	11,004.14	207.68	-613.78	14,447,498.27	1,716,531.15	39.78208447	-80.72907145
11,800.00	91.00	330.17	11,002.39	294.42	-663.51	14,447,585.01	1,716,481.41	39.78232308	-80.72924755
11,900.00	91.00	330.17	11,000.63	381.15	-713.25	14,447,671.74	1,716,431.68	39.78256169	-80.72942366
12,000.00	91.00	330.17	10,998.88	467.89	-762.99	14,447,758.48	1,716,381.94	39.78280030	-80.72959976
12,100.00	91.00	330.17	10,997.13	554.62	-812.73	14,447,845.21	1,716,332.20	39.78303892	-80.72977587
12,200.00	91.00	330.17	10,995.38	641.36	-862.46	14,447,931.95	1,716,282.47	39.78327753	-80.72995198
12,300.00	91.00	330.17	10,993.63	728.10	-912.20	14,448,018.69	1,716,232.73	39.78351614	-80.73012809
12,400.00	91.00	330.17	10,991.88	814.83	-961.94	14,448,105.42	1,716,182.99	39.78375475	-80.73030420
12,500.00	91.00	330.17	10,990.13	901.57	-1,011.68	14,448,192.16	1,716,133.25	39.78399336	-80.73048031
12,600.00	91.00	330.17	10,988.38	988.30	-1,061.41	14,448,278.89	1,716,083.52	39.78423197	-80.73065642
12,700.00	91.00	330.17	10,986.63	1,075.04	-1,111.15	14,448,365.63	1,716,033.78	39.78447058	-80.73083254
12,800.00	91.00	330.17	10,984.88	1,161.78	-1,160.89	14,448,452.37	1,715,984.04	39.78470919	-80.73100865
12,900.00	91.00	330.17	10,983.13	1,248.51	-1,210.62	14,448,539.10	1,715,934.31	39.78494780	-80.73118477
13,000.00	91.00	330.17	10,981.38	1,335.25	-1,260.36	14,448,625.84	1,715,884.57	39.78518641	-80.73136089
13,100.00	91.00	330.17	10,979.63	1,421.99	-1,310.10	14,448,712.57	1,715,834.83	39.78542502	-80.73153701
13,200.00	91.00	330.17	10,977.88	1,508.72	-1,359.84	14,448,799.31	1,715,785.09	39.78566363	-80.73171313
13,300.00	91.00	330.17	10,976.13	1,595.46	-1,409.57	14,448,886.05	1,715,735.36	39.78590224	-80.73188925
13,400.00	91.00	330.17	10,974.38	1,682.19	-1,459.31	14,448,972.78	1,715,685.62	39.78614085	-80.73206537
13,500.00	91.00	330.17	10,972.63	1,768.93	-1,509.05	14,449,059.52	1,715,635.88	39.78637946	-80.73224149
13,600.00	91.00	330.17	10,970.88	1,855.67	-1,558.78	14,449,146.25	1,715,586.15	39.78661807	-80.73241762
13,700.00	91.00	330.17	10,969.13	1,942.40	-1,608.52	14,449,232.99	1,715,536.41	39.78685668	-80.73259375
13,800.00	91.00	330.17	10,967.38	2,029.14	-1,658.26	14,449,319.72	1,715,486.67	39.78709528	-80.73276987
13,900.00	91.00	330.17	10,965.63	2,115.87	-1,708.00	14,449,406.46	1,715,436.93	39.78733389	-80.73294600
14,000.00	91.00	330.17	10,963.88	2,202.61	-1,757.73	14,449,493.20	1,715,387.20	39.78757250	-80.73312213
14,100.00	91.00	330.17	10,962.13	2,289.35	-1,807.47	14,449,579.93	1,715,337.46	39.78781110	-80.73329826
14,200.00	91.00	330.17	10,960.38	2,376.08	-1,857.21	14,449,666.67	1,715,287.72	39.78804971	-80.73347440
14,300.00	91.00	330.17	10,958.63	2,462.82	-1,906.94	14,449,753.40	1,715,237.99	39.78828832	-80.73365053
14,400.00	91.00	330.17	10,956.88	2,549.55	-1,956.68	14,449,840.14	1,715,188.25	39.78852693	-80.73382666
14,500.00	91.00	330.17	10,955.13	2,636.29	-2,006.42	14,449,926.88	1,715,138.51	39.78876553	-80.73400280



Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Van Winkle
 Well: Van Winkle N-18 HU (slot G)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Van Winkle N-18 HU (slot G)
 TVD Reference: GL @ 754.00ft
 MD Reference: GL @ 754.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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Planned Survey

WV Department of
 Environmental Protection

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,600.00	91.00	330.17	10,953.38	2,723.03	-2,056.16	14,450,013.61	1,715,088.77	39.78900413	-80.73417894
14,700.00	91.00	330.17	10,951.63	2,809.76	-2,105.89	14,450,100.35	1,715,039.04	39.78924274	-80.73435508
14,800.00	91.00	330.17	10,949.88	2,896.50	-2,155.63	14,450,187.08	1,714,989.30	39.78948134	-80.73453121
14,900.00	91.00	330.17	10,948.13	2,983.23	-2,205.37	14,450,273.82	1,714,939.56	39.78971995	-80.73470736
15,000.00	91.00	330.17	10,946.38	3,069.97	-2,255.11	14,450,360.56	1,714,889.83	39.78995855	-80.73488350
15,100.00	91.00	330.17	10,944.63	3,156.71	-2,304.84	14,450,447.29	1,714,840.09	39.79019716	-80.73505964
15,200.00	91.00	330.17	10,942.87	3,243.44	-2,354.58	14,450,534.03	1,714,790.35	39.79043576	-80.73523579
15,300.00	91.00	330.17	10,941.12	3,330.18	-2,404.32	14,450,620.76	1,714,740.61	39.79067436	-80.73541193
15,400.00	91.00	330.17	10,939.37	3,416.92	-2,454.05	14,450,707.50	1,714,690.88	39.79091297	-80.73558808
15,500.00	91.00	330.17	10,937.62	3,503.65	-2,503.79	14,450,794.24	1,714,641.14	39.79115157	-80.73576423
15,600.00	91.00	330.17	10,935.87	3,590.39	-2,553.53	14,450,880.97	1,714,591.40	39.79139017	-80.73594038
15,700.00	91.00	330.17	10,934.12	3,677.12	-2,603.27	14,450,967.71	1,714,541.67	39.79162877	-80.73611653
15,800.00	91.00	330.17	10,932.37	3,763.86	-2,653.00	14,451,054.44	1,714,491.93	39.79186738	-80.73629268
15,900.00	91.00	330.17	10,930.62	3,850.60	-2,702.74	14,451,141.18	1,714,442.19	39.79210598	-80.73646883
16,000.00	91.00	330.17	10,928.87	3,937.33	-2,752.48	14,451,227.91	1,714,392.46	39.79234458	-80.73664498
16,100.00	91.00	330.17	10,927.12	4,024.07	-2,802.21	14,451,314.65	1,714,342.72	39.79258318	-80.73682114
16,200.00	91.00	330.17	10,925.37	4,110.80	-2,851.95	14,451,401.39	1,714,292.98	39.79282178	-80.73699730
16,300.00	91.00	330.17	10,923.62	4,197.54	-2,901.69	14,451,488.12	1,714,243.24	39.79306038	-80.73717345
16,400.00	91.00	330.17	10,921.87	4,284.28	-2,951.43	14,451,574.86	1,714,193.51	39.79329898	-80.73734961
16,500.00	91.00	330.17	10,920.12	4,371.01	-3,001.16	14,451,661.59	1,714,143.77	39.79353758	-80.73752577
16,600.00	91.00	330.17	10,918.37	4,457.75	-3,050.90	14,451,748.33	1,714,094.03	39.79377618	-80.73770194
16,700.00	91.00	330.17	10,916.62	4,544.48	-3,100.64	14,451,835.07	1,714,044.30	39.79401478	-80.73787810
16,800.00	91.00	330.17	10,914.87	4,631.22	-3,150.37	14,451,921.80	1,713,994.56	39.79425338	-80.73805426
16,900.00	91.00	330.17	10,913.12	4,717.96	-3,200.11	14,452,008.54	1,713,944.82	39.79449198	-80.73823043
17,000.00	91.00	330.17	10,911.37	4,804.69	-3,249.85	14,452,095.27	1,713,895.08	39.79473058	-80.73840659
17,100.00	91.00	330.17	10,909.62	4,891.43	-3,299.59	14,452,182.01	1,713,845.35	39.79496918	-80.73858276
17,200.00	91.00	330.17	10,907.87	4,978.16	-3,349.32	14,452,268.75	1,713,795.61	39.79520778	-80.73875893
17,300.00	91.00	330.17	10,906.12	5,064.90	-3,399.06	14,452,355.48	1,713,745.87	39.79544638	-80.73893510
17,400.00	91.00	330.17	10,904.37	5,151.64	-3,448.80	14,452,442.22	1,713,696.14	39.79568497	-80.73911127
17,500.00	91.00	330.17	10,902.62	5,238.37	-3,498.54	14,452,528.95	1,713,646.40	39.79592357	-80.73928744
17,600.00	91.00	330.17	10,900.87	5,325.11	-3,548.27	14,452,615.69	1,713,596.66	39.79616217	-80.73946362
17,700.00	91.00	330.17	10,899.12	5,411.84	-3,598.01	14,452,702.43	1,713,546.92	39.79640076	-80.73963979
17,800.00	91.00	330.17	10,897.37	5,498.58	-3,647.75	14,452,789.16	1,713,497.19	39.79663936	-80.73981597
17,900.00	91.00	330.17	10,895.62	5,585.32	-3,697.48	14,452,875.90	1,713,447.45	39.79687796	-80.73999214
18,000.00	91.00	330.17	10,893.87	5,672.05	-3,747.22	14,452,962.63	1,713,397.71	39.79711655	-80.74016832
18,100.00	91.00	330.17	10,892.12	5,758.79	-3,796.96	14,453,049.37	1,713,347.98	39.79735515	-80.74034450
18,200.00	91.00	330.17	10,890.37	5,845.53	-3,846.70	14,453,136.10	1,713,298.24	39.79759375	-80.74052068
18,300.00	91.00	330.17	10,888.62	5,932.26	-3,896.43	14,453,222.84	1,713,248.50	39.79783234	-80.74069686
18,400.00	91.00	330.17	10,886.87	6,019.00	-3,946.17	14,453,309.58	1,713,198.76	39.79807094	-80.74087305
18,500.00	91.00	330.17	10,885.11	6,105.73	-3,995.91	14,453,396.31	1,713,149.03	39.79830953	-80.74104923
18,600.00	91.00	330.17	10,883.36	6,192.47	-4,045.64	14,453,483.05	1,713,099.29	39.79854812	-80.74122542
18,700.00	91.00	330.17	10,881.61	6,279.21	-4,095.38	14,453,569.78	1,713,049.55	39.79878672	-80.74140161
18,800.00	91.00	330.17	10,879.86	6,365.94	-4,145.12	14,453,656.52	1,712,999.81	39.79902531	-80.74157779
18,900.00	91.00	330.17	10,878.11	6,452.68	-4,194.86	14,453,743.26	1,712,950.08	39.79926391	-80.74175398
19,000.00	91.00	330.17	10,876.36	6,539.41	-4,244.59	14,453,829.99	1,712,900.34	39.79950250	-80.74193017
19,100.00	91.00	330.17	10,874.61	6,626.15	-4,294.33	14,453,916.73	1,712,850.61	39.79974109	-80.74210637
19,200.00	91.00	330.17	10,872.86	6,712.89	-4,344.07	14,454,003.46	1,712,800.87	39.79997969	-80.74228256
19,300.00	91.00	330.17	10,871.11	6,799.62	-4,393.80	14,454,090.20	1,712,751.13	39.80021828	-80.74245875
19,400.00	91.00	330.17	10,869.36	6,886.36	-4,443.54	14,454,176.94	1,712,701.39	39.80045687	-80.74263495
19,500.00	91.00	330.17	10,867.61	6,973.09	-4,493.28	14,454,263.67	1,712,651.66	39.80069546	-80.74281115
19,600.00	91.00	330.17	10,865.86	7,059.83	-4,543.02	14,454,350.41	1,712,601.92	39.80093405	-80.74298734
19,700.00	91.00	330.17	10,864.11	7,146.57	-4,592.75	14,454,437.14	1,712,552.18	39.80117265	-80.74316354
19,800.00	91.00	330.17	10,862.36	7,233.30	-4,642.49	14,454,523.88	1,712,502.45	39.80141124	-80.74333974
19,900.00	91.00	330.17	10,860.61	7,320.04	-4,692.23	14,454,610.62	1,712,452.71	39.80164983	-80.74351594
20,000.00	91.00	330.17	10,858.86	7,406.77	-4,741.97	14,454,697.35	1,712,402.97	39.80188842	-80.74369215



Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Van Winkle
 Well: Van Winkle N-18 HU (slot G)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Van Winkle N-18 HU (slot G)
 TVD Reference: GL @ 754.00ft
 MD Reference: GL @ 754.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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 Environmental Protection

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,100.00	91.00	330.17	10,857.11	7,493.51	-4,791.70	14,454,784.09	1,712,353.23	39.80212701	-80.74386835
20,200.00	91.00	330.17	10,855.36	7,580.25	-4,841.44	14,454,870.82	1,712,303.50	39.80236560	-80.74404456
20,300.00	91.00	330.17	10,853.61	7,666.98	-4,891.18	14,454,957.56	1,712,253.76	39.80260419	-80.74422076
20,400.00	91.00	330.17	10,851.86	7,753.72	-4,940.91	14,455,044.29	1,712,204.02	39.80284278	-80.74439697
20,500.00	91.00	330.17	10,850.11	7,840.46	-4,990.65	14,455,131.03	1,712,154.29	39.80308137	-80.74457318
20,600.00	91.00	330.17	10,848.36	7,927.19	-5,040.39	14,455,217.77	1,712,104.55	39.80331996	-80.74474939
20,700.00	91.00	330.17	10,846.61	8,013.93	-5,090.13	14,455,304.50	1,712,054.81	39.80355855	-80.74492560
20,800.00	91.00	330.17	10,844.86	8,100.66	-5,139.86	14,455,391.24	1,712,005.07	39.80379713	-80.74510181
20,900.00	91.00	330.17	10,843.11	8,187.40	-5,189.60	14,455,477.97	1,711,955.34	39.80403572	-80.74527803
21,000.00	91.00	330.17	10,841.36	8,274.14	-5,239.34	14,455,564.71	1,711,905.60	39.80427431	-80.74545424
21,100.00	91.00	330.17	10,839.61	8,360.87	-5,289.07	14,455,651.45	1,711,855.86	39.80451290	-80.74563046
21,200.00	91.00	330.17	10,837.86	8,447.61	-5,338.81	14,455,738.18	1,711,806.13	39.80475148	-80.74580668
21,300.00	91.00	330.17	10,836.11	8,534.34	-5,388.55	14,455,824.92	1,711,756.39	39.80499007	-80.74598289
21,400.00	91.00	330.17	10,834.36	8,621.08	-5,438.29	14,455,911.65	1,711,706.65	39.80522866	-80.74615911
21,500.00	91.00	330.17	10,832.61	8,707.82	-5,488.02	14,455,998.39	1,711,656.91	39.80546724	-80.74633533
21,600.00	91.00	330.17	10,830.86	8,794.55	-5,537.76	14,456,085.13	1,711,607.18	39.80570583	-80.74651156
21,700.00	91.00	330.17	10,829.11	8,881.29	-5,587.50	14,456,171.86	1,711,557.44	39.80594442	-80.74668778
21,800.00	91.00	330.17	10,827.35	8,968.02	-5,637.23	14,456,258.60	1,711,507.70	39.80618300	-80.74686400
21,900.00	91.00	330.17	10,825.60	9,054.76	-5,686.97	14,456,345.33	1,711,457.97	39.80642159	-80.74704023
22,000.00	91.00	330.17	10,823.85	9,141.50	-5,736.71	14,456,432.07	1,711,408.23	39.80666017	-80.74721646
22,100.00	91.00	330.17	10,822.10	9,228.23	-5,786.45	14,456,518.81	1,711,358.49	39.80689876	-80.74739269
22,200.00	91.00	330.17	10,820.35	9,314.97	-5,836.18	14,456,605.54	1,711,308.75	39.80713734	-80.74756892
22,300.00	91.00	330.17	10,818.60	9,401.70	-5,885.92	14,456,692.28	1,711,259.02	39.80737593	-80.74774515
22,400.00	91.00	330.17	10,816.85	9,488.44	-5,935.66	14,456,779.01	1,711,209.28	39.80761451	-80.74792138
22,500.00	91.00	330.17	10,815.10	9,575.18	-5,985.40	14,456,865.75	1,711,159.54	39.80785310	-80.74809761
22,600.00	91.00	330.17	10,813.35	9,661.91	-6,035.13	14,456,952.48	1,711,109.81	39.80809168	-80.74827385
22,677.26	91.00	330.17	10,812.00	9,728.92	-6,073.56	14,457,019.49	1,711,071.38	39.80827600	-80.74841000

PBHL/TD 22677.26 MD /10812.00 TVD

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Van Winkle N-18HU PB† - hit/miss target - Shape - Point	0.00	0.00	10,812.00	9,728.92	-6,073.56	14,457,019.49	1,711,071.38	39.80827600	-80.74841000
Van Winkle N-18HU LP † - plan misses target center by 0.07ft at 11536.32R MD (11007.00 TVD, 65.71 N, -532.37 E) - Point	0.00	0.00	11,007.00	65.75	-532.31	14,447,356.34	1,716,612.62	39.78169400	-80.72878300

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
22,677.26	10,812.00	20" Casing	20	24



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Van Winkle N-18 HU (slot G)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 754.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 754.00ft
Site:	Van Winkle	North Reference:	Grid
Well:	Van Winkle N-18 HU (slot G)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

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Plan Annotations					WV Department of Environmental Protection
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,500.00	1,500.00	0.00	0.00	KOP Begin 2°/100' build	
1,650.00	1,649.93	-3.93	0.00	Begin 3.00° tangent	
2,650.00	2,648.56	-56.26	0.00	Begin 2°/100' drop	
2,800.00	2,798.49	-60.19	0.00	Begin vertical hold	
8,001.51	8,000.00	-60.19	0.00	Begin 2°/100' build	
8,875.77	8,860.76	-192.38	6.90	Begin 17.49° tangent	
9,934.59	9,870.65	-510.08	23.47	Begin 6°/100' build/turn	
11,011.98	10,835.29	-334.55	-261.86	Begin 8°/100' build/turn	
11,536.43	11,007.00	65.81	-532.42	Begin 91.00° lateral	
22,677.26	10,812.00	9,728.92	-6,073.56	PBHL/TD 22677.26 MD /10812.00 TVD	

WW-9
(4/16)

API Number 47 - 051 - _____
Operator's Well No. Van Winkle N-18HU

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

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

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

Will a pit be used? Yes No

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

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

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

Additives to be used in drilling medium? Barite for weight

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

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

-Landfill or offsite name/permit number? 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) James Pancake
Company Official Title Vice President - Geoscience

RECEIVED
Office of Oil and Gas
FEB 03 2021
WV Department of
Environmental Protection

Subscribed and sworn before me this 2 day of JANUARY, 20 21
David Gabriel Delallo
Commonwealth of Pennsylvania - Notary Seal
David Gabriel Delallo, Notary Public
Washington County
My commission expires February 16, 2024
Commission number 1267492
Notary Public
Member, Pennsylvania Association of Notaries

05/07/2021

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 16.63 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
Annual Ryegrass	40
Spring Oats	96

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

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Bary Stiles

Comments:

RECEIVED
Office of Oil and Gas

FEB 03 2021

WV Department of
Environmental Protection

Title: Oil and Gas Inspector

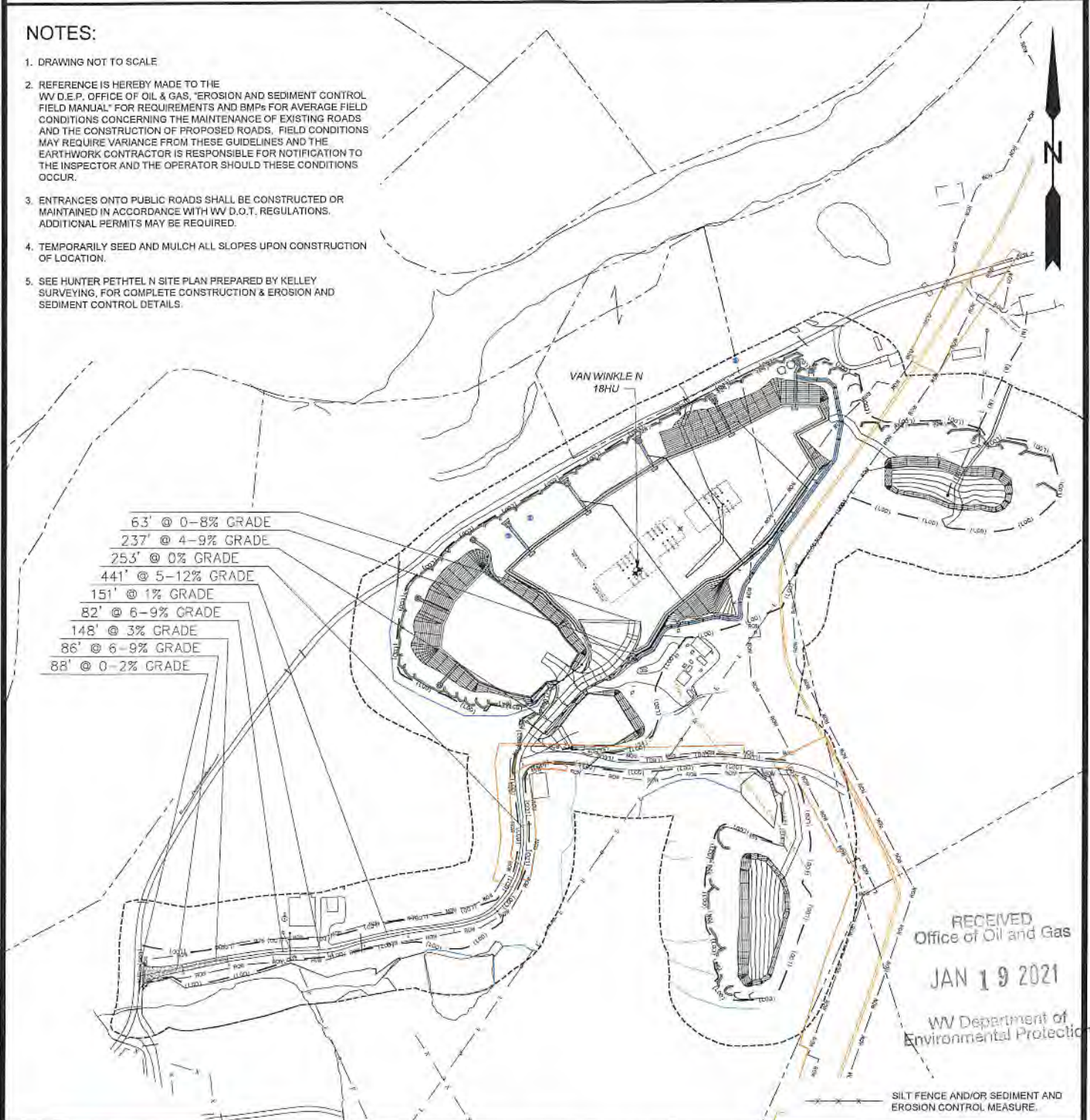
Date: 1-21-21

Field Reviewed? Yes No

PROPOSED VAN WINKLE N - 18HU

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. TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.
5. SEE HUNTER PETHTEL N SITE PLAN PREPARED BY KELLEY SURVEYING, FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.



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Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

SILT FENCE AND/OR SEDIMENT AND EROSION CONTROL MEASURE.



12 Vainhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5534
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.345.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slswv.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	MEADE		
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8952	12/24/2020	NONE



**TUG HILL
OPERATING**

05/07/2021



Well Site Safety Plan

Tug Hill Operating, LLC

Bay Stiles 1-21-21

Well Name: Van Winkle N-18HU

Location: Hunter Pethel

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

Northing: 4,403,542.98

Easting: 523,386.80

January 2021

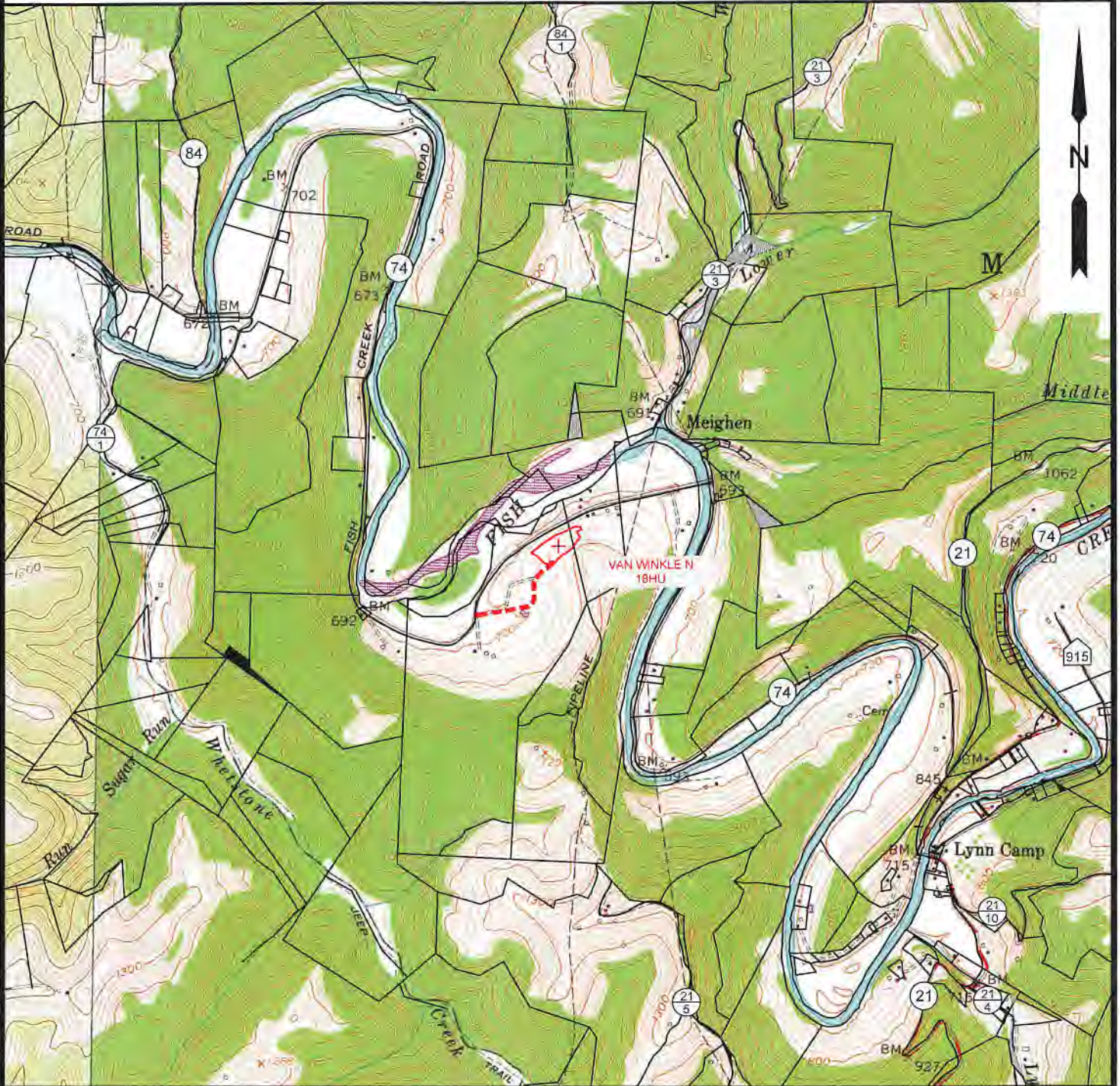
RECEIVED
Office of Oil and Gas

FEB 03 2021

WV Department of
Environmental Protection



05/07/2021

PROPOSED VAN WINKLE N - 18HU



NOTE: CLOSEST WATER PURVEYOR
GRANDVIEW - DOOLIN PUBLIC SERVICE DISTRICT
PROCTOR, WV

LAT: 39.7137712
LON: -80.8258327
LOCATED: S 49°13'48" W AT 37,316.19' FROM THE CENTER OF HUNTER PETHTEL N WELL PAD LOCATION.

 12 Vanhook Drive P.O. Box 150 Glenville, WV 26351 304.462.5534 1412 Kanawha Boulevard, East Charleston, WV 25301 304.346.3952 254 East Beckley Bypass Beckley, WV 25801 304.255.5296 slsw.com	TOPO SECTION:		OPERATOR:	
	GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
	COUNTY	DISTRICT	 TUG HILL OPERATING 05/07/2021	
	MARSHALL	MEADE		
DRAWN BY	JOB NO.	DATE	SCALE	
K.G.M.	8952	12/24/2020	1" = 2000'	

**HUNTER PETHTEL LEASE
UTICA UNIT - 360.86 AC±
VAN WINKLE N 18HU WELL
TUG HILL OPERATING**

T.H. LATITUDE 39°47'30"
B.H. LATITUDE 39°50'00"

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

NAD'83 S.P.C.(FT)	N. 469,119.78	E. 1,623,707.88
NAD'83 GEO.	LAT-(N) 39.781509	LONG-(W) 80.726889
NAD'83 UTM (M)	N. 4,403,542.98	E. 523,386.80

LANDING POINT

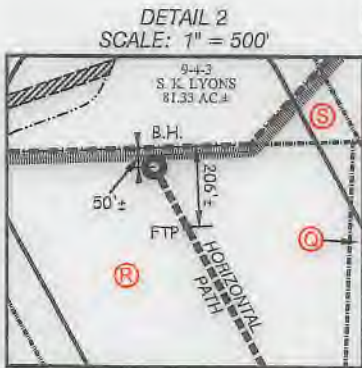
NAD'83 S.P.C.(FT)	N. 469,194.5	E. 1,623,176.5
NAD'83 GEO.	LAT-(N) 39.781694	LONG-(W) 80.727878
NAD'83 UTM (M)	N. 4,403,563.0	E. 523,224.5

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 478,952.1	E. 1,617,795.8
NAD'83 GEO.	LAT-(N) 39.808276	LONG-(W) 80.748410
NAD'83 UTM (M)	N. 4,406,508.4	E. 521,536.6

TAG	SURFACE OWNER	PARCEL	ACRES
A	XCL MIDSTREAM OPERATING, LLC	9-13-5	190.12
B	XCL MIDSTREAM OPERATING, LLC	9-10-19.1	10.00
C	MICHAEL WALKER & JOSEPH BLAKE	9-13-5.1	3.26
D	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
E	JOHN E. & JANET E. KELLEY, ET AL	9-10-19	113.08
F	MARY VIRGINIA PETHTEL (LIFE)	9-13-6	66.36
G	COBLENTZ BROS. INC.	9-10-18	67.88
H	KENNETH W. MASON EST.	9-10-4	67.00
I	WILLIAM N. ROUPE	9-10-3	52.00
J	CAROL VAN SCYOC	9-10-2	206.988
K	CAROL VAN SCYOC	9-10-1	118.087
L	CONNIE S. CUNNINGHAM	9-10-1.1	0.482
M	WILLIAM F. RULONG, ET AL.	5-10-8	70.6672
N	WILLIAM F. RULONG, ET AL.	5-9-11	56.00
O	ROBERT GREGORY MCGUIRE, ET UX	5-9-10	139.60
P	ROBERT GREGORY MCGUIRE, ET UX	5-9-12	78.28
Q	ROBERT GREGORY MCGUIRE, ET UX	9-4-1	76.75
R	ROBERT GREGORY MCGUIRE, ET UX	5-9-9	49.00
S	ROBERT GREGORY MCGUIRE, ET UX	9-4-2	45.233

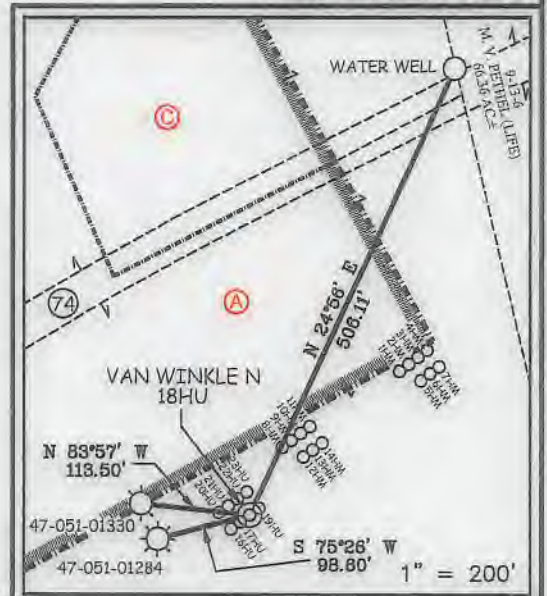
PARCEL	SURFACE ADJOINER	ACRES
5-10-5	WILLIAM F. RULONG, ET AL.	27.5
5-10-6	WILLIAM F. RULONG, ET AL.	P/O 1.00
5-10-7	WILLIAM F. RULONG, ET AL.	22.872
5-10-8.1	SAMUEL D. & BECKY ROBINSON	1.511
9-10-1.2	JOSHUA A. & SHANNON N. HOYT	2.436
9-10-1.3	FINLEY D. MONTGOMERY, ET UX	20.294
9-10-2.1	SHERRY VAN SCYOC YOCUM & BLAINE VAN SCYOC	5.00
9-10-2.2	WALTER J. FECAT, JR., ET UX	5.00
9-10-20	JOSHUA A. & SHANNON N. HOYT	9.942
9-10-21	JAMES & VICKIE J. MASON	2.00
9-10-22	JAMES & VICKIE J. MASON	1.169
9-13-7	MARY VIRGINIA PETHTEL (LIFE)	96.00
9-13-24	ROBERT N. & NANCY R. MCCARDLE	50.64
9-13-25	ROBERT N. & NANCY R. MCCARDLE	48.00
9-13-26	ROBERT N. & NANCY R. MCCARDLE	9.02



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 & TOPO MARK SCALE IS 1"=2000'.
- BASED ON WV DOT COUNTY ROUTE 74 IS A 40' STRIP OF LAND ACQUIRED IN NUMEROUS DEEDS.
- PROPOSED LATERAL OR TOP HOLE OF VAN WINKLE N-18HU IS WITHIN 3000' OF TOP HOLES OR LATERALS OF:
PROPOSED VAN WINKLE N-18HU,
PROPOSED VAN WINKLE N-17HU,
PROPOSED VAN WINKLE N-19HU,
PROPOSED VAN WINKLE S-20HU,
PROPOSED VAN WINKLE S-21HU,
PROPOSED VAN WINKLE S-22HU,
PROPOSED VAN WINKLE S-23HU,
KNOB CREEK N-11HU (47-051-02287).

REFERENCES

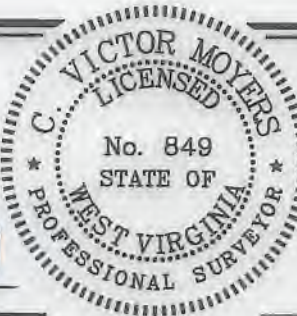


12 Varnhorn Drive | P.O. Box 150 | Glenville, WV 26251 | 304.462.5814
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slswv.com

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

P.S.
849

C. Victor Moyers



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

DATE JANUARY 14, 20 21

REVISED FEBRUARY 25, 2021

OPERATORS WELL NO. VAN WINKLE N 18HU

API WELL NO. 47-051-02351 **Deep**
STATE COUNTY PERMIT HGA

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8952P18HUR.dwg
VAN WINKLE N 18HU-REV3
HORIZONTAL & VERTICAL SCALE 1" = 2000'
CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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: GROUND: 756.10' ELEVATION PROPOSED: 753.50' WATERSHED: FISH CREEK (HUC 10)
DISTRICT: MEADE COUNTY: MARSHALL QUADRANGLE: GLEN EASTON 7.5'

SURFACE OWNER: XCL MIDSTREAM OPERATING, LLC ACREAGE: 190.12 ±
ROYALTY OWNER: DENNIS HUNTER, ET AL - SEE WW-6A1 ACREAGE: 190.12

PROPOSED WORK: LEASE NO. SEE WW-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: 11,236' / TMD: 22,677'

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

DESIGNATED AGENT DIANNA STAMPER
ADDRESS CT CORPORATION SYSTEM
5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

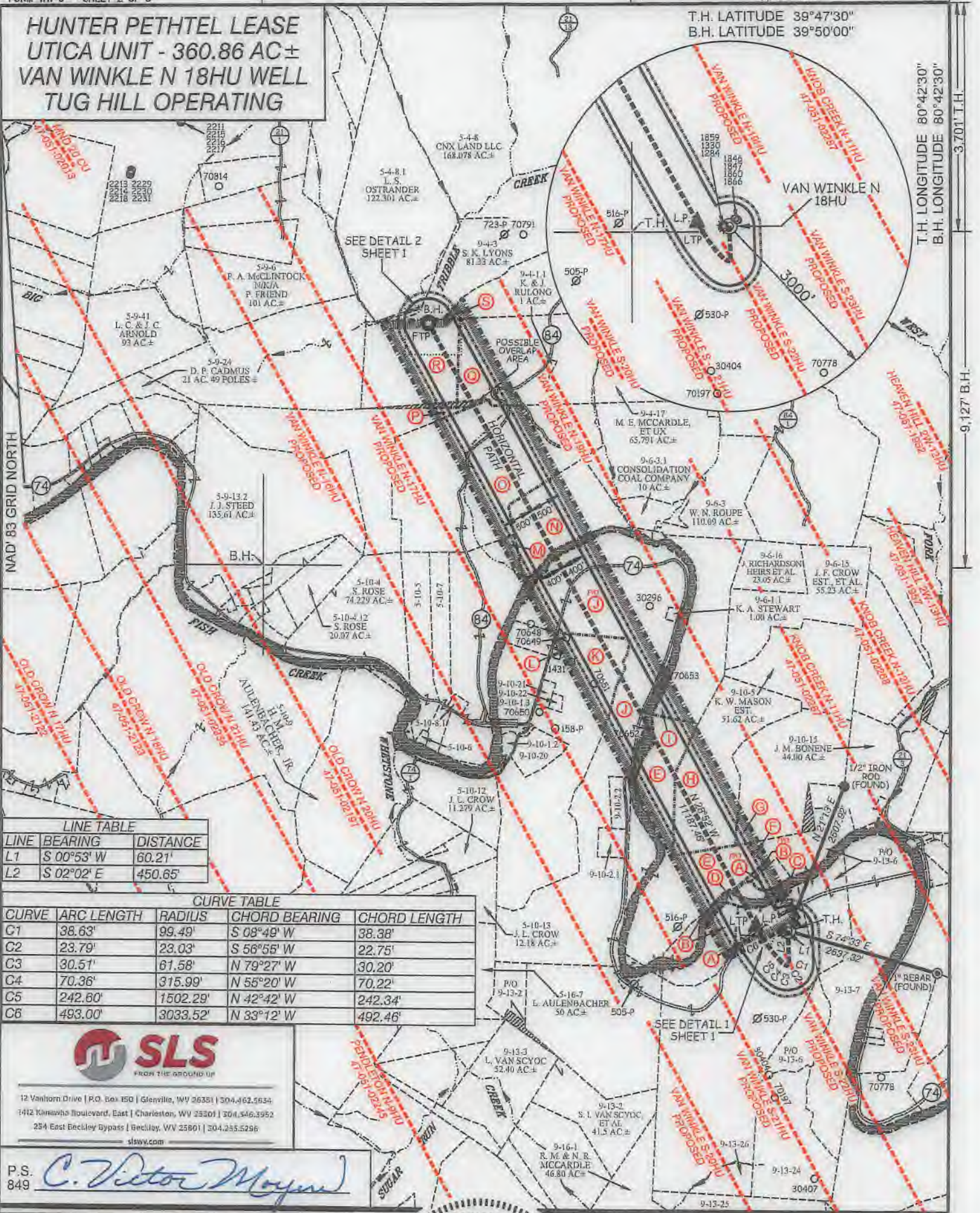
T.H. LONGITUDE 80°42'30"
B.H. LONGITUDE 80°42'30"
3,701' T.H.
9,127' B.H.
COUNTY NAME
PERMIT

05/07/2021

**HUNTER PETHTEL LEASE
UTICA UNIT - 360.86 AC±
VAN WINKLE N 18HU WELL
TUG HILL OPERATING**

T.H. LATITUDE 39°47'30"
B.H. LATITUDE 39°50'00"

T.H. LONGITUDE 80°42'30"
B.H. LONGITUDE 80°42'30"



LINE TABLE

LINE	BEARING	DISTANCE
L1	S 00°53' W	60.21'
L2	S 02°02' E	450.65'

CURVE TABLE

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	38.63'	99.49'	S 08°49' W	38.38'
C2	23.79'	23.03'	S 56°55' W	22.75'
C3	30.51'	61.58'	N 79°27' W	30.20'
C4	70.36'	315.99'	N 55°20' W	70.22'
C5	242.60'	1502.29'	N 42°42' W	242.34'
C6	493.00'	3033.52'	N 33°12' W	492.46'



12 Vanhorn Drive | P.O. Box 850 | Glenville, WV 26351 | 304.462.5834
1412 Kinawaho Boulevard, East | Charleston, WV 25301 | 304.546.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
sllsvv.com

P.S. 849 *C. Victor Moyers*

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

NAD'83 S.P.C.(FT)	N. 469,119.78	E. 1,623,707.88
NAD'83 GEO.	LAT-(N) 39.781509	LONG-(W) 80.726689
NAD'83 UTM (M)	N. 4,403,542.98	E. 523,386.80
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 469,194.5	E. 1,623,176.5
NAD'83 GEO.	LAT-(N) 39.781894	LONG-(W) 80.728783
NAD'83 UTM (M)	N. 4,403,563.0	E. 523,224.5
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 478,952.1	E. 1,617,795.8
NAD'83 GEO.	LAT-(N) 39.808276	LONG-(W) 80.748410
NAD'83 UTM (M)	N. 4,406,508.4	E. 521,535.6



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

LEGEND

UNIT BOUNDARY	
LEASED TRACTS INSIDE	
UNIT BOUNDARY	
SURFACE LINE	
PROPOSED UTICA	
WELL LATERAL	
400' OFFSET LINE	
500' OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
COUNTY ROUTE	
PROPOSED WELL	
EXISTING WELL	
PERMITTED WELL	
SURFACE OWNER (SEE TABLE)	
LEASE # (SEE ADDITIONAL SHEETS)	

SCALE 1" = 2000' FILE NO. 8952P18HUR.dwg
VAN WINKLE N 18HU-REV3
DATE JANUARY 14, 2021
REVISED FEBRUARY 25, 2021
OPERATORS WELL NO. VAN WINKLE N 18HU
API WELL NO. 47-051-02351
STATE COUNTY PERMIT

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

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

05/07/2021

COUNTY NAME PERMIT

**HUNTER PETHTEL LEASE
UTICA UNIT - 360.86 AC±
VAN WINKLE N 18HU WELL
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
slswv.com

NO.	Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Deed Book/Page
1	10*31312	9-13-5	A	DENNIS W & KATHY A HUNTER	668 155
2	10*31352	9-10-19.1	B	DENNIS W HUNTER ET UX	690 60
3	10*31312	9-13-5.1	C	DENNIS W & KATHY A HUNTER	668 155
4	10*23458	FISH CREEK	D	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	1019 373
5	10*31384	9-10-19	E	JOHN E KELLEY AND JANET E KELLEY	693 6
6	10*31303	9-13-6	F	MARY V & FRANK E PETHTEL, ET AL	668 525
7	10*17383	9-10-18	G	JACQUES ROY, ET AL	919 631
8	10*19749	9-10-4	H	JOHN CALVERT, ET AL	944 428
9	10*19750	9-10-4	H	DELORES J MYERS	944 430
10	10*23561	9-10-3	I	VINCENT PATRELLO AND AMANDA PATRELLO, ET AL	988 97
11	10*19894	9-10-2	J	CAROL L VANSYOC	941 392
12	10*19894	9-10-1	K	CAROL L VANSYOC	941 392
13	10*19894	9-10-1.1	L	CAROL L VANSYOC	941 392
14	10*18726	5-10-8	M	EMILY K RULONG AND WILLIAM F RULONG SR, ET AL	941 441
15	10*18726	5-9-11	N	EMILY K RULONG AND WILLIAM F RULONG SR	941 441
16	10*47051.144.0	5-9-10	O	ROBERT G & TERRI L MCGUIRE	867 581
17	10*47051.144.0	5-9-12	P	ROBERT G & TERRI L MCGUIRE	867 581
18	10*29855	9-4-1	Q	ROBERT G & TERRI L MCGUIRE	1101 307
19	10*29855	5-9-9	R	ROBERT G & TERRI L MCGUIRE	1101 307
20	10*29855	9-4-2	S	ROBERT G & TERRI L MCGUIRE	1101 307

FILE NO. 8952P18HUR.dwg
VAN WINKLE N 18HU-REV3

DATE JANUARY 14, 20 21

REVISED FEBRUARY 25, 2021

OPERATORS WELL NO. VAN WINKLE N 18HU

API WELL NO. 47 — 051 — 02351 *Deep H&A*
STATE COUNTY PERMIT



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



P.S.
849

C. Victor Moyers

COUNTY NAME

PERMIT

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

DESIGNATED AGENT DIANNA STAMPER
ADDRESS CT CORPORATION SYSTEM
5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

WW-6A1
(5/13)

Operator's Well No. Van Winkle N-18HU

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

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

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

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

*See attached pages

***Co-tenancy utilization – At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease on the tract. The interests of the remaining co-tenants were acquired pursuant to the Co-tenancy Modernization and Majority Protection Act.**

**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	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment
10*31312	9-13-5	A	DENNIS W & KATHY A HUNTER	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	668	155	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corporation: AB 21/288 & 21/356	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31352	9-10-19.1	B	DENNIS W HUNTER ET UX	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	690	60	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corporation: AB 21/497	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*23458	FISH CREEK	D	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	TH EXPLORATION LLC	1/8+	1019	373	N/A	N/A	N/A	N/A	N/A
10*31384	9-10-19	E	JOHN E KELLEY AND JANET E KELLEY	STONE ENERGY CORPORATION	1/8+	693	6	N/A	N/A	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*19749	9-10-4	H	JOHN CALVERT	TH EXPLORATION LLC	1/8+	944	428	N/A	N/A	N/A	N/A	N/A
10*19750	9-10-4	H	DELORES J MYERS	TH EXPLORATION LLC	1/8+	944	430	N/A	N/A	N/A	N/A	N/A
10*19824	9-10-4	H	ROBERT BRADLEY HIGGINS	TH EXPLORATION LLC	1/8+	946	57	N/A	N/A	N/A	N/A	N/A
10*19972	9-10-4	H	ALBERT J WARSINKY AIF ELLEN K NYLES	TH EXPLORATION LLC	1/8+	948	209	N/A	N/A	N/A	N/A	N/A
10*27947	9-10-4	H	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	568	N/A	N/A	N/A	N/A	N/A
10*29814	9-10-4	H	DAVID P WARSINSKY	TH EXPLORATION LLC	1/8+	1101	29	N/A	N/A	N/A	N/A	N/A
10*29816	9-10-4	H	ELLEN K NYLES	TH EXPLORATION LLC	1/8+	1101	31	N/A	N/A	N/A	N/A	N/A
10*19894	9-10-2	J	CAROL L VANSCYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A	N/A	N/A
10*19894	9-10-1	K	CAROL L VANSCYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A	N/A	N/A
10*18726	5-9-11	N	EMILY K RULONG AND WILLIAM F RULONG SR	TH EXPLORATION LLC	1/8+	941	441	N/A	N/A	N/A	N/A	N/A
10*47051.144.0	5-9-10	O	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	867	581	N/A	N/A	N/A	N/A	N/A
10*47051.144.0	5-9-12	P	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	867	581	N/A	N/A	N/A	N/A	N/A
10*29855	9-4-1	Q	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	1101	307	N/A	N/A	N/A	N/A	N/A
10*29855	5-9-9	R	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	1101	307	N/A	N/A	N/A	N/A	N/A

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment
10*31312	9-13-5.1	C	DENNIS W & KATHY A HUNTER	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	668	155	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corporation: AB 21/288 & 21/356	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31303	9-13-6	F	MARY V & FRANK E PETHTEL	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	668	525	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corporation: AB 21/288 & 21/356	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31304	9-13-6	F	MARY V & FRANK E PETHTEL	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	675	171	N/A	N/A	Central Michigan Exploration LLC to Stone Energy Corporation: AB 21/288 & 21/356	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31306	9-13-6	F	RICHARD CUNNINGHAM	STONE ENERGY CORPORATION	1/8+	859	595	N/A	N/A	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31307	9-13-6	F	LINDA DANLEY	STONE ENERGY CORPORATION	1/8+	859	593	N/A	N/A	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31308	9-13-6	F	SUZY WALKER	STONE ENERGY CORPORATION	1/8+	859	591	N/A	N/A	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*17383	9-10-18	G	JACQUES ROY	TH EXPLORATION LLC	1/8+	919	631	N/A	N/A	N/A	N/A	N/A
10*17385	9-10-18	G	GABRIEL ARTHUR KRAUSE ROY	TH EXPLORATION LLC	1/8+	919	633	N/A	N/A	N/A	N/A	N/A
10*17386	9-10-18	G	LYNNE MERYL KRAUSE	TH EXPLORATION LLC	1/8+	919	629	N/A	N/A	N/A	N/A	N/A
10*17387	9-10-18	G	JACINTHE KRAUSE-ROY	TH EXPLORATION LLC	1/8+	919	636	N/A	N/A	N/A	N/A	N/A
10*23561	9-10-3	I	VINCENT PATRELLO AND AMANDA PATRELLO	TH EXPLORATION LLC	1/8+	988	97	N/A	N/A	N/A	N/A	N/A
10*23562	9-10-3	I	WILLIAM B ROUPE AND KATHERINE A ROUPE	TH EXPLORATION LLC	1/8+	988	94	N/A	N/A	N/A	N/A	N/A
10*23563	9-10-3	I	WILLIAM N ROUPE AND VIRGINIA A ROUPE	TH EXPLORATION LLC	1/8+	1009	317	N/A	N/A	N/A	N/A	N/A
10*23564	9-10-3	I	CHRISTOPHER A ROUPE AND KARI S ROUPE	TH EXPLORATION LLC	1/8+	988	100	N/A	N/A	N/A	N/A	N/A
10*19894	9-10-1.1	L	CAROL L VANSCYOC	TH EXPLORATION LLC	1/8+	941	392	N/A	N/A	N/A	N/A	N/A
10*18726	5-10-8	M	EMILY K RULONG AND WILLIAM F RULONG SR	TH EXPLORATION LLC	1/8+	941	441	N/A	N/A	N/A	N/A	N/A
10*18837	5-10-8	M	THE RODGERS FAMILY TRUST	TH EXPLORATION LLC	1/8+	935	122	N/A	N/A	N/A	N/A	N/A
10*18943	5-10-8	M	BRANDY SUE MOORE AND DELMAS L MOORE	TH EXPLORATION LLC	1/8+	940	124	N/A	N/A	N/A	N/A	N/A
10*19607	5-10-8	M	DAVA HARTLEY SMITH	TH EXPLORATION LLC	1/8+	944	186	N/A	N/A	N/A	N/A	N/A
10*19666	5-10-8	M	RALPH TERRY AND MONICA TERRY	TH EXPLORATION LLC	1/8+	944	182	N/A	N/A	N/A	N/A	N/A
10*22324	5-10-8	M	RHONDA RISDEN	TH EXPLORATION LLC	1/8+	965	600	N/A	N/A	N/A	N/A	N/A
10*22542	5-10-8	M	VINCE E OSER AND KAY J OSER	TH EXPLORATION LLC	1/8+	966	198	N/A	N/A	N/A	N/A	N/A
10*23487	5-10-8	M	ELMER RICHARDSON OR UNKNOWN HEIRS ET AL	TH EXPLORATION LLC	1/8+	1009	255	N/A	N/A	N/A	N/A	N/A
10*23491	5-10-8	M	LAWRENCE EDWARD MOORE OR UNKNOWN HEIRS, ET AL	TH EXPLORATION LLC	1/8+	1014	498	N/A	N/A	N/A	N/A	N/A
10*26514	5-10-8	M	CLIFFORD C HARTLEY AND BARBARA T HARTLEY*	TH EXPLORATION LLC	1/8+	1034	229	N/A	N/A	N/A	N/A	N/A
10*27959	5-10-8	M	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	594	N/A	N/A	N/A	N/A	N/A
10*28127	5-10-8	M	WILMA JEAN OSER	TH EXPLORATION LLC	1/8+	1057	330	N/A	N/A	N/A	N/A	N/A
10*28563	5-10-8	M	MARGARET TOLER	TH EXPLORATION LLC	1/8+	1074	630	N/A	N/A	N/A	N/A	N/A
10*28616	5-10-8	M	SILVIA J NEEHOUSE	TH EXPLORATION LLC	1/8+	1075	37	N/A	N/A	N/A	N/A	N/A
10*28617	5-10-8	M	RICKY E DAVIS AIF ALISA M DAVIS	TH EXPLORATION LLC	1/8+	1075	35	N/A	N/A	N/A	N/A	N/A
10*28812	5-10-8	M	ROBERT N BAKER AND THERESA L BAKER	TH EXPLORATION LLC	1/8+	1077	33	N/A	N/A	N/A	N/A	N/A

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10*28855	5-10-8	M	PAMELA J WHORTON AND ROBERT D WHORTON	TH EXPLORATION LLC	1/8+	1077	264	N/A	N/A	N/A	N/A	N/A
10*28926	5-10-8	M	DAVID M AND SHERRY L TOLER	TH EXPLORATION LLC	1/8+	1078	13	N/A	N/A	N/A	N/A	N/A
10*28950	5-10-8	M	ANTHONY C BENEDETTA AND MARY A BENEDETTA	TH EXPLORATION LLC	1/8+	1078	188	N/A	N/A	N/A	N/A	N/A
10*28969	5-10-8	M	HARRY MCCrackEN AND BETH ANN MCCrackEN	TH EXPLORATION LLC	1/8+	1078	436	N/A	N/A	N/A	N/A	N/A
10*28988	5-10-8	M	HAROLD L GOUDY AND DONNA D GOUDY	TH EXPLORATION LLC	1/8+	1080	536	N/A	N/A	N/A	N/A	N/A
10*28989	5-10-8	M	SANDRA K LYTTON AND CHARLES E LYTTON	TH EXPLORATION LLC	1/8+	1080	538	N/A	N/A	N/A	N/A	N/A
10*28993	5-10-8	M	CALVIN MCGUIRE	TH EXPLORATION LLC	1/8+	1080	541	N/A	N/A	N/A	N/A	N/A
10*28994	5-10-8	M	JENNIFER T PUMPA AND RICHARD PUMPA	TH EXPLORATION LLC	1/8+	1080	543	N/A	N/A	N/A	N/A	N/A
10*28995	5-10-8	M	ELLEN SCHMIDT	TH EXPLORATION LLC	1/8+	1080	545	N/A	N/A	N/A	N/A	N/A
10*28996	5-10-8	M	SHAWN MARIE SEWGARD AND JERRY SWEGARD	TH EXPLORATION LLC	1/8+	1083	124	N/A	N/A	N/A	N/A	N/A
10*29043	5-10-8	M	DONALD LESTER GOUDY JR AND BILLIE GOUDY	TH EXPLORATION LLC	1/8+	1083	121	N/A	N/A	N/A	N/A	N/A
10*29044	5-10-8	M	GARREN RAY GOUDY AND HOLLEE J GOUDY	TH EXPLORATION LLC	1/8+	1083	377	N/A	N/A	N/A	N/A	N/A
10*29073	5-10-8	M	JOEL B MATHIS II AND DEBORAH MATHIS	TH EXPLORATION LLC	1/8+	1083	563	N/A	N/A	N/A	N/A	N/A
10*29206	5-10-8	M	PAMELA R BENEDETTA	TH EXPLORATION LLC	1/8+	1085	598	N/A	N/A	N/A	N/A	N/A
10*29245	5-10-8	M	AMFLO ENTERPRISES LLC CO BARRY STIFFLER	TH EXPLORATION LLC	1/8+	1086	508	N/A	N/A	N/A	N/A	N/A
10*29267	5-10-8	M	ELNORA M BARANICH	TH EXPLORATION LLC	1/8+	1090	141	N/A	N/A	N/A	N/A	N/A
10*29394	5-10-8	M	WILLIAM ELLIOTT AND MARY MARCIA ELLIOTT	TH EXPLORATION LLC	1/8+	1096	303	N/A	N/A	N/A	N/A	N/A
10*29512	5-10-8	M	KERRY R MOORE AND BARBARA MOORE	TH EXPLORATION LLC	1/8+	1096	305	N/A	N/A	N/A	N/A	N/A
10*29644	5-10-8	M	JAMES & DEBRA LEE MATHIS	TH EXPLORATION LLC	1/8+	1100	86	N/A	N/A	N/A	N/A	N/A
10*29664	5-10-8	M	DALE BRUCE MOORE	TH EXPLORATION LLC	1/8+	1100	89	N/A	N/A	N/A	N/A	N/A
10*29669	5-10-8	M	JEFFREY & MELISSA M MOORE	TH EXPLORATION LLC	1/8+	1100	91	N/A	N/A	N/A	N/A	N/A
10*29721	5-10-8	M	CHARLES MICHAEL & TRACEY L BAKER	TH EXPLORATION LLC	1/8+	1100	250	N/A	N/A	N/A	N/A	N/A
10*29796	5-10-8	M	LOUIS M BENEDETTA	TH EXPLORATION LLC	1/8+	1101	27	N/A	N/A	N/A	N/A	N/A
10*29802	5-10-8	M	KIRCHGESSNER CONSULTING GROUP LLC*	TH EXPLORATION LLC	1/8+	1101	297	N/A	N/A	N/A	N/A	N/A
10*29808	5-10-8	M	DANIEL J NABUDA*	TH EXPLORATION LLC	1/8+	1101	291	N/A	N/A	N/A	N/A	N/A
10*29810	5-10-8	M	RICHARD D & JULIA M REPASKY*	TH EXPLORATION LLC	1/8+	1101	285	N/A	N/A	N/A	N/A	N/A
10*29813	5-10-8	M	HELEN E ROBINSON	TH EXPLORATION LLC	1/8+	1101	23	N/A	N/A	N/A	N/A	N/A
10*29833	5-10-8	M	SKYPOINT RESOURCES LLC	TH EXPLORATION LLC	1/8+	1103	556	N/A	N/A	N/A	N/A	N/A
10*29856	5-10-8	M	DEAN A BENEDETTA*	TH EXPLORATION LLC	1/8+	1102	298	N/A	N/A	N/A	N/A	N/A
10*29925	5-10-8	M	H3 LLC	TH EXPLORATION LLC	1/8+	1103	569	N/A	N/A	N/A	N/A	N/A
10*31355	5-10-8	M	KERRY R MOORE ET UX	CHEVRON USA INC	1/8+	772	546	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31356	5-10-8	M	AMY M TOLER	STONE ENERGY CORPORATION	1/8+	772	407	N/A	N/A	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31357	5-10-8	M	LORI E KESTNER	STONE ENERGY CORPORATION	1/8+	886	251	N/A	N/A	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31360	5-10-8	M	ANA SMITH	CHEVRON USA INC	1/8+	801	572	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21

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10*31361	5-10-8	M	JAMES W HARTLEY	CHEVRON USA INC	1/8+	801	563	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31364	5-10-8	M	JEFFREY MOORE ET UX	CHEVRON USA INC	1/8+	776	443	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31369	5-10-8	M	JAMES ROBERT WHITE	CHEVRON USA INC	1/8+	778	189	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31373	5-10-8	M	JOYCE FELLERS ET VIR	CHEVRON USA INC	1/8+	780	267	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31377	5-10-8	M	WILLIAM L ROBINSON ET UX	CHEVRON USA INC	1/8+	779	608	N/A	N/A	Chevron USA Inc to Stone Energy Corporation: 33/325	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*30034	5-10-8	M	DANNY MOORE ET UX	TH EXPLORATION LLC	1/8/+	1103	582	N/A	N/A	N/A	N/A	N/A
10*30076	5-10-8	M	DAVID A JOHNSON AND KELLI A JOHNSON	TH EXPLORATION LLC	1/8/+	1104	194	N/A	N/A	N/A	N/A	N/A
10*29978	5-10-8	M	KEITH DAWSON	TH EXPLORATION LLC	1/8/+	1103	164	N/A	N/A	N/A	N/A	N/A
10*30040	5-10-8	M	MARY RENEE WHITE	TH EXPLORATION LLC	1/8/+	1103	600	N/A	N/A	N/A	N/A	N/A
10*30075	5-10-8	M	RHONDA SUE DEPAUL	TH EXPLORATION LLC	1/8/+	1103	606	N/A	N/A	N/A	N/A	N/A
10*30042	5-10-8	M	RICHARD NEWMAN WHITE	TH EXPLORATION LLC	1/8/+	1103	594	N/A	N/A	N/A	N/A	N/A
10*30046	5-10-8	M	ROBERT LEE WHITE JR ET UX	TH EXPLORATION LLC	1/8/+	1103	612	N/A	N/A	N/A	N/A	N/A
10*30037	5-10-8	M	RUSSELL ALBERT WHITE	TH EXPLORATION LLC	1/8/+	1103	588	N/A	N/A	N/A	N/A	N/A
10*29855	9-4-2	S	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	1101	307	N/A	N/A	N/A	N/A	N/A

ASSIGNMENT AND BILL OF SALE

This ASSIGNMENT AND BILL OF SALE (this "Assignment") dated as of December 1, 2020 (the "Execution Date"), is made by and between EQT PRODUCTION COMPANY, a Pennsylvania corporation, with an address at 625 Liberty Avenue, Suite 1700, Pittsburgh, Pennsylvania 15222 ("EQT"), and TH EXPLORATION, LLC, a Texas limited liability company, with an address at 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 ("TH") pursuant to the terms of that certain Acreage Trade Agreement by and among EQT, TH and TH Exploration II, LLC ("TH II"), dated July 8, 2020 (the "Agreement"). EQT and TH may be referred to herein together as the "Parties", and each individually as a "Party".

RECITALS

WHEREAS, EQT desires to transfer, convey and assign to TH certain of EQT's oil and gas leasehold interests located in Marshall County, West Virginia set forth on Exhibit A attached hereto and incorporated herein ("EQT Leases") in accordance with this Assignment and the Agreement; and

WHEREAS, TH desires to receive from EQT, all of EQT's right, title and interest in and to the EQT Leases in accordance with this Assignment and the Agreement.

NOW, THEREFORE, for and in consideration of the mutual promises contained herein and in the Agreement, the benefits to be derived by each Party hereunder and under the Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

ARTICLE I
DEFINED TERMS

1.1 *Definitions.* Capitalized terms used herein and not otherwise defined throughout this Assignment shall have the meanings given such terms in the Agreement.

ARTICLE II
ASSIGNMENT OF ASSETS

2.1 *Assignment.* Subject to the terms and conditions of this Assignment and the Agreement, EQT does hereby assign, convey and transfer to TH all of the right, title and interest of EQT in and to the following (collectively for purposes of this Assignment, the "EQT Assets"):

(a) Subject to the conveyance of the Wells Assets from EQT to TH II as described in the Agreement, the EQT Leases and appurtenances thereto (including rights of access and to install facilities), all Hydrocarbons within, produced from, derived from, or sold from the EQT Leases (and all proceeds related thereto), on and after the Valuation Date, and all Surface Contracts including but not limited to those set forth on Exhibit B attached hereto and incorporated herein (the "EQT Surface Contracts") related to the EQT Leases and such Hydrocarbons; and

(b) Copies of deeds, files and all other ownership information directly related to the acquisition, operations and maintenance of the EQT Leases, lease files for the EQT Leases

RECEIVED
Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

05/07/2021



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

March 26, 2021

EQT Production Company
625 Liberty Ave Ste 1700
Pittsburgh PA 15222

9489 0090 0027 6201 3317 03

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC – Van Winkle N-18HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received within ten 10 days from the date of delivery, the application will be processed in the normal manner.

If you have any questions please call me at (304) 414-1239.

Sincerely,

A handwritten signature in black ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

Susan Rose
Administrator

encl:

05/07/2021



April 13, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:
9489 0090 0027 6201 3317 03.


Item Details

Status:	Delivered, Left with Individual
Status Date / Time:	April 1, 2021, 10:41 am
Location:	PITTSBURGH, PA 15222
Postal Product:	First-Class Mail®
Extra Services:	Certified Mail™ Return Receipt Electronic

Shipment Details

Weight:	2lb, 11.7oz
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Recipient Signature

Signature of Recipient:	
Address of Recipient:	625 LIBERTY AVE PITTSBURGH, PA 15222

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

Thank you for selecting the United States Postal Service® for your mailing needs. If you require additional assistance, please contact your local Post Office™ or a Postal representative at 1-800-222-1811.

Sincerely,
United States Postal Service®
475 L'Enfant Plaza SW
Washington, D.C. 20260-0004

05/07/2021



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

March 26, 2021

TH Exploration, LLC
1320 S. University Dr Ste 500
Ft Worth TX 76107

9489 0090 0027 6201 3316 66

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC – Van Winkle N-18HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received within ten 10 days from the date of delivery, the application will be processed in the normal manner.

If you have any questions please call me at (304) 414-1239.

Sincerely,

A handwritten signature in black ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

Susan Rose
Administrator

encl:

05/07/2021



April 13, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:
9489 0090 0027 6201 3316 66.


Item Details

Status: Delivered, Front Desk/Reception/Mail Room
Status Date / Time: April 5, 2021, 2:30 pm
Location: FORT WORTH, TX 76107
Postal Product: First-Class Mail®
Extra Services: Certified Mail™
Return Receipt Electronic

Shipment Details

Weight: 6lb, 5.3oz

Recipient Signature

Signature of Recipient:	
Address of Recipient:	JB RT# Covid-19 1320 S University 76107 500

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

Thank you for selecting the United States Postal Service® for your mailing needs. If you require additional assistance, please contact your local Post Office™ or a Postal representative at 1-800-222-1811.

Sincerely,
United States Postal Service®
475 L'Enfant Plaza SW
Washington, D.C. 20260-0004

05/07/2021



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

March 26, 2021

Venable Royalty, LTC
5910 North Central Expressway Ste 1470
Dallas TX 75206

9489 0090 0027 6201 3316 80

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC – Van Winkle N-18HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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Susan Rose
Administrator

encl:

05/07/2021



April 13, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:
9489 0090 0027 6201 3316 80.



Item Details

Status: Delivered, Front Desk/Reception/Mail Room
Status Date / Time: April 2, 2021, 11:02 am
Location: DALLAS, TX 75206
Postal Product: First-Class Mail®
Extra Services: Certified Mail™
Return Receipt Electronic

Shipment Details

Weight: 2lb, 15.9oz

Recipient Signature

Signature of Recipient:	
Address of Recipient:	

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Sincerely,
United States Postal Service®
475 L'Enfant Plaza SW
Washington, D.C. 20260-0004

05/07/2021



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

March 26, 2021

Venro LTD
5910 North Central Expressway Ste 1470
Dallas TX 75206

9489 0090 0027 6201 3316 97

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC – Van Winkle N-18HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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A handwritten signature in black ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

Susan Rose
Administrator

encl:

05/07/2021



April 13, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number: **9489 0090 0027 6201 3316 97**.



Item Details

Status:	Delivered, Front Desk/Reception/Mail Room
Status Date / Time:	April 2, 2021, 11:02 am
Location:	DALLAS, TX 75206
Postal Product:	First-Class Mail®
Extra Services:	Certified Mail™ Return Receipt Electronic

Shipment Details

Weight:	2lb, 14.2oz
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Recipient Signature

Signature of Recipient:	
Address of Recipient:	

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

Thank you for selecting the United States Postal Service® for your mailing needs. If you require additional assistance, please contact your local Post Office™ or a Postal representative at 1-800-222-1811.

Sincerely,
United States Postal Service®
475 L'Enfant Plaza SW
Washington, D.C. 20260-0004

05/07/2021



January 15, 2021

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

RE: Van Winkle N-18HU

Subject: Marshall County Route 84 and 74 Road Crossing Letter

Dear Wade:

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 84 and 74 in the area reflected on the Van Winkle N-18HU 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,

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

RECEIVED
Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

05/07/2021

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

Date of Notice Certification: 01/15/2021

API No. 47- 051 -

Operator's Well No. Van Winkle N-18HU

Well Pad Name: Hunter Pethiel

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>523,386.80</u>
County:	<u>Marshall</u>		Northing:	<u>4,403,542.98</u>
District:	<u>Meade</u>	Public Road Access:	<u>Country Route 74</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>XcL Midstream Operating, LLC</u>	
Watershed:	<u>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 align="center">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>
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RECEIVED
Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

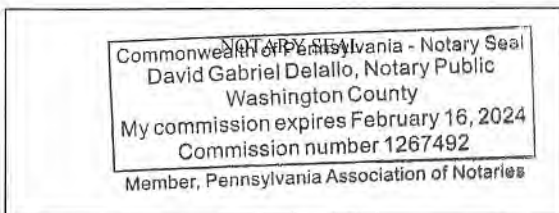
Required Attachments:

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

Certification of Notice is hereby given:

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

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



Subscribed and sworn before me this 15 day of JANUARY, 2021
David Gabriel Delallo Notary Public
 My Commission Expires 2/16/24

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.

RECEIVED
 Office of Oil and Gas
 JAN 19 2021
 WV Department of
 Environmental Protection

WW-6A
(9-13)

API NO. 47- 051 - 02350 Deep
OPERATOR WELL NO. Van Winkle N-18HU
Well Pad Name: Hunter Pethtel

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: 1/26/2021 **Date Permit Application Filed:** 1/15/2021

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: XcL Midstream Operating, LLC (Well Pad & Access Road)
Address: 380 Southpointe Boulevard, Plaza II, Suite 215
Canonsburg, PA 15317

Name: Frank E. & Mary Virginia Pethtel, Life Estate (Well Pad)
Address: 9845 Fish Creek Road
Glen Easton, WV 26039

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

Name: Regina M. & Aaron D. Murray, Remainderman
Address: 5 Mound Manor
St. Mary's, WV 26170

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: CNX Land, LLC
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

COAL OPERATOR

Name: _____
Address: _____

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

RECEIVED
Office of Oil and Gas

FEB 03 2021

WV Department of
Environmental Protection

05/07/2021

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 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

RECEIVED
Office of Oil and Gas

FEB 03 2021

WV Department of
Environmental Protection

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.**

05/07/2021

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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Division of Oil and Gas
FEB 08 2021
WV Department of
Environmental Protection

WW-6A
(8-13)

API NO. 47- 051 -
OPERATOR WELL NO. Van Winkle N-18HU
Well Pad Name: Hunter Pethel

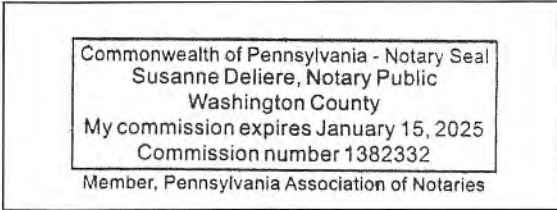
Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 26th day of January 2021
Susanne Deliere Notary Public
My Commission Expires 1/15/2025

RECEIVED
Office of Oil and Gas

FEB 03 2021

WV Department of
Environmental Protection

05/07/2021

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

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

Well: Van Winkle N – 18HU
 District: Meade
 State: WV

There are four (4) possible residences, one (1) possible commercial or business site, no churches, no schools and no emergency facilities within two-thousand feet (2,000') of the above referenced well location. Number 6 is a water well only and is not a residence.

<p>Residence (#1) TM 13 Pcl. 6 Mary Virginia Pethtel Phone: 304-684-2646, 304-845-3423 Physical Address: None Found – Possible Mobile Home Tax Address: 9845 Fish Creek Rd Glen Easton, WV 26039</p>	<p>Residence (#2) TM 13 Pcl. 7 Mary Virginia Pethtel Phone: 304-684-2646, 304-845-3423 Physical Address: 9845 Fish Creek Rd Glen Easton, WV 26039 Tax Address: Same</p>	<p>Commercial/Business (#3)* TM 13 Pcl. 5 XcL Midstream Operating, LLC Phone: 1-888-751-0434 Physical Address: 9269 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: 1320 S University DR STE 500 Fort Worth, TX 76107 *Physical address appears to be related to Oil & Gas Well Pad.</p>
<p>Residence (#4) TM 13 Pcl. 5 XcL Midstream Operating, LLC Phone: 1-888-751-0434 Physical Address: None Found – Appears to be newer home Tax Address: 1320 S University DR STE 500 Fort Worth, TX 76107</p>	<p>Residence (#5) TM 13 Pcl. 5 XcL Midstream Operating, LLC Phone: 1-888-751-0434 Physical Address: 9201 Fish Creek Rd. Glen Easton, WV 26039 Tax Address: 1320 S University DR STE 500 Fort Worth, TX 76107</p>	<p>(#6) Water Well Only (No Residence) Joseph L. Blake & Michael A. Walker 1207 Roberts Ridge Rd. Moundsville, WV 26041</p>

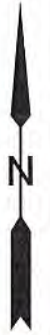
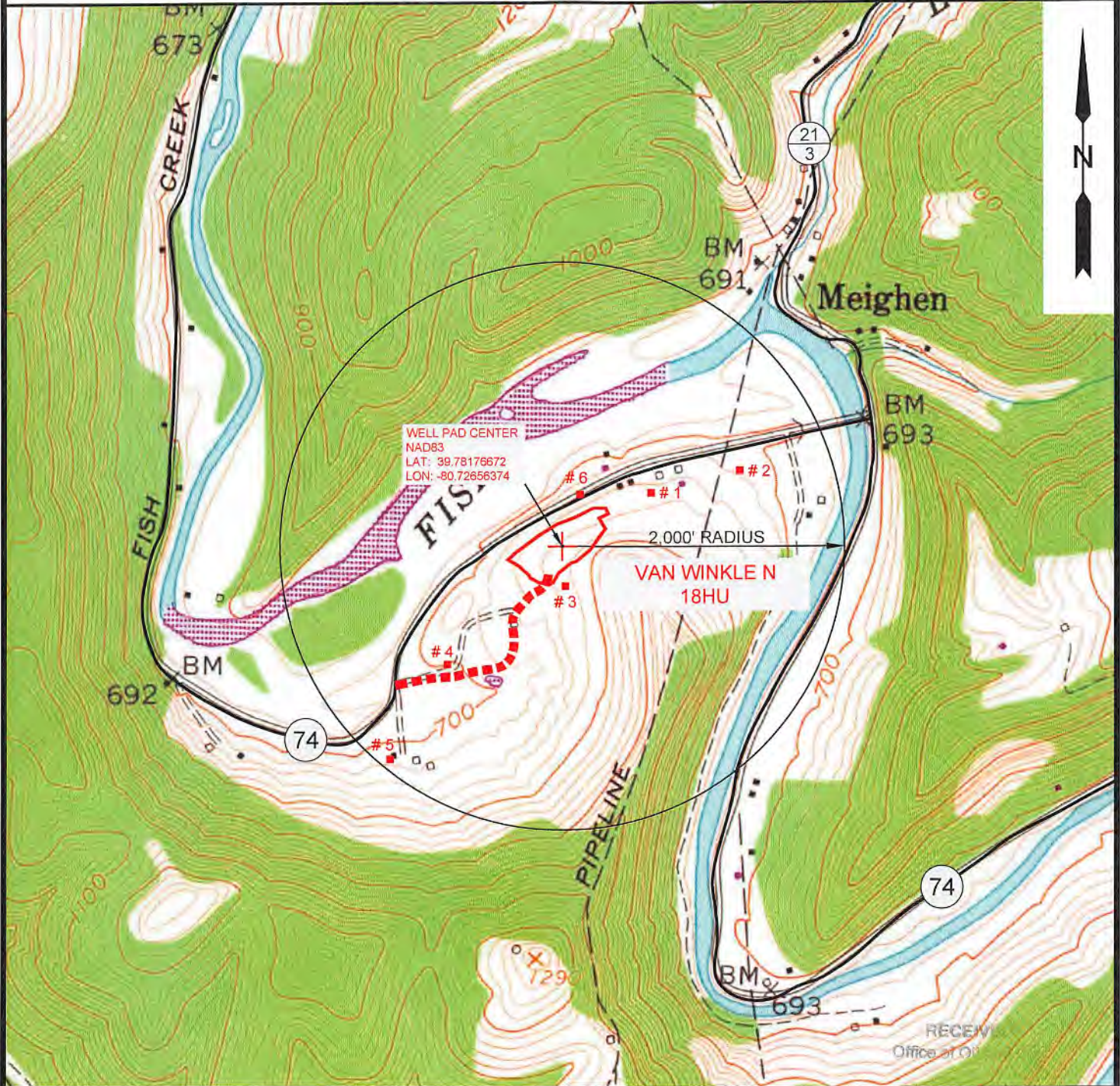
RECEIVED
 Office of Oil and Gas

FEB 03 2021

WV Department of
 Environmental Protection

05/07/2021

PROPOSED VAN WINKLE N - 18HU



NOTE: THERE APPEARS TO BE SIX (6) POSSIBLE WATER SOURCES WITHIN 2,000'. NUMBER 6 IS A WATER WELL ONLY (NO RESIDENCE).

FEB 09 2021

WV Department of
Environmental Protection



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
slswv.com

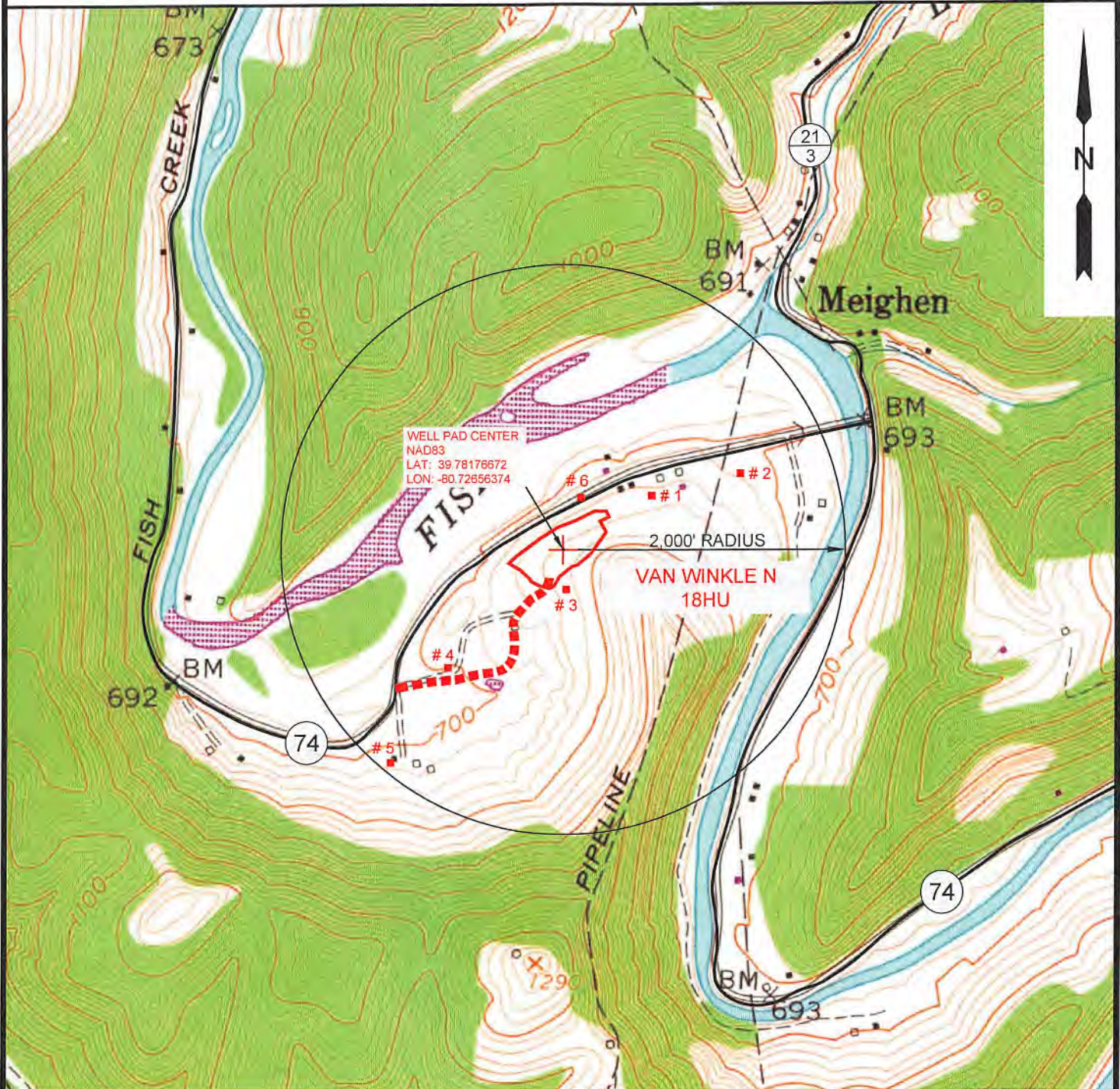
TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
		SUITE 200	
		CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	8952	12/24/2020	1" = 1000'



TUG HILL
OPERATING



05/07/2021

PROPOSED VAN WINKLE N - 18HU



NOTE: THERE APPEARS TO BE SIX (6) POSSIBLE WATER SOURCES WITHIN 2,000'. NUMBER 6 IS A WATER WELL ONLY (NO RESIDENCE).

JAN 19 2021

 <p>12 Vanhorn Drive P.O. Box 150 Glenville, WV 25351 304.462.5634 1412 Kanawha Boulevard, East Charleston, WV 25301 304.346.3952 254 East Beckley Bypass Beckley, WV 25801 304.255.5295 solv.com</p>	TOPO SECTION: GLEN EASTON 7.5'		OPERATOR: PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		 <p>WV Department of Environmental Protection TUG HILL OPERATING</p> <p>05/07/2021</p>	
	COUNTY MARSHALL	DISTRICT MEADE	DRAWN BY K.G.M.	JOB NO. 8952		DATE 12/24/2020
			SCALE 1" = 1000'			

Affidavit of Personal Service

State Of WEST VIRGINIA
County Of MARSHALL



The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A) / WW-3(A) / WW-4(A) / WW-5(A) / WW-6(A) 6A5
- (2) Application on Form WW-2(B) / WW-3(B) / WW-4(B) / WW-5(B) / WW-6(B) X
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. see list located in Meade District, Marshall County, West Virginia, upon the person or organization named--

FRANK E. PETER Frank E. Peter
--by delivering the same in MARSHALL County, State of WEST VIRGINIA on the 15 day of JANUARY, 2021 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him / her / or, because he / she / refused to take it when offered it, by leaving it in his / her / presence.

Handing it to a member of his or her family above the age of 16 years named who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to , a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named , or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

Handing it to the corporation's employee / officer / director / attorney in fact / named

[Signature]
(Signature of person executing service)

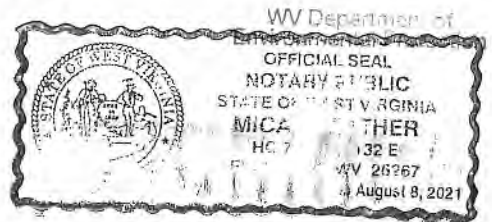
Taken, subscribed and sworn before me this 15 day of January
My commission expires August 8, 2021

RECEIVED
Office of Oil and Gas

[Signature]
Notary Public

JAN 19 2021

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)



Affidavit of Personal Service

State Of Pennsylvania
County Of Washington



The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A) ___/ WW-3(A) ___/ WW-4(A) ___/ WW-5(A) ___/ WW-6(A) LA5
- (2) Application on Form WW-2(B) ___/ WW-3(B) ___/ WW-4(B) ___/ WW-5(B) ___/ WW-6(B) X
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. VanWinkle Wells (997) located in Meade District, Marshall County, West Virginia, upon the person or organization named--

Xcl Midstream Operating, LLC
--by delivering the same in Washington County, State of Pennsylvania on the 14th day of January, 2021 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him ___/ her ___/ or, because he ___/ she ___/ refused to take it when offered it, by leaving it in his ___/ her ___/ presence.

Handing it to a member of his or her family above the age of 16 years named _____ who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to _____, a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named _____, or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

Handing it to the corporation's employee ___/ officer / director ___/ attorney in fact ___/ named Justin Trettel.

anyllowis
(Signature of person executing service)

Taken, subscribed and sworn before me this 14 day of JANUARY 2021.
My commission expires 2/16/24

[Signature]
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)

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

RECEIVED
Office of Oil and Gas
JAN 19 2021

WV Department of
Environmental Protection

05/07/2021

WW-70 Attachment

Well List

- Van Winkle N-16HU
- Van Winkle N-17HU
- Van Winkle N-18HU
- Van Winkle N-19HU
- Van Winkle S-20HU
- Van Winkle S-21HU
- Van Winkle S-22HU
- Van Winkle S-23HU

RECEIVED
Office of Oil and Gas
JAN 19 2021
WW Department of
Environmental Protection

05/07/2021

WW-6A3
(1/12)

Operator Well No. Van Winkle N-18HU

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: 12/11/2020 **Date of Planned Entry:** 12/18/2020

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: XcL Midstream Operating, LLC (Well Pad & Access Road)
 Address: 380 Southpointe Boulevard, Plaza II, Suite 215
Canonsburg, PA 15317

Name: Frank E. & Mary Virginia Pethtel, Life Estate (Well Pad) ✓
 Address: 9845 Fish Creek Road
Glen Easton, WV 26039

Name: Regina M. & Aaron D. Murray, Remainderman ✓
 Address: 5 Mound Manor
St. Marys, WV 26170

COAL OWNER OR LESSEE

Name: CNX Land, LLC ✓
 Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

MINERAL OWNER(s)

Name: Frank E. & Mary Virginia Pethtel, Life Estate ✓
 Address: 9845 Fish Creek Road
Glen Easton, WV 26039 **See attached list

*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>39.78176850; -80.72661368</u>
County:	<u>Marshall</u>	Public Road Access:	<u>County Route 74</u>
District:	<u>Meade</u>	Watershed:	<u>Middle Fish Creek</u>
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>XcL Midstream Operating, 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: Tug Hill Operating, LLC
 Telephone: 724-749-8388
 Email: amorris@tug-hill-op.com

Address: 380 Southpointe Boulevard, Plaza II, Suite 200
Canonsburg, PA 15317
 Facsimile: 724-338-2020

RECEIVED
Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

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.

05/07/2021

WW-6A3 Notice of Entry for Plat Survey
Additional Parties to Notice
Van Winkle Wells

Additional Mineral Owner:
Dennis W. Hunter ✓
3322 Rainbow Lane
North Ft. Myers, FL 33903

RECEIVED
Office of Oil and Gas

JAN 19 2021

WV Department of
Environmental Protection

05/07/2021

Affidavit of Personal Service

State Of Pennsylvania
County Of Washington



The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A) / WW-3(A) / WW-4(A) / WW-5(A) / WW-6(A) 3 ✓
- (2) Application on Form WW-2(B) / WW-3(B) / WW-4(B) / WW-5(B) / WW-6(B)
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. vanDuke wells (see list) located in Meade District, Marshall County, West Virginia, upon the person or organization named--

XCL Midstream Operating, LLC
--by delivering the same in Washington County, State of Pennsylvania on the 14th day of December, 2020 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him / her / or, because he / she / refused to take it when offered it, by leaving it in his / her / presence.

Handing it to a member of his or her family above the age of 16 years named who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to , a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named , or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

Handing it to the corporation's employee / officer / director / attorney in fact / named Justin Irettel.

Amy Blouvis
(Signature of person executing service)

Taken, subscribed and sworn before me this 14 day of December 2020.
My commission expires 2/16/2024

D. G. Delallo
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)

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

RECEIVED
Office of Oil and Gas

JAN 19 2021

PA Department of
Environmental Protection

05/07/2021

WW-70 Attachment

Well List

Van Winkle N-16HU

Van Winkle N-17HU

Van Winkle N-18HU

Van Winkle N-19HU

Van Winkle S-20HU

Van Winkle S-21HU

Van Winkle S-22HU

Van Winkle S-23HU

RECEIVED
Office of Oil and Gas

JAN 19 2021

WV Department of
Environmental Protection

05/07/2021

WW-6A5
(1/12)Operator Well No. Van Winkle N-18HU

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

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

Date of Notice: 01/14/2021 **Date Permit Application Filed:** 01/15/2021

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

- CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

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

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: XcL Midstream Operating, LLC

Address: 380 Southpointe Boulevard, Plaza II, Suite 200

Canonsburg, PA 15317

Name: Frank E. & Mary Virginia Pathtel (Life Estate)

Address: 9845 Fish Creek Road

Glen Easton, WV 26039

Notice is hereby given:

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>523,386.80</u>
County:	<u>Marshall</u>		Northing:	<u>4,403,542.98</u>
District:	<u>Meade</u>	Public Road Access:	<u>County Route 74</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>XcL Midstream Operating, LLC</u>	
Watershed:	<u>Fish Creek (HUC 10)</u>			

This Notice Shall Include:

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

Well Operator: Tug Hill Operating, LLC

Telephone: 724-749-8388

Email: amorris@tug-hill-op.com

Address: 380 Southpointe Boulevard, Plaza II, Suite 200

Canonsburg, PA 15317

Facsimile: 724-338-2030

Oil and Gas Privacy Notice:

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

RECEIVED
Office of Oil and Gas

JAN 19 2021

WV Department of
Environmental Protection

05/07/2021

**Additional Surface Owner – Van Winkle Wells
WW-6A5**

Regina M. & Aaron D. Murray
5 Mound Manor
St. Marys, WV 26170



RECEIVED
Office of Oil and Gas

JAN 19 2021

WV Department of
Environmental Protection

05/07/2021

Affidavit of Personal Service

State Of WEST VIRGINIA
County Of MARSHALL



The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A) ___ / WW-3(A) ___ / WW-4(A) ___ / WW-5(A) ___ / WW-6(A) 6A5
- (2) Application on Form WW-2(B) ___ / WW-3(B) ___ / WW-4(B) ___ / WW-5(B) ___ / WW-6(B) X
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. seelist located in Meade District, Marshall County, West Virginia, upon the person or organization named--

FRANK E. POTTER - Frank E. Potter
--by delivering the same in Marshall County, State of WEST VIRGINIA on the 15 day of JANUARY, 2021 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him / her ___ / or, because he ___ / she ___ / refused to take it when offered it, by leaving it in his ___ / her ___ / presence.

[] Handing it to a member of his or her family above the age of 16 years named _____ who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

[] Handing it to _____, a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

[] Handing it to the general partner, named _____, or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

[] Handing it to the corporation's employee ___ / officer ___ / director ___ / attorney in fact ___ / named _____.

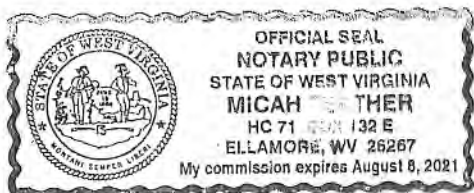
[Signature]
(Signature of person executing service)

Taken, subscribed and sworn before me this 15 day of January 2021.
My commission expires August 8, 2021

[Signature]
Notary Public

RECEIVED
Office of Oil and Gas
JAN 19 2021

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)



Affidavit of Personal Service

State Of Pennsylvania
County Of Washington



The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A)___/ WW-3(A)___/ WW-4(A)___/ WW-5(A)___/ WW-6(A) LAS
- (2) Application on Form WW-2(B)___/ WW-3(B)___/ WW-4(B)___/ WW-5(B)___/ WW-6(B) X
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. VanWinkleWells (see) located in Meade District, Marshall County, West Virginia, upon the person or organization named--

Kcl Midstream Operating, LLC
--by delivering the same in Washington County, State of Pennsylvania on the 14th day of January, 2021 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him___/ her___/ or, because he___/ she___/ refused to take it when offered it, by leaving it in his___/ her___/ presence.

Handing it to a member of his or her family above the age of 16 years named _____ who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to _____, a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named _____, or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

Handing it to the corporation's employee___/ officer/ director___/ attorney in fact___/ named Justin Trettel.

anyellowis
(Signature of person executing service)

Taken, subscribed and sworn before me this 14 day of JANUARY 2021.
My commission expires 2/16/24

[Signature]
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)

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

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Office of Oil and Gas
JAN 19 2021
PA Department of Environmental Protection
05/07/2021

WW-70 Attachment

Well List

Van Winkle N-16HU
Van Winkle N-17HU
Van Winkle N-18HU
Van Winkle N-19HU
Van Winkle S-20HU
Van Winkle S-21HU
Van Winkle S-22HU
Van Winkle S-23HU



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

January 14, 2021

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

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 Hunter-Pethtel Pad, Marshall County
Van Winkle N-18HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2009-0275 which has been transferred to Tug Hill Operating for access to the State Road for a well site located off Marshall County Route 74 SLS.

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.

Very Truly Yours,

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

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

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Office of Oil and Gas

JAN 19 2021

WV Department of
Environmental Protection

05/07/2021



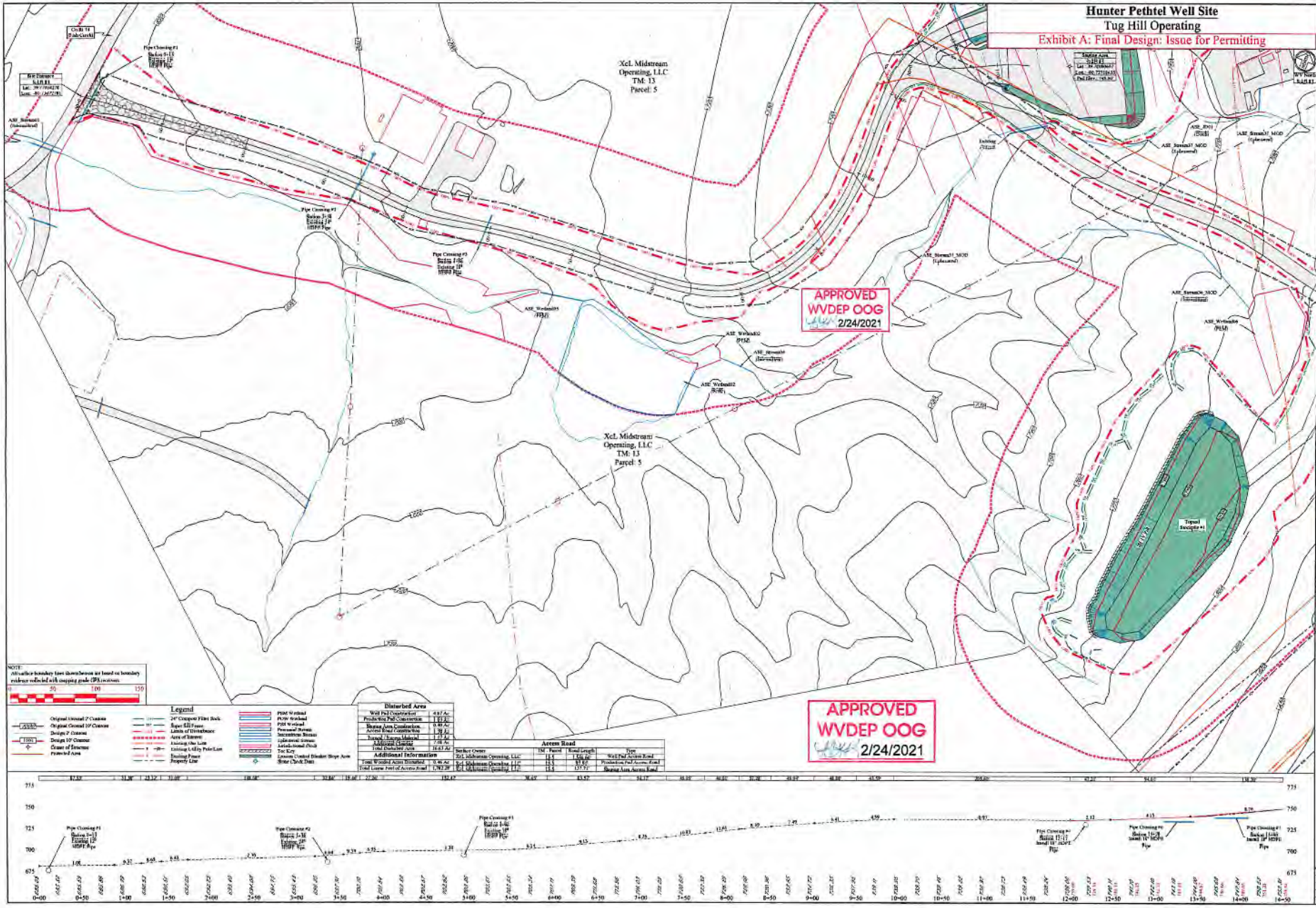
PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Van Winkle 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

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JAN 19 2021
WV Department of
Environmental Protection

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

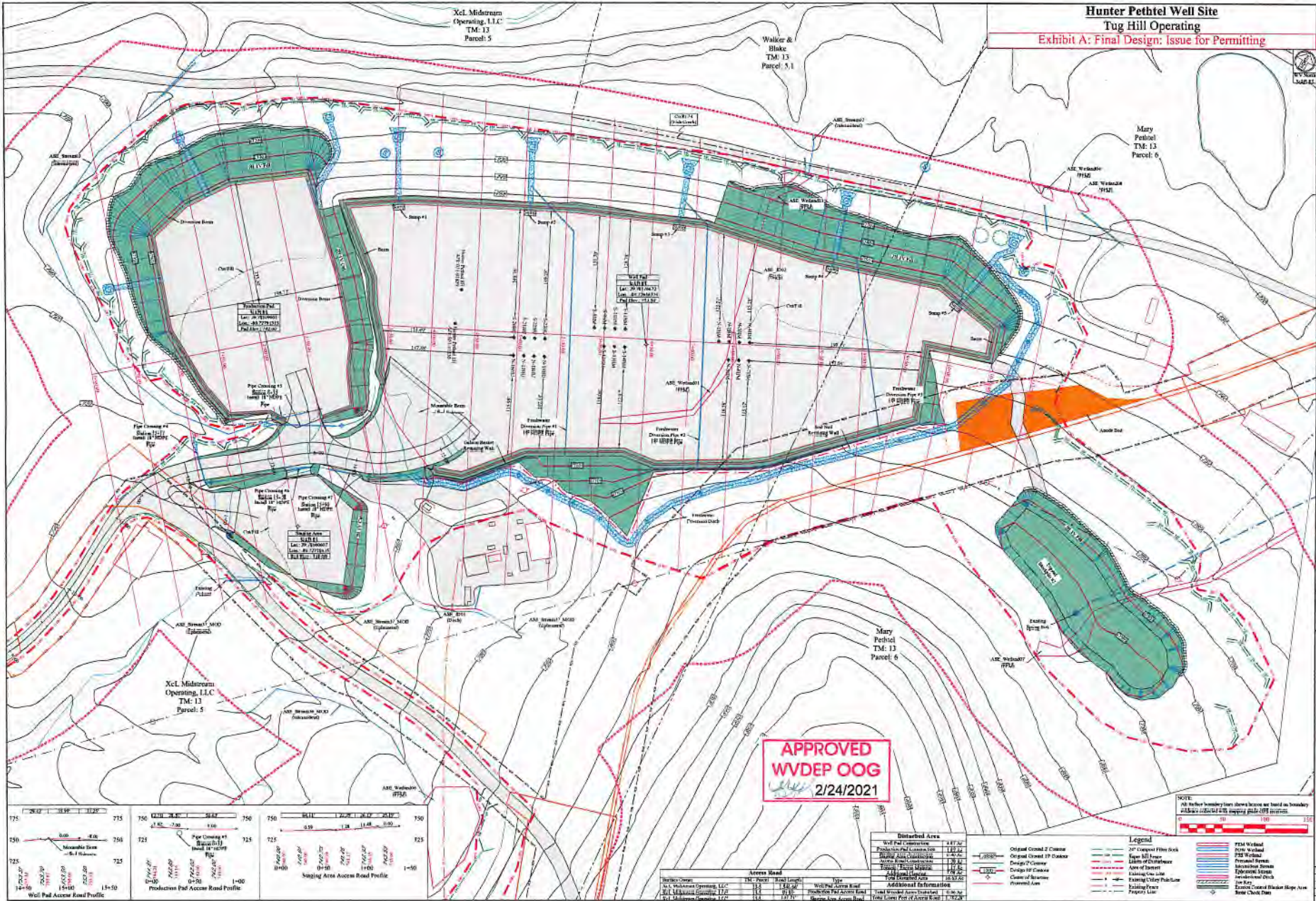


NOTE: All vertical boundary lines shown herein are based on boundary evidence reflected with existing grade (P) locations.



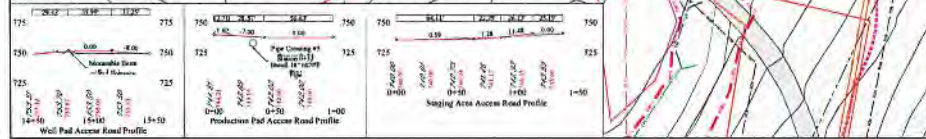
- Legend**
- Original Unaltered 2" Chassis
 - Original Unaltered 10" Chassis
 - Design 2" Chassis
 - Design 10" Chassis
 - State of Westmoreland
 - Proposed Area
 - 2" Concrete Fiber Back
 - Basin E1 Frame
 - Line of Disturbance
 - Area of Impact
 - Existing One Lane
 - Existing Utility Pole Line
 - Existing Power
 - Property Line
 - 18" Water
 - 12" Water
 - 6" Water
 - 4" Water
 - 2" Water
 - 1" Water
 - 1/2" Water
 - 1/4" Water
 - 1/8" Water
 - 1/16" Water
 - 1/32" Water
 - 1/64" Water
 - 1/128" Water
 - 1/256" Water
 - 1/512" Water
 - 1/1024" Water
 - 1/2048" Water
 - 1/4096" Water
 - 1/8192" Water
 - 1/16384" Water
 - 1/32768" Water
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 - 1/2097152" Water
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Hunter Pettel Well Site
Tug Hill Operating
Exhibit A: Final Design: Issue for Permitting



APPROVED
WVDEP OOG
 2/24/2021

NOTE: All buffer boundary lines shown herein are based on boundary as shown collected 2018 imagery data/DEM information.



Disturbed Area		Legend	
Well Pad Construction	4.87 Ac	Original Ground 2' Contour	20' Contour Filter Ditch
Production Pad Construction	1.22 Ac	Original Ground 10' Contour	Edge Hill Trace
Buffer Area Construction	1.76 Ac	Design 2' Contour	Limits of Disturbance
Other Disturbed Area	1.22 Ac	Design 10' Contour	Area of Interest
Total Disturbed Area	9.07 Ac	Existing One Line	Existing One Line
Additional Information		Existing Utility Pole Line	Existing Utility Pole Line
Site Location		Existing Fence	Existing Fence
Parcel: 5		Proposed Line	Proposed Line
Parcel: 5.1			
Parcel: 6			

Site Plan: Hunter Pettel Well Site
 Meade District
 Marshall County, WV

TUG HILL
 OIL & GAS

THIS DOCUMENT PREPARED FOR
 TUG HILL OPERATING

KS
 K&S CONSULTANTS
 ENGINEERS & ARCHITECTS
 1000 MARKET STREET, SUITE 200
 MARTINSBURG, WV 26150
 TEL: 304.263.1100
 FAX: 304.263.1101

DATE: 1/24/2020
 SCALE: AS SHOWN
 DESIGNED BY: ZS
 316.MC
 SHEET 10 OF 13