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 west virginia department of environmental protection
 

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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Tuesday, February 26, 2019  
 WELL WORK PERMIT  
 Horizontal 6A / New Drill

TUG HILL OPERATING, LLC  
 380 SOUTHPOINTE BLVD

CANONSBURG, PA 15317

Re: Permit approval for WOODFORD 6HU  
 47-051-02143-00-00

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: WOODFORD 6HU  
 Farm Name: CNX RCPC, LLC  
 U.S. WELL NUMBER: 47-051-02143-00-00  
 Horizontal 6A New Drill  
 Date Issued: 2/26/2019

# PERMIT CONDITIONS

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

## CONDITIONS

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

## PERMIT CONDITIONS

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



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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-926-0499 Ext 1274

Barry K. Lay, Chairman  
dep.wv.gov

January 23, 2019

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

RE: Application for Deep Well Permit – API #47-051-02143

COMPANY: Tug Hill Operating, LLC

FARM: CNX Land, LLC Woodford 6HU

COUNTY: Marshall DISTRICT: Franklin QUAD: Powhatan Point 7 ½'

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: None
4. Provided a plat showing that the proposed location is a distance of 400+ feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

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

Susan Rose  
Administrator

05 10 2 143

03/01/2019

WW-6B  
(04/15)

API NO. 47- 051

OPERATOR WELL NO. Woodford 6HU

Well Pad Name: Woodford

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

1) Well Operator: Tug Hill Operating, LLC      494510851      Marshall      Franklin      Powhatan Point 7  
Operator ID      County      District      Quadrangle

2) Operator's Well Number: Woodford 6HU      Well Pad Name: Woodford

3) Farm Name/Surface Owner: CNX Land, LLC      Public Road Access: Burch Ridge Road (County Route 29)

4) Elevation, current ground: 1250'      Elevation, proposed post-construction: 1233.51'

5) Well Type (a) Gas  Oil  Underground Storage   
Other

(b) If Gas Shallow  Deep   
Horizontal

6) Existing Pad: Yes or No No

*JW*  
1/7/19

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

Point Pleasant is the target formation at a depth of 10,980' - 10,858' - thickness of 122' and anticipated pressure of approx. 9500 psi.

8) Proposed Total Vertical Depth: 11,130'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 17,392'

11) Proposed Horizontal Leg Length: 5,701.08'

12) Approximate Fresh Water Strata Depths: 70' ; 805'

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: 2,167'

15) Approximate Coal Seam Depths: Sewickley Coal - 701' ; Pittsburgh Coal - 799'

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

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

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

WW-6B  
(04/15)

05 10 21  
API NO. 47- 051 - 03/01/2019  
OPERATOR WELL NO. Woodford 6HU  
Well Pad Name: Woodford

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#	905'	905'	1,470FT^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2700'	2700'	1,905FT^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	10,134'	10,134'	3,308FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	17,392'	17,392'	4,156FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,058'	
Liners							

*ju*  
*11/21/15*

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	1.99
Production	5 1/2"	8 1/2"	.415	16,510	10,864	SEE #24	1.18
Tubing	2 7/8"			11,385	11,624		
Liners							

**PACKERS**

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

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WW-6B  
(10/14)

API NO. 47-05 **05-102149** 03/01/2019  
OPERATOR WELL NO. Woodford 6HU  
Well Pad Name: Woodford

*JW*  
*11/21/18*

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 CBL from 60 deg to surface, make cleanout run, and stimulate.

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

Well to be completed with approximately 14,250,000 lb proppant and 220,315 bbl of water. Max rate = 80 bpm; max psi = 12,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 44.34 acres

22) Area to be disturbed for well pad only, less access road (acres): 6.01 acres

23) Describe centralizer placement for each casing string:

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

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

\*See Attachment

25) Proposed borehole conditioning procedures:

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

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\*Note: Attach additional sheets as needed.

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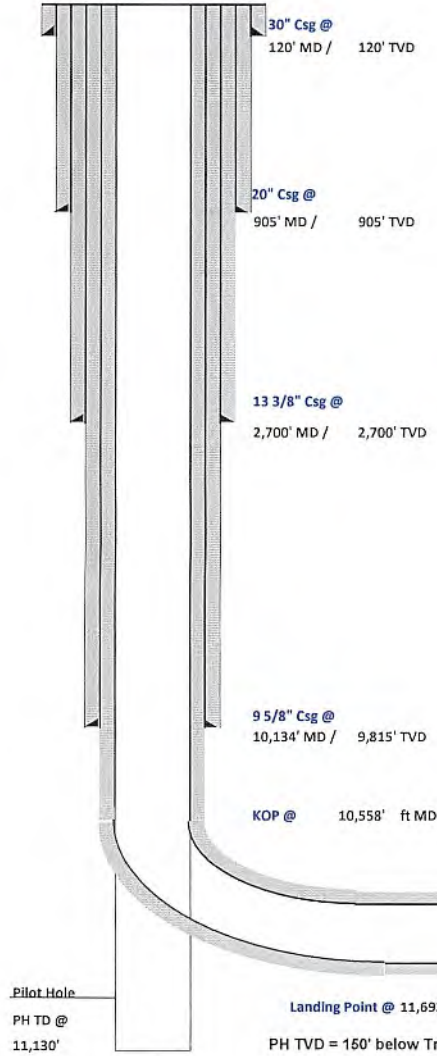


**WELL NAME:** Woodford-6HU  
**STATE:** WV **COUNTY:** Marshall  
**DISTRICT:** Franklin  
**DF Elev:** 1,235' **GL Elev:** 1,235'  
**TD:** 17,392'  
**TH Latitude:** 39.80417668  
**TH Longitude:** -80.81198554  
**BH Latitude:** 39.78613616  
**BH Longitude:** -80.8082821

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	805'
Sewickley Coal	701'
Pittsburgh Coal	799'
Big Lime	2,082'
Berea	2,596'
Tully	6,254'
Marcellus	6,315'
Onondaga	6,369'
Salina	7,043'
Lockport	8,044'
Utica	10,642'
Point Pleasant	10,858'
Landing Depth	10,920'
Trenton	10,980'
Pilot Hole TD	11,130'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	26	20	905'	905'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,700'	2,700'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,134'	9,815'	47	HPP110	Surface
Production	8 1/2	5 1/2	17,392'	11,019'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,585	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,064	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,725	A	14.5	Air	1 Centralizer every other jt
Production	3,566	A	15	Air / SOBM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc



*John*  
11/21/18

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Lateral TD @ 17,392' ft MD  
 11,019' ft TVD

Landing Point @ 11,692' MD / 10,920' TVD  
 PH TVD = 150' below Trenton Top

Pilot Hole  
 PH TD @  
 11,130'



03/01/2019

05102143



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

**Woodford-6HU**

**Casing**

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	905'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,700'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,134'	CTS
Production	5 1/2"	HCP110	8 1/2"	17,392'	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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## 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 Devin Ducoeur 724-705-0444, [dducoeur@dpslandservices.com](mailto:dducoeur@dpslandservices.com) DPS GIS (7/2/2018) 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

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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

Permit well - Woodford-6HU

Wells within 500' Buffer

Note: Well spots depicted on Area of Review map (page 3) 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

05 10 21 43

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
None	N/A	N/A	N/A	N/A	N/A	N/A

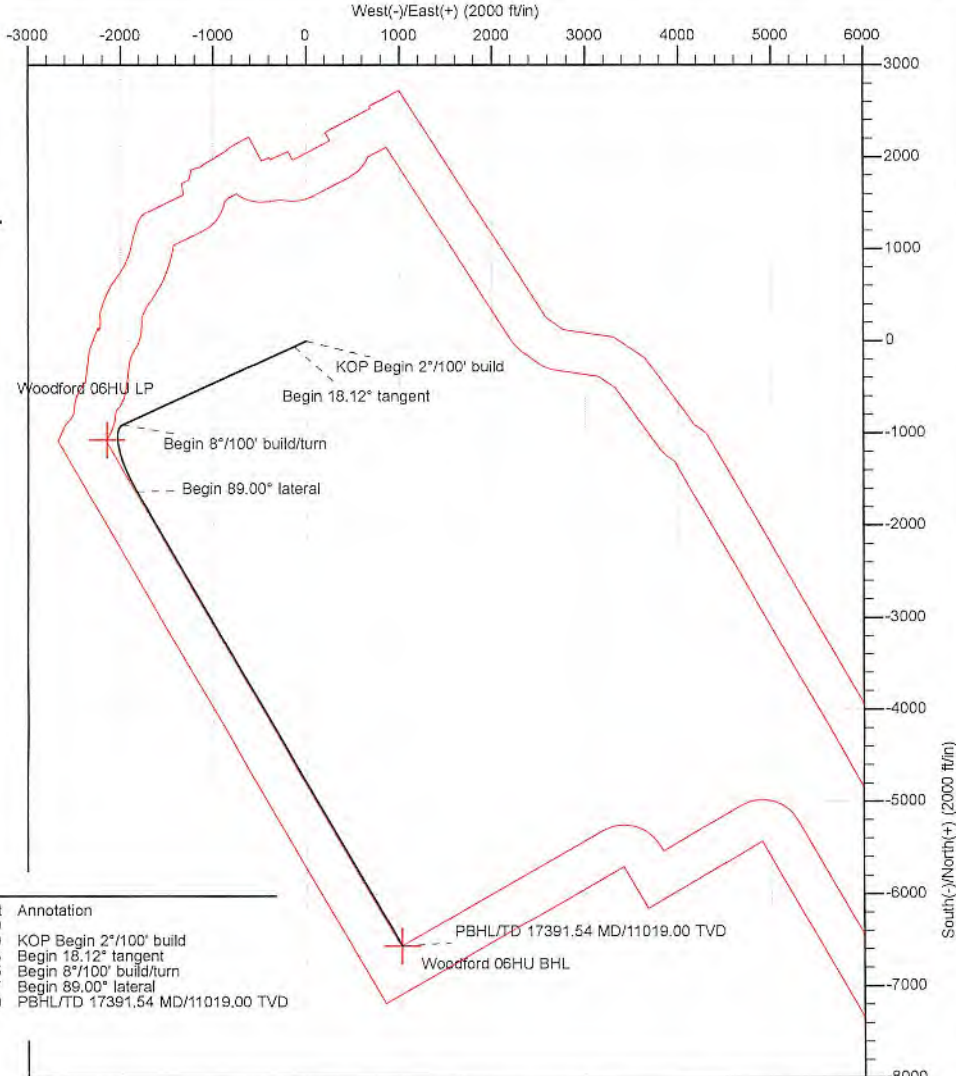
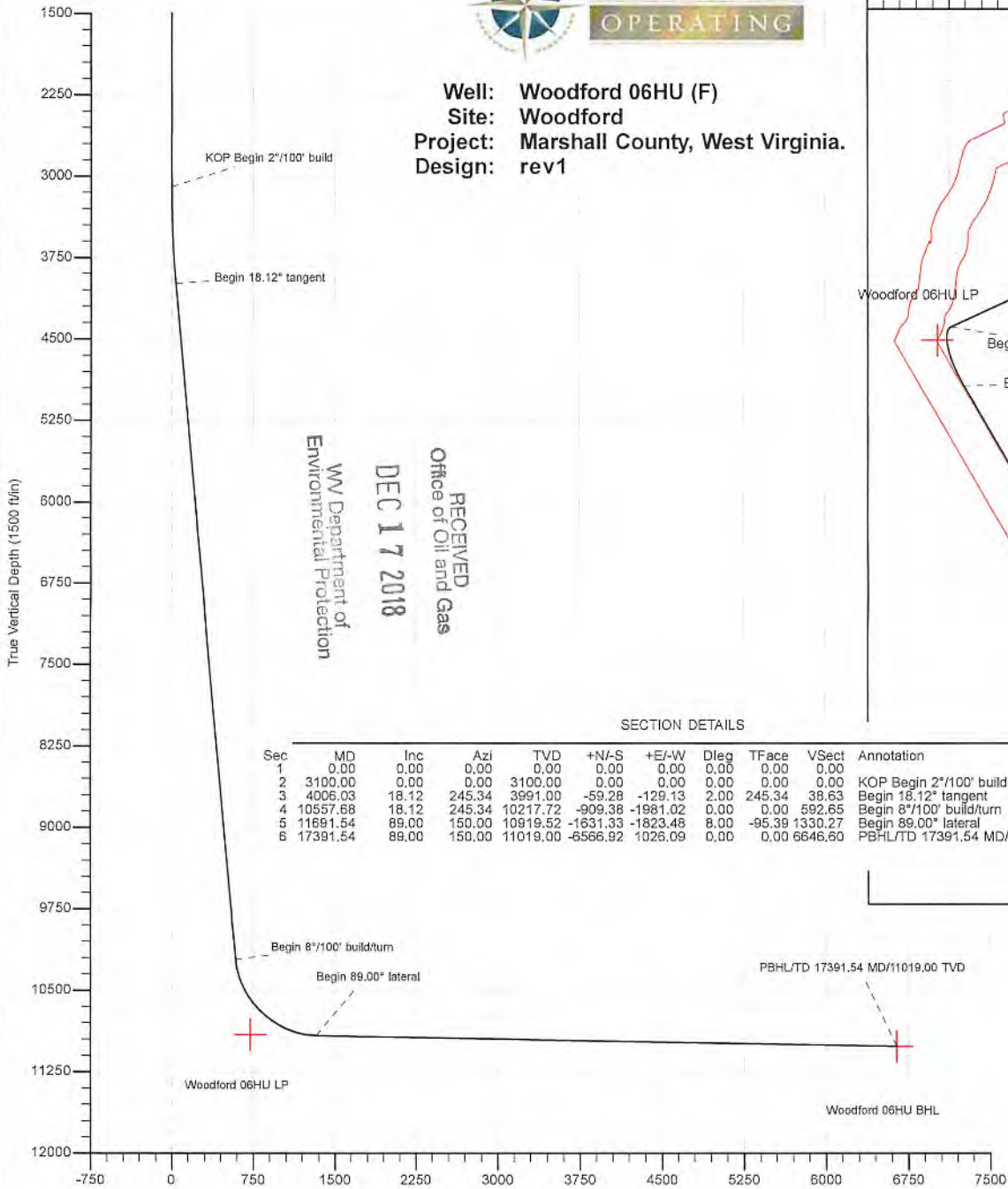
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**TUG HILL**  
OPERATING

Well: Woodford 06HU (F)  
Site: Woodford  
Project: Marshall County, West Virginia.  
Design: rev1

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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	0.00	0.00	
2	3100.00	0.00	0.00	3100.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2°/100' build
3	4006.03	18.12	245.34	3991.00	-59.28	-129.13	2.00	245.34	38.63	Begin 18.12° tangent
4	10557.68	18.12	245.34	10217.72	-909.38	-1981.02	0.00	0.00	592.65	Begin 8°/100' build/turn
5	11691.54	89.00	150.00	10919.52	-1831.33	-1823.48	8.00	-95.39	1330.27	Begin 89.00° lateral
6	17391.54	89.00	150.00	11019.00	-6566.92	1026.09	0.00	0.00	6646.60	PBHL/TD 17391.54 MD/11019.00 TVD

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 @ 1235.00ft

Northing 14455482.96 Easting 1693220.41 Latitude 39.80417668 Longitude -80.81198554

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.77°



Azimuths to Grid North  
True North: -0.12°  
Magnetic North: -8.77°

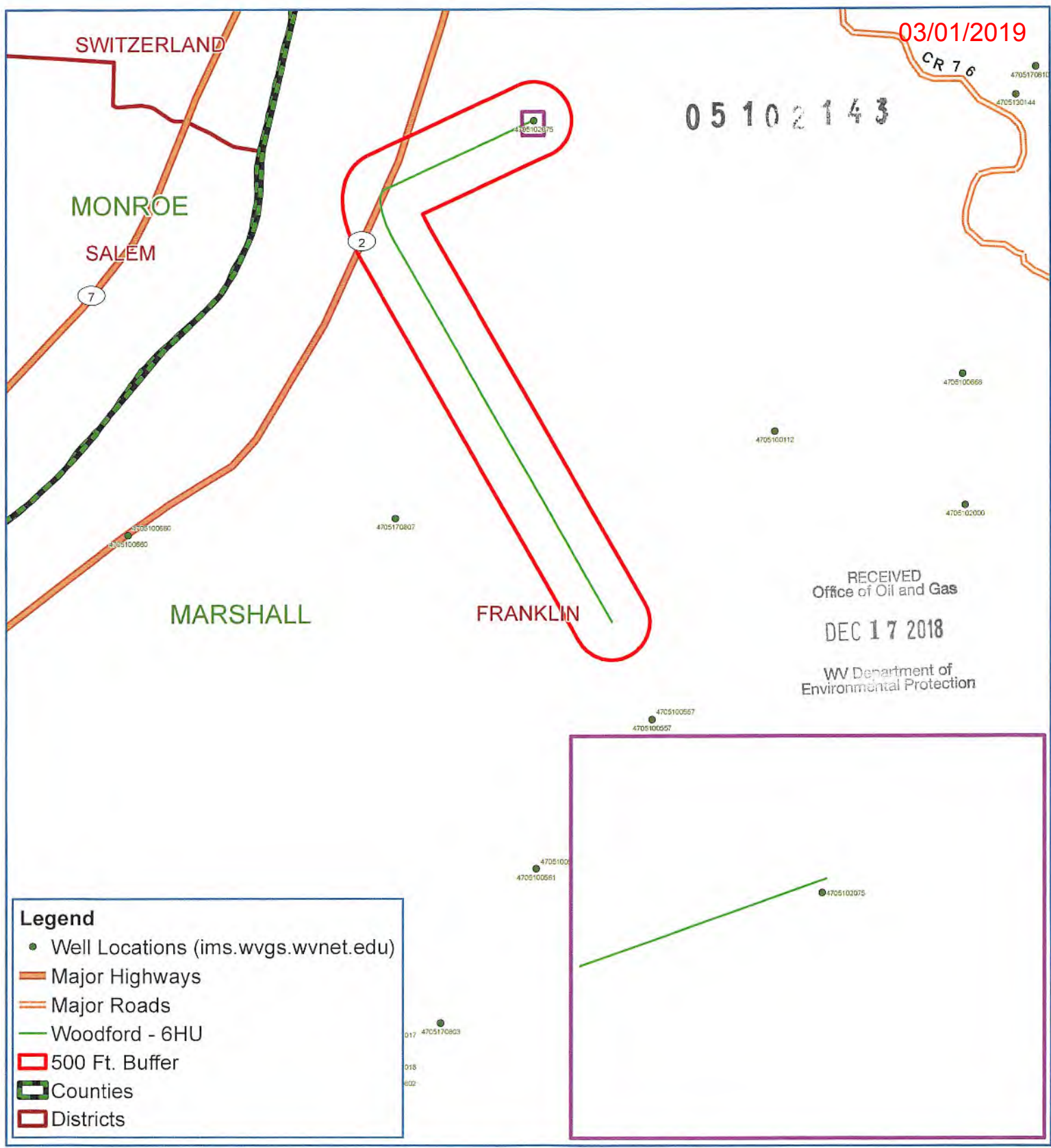
Magnetic Field  
Strength: 52090.3snT  
Dip Angle: 66.91°  
Date: 5/12/2018  
Model: IGRF2015



05102143

03/01/2019

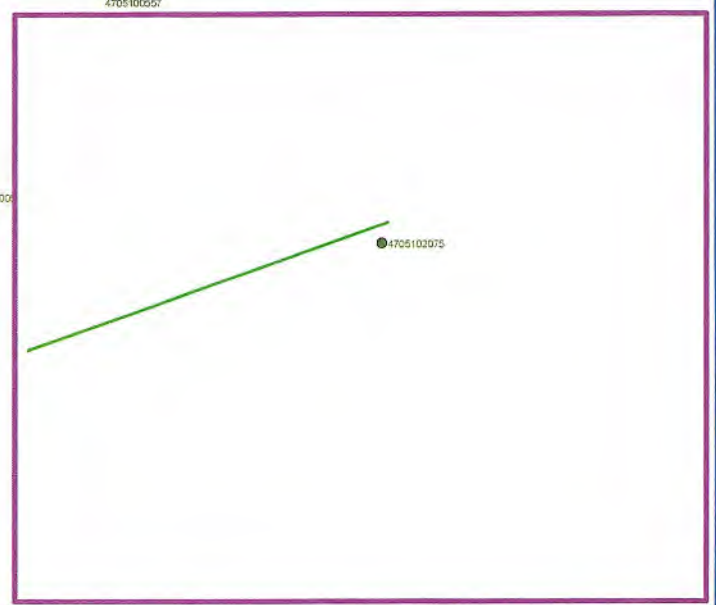
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**Legend**

- Well Locations (ims.wvgs.wvnet.edu)
- Major Highways
- Major Roads
- Woodford - 6HU
- 500 Ft. Buffer
- ▨ Counties
- ▨ Districts



## Woodford - 6HU Franklin District Marshall County, WV



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





Planning Report - Geographic

05102143 03/01/2019

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Woodford 06HU (F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1235.00ft
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1235.00ft
Site:	Woodford	North Reference:	Grid
Well:	Woodford 06HU (F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

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	Woodford				
Site Position:		Northing:	14,455,471.78 usft	Latitude:	39.80414597
From:	Lat/Long	Easting:	1,693,217.70 usft	Longitude:	-80.81199526
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.12 °

Well	Woodford 06HU (F)					
Well Position	+N/-S	0.00 ft	Northing:	14,455,482.96 usft	Latitude:	39.80417668
	+E/-W	0.00 ft	Easting:	1,693,220.41 usft	Longitude:	-80.81198554
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	1,235.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/12/2018	-8.65	66.91	52,090.32619014

Design	rev1				
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	171.12	

Plan Survey Tool Program	Date	5/19/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	17,391.54 rev1 (Original Hole)	MWD	MWD - Standard	

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	0.00	0.00	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,006.03	18.12	245.34	3,991.00	-59.28	-129.13	2.00	2.00	0.00	245.34		
10,557.68	18.12	245.34	10,217.72	-909.38	-1,981.02	0.00	0.00	0.00	0.00		
11,691.54	89.00	150.00	10,919.52	-1,631.33	-1,823.48	8.00	6.25	-8.41	-95.39		
17,391.54	89.00	150.00	11,019.00	-8,566.92	1,026.09	0.00	0.00	0.00	0.00	Woodford 06HU BHL	

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Planning Report - Geographic

05 10 21 43 03/01/2019

Database: DB\_Jul2216dt\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia.  
 Site: Woodford  
 Well: Woodford 06HU (F)  
 Wellbore: Original Hole  
 Design: rev1

Local Co-ordinate Reference: Well Woodford 06HU (F)  
 TVD Reference: GL @ 1235.00ft  
 MD Reference: GL @ 1235.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
100.00	0.00	0.00	100.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
200.00	0.00	0.00	200.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
300.00	0.00	0.00	300.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
400.00	0.00	0.00	400.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
500.00	0.00	0.00	500.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
600.00	0.00	0.00	600.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
700.00	0.00	0.00	700.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
800.00	0.00	0.00	800.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
900.00	0.00	0.00	900.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,455,482.96	1,693,220.41	39.80417668	-80.81198554
<b>KOP Begin 2°/100' build</b>									
3,200.00	2.00	245.34	3,199.98	-0.73	-1.59	14,455,482.24	1,693,218.82	39.80417469	-80.81199119
3,300.00	4.00	245.34	3,299.84	-2.91	-6.34	14,455,480.05	1,693,214.07	39.80416872	-80.81200814
3,400.00	6.00	245.34	3,399.45	-6.55	-14.26	14,455,476.42	1,693,206.15	39.80415878	-80.81203637
3,500.00	8.00	245.34	3,498.70	-11.63	-25.34	14,455,471.33	1,693,195.07	39.80414489	-80.81207585
3,600.00	10.00	245.34	3,597.47	-18.16	-39.55	14,455,464.81	1,693,180.85	39.80412705	-80.81212651
3,700.00	12.00	245.34	3,695.62	-26.12	-56.89	14,455,456.85	1,693,163.51	39.80410529	-80.81218831
3,800.00	14.00	245.34	3,793.06	-35.50	-77.34	14,455,447.46	1,693,143.07	39.80407963	-80.81226117
3,900.00	16.00	245.34	3,889.64	-46.30	-100.86	14,455,436.67	1,693,119.55	39.80405012	-80.81234500
4,000.00	18.00	245.34	3,985.27	-58.50	-127.43	14,455,424.47	1,693,092.98	39.80401677	-80.81243970
4,006.03	18.12	245.34	3,991.00	-59.28	-129.13	14,455,423.69	1,693,091.28	39.80401464	-80.81244575
<b>Begin 18.12° tangent</b>									
4,100.00	18.12	245.34	4,080.31	-71.47	-155.69	14,455,411.50	1,693,064.72	39.80398131	-80.81254042
4,200.00	18.12	245.34	4,175.35	-84.44	-183.95	14,455,398.52	1,693,036.45	39.80394584	-80.81264116
4,300.00	18.12	245.34	4,270.39	-97.42	-212.22	14,455,385.55	1,693,008.19	39.80391037	-80.81274190
4,400.00	18.12	245.34	4,365.43	-110.39	-240.49	14,455,372.57	1,692,979.92	39.80387489	-80.81284264
4,500.00	18.12	245.34	4,460.47	-123.37	-268.75	14,455,359.59	1,692,951.66	39.80383942	-80.81294338
4,600.00	18.12	245.34	4,555.51	-136.34	-297.02	14,455,346.62	1,692,923.39	39.80380395	-80.81304412
4,700.00	18.12	245.34	4,650.55	-149.32	-325.28	14,455,333.64	1,692,895.12	39.80376848	-80.81314486
4,800.00	18.12	245.34	4,745.59	-162.30	-353.55	14,455,320.67	1,692,866.86	39.80373301	-80.81324560
4,900.00	18.12	245.34	4,840.63	-175.27	-381.82	14,455,307.69	1,692,838.59	39.80369754	-80.81334634
5,000.00	18.12	245.34	4,935.67	-188.25	-410.08	14,455,294.72	1,692,810.33	39.80366206	-80.81344708



Planning Report - Geographic

05102143 03/01/2019

Database: DB\_Jul2216dt\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia.  
 Site: Woodford  
 Well: Woodford 06HU (F)  
 Wellbore: Original Hole  
 Design: rev1

Local Co-ordinate Reference: Well Woodford 06HU (F)  
 TVD Reference: GL @ 1235.00ft  
 MD Reference: GL @ 1235.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
5,100.00	18.12	245.34	5,030.71	-201.22	-438.35	14,455,281.74	1,692,782.06	39.80362659	-80.81354782	
5,200.00	18.12	245.34	5,125.76	-214.20	-466.61	14,455,268.77	1,692,753.79	39.80359112	-80.81364856	
5,300.00	18.12	245.34	5,220.80	-227.17	-494.88	14,455,255.79	1,692,725.53	39.80355565	-80.81374930	
5,400.00	18.12	245.34	5,315.84	-240.15	-523.15	14,455,242.82	1,692,697.26	39.80352018	-80.81385004	
5,500.00	18.12	245.34	5,410.88	-253.12	-551.41	14,455,229.84	1,692,669.00	39.80348470	-80.81395078	
5,600.00	18.12	245.34	5,505.92	-266.10	-579.68	14,455,216.87	1,692,640.73	39.80344923	-80.81405152	
5,700.00	18.12	245.34	5,600.96	-279.07	-607.94	14,455,203.89	1,692,612.46	39.80341376	-80.81415225	
5,800.00	18.12	245.34	5,696.00	-292.05	-636.21	14,455,190.92	1,692,584.20	39.80337829	-80.81425299	
5,900.00	18.12	245.34	5,791.04	-305.02	-664.48	14,455,177.94	1,692,555.93	39.80334281	-80.81435373	
6,000.00	18.12	245.34	5,886.08	-318.00	-692.74	14,455,164.96	1,692,527.67	39.80330734	-80.81445447	
6,100.00	18.12	245.34	5,981.12	-330.98	-721.01	14,455,151.99	1,692,499.40	39.80327187	-80.81455521	
6,200.00	18.12	245.34	6,076.16	-343.95	-749.27	14,455,139.01	1,692,471.13	39.80323639	-80.81465595	
6,300.00	18.12	245.34	6,171.20	-356.93	-777.54	14,455,126.04	1,692,442.87	39.80320092	-80.81475669	
6,400.00	18.12	245.34	6,266.24	-369.90	-805.81	14,455,113.06	1,692,414.60	39.80316545	-80.81485742	
6,500.00	18.12	245.34	6,361.28	-382.88	-834.07	14,455,100.09	1,692,386.34	39.80312997	-80.81495816	
6,600.00	18.12	245.34	6,456.32	-395.85	-862.34	14,455,087.11	1,692,358.07	39.80309450	-80.81505890	
6,700.00	18.12	245.34	6,551.36	-408.83	-890.60	14,455,074.14	1,692,329.80	39.80305903	-80.81515964	
6,800.00	18.12	245.34	6,646.40	-421.80	-918.87	14,455,061.16	1,692,301.54	39.80302355	-80.81526038	
6,900.00	18.12	245.34	6,741.44	-434.78	-947.14	14,455,048.19	1,692,273.27	39.80298808	-80.81536111	
7,000.00	18.12	245.34	6,836.48	-447.75	-975.40	14,455,035.21	1,692,245.01	39.80295261	-80.81546185	
7,100.00	18.12	245.34	6,931.52	-460.73	-1,003.67	14,455,022.24	1,692,216.74	39.80291713	-80.81556259	
7,200.00	18.12	245.34	7,026.56	-473.70	-1,031.94	14,455,009.26	1,692,188.47	39.80288166	-80.81566333	
7,300.00	18.12	245.34	7,121.60	-486.68	-1,060.20	14,454,996.29	1,692,160.21	39.80284619	-80.81576406	
7,400.00	18.12	245.34	7,216.64	-499.65	-1,088.47	14,454,983.31	1,692,131.94	39.80281071	-80.81586480	
7,500.00	18.12	245.34	7,311.68	-512.63	-1,116.73	14,454,970.34	1,692,103.68	39.80277524	-80.81596554	
7,600.00	18.12	245.34	7,406.72	-525.61	-1,145.00	14,454,957.36	1,692,075.41	39.80273976	-80.81606627	
7,700.00	18.12	245.34	7,501.76	-538.58	-1,173.27	14,454,944.38	1,692,047.14	39.80270429	-80.81616701	
7,800.00	18.12	245.34	7,596.80	-551.56	-1,201.53	14,454,931.41	1,692,018.88	39.80266881	-80.81626775	
7,900.00	18.12	245.34	7,691.85	-564.53	-1,229.80	14,454,918.43	1,691,990.61	39.80263334	-80.81636848	
8,000.00	18.12	245.34	7,786.89	-577.51	-1,258.06	14,454,905.46	1,691,962.35	39.80259787	-80.81646922	
8,100.00	18.12	245.34	7,881.93	-590.48	-1,286.33	14,454,892.48	1,691,934.08	39.80256239	-80.81656996	
8,200.00	18.12	245.34	7,976.97	-603.46	-1,314.60	14,454,879.51	1,691,905.82	39.80252692	-80.81667069	
8,300.00	18.12	245.34	8,072.01	-616.43	-1,342.86	14,454,866.53	1,691,877.55	39.80249144	-80.81677143	
8,400.00	18.12	245.34	8,167.05	-629.41	-1,371.13	14,454,853.56	1,691,849.28	39.80245597	-80.81687217	
8,500.00	18.12	245.34	8,262.09	-642.38	-1,399.39	14,454,840.58	1,691,821.02	39.80242049	-80.81697290	
8,600.00	18.12	245.34	8,357.13	-655.36	-1,427.66	14,454,827.61	1,691,792.75	39.80238502	-80.81707364	
8,700.00	18.12	245.34	8,452.17	-668.33	-1,455.93	14,454,814.63	1,691,764.49	39.80234954	-80.81717437	
8,800.00	18.12	245.34	8,547.21	-681.31	-1,484.19	14,454,801.66	1,691,736.22	39.80231407	-80.81727511	
8,900.00	18.12	245.34	8,642.25	-694.28	-1,512.46	14,454,788.68	1,691,707.95	39.80227859	-80.81737585	
9,000.00	18.12	245.34	8,737.29	-707.26	-1,540.72	14,454,775.71	1,691,679.69	39.80224311	-80.81747658	
9,100.00	18.12	245.34	8,832.33	-720.24	-1,568.99	14,454,762.73	1,691,651.42	39.80220764	-80.81757732	
9,200.00	18.12	245.34	8,927.37	-733.21	-1,597.26	14,454,749.75	1,691,623.16	39.80217216	-80.81767805	
9,300.00	18.12	245.34	9,022.41	-746.19	-1,625.52	14,454,736.78	1,691,594.89	39.80213669	-80.81777879	
9,400.00	18.12	245.34	9,117.45	-759.16	-1,653.79	14,454,723.80	1,691,566.62	39.80210121	-80.81787952	
9,500.00	18.12	245.34	9,212.49	-772.14	-1,682.05	14,454,710.83	1,691,538.36	39.80206574	-80.81798026	
9,600.00	18.12	245.34	9,307.53	-785.11	-1,710.32	14,454,697.85	1,691,510.09	39.80203026	-80.81808099	
9,700.00	18.12	245.34	9,402.57	-798.09	-1,738.59	14,454,684.88	1,691,481.83	39.80199478	-80.81818173	
9,800.00	18.12	245.34	9,497.61	-811.06	-1,766.85	14,454,671.90	1,691,453.56	39.80195931	-80.81828246	
9,900.00	18.12	245.34	9,592.65	-824.04	-1,795.12	14,454,658.93	1,691,425.29	39.80192383	-80.81838320	
10,000.00	18.12	245.34	9,687.69	-837.01	-1,823.38	14,454,645.95	1,691,397.03	39.80188836	-80.81848393	
10,100.00	18.12	245.34	9,782.73	-849.99	-1,851.65	14,454,632.98	1,691,368.76	39.80185288	-80.81858466	
10,200.00	18.12	245.34	9,877.77	-862.96	-1,879.92	14,454,620.00	1,691,340.50	39.80181740	-80.81868540	
10,300.00	18.12	245.34	9,972.81	-875.94	-1,908.18	14,454,607.03	1,691,312.23	39.80178193	-80.81878613	
10,400.00	18.12	245.34	10,067.85	-888.92	-1,936.45	14,454,594.05	1,691,283.96	39.80174645	-80.81888687	
10,500.00	18.12	245.34	10,162.90	-901.89	-1,964.71	14,454,581.08	1,691,255.70	39.80171097	-80.81898760	





Planning Report - Geographic

05102143

Database: DB\_Jul2216dt\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia.  
 Site: Woodford  
 Well: Woodford 06HU (F)  
 Wellbore: Original Hole  
 Design: rev1

Local Co-ordinate Reference: Well Woodford 06HU (F)  
 TVD Reference: GL @ 1235.00ft  
 MD Reference: GL @ 1235.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,557.68	18.12	245.34	10,217.71	-909.37	-1,981.02	14,454,573.59	1,691,239.39	39.80169051	-80.81904570
<b>Begin 8°/100' build/turm</b>									
10,800.00	18.11	234.44	10,257.95	-915.95	-1,992.35	14,454,567.02	1,691,228.06	39.80167252	-80.81908611
10,700.00	20.37	210.97	10,352.50	-939.95	-2,013.98	14,454,543.02	1,691,206.43	39.80160673	-80.81916330
10,800.00	25.01	193.94	10,444.83	-975.45	-2,028.05	14,454,507.52	1,691,192.36	39.80150932	-80.81921365
10,900.00	30.98	182.52	10,533.15	-1,021.75	-2,034.29	14,454,461.21	1,691,186.12	39.80138219	-80.81923618
11,000.00	37.85	174.64	10,615.74	-1,077.97	-2,032.56	14,454,405.00	1,691,187.85	39.80122780	-80.81923045
11,100.00	44.70	168.89	10,690.99	-1,142.99	-2,022.92	14,454,339.98	1,691,197.50	39.80104917	-80.81919657
11,200.00	51.98	164.43	10,757.44	-1,215.56	-2,005.53	14,454,267.40	1,691,214.88	39.80084977	-80.81913519
11,300.00	59.39	160.78	10,813.78	-1,294.27	-1,980.75	14,454,188.70	1,691,239.66	39.80063348	-80.81904753
11,400.00	66.89	157.66	10,858.93	-1,377.58	-1,949.05	14,454,105.39	1,691,271.36	39.80040452	-80.81893527
11,500.00	74.45	154.87	10,892.01	-1,463.87	-1,911.06	14,454,019.10	1,691,309.35	39.80016733	-80.81880061
11,600.00	82.04	152.28	10,912.37	-1,551.46	-1,867.50	14,453,931.51	1,691,352.91	39.79992654	-80.81864617
11,691.54	89.00	150.00	10,919.52	-1,631.33	-1,823.48	14,453,851.64	1,691,396.93	39.79970696	-80.81849001
<b>Begin 89.00° lateral</b>									
11,700.00	89.00	150.00	10,919.67	-1,638.65	-1,819.25	14,453,844.31	1,691,401.16	39.79968682	-80.81847500
11,800.00	89.00	150.00	10,921.41	-1,725.24	-1,769.26	14,453,757.72	1,691,451.15	39.79944874	-80.81829764
11,900.00	89.00	150.00	10,923.16	-1,811.83	-1,719.27	14,453,671.14	1,691,501.15	39.79921066	-80.81812027
12,000.00	89.00	150.00	10,924.90	-1,898.42	-1,669.27	14,453,584.55	1,691,551.14	39.79897259	-80.81794291
12,100.00	89.00	150.00	10,926.65	-1,985.01	-1,619.28	14,453,497.96	1,691,601.13	39.79873451	-80.81776555
12,200.00	89.00	150.00	10,928.40	-2,071.60	-1,569.29	14,453,411.37	1,691,651.12	39.79849643	-80.81758819
12,300.00	89.00	150.00	10,930.14	-2,158.19	-1,519.30	14,453,324.78	1,691,701.12	39.79825835	-80.81741083
12,400.00	89.00	150.00	10,931.89	-2,244.78	-1,469.30	14,453,238.19	1,691,751.11	39.79802028	-80.81723347
12,500.00	89.00	150.00	10,933.63	-2,331.37	-1,419.31	14,453,151.60	1,691,801.10	39.79778220	-80.81705611
12,600.00	89.00	150.00	10,935.38	-2,417.96	-1,369.32	14,453,065.01	1,691,851.09	39.79754412	-80.81687875
12,700.00	89.00	150.00	10,937.12	-2,504.55	-1,319.33	14,452,978.42	1,691,901.08	39.79730604	-80.81670140
12,800.00	89.00	150.00	10,938.87	-2,591.14	-1,269.33	14,452,891.83	1,691,951.08	39.79706796	-80.81652405
12,900.00	89.00	150.00	10,940.61	-2,677.73	-1,219.34	14,452,805.24	1,692,001.07	39.79682988	-80.81634669
13,000.00	89.00	150.00	10,942.36	-2,764.31	-1,169.35	14,452,718.65	1,692,051.06	39.79659180	-80.81616934
13,100.00	89.00	150.00	10,944.10	-2,850.90	-1,119.36	14,452,632.07	1,692,101.05	39.79635372	-80.81599199
13,200.00	89.00	150.00	10,945.85	-2,937.49	-1,069.36	14,452,545.48	1,692,151.05	39.79611564	-80.81581464
13,300.00	89.00	150.00	10,947.59	-3,024.08	-1,019.37	14,452,458.89	1,692,201.04	39.79587756	-80.81563730
13,400.00	89.00	150.00	10,949.34	-3,110.67	-969.38	14,452,372.30	1,692,251.03	39.79563948	-80.81545995
13,500.00	89.00	150.00	10,951.08	-3,197.26	-919.39	14,452,285.71	1,692,301.02	39.79540140	-80.81528261
13,600.00	89.00	150.00	10,952.83	-3,283.85	-869.39	14,452,199.12	1,692,351.01	39.79516332	-80.81510526
13,700.00	89.00	150.00	10,954.57	-3,370.44	-819.40	14,452,112.53	1,692,401.01	39.79492524	-80.81492792
13,800.00	89.00	150.00	10,956.32	-3,457.03	-769.41	14,452,025.94	1,692,451.00	39.79468716	-80.81475058
13,900.00	89.00	150.00	10,958.06	-3,543.62	-719.42	14,451,939.35	1,692,500.99	39.79444907	-80.81457324
14,000.00	89.00	150.00	10,959.81	-3,630.21	-669.43	14,451,852.76	1,692,550.98	39.79421099	-80.81439590
14,100.00	89.00	150.00	10,961.55	-3,716.80	-619.43	14,451,766.17	1,692,600.98	39.79397291	-80.81421856
14,200.00	89.00	150.00	10,963.30	-3,803.39	-569.44	14,451,679.58	1,692,650.97	39.79373483	-80.81404123
14,300.00	89.00	150.00	10,965.05	-3,889.98	-519.45	14,451,593.00	1,692,700.96	39.79349674	-80.81386389
14,400.00	89.00	150.00	10,966.79	-3,976.57	-469.46	14,451,506.41	1,692,750.95	39.79325866	-80.81368656
14,500.00	89.00	150.00	10,968.54	-4,063.16	-419.46	14,451,419.82	1,692,800.95	39.79302058	-80.81350922
14,600.00	89.00	150.00	10,970.28	-4,149.74	-369.47	14,451,333.23	1,692,850.94	39.79278249	-80.81333189
14,700.00	89.00	150.00	10,972.03	-4,236.33	-319.48	14,451,246.64	1,692,900.93	39.79254441	-80.81315456
14,800.00	89.00	150.00	10,973.77	-4,322.92	-269.49	14,451,160.05	1,692,950.92	39.79230632	-80.81297723
14,900.00	89.00	150.00	10,975.52	-4,409.51	-219.49	14,451,073.46	1,693,000.91	39.79206824	-80.81279991
15,000.00	89.00	150.00	10,977.26	-4,496.10	-169.50	14,450,986.87	1,693,050.91	39.79183015	-80.81262258
15,100.00	89.00	150.00	10,979.01	-4,582.69	-119.51	14,450,900.28	1,693,100.90	39.79159207	-80.81244525
15,200.00	89.00	150.00	10,980.75	-4,669.28	-69.52	14,450,813.69	1,693,150.89	39.79135398	-80.81226793
15,300.00	89.00	150.00	10,982.50	-4,755.87	-19.52	14,450,727.10	1,693,200.88	39.79111590	-80.81209061
15,400.00	89.00	150.00	10,984.24	-4,842.46	30.47	14,450,640.51	1,693,250.88	39.79087781	-80.81191328
15,500.00	89.00	150.00	10,985.99	-4,929.05	80.46	14,450,553.93	1,693,300.87	39.79063972	-80.81173596



DEC 17 2018

WV Department of  
Environmental Protection

Database: DB\_Jul2216dt\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia.  
 Site: Woodford  
 Well: Woodford 06HU (F)  
 Wellbore: Original Hole  
 Design: rev1

Local Co-ordinate Reference: Well Woodford 06HU (F)  
 TVD Reference: GL @ 1235.00ft  
 MD Reference: GL @ 1235.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,600.00	89.00	150.00	10,987.73	-5,015.64	130.45	14,450,467.34	1,693,350.86	39.79040164	-80.81155865
15,700.00	89.00	150.00	10,989.48	-5,102.23	180.45	14,450,380.75	1,693,400.85	39.79016355	-80.81138133
15,800.00	89.00	150.00	10,991.22	-5,188.82	230.44	14,450,294.16	1,693,450.85	39.78992546	-80.81120401
15,900.00	89.00	150.00	10,992.97	-5,275.41	280.43	14,450,207.57	1,693,500.84	39.78968737	-80.81102669
16,000.00	89.00	150.00	10,994.71	-5,362.00	330.42	14,450,120.98	1,693,550.83	39.78944929	-80.81084938
16,100.00	89.00	150.00	10,996.46	-5,448.58	380.41	14,450,034.39	1,693,600.82	39.78921120	-80.81067207
16,200.00	89.00	150.00	10,998.20	-5,535.17	430.41	14,449,947.80	1,693,650.81	39.78897311	-80.81049476
16,300.00	89.00	150.00	10,999.95	-5,621.76	480.40	14,449,861.21	1,693,700.81	39.78873502	-80.81031744
16,400.00	89.00	150.00	11,001.70	-5,708.35	530.39	14,449,774.62	1,693,750.80	39.78849693	-80.81014013
16,500.00	89.00	150.00	11,003.44	-5,794.94	580.38	14,449,688.03	1,693,800.79	39.78825884	-80.80996283
16,600.00	89.00	150.00	11,005.19	-5,881.53	630.36	14,449,601.44	1,693,850.78	39.78802075	-80.80978552
16,700.00	89.00	150.00	11,006.93	-5,968.12	680.37	14,449,514.86	1,693,900.78	39.78778266	-80.80960821
16,800.00	89.00	150.00	11,008.68	-6,054.71	730.36	14,449,428.27	1,693,950.77	39.78754457	-80.80943091
16,900.00	89.00	150.00	11,010.42	-6,141.30	780.35	14,449,341.68	1,694,000.76	39.78730648	-80.80925361
17,000.00	89.00	150.00	11,012.17	-6,227.89	830.35	14,449,255.09	1,694,050.75	39.78706839	-80.80907630
17,100.00	89.00	150.00	11,013.91	-6,314.48	880.34	14,449,168.50	1,694,100.74	39.78683030	-80.80889900
17,200.00	89.00	150.00	11,015.66	-6,401.07	930.33	14,449,081.91	1,694,150.74	39.78659221	-80.80872170
17,300.00	89.00	150.00	11,017.40	-6,487.66	980.32	14,448,995.32	1,694,200.73	39.78635412	-80.80854440
17,391.54	89.00	150.00	11,019.00	-6,566.92	1,026.09	14,448,916.05	1,694,246.49	39.78613616	-80.80838210

PBHL/TD 17391.54 MD/11019.00 TVD

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Woodford 06HU LP - hit/miss target - Shape - Point	0.00	0.00	10,908.00	-1,073.90	-2,145.49	14,454,409.07	1,691,074.92	39.80123960	-80.81963249
- plan misses target center by 246.80ft at 11172.86ft MD (10740.35 TVD, -1195.20 N, -2011.00 E)									
Woodford 06HU BHL - plan hits target center - Point	0.00	0.00	11,019.00	-6,566.92	1,026.09	14,448,916.05	1,694,246.49	39.78613616	-80.80838210

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
3,100.00	3,100.00	0.00	0.00	KOP Begin 2°/100' build
4,006.03	3,991.00	-59.28	-129.13	Begin 18.12° tangent
10,557.68	10,217.71	-909.37	-1,981.02	Begin 8°/100' build/turn
11,691.54	10,919.52	-1,631.33	-1,823.48	Begin 89.00° lateral
17,391.54	11,019.00	-6,566.92	1,026.09	PBHL/TD 17391.54 MD/11019.00 TVD

WW-9  
(4/16)

05 10 2 1 4 3 03/01/2019

API Number 47 - 051 - \_\_\_\_\_  
Operator's Well No. Woodford 6HU

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) French Creek - Ohio River Quadrangle Powhatan Point 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 \_\_\_\_\_)

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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 Jim Pancake

Company Official (Typed Name) Jim Pancake

Company Official Title Vice President - Geoscience

Subscribed and sworn before me this 16 day of NOVEMBER, 2018

Maureen A Stead

Notary Public

My commission expires 1/28/19

COMMONWEALTH OF PENNSYLVANIA

NOTARIAL SEAL  
MAUREEN A STEAD  
Notary Public

CECIL TWP, WASHINGTON COUNTY  
My Commission Expires Jan 28, 2019

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 44.34 acres Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Orchard Grass	12
Spring Oats	96	Ladino	3
		White Clover	2

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *[Signature]*

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

Title: Oil and Gas Inspector

Date: 11/21/18

Field Reviewed? (  ) Yes (  ) No

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Environmental Protection

05101143

WW-9

# PROPOSED WOODFORD 6HU SHEET 1

SUPPLEMENT PG 1

REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.

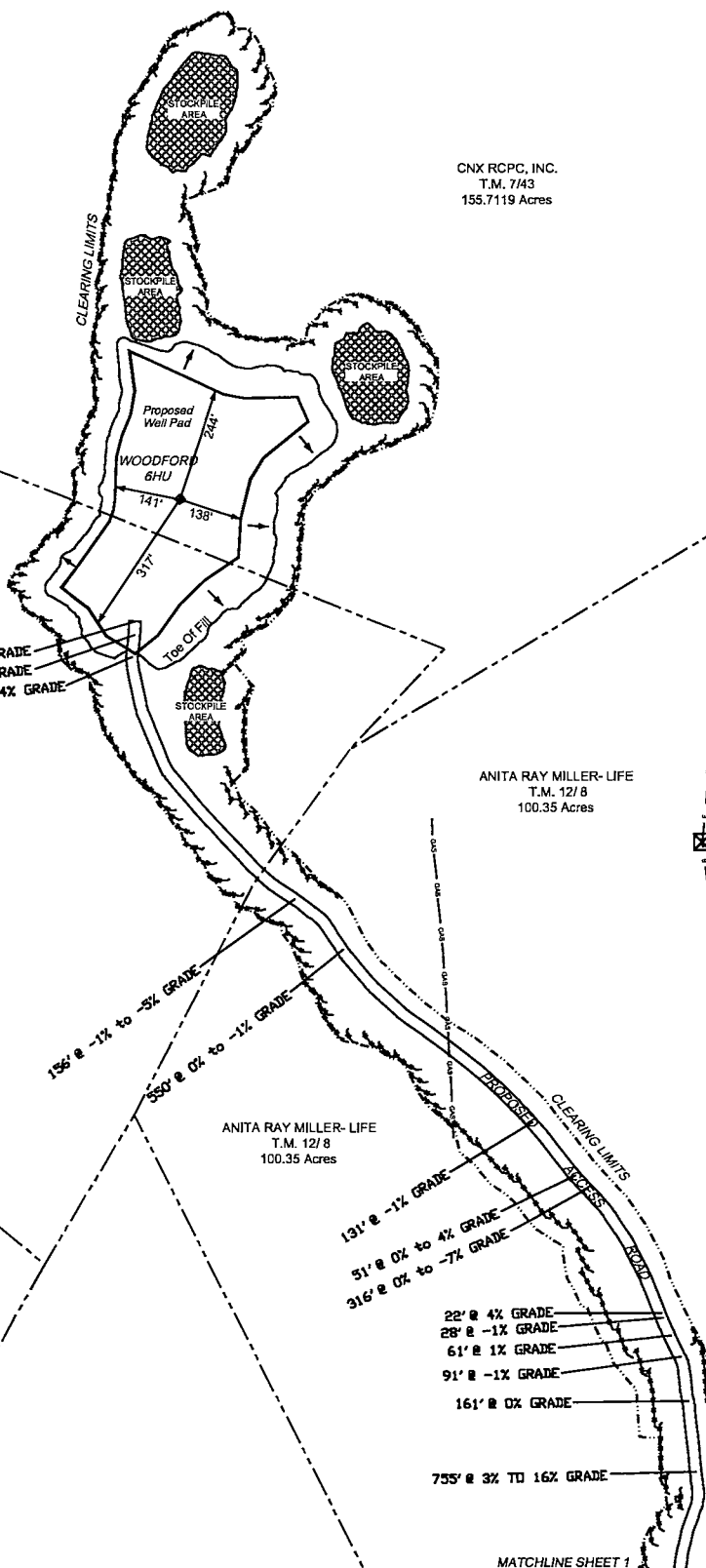
INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.

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

TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

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

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



CNX RCPC, INC.  
T.M. 7/43  
155.7119 Acres

CNX RCPC, LLC  
T.M. 12/ 2  
60.68 Acres

ANITA RAY MILLER- LIFE  
T.M. 12/ 8  
100.35 Acres

CNX RCPC, LLC  
T.M. 12/ 3  
62.30 Acres

ANITA RAY MILLER- LIFE  
T.M. 12/ 8  
100.35 Acres

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DRAWING NOT  
TO SCALE

OVERHEAD POWERLINE

**LEGEND**

- Note:
- ⊙ — Denotes existing culvert with appropriate sediment outlet control (Rip Rap splash pad).
  - Silt Fence and or Sediment and Erosion Control Measure.
  - Surface Boundary

MATCHLINE SHEET 1  
MATCHLINE SHEET 2

DATE: 07-27-2018

PROJECT NO: 494510851

DRAWN BY: J.A.H.

WW-9

# PROPOSED WOODFORD 6HU SHEET 2

MATCHLINE SHEET 1  
MATCHLINE SHEET 2

SUPPLEMENT PG 1

REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.

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

ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED. TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

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

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

ROBERT WM RIGGENBACH ET UX  
T.M. 12/ 7  
104.231 Acres

LINDA HAMILTON ET AL  
T.M. 12/ 13  
41.867 Acres

RAYMOND K MILLER  
T.M. 12/ 7.2  
4.66 Acres

RAYMOND K MILLER  
T.M. 12/ 7.1  
1.609 Acres

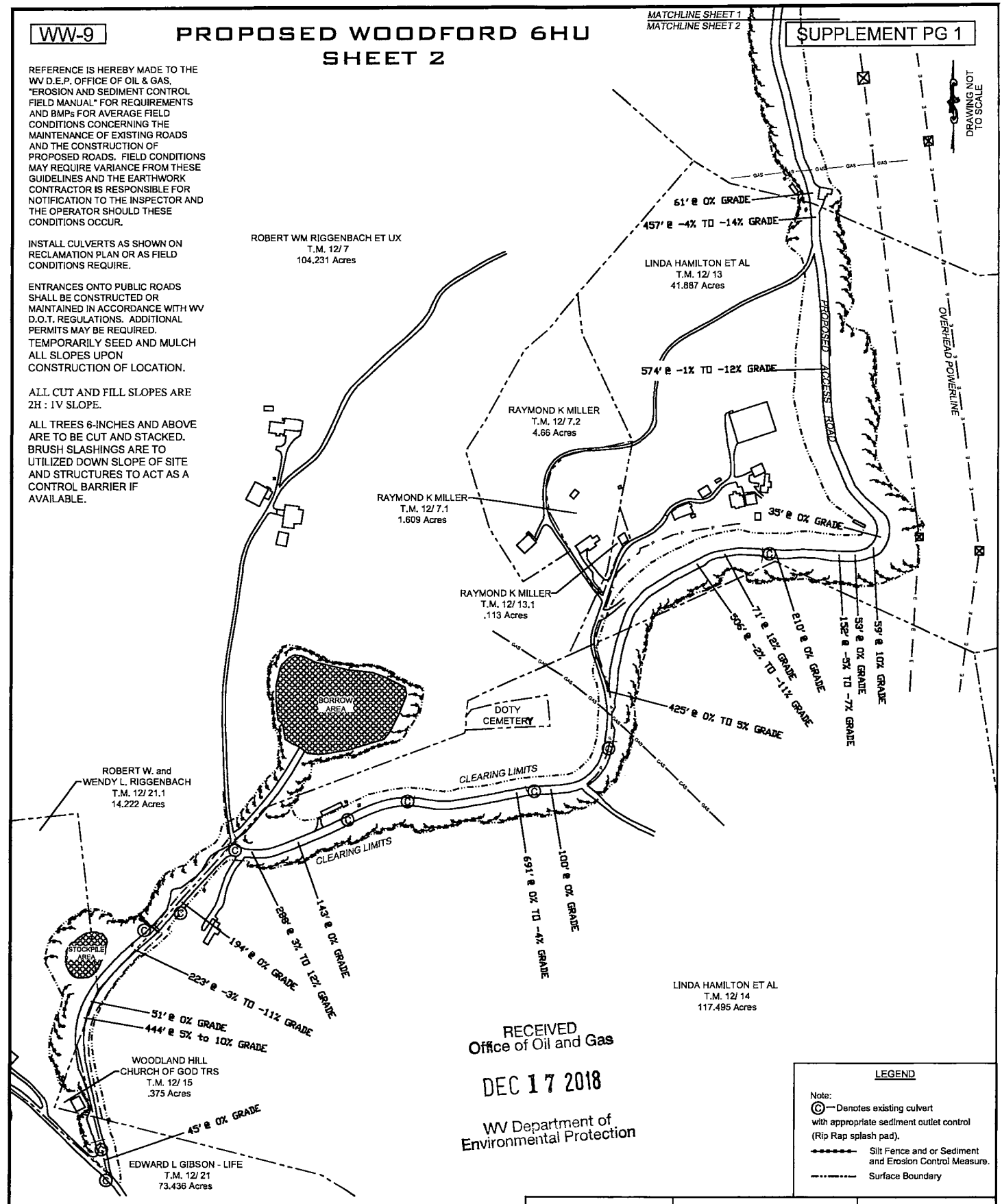
RAYMOND K MILLER  
T.M. 12/ 13.1  
.113 Acres

ROBERT W. and  
WENDY L. RIGGENBACH  
T.M. 12/ 21.1  
14.222 Acres

LINDA HAMILTON ET AL  
T.M. 12/ 14  
117.495 Acres

WOODLAND HILL  
CHURCH OF GOD TRS  
T.M. 12/ 15  
.375 Acres

EDWARD L GIBSON - LIFE  
T.M. 12/ 21  
73.436 Acres



DRAWING NOT  
TO SCALE

OVERHEAD POWERLINE

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**DEC 17 2018**  
WV Department of  
Environmental Protection

**LEGEND**

Note:  
 (C) --- Denotes existing culvert with appropriate sediment outlet control (Rip Rap splash pad).  
 - - - - - Silt Fence and or Sediment and Erosion Control Measure.  
 - - - - - Surface Boundary

05 10 2 1 4 3



# Well Site Safety Plan

## Tug Hill Operating, LLC

*JUC*  
*11/21/18*

Well Name: Woodford 6HU

Pad Location: Woodford

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

NORTHING -4,406,040.02

EASTING -516,094.61

November 2018

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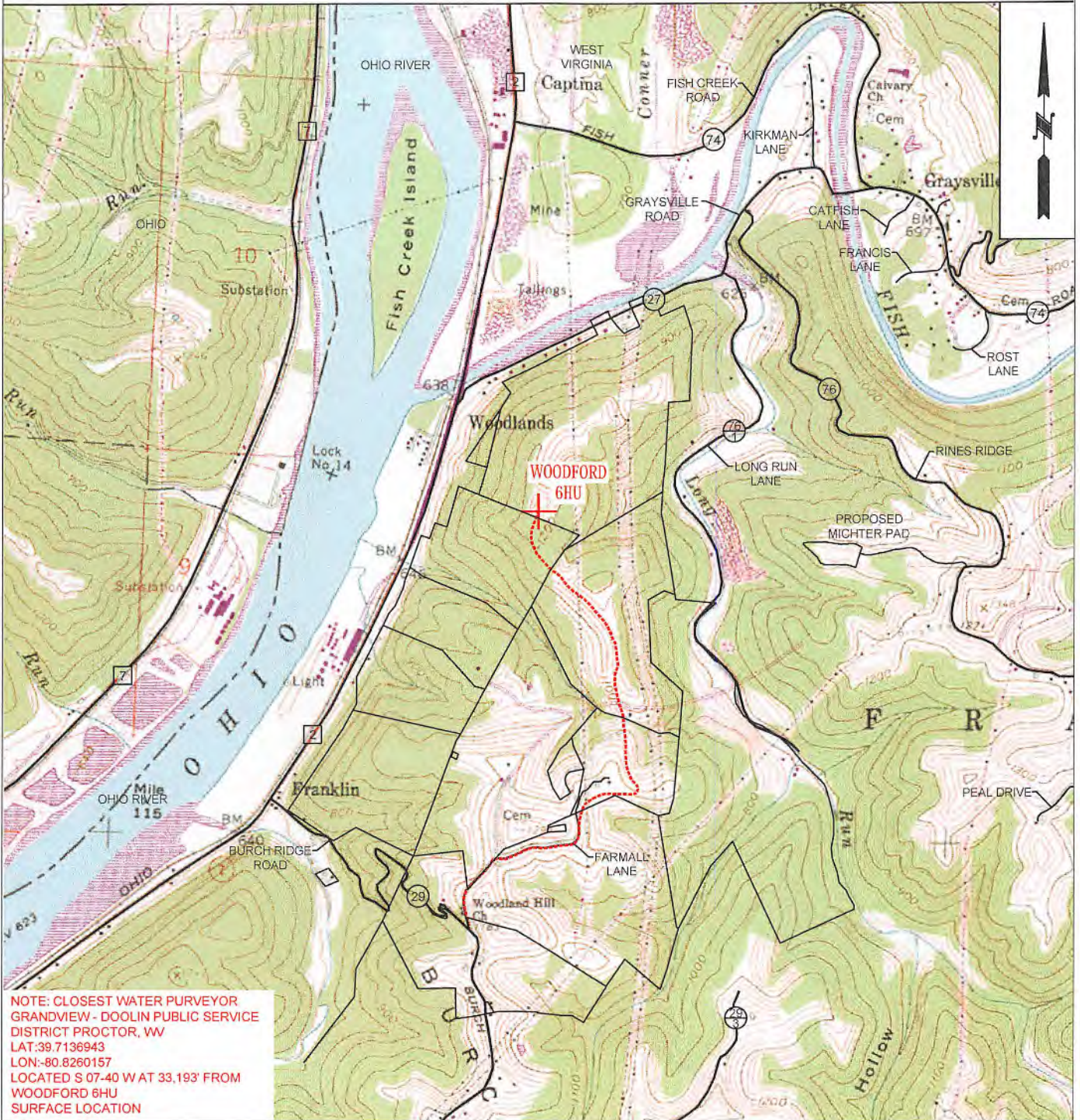
WW-9

DEC 17 2018


**PROPOSED  
WOODFORD 6HU**

SUPPLEMENT PG 2

WV Department of  
Environmental Protection



NOTE: CLOSEST WATER PURVEYOR  
GRANDVIEW - DOOLIN PUBLIC SERVICE  
DISTRICT PROCTOR, WV  
LAT: 39.7136943  
LON: -80.8260157  
LOCATED S 07-40 W AT 33,193' FROM  
WOODFORD 6HU  
SURFACE LOCATION

 <p><b>TUG HILL OPERATING</b></p>	<b>OPERATOR</b>	494510851	<b>TOPO SECTION</b>	<b>LEASE NAME</b>
	TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		POWHATAN POINT 7.5'	WOODFORD
			<b>SCALE:</b>	<b>DATE:</b>
			1" = 2000'	DATE: 07-27-2018



# WOODFORD LEASE WELL 6HU 456.5281 ± ACRES

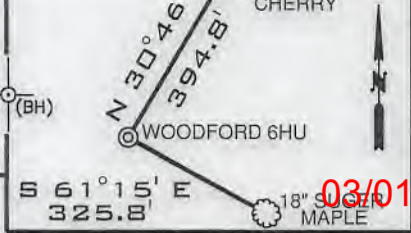
TOP HOLE LATITUDE: 39°50'00"  
BOTTOM HOLE LATITUDE: 39°47'30"

DETAIL SKETCH "A"  
SCALE 1"=100'

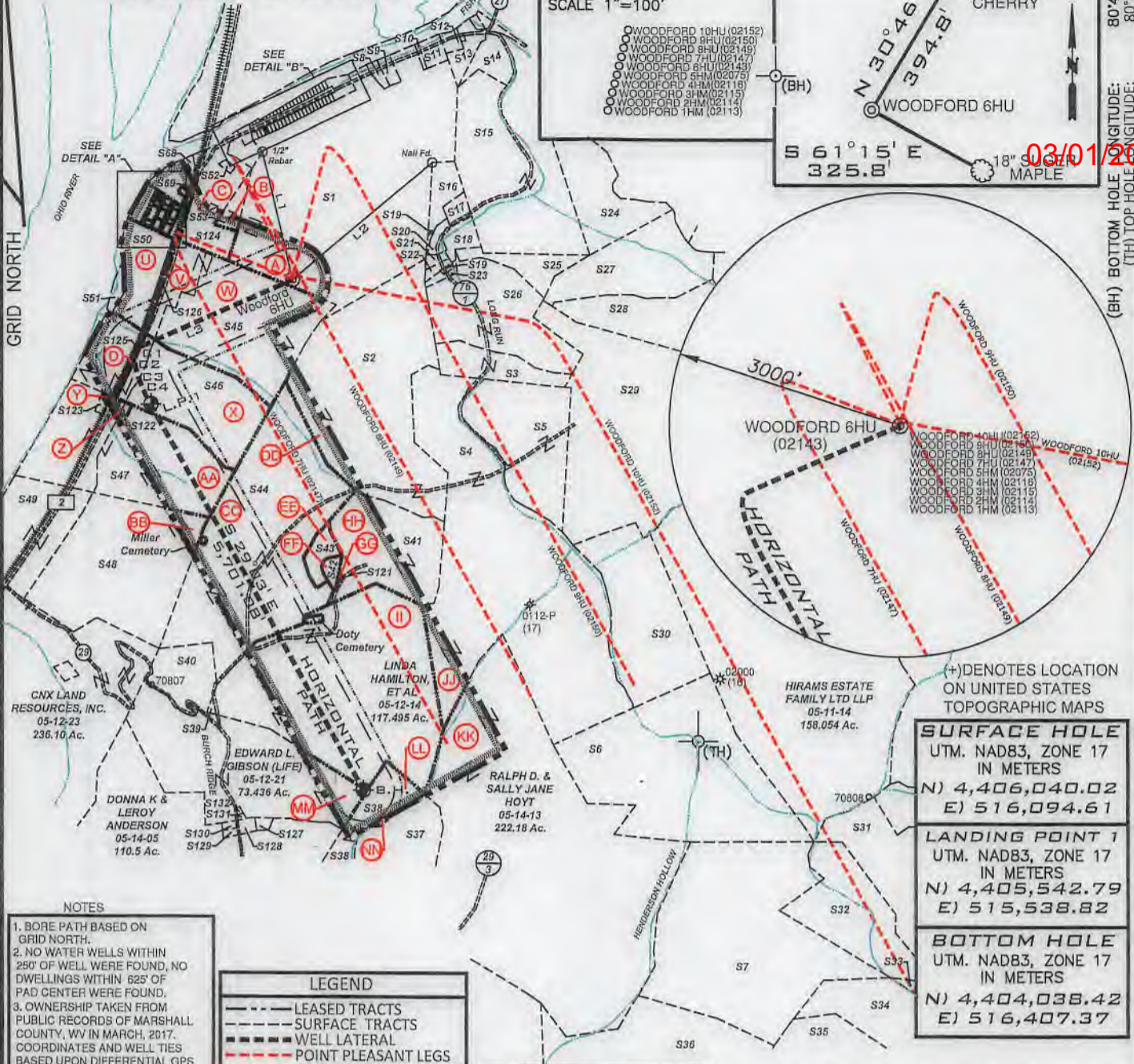
REFERENCES

SCALE 1"=400'

20" BLACK CHERRY



03/01/2019



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

**SURFACE HOLE**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,406,040.02  
E) 516,094.61

**LANDING POINT 1**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,405,542.79  
E) 515,538.82

**BOTTOM HOLE**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,404,038.42  
E) 516,407.37

- NOTES**
- BORE PATH BASED ON GRID NORTH.
  - NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 825' OF PAD CENTER WERE FOUND.
  - OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 2017. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
  - WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
  - ALL DEEP WELLS WITHIN 3,000' OF LATERAL ARE SHOWN ON THIS PLAT.

**LEGEND**

- LEASE TRACTS
- - - SURFACE TRACTS
- WELL LATERAL
- - - POINT PLEASANT LEGS
- 400' BORE PATH OFFSET
- 500' WELL BORE OFFSET
- UNIT BOUNDARY
- (A) LEASE # (SEE 6A1 FORM)

LINE	BEARING	DISTANCE
L1	N 13°20' W	1690.04'
L2	N 50°14' E	2368.61'
L3	S 66°18' W	2180.51'

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 42°05' W	62.31'	81.44'	63.94'
C2	S 08°37' W	93.26'	235.51'	93.88'
C3	S 10°09' E	209.56'	843.45'	210.10'
C4	S 23°23' E	414.00'	1976.54'	414.76'

FILE NUMBER \_\_\_\_\_

DRAWING NUMBER WOODFORD\_6HU\_REV1

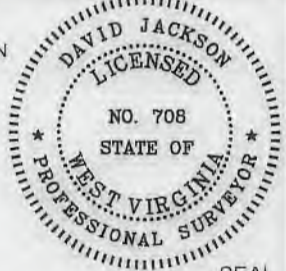
SCALE 1" = 2000'

MINIMUM DEGREE OF ACCURACY 1/200

PROVEN SOURCE OF ELEVATION SUBMETER MAPPING GRADE GPS

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

*David L Jackson*



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



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

DATE: DECEMBER 11, 2018

REVISED DATE: JANUARY 30, 2019

OPERATORS WELL NO. Woodford 6HU

API WELL NO. 47-051-02143 H6A

STATE COUNTY PERMIT

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

LOCATION ELEVATION 1233.51' WATERSHED (HUC 10) FRENCH CREEK - OHIO RIVER

DISTRICT FRANKLIN COUNTY MARSHALL

QUADRANGLE POWHATAN POINT 7.5' LEASE NUMBER SEE WW-6A1 Form

SURFACE OWNER CNX LAND, LLC ACREAGE 155.7119

OIL & GAS ROYALTY OWNER SEE WW-6A1 FORM LEASE ACREAGE 456.5281

PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_  
PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE (SPECIFY) \_\_\_\_\_

TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,130' TMD: 17,392'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

form ww6

(TH) 10,641'

(BH) 2,041'

(BH) BOTTOM HOLE ELEVATION: 80°47'30"

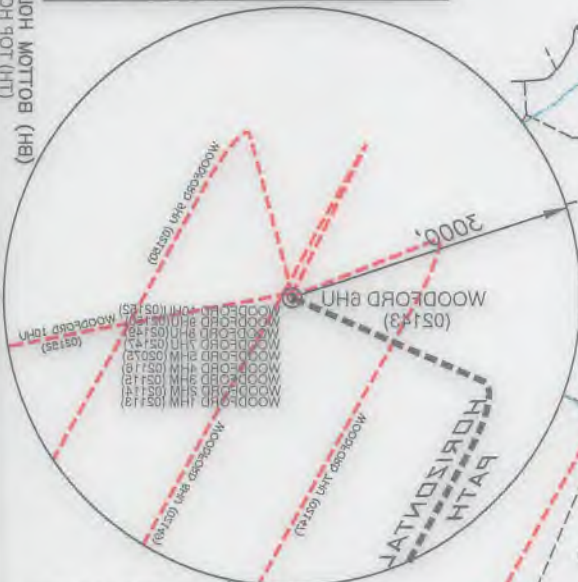
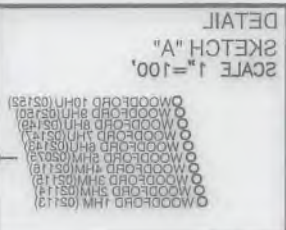
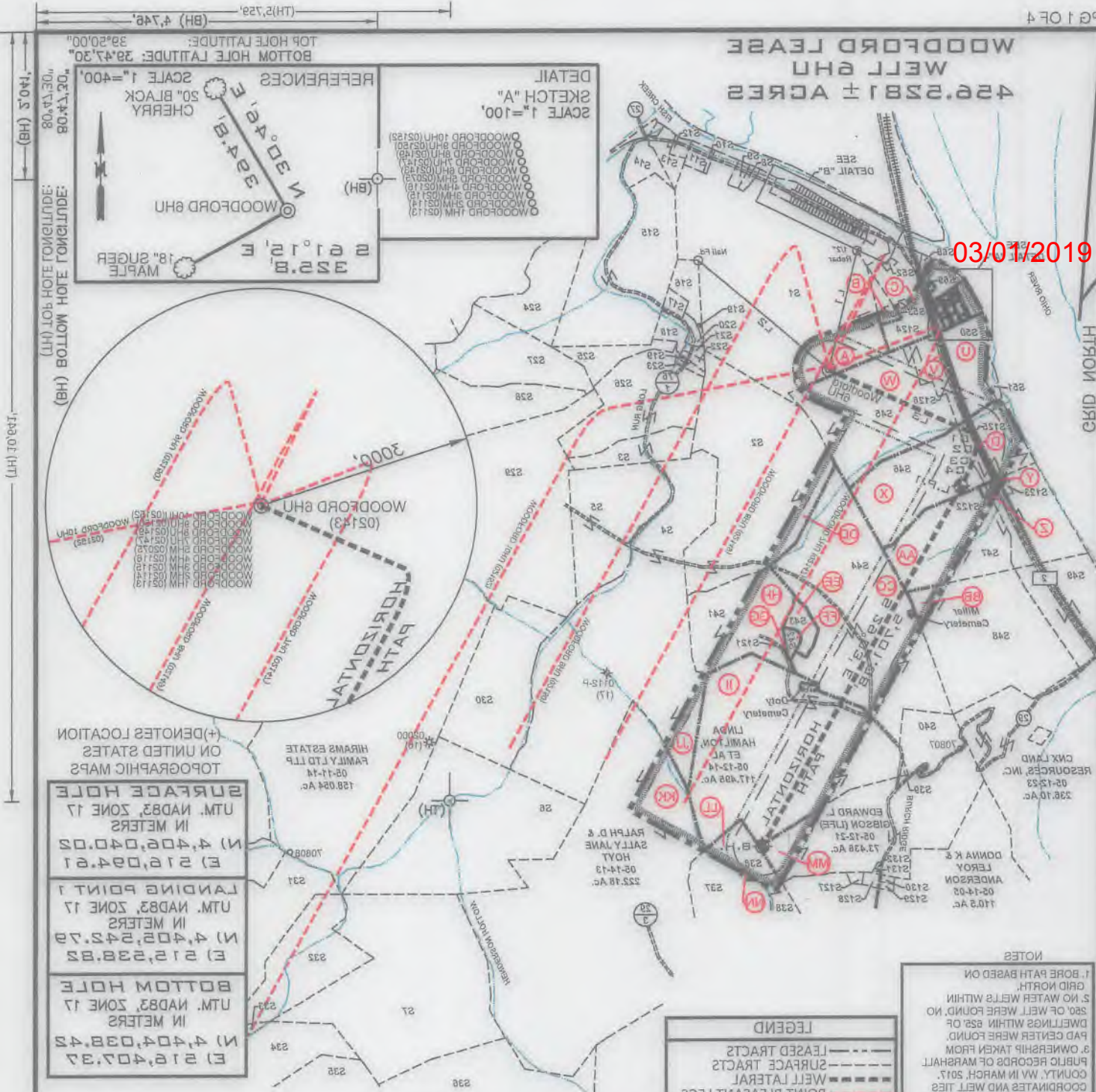
(TH) TOP HOLE ELEVATION: 80°47'30"

COUNTY NAME PERMIT

# WOODFORD LEASE WELL 8HU 456.5281 ± ACRES

03/01/2019

GRID NORTH



CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 42.02° W	85.31	81.44	63.94
C2	S 08.37° W	93.58	235.81	93.88
C3	S 10.08° E	208.88	842.45	270.10
C4	S 23.23° E	414.00	1238.54	414.78

LINE	BEARING	DISTANCE
L1	N 13.20° W	1690.04
L2	N 50.14° E	2388.81
L3	S 68.18° W	2180.51

### NOTES

- BORE PATH BASED ON GRID NORTH.
- NO WATER WELLS WITHIN 250' OF WELL WERE FOUND. NO DWELLINGS WITHIN 850' OF PAD CENTER WERE FOUND.
- OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, W. IN MARSH, 2017.
- COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
- WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
- ALL DEEP WELLS WITHIN 3,000' OF LATERAL ARE SHOWN ON THIS PLAN.

### LEGEND

- LEASSED TRACTS
- SURFACE TRACTS
- WELL LATERAL
- POINT PLEASANT LEGS
- 400' BORE PATH OFFSET
- 200' WELL BORE OFFSET
- UNIT BOUNDARY
- LEASE # (SEE 6A1 FORM)

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION



*David Jackson*

JACKSON SURVEYING INC.  
P.O. Box 1460  
Clarksburg, WV 26302  
304-623-8881



FILE NUMBER	
DRAWING NUMBER	WOODFORD_8HU_REV1
SCALE	1" = 2000'
MINIMUM DEGREE OF ACCURACY	1/200
PROVEN SOURCE OF ELEVATION	SUBMETER MAPPING
GRADE GPS	

DATE: DECEMBER 11, 2018  
REVISED DATE: JANUARY 30, 2019  
OPERATORS WELL NO. Woodford 8HU

APR WELL NO. 47-051-02143444 PERMIT

STATE COUNTY MARSHALL

LOCATION ELEVATION 1233.51' WATERSHED (HUC 10) FRENCH CREEK - OHIO RIVER

DISTRICT FRANKLIN

QUADRANGLE POWHATAN POINT 7.5, LEASE NUMBER SEE WW-8A1 Form

SURFACE OWNER CNX LAND, LLC

OIL & GAS ROYALTY OWNER SEE WW-6A1 FORM

PROPOSED WORK: DRILL X CONVERT X DRILL DEEPER X REDRILL X FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION X

PERFORM NEW FORMATION \_\_\_\_\_ OTHER PHYSICAL CHANGE (SPECIFY) \_\_\_\_\_

TARGET FORMATION POINT PLEASANT

WELL OPERATOR THE 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

ESTIMATED DEPTH TVD: 11,130' TMD: 17,392'

PLUG & ABANDON \_\_\_\_\_ CLEAN OUT & REPLUG \_\_\_\_\_

PERMIT

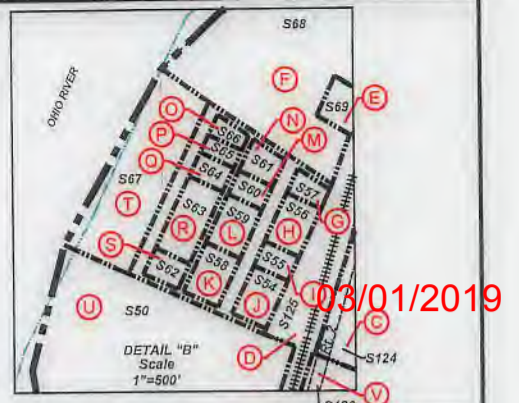
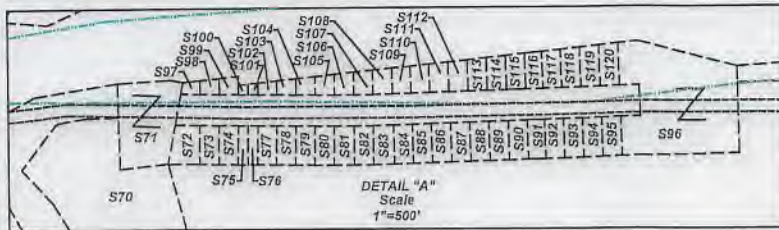
COUNTY NAME

AGREEMENT

LEASE ACREAGE 456.5281

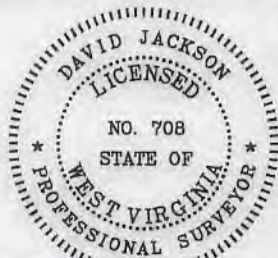
ACREAGE 152.7119

**WOODFORD LEASE  
WELL 6HU  
456.5281 ± ACRES**



Number	TAX MAP-PARCEL	SURFACE OWNER	ACRES
S1 (A)	05-07-43	CNX LAND, LLC	155.7119
S2 (D)	05-12-08	Anita Rae Miller (Life)	100.35
S3	05-12-10	Consolidation Coal Co./ Murray Energy	13.76
S4 (J)	05-12-12.1	Lionel L. Persinger, Et Ux.	148.09
S5	05-12-12	Lionel L. Persinger, Et Ux.	45
S6	05-11-15	Lionel L. Persinger, Et Ux.	93
S7	05-15-01	Marcus Sharp & David Schlabach, Hrs.	121
S8	05-7B-49	Cassidy Rain Carpenter	1.1441
S9	05-7B-48	Cassidy Rain Carpenter	1.325
S10	05-07-43.3	M. Frank Mason	0.327
S11	05-07-43.2	M. Frank Mason	1.36
S12	05-07-38	John K. Persinger, Et Ux.	2.65
S13	05-07-36	John Persinger	4.329
S14	05-07-35	Samuel L. Persinger	10.708
S15	05-07-39	Lionel L. Persinger, et ux	57
S16	05-07-42.1	Holly Rice	5.99
S17	05-07-41	James A. Wade	1
S18	05-07-42.5	Matthew V. Conner, et al	3.791
S19	05-07-42	Tracy M. Kesterson	0.54
S20	05-07-44	Crystal B. Darrah	1.726
S21	05-07-42.2	Steven & Rhonda Lloyd	0.85
S22	05-07-42.3	Joshua David Hartley	0.886
S23	05-07-42.4	Lionel & Mary Lee Persinger	0.94
S24	05-07-33	Lionel & Mary Lee Persinger	24.6
S25	05-12-09	Lionel & Mary Lee Persinger	10.15
S26	05-12-10.1	Consolidation Coal Co./ Murray Energy	38.48
S27	05-11-1.4	Larry W. Dunlap, et al	32.493
S28	05-11-1.1	Larry W. Dunlap & Charles Leroy Dunlap	34.405
S29	05-11-21	Karen Reed, et al	112.67
S30	05-12-11	Wesley B. Bryan & Wesley R. Bryan II	52.478
S31	05-15-04	Joseph J. Kramer, et ux	41.106
S32	05-15-03	Joseph J. Kramer, et ux	36.10
S33	05-15-02	John David Petrock, et ux	5
S34	05-15-14	John David Petrock, et ux	25
S35	05-15-12	John David Petrock, et ux	150.23
S36	05-15-15	Robert L. Shields, et al	49
S37 (N)	05-14-12	Dale R. Gallaher, et al	135.100
S38 (L)	05-14-10	Wanda P. Rine (Life)	107.372
S39	05-12-15	Woodland Hills Church of God Trs.	0.375
S40	05-12-21.1	Robert W. Jr. & Wendy L. Riggerbach	14.222
S41 (H)	05-12-13	Linda Hamilton, et al	41.887
S42 (F)	05-12-7.1	Raymond K. Miller	1.609
S43 (E)	05-12-7.2	Raymond K. Miller	4.66
S44 (C)	05-12-07	Robert Wm. Riggerbach, et ux	104.231
S45 (W)	05-12-02	CNX LAND, LLC	60.68
S46 (X)	05-12-03	CNX LAND, LLC	62.30
S47 (A)	05-12-05	CNX LAND, LLC	61.883
S48 (B)	05-12-06	CNX LAND, LLC	70.81
S49	05-12-6.2	Consolidation Coal Co./ Murray Energy	25.50
S50 (U)	05-12-2.1	Consolidation Coal Co./ Murray Energy	22
S51	05-12-01	US of America	1.68
S52	05-07-43.4	Ida Campbell	0.29
S53 (B)	05-07-43.1	State Road Commission	1.48
S54 (J)	05-7A-17	Carol Martin & Harry L. Yoho	0.3067
S55 (I)	05-7A-18	Barbara Anderson	0.1530
S56 (H)	05-7A-19	Barbara Anderson	0.3060

Number	TAX MAP-PARCEL	SURFACE OWNER	ACRES
S57 (G)	05-7A-20	Betty Sexton	0.1204
S58 (K)	05-7A-24	Rick A. Kosky	0.3152
S59 (L)	05-7A-23	Harold S. Young, et ux	0.3067
S60 (M)	05-7A-22	Richard Hyer, et ux	0.1530
S61 (N)	05-7A-21	David A. Beyser	0.1866
S62 (S)	05-7A-25	Rick A. Kosky	0.1638
S63 (R)	05-7A-26	Lance Clark	0.4531
S64 (Q)	05-7A-27	Paul W. Barrett	0.1495
S65 (P)	05-7A-28	Richard Hyer, et ux	0.1093
S66 (O)	05-7A-29	Richard Hyer, et ux	0.1085
S67 (T)	05-7A-30	Richard Hyer, et ux	1.9
S68 (F)	05-7A-31	WVA Dept. of Natural Resources	3.18
S69 (E)	05-7A-32	Dawn Thompson Tennant	0.3091
S70	05-7A-02	CNX LAND, LLC	2.23
S71	05-7A-01	Lucille Myers	0.529
S72	05-7B-25	Cindy D. Aliff	0.1673
S73	05-7B-26	Cindy D. Aliff	0.1148
S74	05-7B-27	Patricia A. Johnson	0.1148
S75	05-7B-28	Patricia A. Johnson	0.0574
S76	05-7B-28.1	Patricia A. Johnson	0.0574
S77	05-7B-29	Patricia A. Johnson	0.1148
S78	05-7B-30	Cindy D. Aliff, et al	0.1148
S79	05-7B-31	Cindy D. Aliff, et al	0.1148
S80	05-7B-32	Albert J. Anderson, Jr.	0.1148
S81	05-7B-33	Albert J. Anderson, Jr.	0.1182
S82	05-7B-34	Albert J. Anderson, Jr.	0.1148
S83	05-7B-35	Albert J. Anderson, Jr.	0.1217
S84	05-7B-36	Albert J. Anderson, Jr.	0.1148
S85	05-7B-37	Teresa & Thomas Gouldsberry	0.1148
S86	05-7B-38	Teresa & Thomas Gouldsberry	0.1148
S87	05-7B-39	Teresa & Thomas Gouldsberry	0.1148
S88	05-7B-40	Teresa & Thomas Gouldsberry	0.1148
S89	05-7B-41	Teresa & Thomas Gouldsberry	0.1148
S90	05-7B-42	Teresa & Thomas Gouldsberry	0.1194
S91	05-7B-43	Teresa & Thomas Gouldsberry	0.1148
S92	05-7B-44	Daniel D. & Mary E. Robinson	0.1148
S93	05-7B-45	Daniel D. & Mary E. Robinson	0.1148
S94	05-7B-46	Daniel D. Robinson, et ux	0.1148
S95	05-7B-47	Daniel D. Robinson, et ux	0.1148
S96	05-7B-01	Patricia L. Robinson	1.257
S97	05-7B-24	Cindy D. Aliff	0.0354
S98	05-7B-23	Cindy D. Aliff	0.0471
S99	05-7B-22	Patricia A. Johnson	0.0505
S100	05-7B-21	Patricia A. Johnson	0.0287
S101	05-7B-21.1	Patricia A. Johnson	0.0296
S102	05-7B-20	Patricia A. Johnson	0.0626
S103	05-7B-19	Cindy D. Aliff, et al	0.0712
S104	05-7B-18	Cindy D. Aliff, et al	0.0763
S105	05-7B-17	Albert J. Anderson, Jr.	0.0849
S106	05-7B-16	Albert J. Anderson, Jr.	0.0903
S107	05-7B-15	Albert J. Anderson, Jr.	0.0970
S108	05-7B-14	Albert J. Anderson, Jr.	0.0991
S109	05-7B-13	Albert J. Anderson, Jr.	0.1067
S110	05-7B-12	Teresa & Thomas Gouldsberry	0.1113
S111	05-7B-11	Teresa & Thomas Gouldsberry	0.1159
S112	05-7B-10	Teresa & Thomas Gouldsberry	0.1199
S113	05-7B-09	Teresa & Thomas Gouldsberry	0.1240
S114	05-7B-08	Teresa & Thomas Gouldsberry	0.1286
S115	05-7B-07	Teresa & Thomas Gouldsberry	0.1331
S116	05-7B-06	Teresa & Thomas Gouldsberry	0.1377
S117	05-7B-05	Daniel D. & Mary E. Robinson	0.1418
S118	05-7B-04	Daniel D. & Mary E. Robinson	0.1458
S119	05-7B-03	Daniel D. Robinson, et ux	0.1504
S120	05-7B-02	Daniel D. Robinson, et ux	0.1550
S121 (G)	05-12-13.1	Raymond K. Miller	0.113
S122 (Z)	05-12-5.1	CNX LAND, LLC	0.52
S123 (Y)	05-12-04	CNX LAND, LLC	0.93
S124 (C)	Rt. 2	State Road Commission	17.62(Calc.)
S125 (D)	R.R.	CSX Transportation	5.01(Calc.)
S126 (V)	Rt. 2	WV DOT	4.18(Calc.)
S127	05-12-17	Hilda Deloris Baxter	0.752
S128	05-12-18	Hilda Deloris Baxter	1.018
S129	05-12-19	Delores J. Myers (Life)	0.457
S130	05-12-20	Delores J. Myers (Life)	0.457
S131	05-12-16.1	Gary E. Gibson, et al	0.146
S132	05-12-16	Gary E. Gibson, et al	0.104



51-02143H6A

P.S. 708

David L Jackson



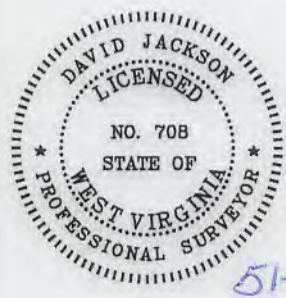
OPERATOR'S  
WELL #: Woodford 6HU  
DISTRICT: Franklin  
COUNTY: Marshall  
STATE: WV  
API# 47-051-02143

WELL PLAT  
PAGE: 2 OF 4  
DATE: 12/11/2018  
REVISED DATE:  
01/30/2019

**WOODFORD LEASE  
WELL 6HU  
456.5281 ± ACRES**

LEASE NO.	TAGS	PARCEL	OIL & GAS ROYALTY OWNER	DEED BOOK	PAGE
041112	A	5-7-43	COLUMBIAN CHEMICALS COMPANY	691	363
Q075753000	B	5-7-43.1	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	797	642
Q088417001	C	RTE 2 - STATE ROAD COMMISSION	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	845	332
041112	C	RTE 2 - STATE ROAD COMMISSION	COLUMBIAN CHEMICALS COMPANY	691	363
Q095360000	D	R. R. CSX TRANSPORTATION	CSX TRANSPORTATION INC	879	251
Q088417001	D	R. R. CSX TRANSPORTATION	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	845	332
10*24559	E	5-7A-32	DAWN THOMPSON TENANT AKA DAWN THOMPSON		
Q091960000	F	5-7A-31	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	865	558
10*24534	G	5-7A-20	MICHAEL SEXTON		
Q091280000	H	5-7A-19	BARBARA ANDERSON	860	498
Q091280000	I	5-7A-18	BARBARA ANDERSON	860	498
Q081130000	J	5-7A-17	CLARA B YOHO	820	514
10*24587	K	5-7A-24	RICK A KOSKY		
Q083451000	L	5-7A-23	HAROLD S YOUNG AND CHARLENE S YOUNG	828	252
Q091091000	M	5-7A-22	RICHARD HYER AND PATRICIA HYER	859	500
Q090307000	N	5-7A-21	DAVID A BEYSER AND SUSAN M BEYSER	858	260
Q091091000	O	5-7A-29	RICHARD HYER AND PATRICIA HYER	859	500
Q091091000	P	5-7A-28	RICHARD HYER AND PATRICIA HYER	859	500
Q085232000	Q	5-7A-27	PAUL W BARRETT	838	469
Q085150001	R	5-7A-26	MICKEY L WHITE AND CAROLE WHITE	833	503
Q085150002	R	5-7A-26	ROBERT ROSS AND ORPHA L ROSS	833	501
Q085150003	R	5-7A-26	ERMA CARNEY	833	496
Q085150004	R	5-7A-26	TWILA ADAMS	833	486
Q085150005	R	5-7A-26	CONNIE CURRENT	834	127
Q085150006	R	5-7A-26	NANCY BRUMBAUGH	836	451
Q085150007	R	5-7A-26	CECIL A TRUAX AKA CECIL TRUAX	836	453
Q085150008	R	5-7A-26	NORA RICH WOOD	839	196
Q085150009	R	5-7A-26	JOSEPH WOOD	839	198
Q085150010	R	5-7A-26	CHARLES JAN WOOD AKA CHARLES WOOD	839	200
Q085150011	R	5-7A-26	SAM NICKI WOOD AKA SAM WOOD AND NICKI WOOD	839	202
Q085150012	R	5-7A-26	BOBBIE SUE WOOD	839	204
Q085150013	R	5-7A-26	NIKA WOOD AKA NIKI GERALD WOOD	839	220
Q085150014	R	5-7A-26	BILL LEANNE WOOD AKA BILL WOOD AND LEANNE E	841	360
Q085150015	R	5-7A-26	RONALD L NESTOR	842	347
Q085150016	R	5-7A-26	KAREN L RIDENOUR AND JAMES RIDENOUR	842	349
Q085150017	R	5-7A-26	CRYSTAL KOSKY AND RICK KOSKY	842	351
Q085150018	R	5-7A-26	TERRY GRAY	842	361
Q085150019	R	5-7A-26	THOMAS BETH WOOD AKA THOMAS WOOD AND	844	464
Q085150020	R	5-7A-26	ANNA LEE HAKR	859	498
Q085150021	R	5-7A-26	DONNA S DIMARCO AND JOHN DIMARCO	859	502
Q085150022	R	5-7A-26	CLARENCE BURGE AND ELLEN BURGE	860	504
10*24587	S	5-7A-25	RICK A KOSKY		
Q091091000	T	5-7A-30	RICHARD HYER AND PATRICIA HYER	859	500
Q095360000	U	5-12-2.1	CSX TRANSPORTATION INC	879	251
041112	V	RTE 2 - WV DOT	COLUMBIAN CHEMICAL COMPANY	691	363
Q088417001	V	RTE 2 - WV DOT	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	845	332
624145	W	5-12-2	COLUMBIAN CHEMICALS COMPANY	691	363
041112	X	5-12-3	COLUMBIAN CHEMICALS COMPANY	691	363
041112	Y	5-12-4	COLUMBIAN CHEMICALS COMPANY	691	363
Q095360000	Y	5-12-4	CSX TRANSPORTATION INC	879	251
041112	Z	5-12-5.1	COLUMBIAN CHEMICALS COMPANY	691	363
041112	AA	5-12-5	COLUMBIAN CHEMICALS COMPANY	691	363
041112	BB	5-12-6	COLUMBIAN CHEMICALS COMPANY	691	363
10*19255	CC	5-12-7	ROBERT W. RIGGENBACH & SHARON RIGGENBACH,	772	450
10*23969	DD	5-12-8	MARK A. JOHNSON ET AL	1020	195
10*24588	DD	5-12-8	MICHAEL POWDERLY	1025	287
10*24577	DD	5-12-8	LYNN A. YATES & WALTER R. YATES		
10*23896	DD	5-12-8	MOLLY MCMAHON AND JOHN D. MCMAHON	1017	489
10*18827	DD	5-12-8	ERIN E SCHOLL	937	626
10*18835	DD	5-12-8	REBECCA LYNN KIER AND ERIC JAMES KIER	937	405
10*18968	DD	5-12-8	E SHIELA PAVLOVICH	940	291
10*18969	DD	5-12-8	JEANNE MARIE VAN GROLAND RICHARD ARTHUR VAN	941	289
10*19500	DD	5-12-8	JAMES CONTRERAS AND CATHERINE CONTRERAS	942	608
10*19825	DD	5-12-8	THOMAS A POWDERLY	945	639
10*19826	DD	5-12-8	TERRANCE V POWDERLY SR	945	637
10*19827	DD	5-12-8	CORINNE EVERNA AND JONATHAN C VERNA SR	945	635
10*19828	DD	5-12-8	ANNE M AND JOHN LEACH	945	633
10*19829	DD	5-12-8	MARGARET J WHITFORD AND LANCE W WHITFORD	945	631
10*19830	DD	5-12-8	DAVID POWDERLY AND NANCY A POWDERLY	945	629
10*21002	DD	5-12-8	STANLEY EUGENE STOWE	951	215
10*21045	DD	5-12-8	SANDRA J HARMON AND WALTER D HARMON	951	217
10*21190	DD	5-12-8	MARGARET CLICKNER	941	283
10*21223	DD	5-12-8	EUGENE C GRIEB AND SHIRLEY K GRIEB	961	488
10*21607	DD	5-12-8	SHERLEY R STOWE & KAREN M STOWE	959	474
10*21924	DD	5-12-8	BEVERLY A MILLER	953	533
10*21926	DD	5-12-8	VIOLA JANE BREON AND JAMES RONALD BREON	953	360
10*21929	DD	5-12-8	BENNY MILLER	960	177
10*21930	DD	5-12-8	JAMES A GRENOBLE AND MARY JANE GRENOBLE	953	263
10*21938	DD	5-12-8	SEAN M GRENOBLE AND CHERYL A GRENOBLE	960	91
10*21939	DD	5-12-8	LILA F NELSON	960	96
10*22051	DD	5-12-8	NOEL A PARKS	960	509
10*22309	DD	5-12-8	AARON D LUTMAN AND BETTY J LUTMAN	963	408
10*22311	DD	5-12-8	WILLIAM LUTMAN AND VICKIE L LUTMAN	963	404
10*22312	DD	5-12-8	RICHARD WOOD AND VICKI WOOD	962	528
10*22349	DD	5-12-8	ANITA RAE MILLER	910	152
10*22408	DD	5-12-8	REBECCA S TARR	962	578
10*22548	DD	5-12-8	SHARON TOLER WILLIAMS & HERVY WILLIAMS	966	194
10*22604	DD	5-12-8	WILLIAM LEESON	966	499
10*22605	DD	5-12-8	MICHAEL R LEESON AND BRENDA R LEESON	966	496
10*22744	DD	5-12-8	BRIDGET A POWDERLY	968	206
10*22858	DD	5-12-8	THOMAS C DAVIS AND MARY ELLEN DAVIS	977	63
10*23004	DD	5-12-8	KLOVA A MORRIS	977	382
Q083768001	DD	5-12-8	SANDRA WINSLOW	831	54
Q083768002	DD	5-12-8	KERMIT REED HUBBS ET UX	831	163
Q083768003	DD	5-12-8	DOUGLAS G DERROW	831	165

03/01/2019



51-02143146A

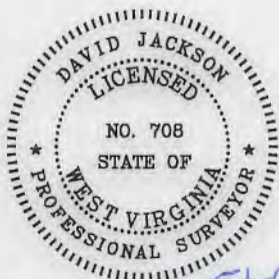
P.S. 708 *David L Jackson*

	OPERATOR'S WELL #:	<i>Woodford 6HU</i>	WELL PLAT
	DISTRICT:	<i>Franklin</i>	PAGE: 3 OF 4
	COUNTY:	<i>Marshall</i>	DATE: 12/11/2018
	STATE:	<i>WV</i>	REVISED DATE: 01/30/2019
	API#	<i>47-051-02143</i>	

**WOODFORD LEASE  
WELL 6HU  
456.5281 ± ACRES**

LEASE NO.	TAGS	PARCEL	OIL & GAS ROYALTY OWNER	DEED BOOK	PAGE
Q083768004	DD	5-12-8	FERN A PICKENPAUGH	831	167
Q083768005	DD	5-12-8	JEAN GAUTHIER	832	228
Q083768006	DD	5-12-8	SONDRA SUE RULONG ET VIR	832	230
Q083768007	DD	5-12-8	VERA SHIRLENE WORKMAN ET VIR	832	232
Q083768008	DD	5-12-8	CHARLOTTE A MERSEUS ET VIR	833	14
Q083768009	DD	5-12-8	PHYLLIS JEAN OSTRANDER	833	472
Q083768010	DD	5-12-8	JAMES A KOLL	832	584
Q083768011	DD	5-12-8	MICHAEL W DERROW	833	464
Q083768012	DD	5-12-8	WILLIAM L WILLIAMS ET UX	833	574
Q083768013	DD	5-12-8	KELLY KERN	863	189
Q083768014	DD	5-12-8	SHIRLEY GBUR	863	191
Q083768015	DD	5-12-8	NORMAN L DERROW ET UX	834	590
Q083768016	DD	5-12-8	BETTY JUNE CAMPBELL ET VIR	834	632
Q083768017	DD	5-12-8	LAMOYNE S BAKER	834	634
Q083768018	DD	5-12-8	HONUS ADAIR STOLLAR	836	36
Q083768019	DD	5-12-8	MARTHA J JAMISON ET VIR	836	38
Q083768020	DD	5-12-8	SARA BRADLEY	839	205
Q083768021	DD	5-12-8	MARY S FOGLESONG ET VIR	837	352
Q083768024	DD	5-12-8	JIMMIE WILLIAMS ET UX	837	143
Q083768025	DD	5-12-8	JUDY ANN MCCHESEY ET VIR	840	291
Q083768026	DD	5-12-8	PENNY S SCHAUER ET VIR	842	7
Q083768027	DD	5-12-8	TRACI L WILLIAMS	842	9
Q083768028	DD	5-12-8	STEVEN S DERROW	842	24
Q083768029	DD	5-12-8	MARY E VOLTZ ET VIR	841	82
Q083768030	DD	5-12-8	ELLIOTT L THRASHER II ET UX	842	510
Q083768031	DD	5-12-8	JACK M FOREMAN	844	131
Q083768032	DD	5-12-8	DOUGLAS E MILLER	844	520
Q083768033	DD	5-12-8	REVA J ICARD ET VIR	844	526
Q083768034	DD	5-12-8	JULIE SPRINGWATER	850	491
Q083768035	DD	5-12-8	JULIE SPRINGWATER	850	499
Q083768036	DD	5-12-8	JACK M FOREMAN	850	503
Q083768037	DD	5-12-8	ANITA M MASON	851	5
Q083768038	DD	5-12-8	BONNIE H GRISELLE ET VIR	850	646
Q083768039	DD	5-12-8	MARY ELIZABETH VOLTZ ET VIR	850	648
Q083768040	DD	5-12-8	SCOTT C HARRIS ET UX	851	394
Q083768041	DD	5-12-8	JACK M FOREMAN	854	178
Q083768042	DD	5-12-8	JACQUELYN JOHNSON ET VIR	860	523
Q083768043	DD	5-12-8	ROY JOSEPH LEACH	859	487
Q083768044	DD	5-12-8	LESLIE ANN BLYTHE ET VIR	860	535
Q083768045	DD	5-12-8	MURIEL ANNE MILLER ET VIR	860	545
Q083768046	DD	5-12-8	GREGORY S MILLER ET UX	860	517
Q083768047	DD	5-12-8	REBECCA L CULLEN ET VIR	860	558
Q083768048	DD	5-12-8	FRANCES E RUTLEDGE ET VIR	860	513
Q083768049	DD	5-12-8	LARRY DEAN MCWHORTER ET AL	860	529
Q083768050	DD	5-12-8	LEROY MILLER	860	532
Q083768051	DD	5-12-8	DAVID LEE EVANS JR ET UX	864	187
Q083768052	DD	5-12-8	STEVEN POND ET UX	860	574
Q083768053	DD	5-12-8	IAN KIPP HAGEMANN	860	520
Q083768054	DD	5-12-8	MELISSA MILLER GIBSON ET VIR	869	100
Q083768055	DD	5-12-8	HEATHER D MALD ET VIR	866	336
Q083768056	DD	5-12-8	RODNEY F PETERSON	866	342
Q083768057	DD	5-12-8	PRISCILLA ANN MILLER HADEN	873	545
Q083768058	DD	5-12-8	DANIEL D HOBBS ET UX	873	543
Q083768059	DD	5-12-8	RICHARD S MULLEN ET UX	869	98
Q083768060	DD	5-12-8	JAMES B CROW ET UX	869	108
Q083768061	DD	5-12-8	GREGORY S CROW	869	106
Q083768062	DD	5-12-8	HAROLD B CROW ET UX	869	102
Q083768063	DD	5-12-8	BRIAN K CROW	869	104
Q083768064	DD	5-12-8	TIMOTHY HOWARD MANCHEGO	873	104
Q083768065	DD	5-12-8	KATHLEEN HOBBS YOLING	869	356
Q083768066	DD	5-12-8	DAVID C MULLEN ET UX	869	358
Q083768067	DD	5-12-8	DENNIS FISCHER ET UX	870	360
Q083768068	DD	5-12-8	KATHLEEN A SULLIVAN ET VIR	870	362
Q083768069	DD	5-12-8	FRANCIS F FISCHER ET UX	871	494
Q083768070	DD	5-12-8	JOYCE A FIORILLI ET VIR	873	114
Q083768071	DD	5-12-8	BARBARA L VOGLER ET VIR	873	112
Q083768072	DD	5-12-8	HARRIET C HERMAN ET VIR	873	116
Q083768073	DD	5-12-8	EUGENIA A KERR	873	118
Q083768074	DD	5-12-8	JANE H BARNSTEINER ET UX	873	93
Q083768075	DD	5-12-8	EDWARD P POWDERLY ET UX	873	91
Q083768076	DD	5-12-8	NORA C POWDERLY	873	89
Q083768077	DD	5-12-8	EILEEN T POWDERLY	873	87
Q083768078	DD	5-12-8	MARY F WEILAND	873	124
Q083768079	DD	5-12-8	JAMES E HERMAN	873	128
Q083768080	DD	5-12-8	ANTHONY T POWDERLY ET UX	878	363
Q083768081	DD	5-12-8	SHARON L SCHOLL	878	379
Q083768082	DD	5-12-8	JAMES T SCHOLL	878	376
Q083768083	DD	5-12-8	ANNE GALBALLY ET VIR	878	354
Q083768084	DD	5-12-8	CLARK D CHASE ET UX	878	357
Q083768085	DD	5-12-8	BRIDGET A POWDERLY	881	29
Q083768086	DD	5-12-8	NORA K POWDERLY	881	23
Q083768087	DD	5-12-8	KEVIN M POWDERLY	890	518
Q083768088	DD	5-12-8	MARY S SCHOLL	890	569
Q083768089	DD	5-12-8	BRIAN P POWDERLY ET UX	890	563
Q083768090	DD	5-12-8	SUSANNE S QUARTERMAN	890	560
Q083768091	DD	5-12-8	HARRIET C VENTURA ET VIR	894	541
Q083768099	DD	5-12-8	EILEEN T POWDERLY	873	81
10*23356	EE	5-12-7.2	RAYMOND K AND MICHELE A MILLER	988	484
Q092567000	FF	5-12-7.1	RAYMOND K MILLER MICHELE A MILLER	866	340
Q092567000	GG	5-12-13.1	RAYMOND K MILLER MICHELE A MILLER	866	340
10*21769	HH	5-12-13	BETTY HAMILTON	957	419
10*21770	HH	5-12-13	SUSAN WINLAND AND PAUL MICHAEL WINLAND	957	421
10*21776	HH	5-12-13	LUNDA HAMILTON	957	417
10*21769	II	5-12-14	BETTY HAMILTON	957	419
10*21770	II	5-12-14	SUSAN WINLAND AND PAUL MICHAEL WINLAND	957	421
10*21776	II	5-12-14	LUNDA HAMILTON	957	417
10*16918	JJ	5-12-12.1	LIONEL LAND MARY LEE PERSINGER	976	617
10*14067	KK	5-14-13	REVA FRANZE	665	51
10*14420	LL	5-14-10	ELLIS V. RINE AND WANDA P. RIN ET UX	725	141
10*24492	MM	5-12-21	EDWARD L. GIBSON ET UX	920	112
10*14928	NN	5-14-12	JOSEPH D PARRIOTT AND NELLIE B	660	517

03/01/2019



5102143H6A

P.S.  
708

*David L Jackson*



**TUG HILL  
OPERATING**

OPERATOR'S  
WELL #: Woodford 6HU  
DISTRICT: Franklin  
COUNTY: Marshall  
STATE: WV  
API# 47-051-02143

WELL PLAT  
PAGE: 4 OF 4  
DATE: 12/11/2018  
REVISED DATE:  
01/30/2019

WW-6A1  
(5/13)

Operator's Well No. Woodford 6HU

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

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

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

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

\*See attached pages

RECEIVED  
Office of Oil and Gas  
DEC 17 2018  
WV Department of  
Environmental Protection

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

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

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

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

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

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
041112	5-7-43	A	COLUMBIAN CHEMICALS COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	N/A	N/A	CNX Land Resources Inc to CNX Gas Company LLC: 745/117	CNX Gas Company LLC to Noble Energy Inc: 752/66	CNX Gas Company LLC to Noble Energy Inc: 909/94	Noble Energy Inc to HG Energy II Appalachia LLC: 931/43	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q075763000	5-7-43.1	B	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	NOBLE ENERGY INC	1/8+	797	642	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 931/43	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q088417001	RTE 2 - STATE ROAD COMMISSION	C	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	NOBLE ENERGY INC	1/8+	845	332	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/407	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
041112	RTE 2 - STATE ROAD COMMISSION	C	COLUMBIAN CHEMICALS COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	N/A	N/A	CNX Land Resources Inc to CNX Gas Company LLC: 745/117	CNX Gas Company LLC to Noble Energy Inc: 752/66	CNX Gas Company LLC to Noble Energy Inc: 909/94	Noble Energy Inc to HG Energy II Appalachia LLC: 931/43	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q095360000	R. R. CSX TRANSPORTATION	D	CSX TRANSPORTATION INC	NOBLE ENERGY INC	1/8+	879	251	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q088417001	R. R. CSX TRANSPORTATION	D	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	NOBLE ENERGY INC	1/8+	845	332	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/407	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
10*24559	5-7A-32	E	DAWN THOMPSON TENANT AKA DAWN THOMPSON	TH EXPLORATION LLC	1/8+	PENDING		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Q091960000	5-7A-31	F	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	NOBLE ENERGY INC	1/8+	865	558	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
10*24534	5-7A-20	G	MICHAEL SEXTON	TH EXPLORATION LLC	1/8+	PENDING		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Q091280000	5-7A-19	H	BARBARA ANDERSON	NOBLE ENERGY INC	1/8+	860	498	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q091280000	5-7A-18	I	BARBARA ANDERSON	NOBLE ENERGY INC	1/8+	860	498	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q081130000	5-7A-17	J	CLARA B YOHO	NOBLE ENERGY INC	1/8+	820	514	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
10*24587	5-7A-24	K	RICK A KOSKY	TH EXPLORATION LLC	1/8+	PENDING		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Q083451000	5-7A-23	L	HAROLD S YOUNG AND CHARLENE S YOUNG	NOBLE ENERGY INC	1/8+	828	252	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
Q091091000	5-7A-22	M	RICHARD HYER AND PATRICIA HYER	NOBLE ENERGY INC	1/8+	859	500	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q090307000	5-7A-21	N	DAVID A BEYSER AND SUSAN M BEYSER	NOBLE ENERGY INC	1/8+	858	260	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q091091000	5-7A-29	O	RICHARD HYER AND PATRICIA HYER	NOBLE ENERGY INC	1/8+	859	500	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q091091000	5-7A-28	P	RICHARD HYER AND PATRICIA HYER	NOBLE ENERGY INC	1/8+	859	500	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085232000	5-7A-27	Q	PAUL W BARRETT	NOBLE ENERGY INC	1/8+	838	469	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150001	5-7A-26	R	MICKEY L WHITE AND CAROLE WHITE	NOBLE ENERGY INC	1/8+	833	503	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150002	5-7A-26	R	ROBERT ROSS AND ORPHA L ROSS	NOBLE ENERGY INC	1/8+	833	501	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150003	5-7A-26	R	ERMA CARNEY	NOBLE ENERGY INC	1/8+	833	496	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150004	5-7A-26	R	TWILA ADAMS	NOBLE ENERGY INC	1/8+	833	486	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150005	5-7A-26	R	CONNIE CURRENT	NOBLE ENERGY INC	1/8+	834	127	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150006	5-7A-26	R	NANCY BRUMBAUGH	NOBLE ENERGY INC	1/8+	836	451	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150007	5-7A-26	R	CECIL A TRUAX AKA CECIL TRUEX	NOBLE ENERGY INC	1/8+	836	453	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286



Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
Q085150008	5-7A-26	R	NORA RICH WOOD	NOBLE ENERGY INC	1/8+	839	196	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150009	5-7A-26	R	JOSEPH WOOD	NOBLE ENERGY INC	1/8+	839	198	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150010	5-7A-26	R	CHARLES JAN WOOD AKA CHARLES WOOD	NOBLE ENERGY INC	1/8+	839	200	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150011	5-7A-26	R	SAM NICKI WOOD AKA SAM WOOD AND NICKI WOOD	NOBLE ENERGY INC	1/8+	839	202	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150012	5-7A-26	R	BOBBIE SUE WOOD	NOBLE ENERGY INC	1/8+	839	204	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150013	5-7A-26	R	NIKA WOOD AKA NIKA GERALD WOOD	NOBLE ENERGY INC	1/8+	839	220	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150014	5-7A-26	R	BILL LEANNE WOOD AKA BILL WOOD AND LEANNE E WOOD	NOBLE ENERGY INC	1/8+	841	360	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150015	5-7A-26	R	RONALD L NESTOR	NOBLE ENERGY INC	1/8+	842	347	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150016	5-7A-26	R	KAREN L RIDENOUR AND JAMES RIDENOUR	NOBLE ENERGY INC	1/8+	842	349	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150017	5-7A-26	R	CRYSTAL KOSKY AND RICK KOSKY	NOBLE ENERGY INC	1/8+	842	351	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150018	5-7A-26	R	TERRY GRAY	NOBLE ENERGY INC	1/8+	842	361	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150019	5-7A-26	R	THOMAS BETH WOOD AKA THOMAS WOOD AND REGINA WOOD	NOBLE ENERGY INC	1/8+	844	464	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286

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Q085150020	5-7A-26	R	ANNA LEE HAKR	NOBLE ENERGY INC	1/8+	859	498	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150021	5-7A-26	R	DONNA S DIMARCO AND JOHN DIMARCO	NOBLE ENERGY INC	1/8+	859	502	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q085150022	5-7A-26	R	CLARENCE BURGE AND ELLEN BURGE	NOBLE ENERGY INC	1/8+	860	504	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
10*24587	5-7A-25	S	RICK A KOSKY	TH EXPLORATION LLC	1/8+	PENDING		N/A	N/A	N/A	N/A	N/A	N/A
Q091091000	5-7A-30	T	RICHARD HYER AND PATRICIA HYER	NOBLE ENERGY INC	1/8+	859	500	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q095360000	5-12-2.1	U	CSX TRANSPORTATION INC	NOBLE ENERGY INC	1/8+	879	251	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
041112	RTE 2 - WV DOT	V	COLUMBIAN CHEMICAL COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	N/A	N/A	CNX Land Resources Inc to CNX Gas Company LLC: 745/117	CNX Gas Company LLC to Noble Energy Inc: 752/66	CNX Gas Company Inc: 909/94	Noble Energy Inc to HG Energy II Appalachia LLC: 931/43 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q088417001	RTE 2 - WV DOT	V	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	NOBLE ENERGY INC	1/8+	845	332	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/407 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
624145	5-12-2	W	COLUMBIAN CHEMICALS COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	N/A	N/A	CNX Land Resources Inc to CNX Gas Company LLC: 745/117	CNX Gas Company Inc: 752/66	CNX Gas Company LLC to Noble Energy Inc: 909/94	Noble Energy Inc to HG Energy II Appalachia LLC: 931/43 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
041112	5-12-3	X	COLUMBIAN CHEMICALS COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	N/A	N/A	CNX Land Resources Inc to CNX Gas Company LLC: 745/117	CNX Gas Company LLC to Noble Energy Inc: 752/66	CNX Gas Company LLC to Noble Energy Inc: 909/94	Noble Energy Inc to HG Energy II Appalachia LLC: 931/43 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
041112	5-12-4	Y	COLUMBIAN CHEMICALS COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	N/A	N/A	CNX Land Resources Inc to CNX Gas Company LLC: 745/117	CNX Gas Company LLC to Noble Energy Inc: 752/66	CNX Gas Company LLC to Noble Energy Inc: 909/94	Noble Energy Inc to HG Energy II Appalachia LLC: 931/43 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q095360000	5-12-4	Y	CSX TRANSPORTATION INC	NOBLE ENERGY INC	1/8+	879	251	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
041112	5-12-5.1	Z	COLUMBIAN CHEMICALS COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	N/A	N/A	CNX Land Resources Inc to CNX Gas Company LLC: 745/117	CNX Gas Company LLC to Noble Energy Inc: 752/66	CNX Gas Company LLC to Noble Energy Inc: 909/94	Noble Energy Inc to HG Energy II Appalachia LLC: 931/43 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286



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10*23004	5-12-8	DD	KLOVA A MORRIS	TH EXPLORATION LLC	1/8+	977	382	N/A	N/A	N/A	N/A	N/A	N/A
Q083768001	5-12-8	DD	SANDRA WINSLOW	NOBLE ENERGY INC	1/8+	831	54	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768002	5-12-8	DD	KERMIT REED HUBBS ET UX	NOBLE ENERGY INC	1/8+	831	163	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768003	5-12-8	DD	DOUGLAS G DERROW	NOBLE ENERGY INC	1/8+	831	165	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768004	5-12-8	DD	FERN A PICKENPAUGH	NOBLE ENERGY INC	1/8+	831	167	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768005	5-12-8	DD	JEAN GAUTHIER	NOBLE ENERGY INC	1/8+	832	228	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768006	5-12-8	DD	SONDRA SUE RULONG ET VIR	NOBLE ENERGY INC	1/8+	832	230	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768007	5-12-8	DD	VERA SHIRLENE WORKMAN ET VIR	NOBLE ENERGY INC	1/8+	832	232	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768008	5-12-8	DD	CHARLOTTE A MERSELIS ET VIR	NOBLE ENERGY INC	1/8+	833	14	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768009	5-12-8	DD	PHYLLIS JEAN OSTRANDER	NOBLE ENERGY INC	1/8+	833	472	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768010	5-12-8	DD	JAMES A KOLL	NOBLE ENERGY INC	1/8+	832	584	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768011	5-12-8	DD	MICHAEL W DERROW	NOBLE ENERGY INC	1/8+	833	464	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768012	5-12-8	DD	WILLIAM L WILLIAMS ET UX	NOBLE ENERGY INC	1/8+	833	574	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286

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Q083768013	5-12-8	DD	KELLY KERN	NOBLE ENERGY INC	1/8+	863	189	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768014	5-12-8	DD	SHIRLEY GBUR	NOBLE ENERGY INC	1/8+	863	191	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768015	5-12-8	DD	NORMAN L DERROW ET UX	NOBLE ENERGY INC	1/8+	832	580	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768016	5-12-8	DD	BETTY JUNE CAMPBELL ET VIR	NOBLE ENERGY INC	1/8+	834	632	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768017	5-12-8	DD	LAMOYNE S BAKER	NOBLE ENERGY INC	1/8+	834	634	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768018	5-12-8	DD	HONUS ADAIR STOLLAR	NOBLE ENERGY INC	1/8+	836	36	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768019	5-12-8	DD	MARTHA J JAMISON ET VIR	NOBLE ENERGY INC	1/8+	836	38	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768020	5-12-8	DD	SARA BRADLEY	NOBLE ENERGY INC	1/8+	839	206	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768021	5-12-8	DD	MARY S FOGLESONG ET VIR	NOBLE ENERGY INC	1/8+	837	352	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768024	5-12-8	DD	JIMMIE WILLIAMS ET UX	NOBLE ENERGY INC	1/8+	837	143	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768025	5-12-8	DD	JUDY ANN MCCHESEY ET VIR	NOBLE ENERGY INC	1/8+	840	291	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768026	5-12-8	DD	PENNY S SCHAUER ET VIR	NOBLE ENERGY INC	1/8+	842	7	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286

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Q083768027	5-12-8	DD	TRACI L WILLIAMS	NOBLE ENERGY INC	1/8+	842	9	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768028	5-12-8	DD	STEVEN S DERROW	NOBLE ENERGY INC	1/8+	842	24	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768029	5-12-8	DD	MARY E VOLTZ ET VIR	NOBLE ENERGY INC	1/8+	841	82	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768030	5-12-8	DD	ELLIOTT L THRASHER II ET UX	NOBLE ENERGY INC	1/8+	842	510	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768031	5-12-8	DD	JACK M FOREMAN	NOBLE ENERGY INC	1/8+	844	131	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768032	5-12-8	DD	DOUGLAS E MILLER	NOBLE ENERGY INC	1/8+	844	520	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768033	5-12-8	DD	REVA J ICARD ET VIR	NOBLE ENERGY INC	1/8+	844	526	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768034	5-12-8	DD	JULIE SPRINGWATER	NOBLE ENERGY INC	1/8+	850	491	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768035	5-12-8	DD	JULIE SPRINGWATER	NOBLE ENERGY INC	1/8+	850	499	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768036	5-12-8	DD	JACK M FOREMAN	NOBLE ENERGY INC	1/8+	850	503	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768037	5-12-8	DD	ANITA M MASON	NOBLE ENERGY INC	1/8+	851	5	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768038	5-12-8	DD	BONNIE H GRISELL ET VIR	NOBLE ENERGY INC	1/8+	850	646	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286

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Q083768039	5-12-8	DD	MARY ELIZABETH VOLTZ ET VIR	NOBLE ENERGY INC	1/8+	850	648	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768040	5-12-8	DD	SCOTT C HARRIS ET UX	NOBLE ENERGY INC	1/8+	851	394	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768041	5-12-8	DD	JACK M FOREMAN	NOBLE ENERGY INC	1/8+	854	178	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768042	5-12-8	DD	JACQUELYN JOHNSON ET VIR	NOBLE ENERGY INC	1/8+	860	523	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768043	5-12-8	DD	ROY JOSEPH LEACH	NOBLE ENERGY INC	1/8+	859	487	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768044	5-12-8	DD	LESLIE ANN BLYTHE ET VIR	NOBLE ENERGY INC	1/8+	860	535	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768045	5-12-8	DD	MURIEL ANNE MILLER ET VIR	NOBLE ENERGY INC	1/8+	860	545	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768046	5-12-8	DD	GREGORY S MILLER ET UX	NOBLE ENERGY INC	1/8+	860	517	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768047	5-12-8	DD	REBECCA L CULLEN ET VIR	NOBLE ENERGY INC	1/8+	860	558	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768048	5-12-8	DD	FRANCES E RUTLEDGE ET VIR	NOBLE ENERGY INC	1/8+	860	513	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768049	5-12-8	DD	LARRY DEAN MCWHORTER ET AL	NOBLE ENERGY INC	1/8+	860	529	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768050	5-12-8	DD	LEROY MILLER	NOBLE ENERGY INC	1/8+	860	532	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
Q083768051	5-12-8	DD	DAVID LEE EVANS JR ET UX	NOBLE ENERGY INC	1/8+	864	187	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768052	5-12-8	DD	STEVEN POND ET UX	NOBLE ENERGY INC	1/8+	860	574	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768053	5-12-8	DD	IAN KIPP HAGEMANN	NOBLE ENERGY INC	1/8+	860	520	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768054	5-12-8	DD	MELISSA MILLER GIBSON ET VIR	NOBLE ENERGY INC	1/8+	869	100	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768055	5-12-8	DD	HEATHER D MALO ET VIR	NOBLE ENERGY INC	1/8+	866	336	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768056	5-12-8	DD	RODNEY F PETERSON	NOBLE ENERGY INC	1/8+	866	342	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768057	5-12-8	DD	PRISCILLA ANN MILLER HADEN	NOBLE ENERGY INC	1/8+	873	545	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768058	5-12-8	DD	DANIEL D HOBBS ET UX	NOBLE ENERGY INC	1/8+	873	543	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768059	5-12-8	DD	RICHARD S MULLEN ET UX	NOBLE ENERGY INC	1/8+	869	98	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768060	5-12-8	DD	JAMES B CROW ET UX	NOBLE ENERGY INC	1/8+	869	108	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768061	5-12-8	DD	GREGORY S CROW	NOBLE ENERGY INC	1/8+	869	106	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768062	5-12-8	DD	HAROLD B CROW ET UX	NOBLE ENERGY INC	1/8+	869	102	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286



Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
Q083768063	5-12-8	DD	BRIAN K CROW	NOBLE ENERGY INC	1/8+	869	104	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768064	5-12-8	DD	TIMOTHY HOWARD MANCHEGO	NOBLE ENERGY INC	1/8+	873	104	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768065	5-12-8	DD	KATHLEEN HOBBS YOUNG	NOBLE ENERGY INC	1/8+	869	356	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768066	5-12-8	DD	DAVID C MULLEN ET UX	NOBLE ENERGY INC	1/8+	869	358	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768067	5-12-8	DD	DENNIS FISCHER ET UX	NOBLE ENERGY INC	1/8+	870	360	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768068	5-12-8	DD	KATHLEEN A SULLIVAN ET VIR	NOBLE ENERGY INC	1/8+	870	362	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768069	5-12-8	DD	FRANCIS F FISCHER ET UX	NOBLE ENERGY INC	1/8+	871	494	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768070	5-12-8	DD	JOYCE A FIORILLI ET VIR	NOBLE ENERGY INC	1/8+	873	114	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768071	5-12-8	DD	BARBARA L VOGLER ET VIR	NOBLE ENERGY INC	1/8+	873	112	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768072	5-12-8	DD	HARRIET C HERMAN ET VIR	NOBLE ENERGY INC	1/8+	873	116	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768073	5-12-8	DD	EUGENIA A KERR	NOBLE ENERGY INC	1/8+	873	118	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768074	5-12-8	DD	JANE H BARNSTEINER ET UX	NOBLE ENERGY INC	1/8+	873	93	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
Q083768075	5-12-8	DD	EDWARD P POWDERLY ET UX	NOBLE ENERGY INC	1/8+	873	91	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768076	5-12-8	DD	NORA C POWDERLY	NOBLE ENERGY INC	1/8+	873	89	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768077	5-12-8	DD	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8+	873	87	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768078	5-12-8	DD	MARY F WEILAND	NOBLE ENERGY INC	1/8+	873	124	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768079	5-12-8	DD	JAMES E HERMAN	NOBLE ENERGY INC	1/8+	873	128	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768080	5-12-8	DD	ANTHONY T POWDERLY ET UX	NOBLE ENERGY INC	1/8+	878	363	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768081	5-12-8	DD	SHARON L SCHOLL	NOBLE ENERGY INC	1/8+	878	379	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768082	5-12-8	DD	JAMES T SCHOLL	NOBLE ENERGY INC	1/8+	878	376	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768083	5-12-8	DD	ANNE GALBALLY ET VIR	NOBLE ENERGY INC	1/8+	878	354	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768084	5-12-8	DD	CLARK D CHASE ET UX	NOBLE ENERGY INC	1/8+	878	357	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768085	5-12-8	DD	BRIDGET A POWDERLY	NOBLE ENERGY INC	1/8+	881	29	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286
Q083768086	5-12-8	DD	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	881	23	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286

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Q083768087	5-12-8	DD	KEVIN M POWDERLY	NOBLE ENERGY INC	1/8+	890 518	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286	
Q083768088	5-12-8	DD	MARY S SCHOLL	NOBLE ENERGY INC	1/8+	890 569	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286	
Q083768089	5-12-8	DD	BRIAN P POWDERLY ET UX	NOBLE ENERGY INC	1/8+	890 563	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286	
Q083768090	5-12-8	DD	SUSANNE S QUARTERMAN	NOBLE ENERGY INC	1/8+	890 560	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286	
Q083768091	5-12-8	DD	HARRIET C VENTURA ET VIR	NOBLE ENERGY INC	1/8+	894 541	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286	
Q083768099	5-12-8	DD	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8+	873 81	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286	
10*23356	5-12-7.2	EE	RAYMOND K AND MICHELE A MILLER	TH EXPLORATION LLC	1/8+	988 484	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Q092567000	5-12-7.1	FF	RAYMOND K MILLER MICHELE A MILLER	NOBLE ENERGY INC	1/8+	866 340	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286	
Q092567000	5-12-13.1	GG	RAYMOND K MILLER MICHELE A MILLER	NOBLE ENERGY INC	1/8+	866 340	N/A	N/A	N/A	N/A	N/A	Noble Energy Inc to HG Energy II Appalachia LLC: 39/1	Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC: 988/286	
10*21769	5-12-13	HH	BETTY HAMILTON	TH EXPLORATION LLC	1/8+	957 419	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*21770	5-12-13	HH	SUSAN WINLAND AND PAUL MICHAEL WINLAND	TH EXPLORATION LLC	1/8+	957 421	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*21776	5-12-13	HH	LINDA HAMILTON	TH EXPLORATION LLC	1/8+	957 417	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*21769	5-12-14	II	BETTY HAMILTON	TH EXPLORATION LLC	1/8+	957 419	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*21770	5-12-14	II	SUSAN WINLAND AND PAUL MICHAEL WINLAND	TH EXPLORATION LLC	1/8+	957 421	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*21776	5-12-14	II	LINDA HAMILTON	TH EXPLORATION LLC	1/8+	957 417	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*16918	5-12-12.1	JJ	LIONEL L AND MARY LEE PERSINGER	TH EXPLORATION LLC	1/8+	976 617	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10*14067	5-14-13	KK	REVA FRANZE	GASTAR EXPLORATION USA INC	1/8+	666 51	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Merger - Gastar Exploration USA Inc into Gastar Exploration Inc: 21/41	Gastar Exploration nc to TH Exploration II LLC: 36/9
10*14420	5-14-10	LL	ELLIS V. RINE AND WANDA P. RIN ET UX	GASTAR EXPLORATION USA INC	1/8+	725 141	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 735/263	Merger - Gastar Exploration USA Inc into Gastar Exploration Inc: 21/41	Gastar Exploration nc to TH Exploration II LLC: 36/9

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*24492	5-12-21	MM	EDWARD L. GIBSON ET UX	AMERICAN PETROLEUM PARTNERS LLC	1/8+	920	112	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 42/549
10*14928	5-14-12	NN	JOSEPH D PARRIOTT AND NELLIE B	TRIENERGY INC	1/8+	660	517	TriEnergy Inc to AB Resources LLC: 19/623	AB Resources to Chief Exploration & Development LLC: 666/40	TriEnergy Inc to TriEnergy Holdings LLC: 21/148	Chief, Radler 2000 Ltd Partnership & Enerplus Res. USA Corp to Chevron: 25/1	AB Resources LLC to Chevron USA Inc: 756/397	Chevron US Inc to Gastar Exploration Inc: 32/370	Gastar Exploration Inc to TH Exploration LLC: 36/9

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03/01/2019



TUG HILL

~~47-9150057~~

05 102 14

December 13, 2018

WV Department of Environmental Protection  
Office of Oil & Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Attention: Laura Adkins

RE: Woodford 6HU

Subject: Road Crossing Letter

Dear Laura:

Tug Hill Operating, LLC will not be drilling, extracting or producing any minerals under any WV County or State Routes in the area reflected on the Woodford 6HU well plat.

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

Sincerely,

Amy L. Miller  
Permitting Specialist – Appalachia Region

RECEIVED  
Office of Oil and Gas

DEC 17 2018

WV Department of  
Environmental Protection

WW-6AC  
(1/12)

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

Date of Notice Certification: 12/13/2018

API No. 47- 051 -  
Operator's Well No. Woodford 6HU  
Well Pad Name: Woodford

**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>516,093.78</u>
County:	<u>Marshall</u>	UTM NAD 83 Northing:	<u>4,406,094.61</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Burch Ridge Road (County Route 26)</u>
Quadrangle:	<u>Powhatan Point 7.5'</u>	Generally used farm name:	<u>CNX RCPC, LLC</u>
Watershed:	<u>French Creek - Ohio River (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 checked="" 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 <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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RECEIVED  
Office of Oil and Gas  
DEC 17 2018  
WV Department of  
Environmental Protection

**Required Attachments:**

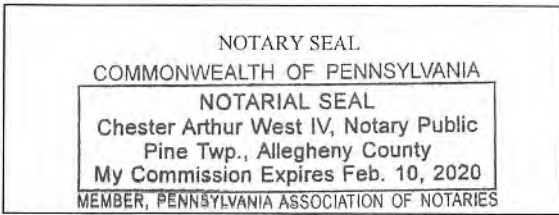
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication 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.

WW-6AC  
(1/12)

**Certification of Notice is hereby given:**

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

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



Subscribed and sworn before me this 13<sup>th</sup> day of DECEMBER 2018  
*[Signature]* Notary Public  
 My Commission Expires 2.10.2020

**Oil and Gas Privacy Notice:**

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

RECEIVED  
Office of Oil and Gas

DEC 17 2018

WV Department of  
Environmental Protection

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

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

**Date of Notice:** 12/11/2018 **Date Permit Application Filed:** 12/13/2018

**Notice of:**

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

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

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

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

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

SURFACE OWNER(s)  
Name: CNX Land Resources, LLC Attn: Casey Saunders  
Address: 1000 Consol Energy Drive  
Canonsburg, PA 15318 (Well Pad)

Name: Woodland Hill Church of God c/o Margirene W. Keefe, Trustee  
Address: 8669 Kossuth Amanda Road  
Spencerville, OH 45887 (Access Road)

SURFACE OWNER(s) (Road and/or Other Disturbance)  
Name: Linda E. Hamilton (Access Road) \* See attached list  
Address: 651 Farmall Lane  
Proctor, WV 26055 (\*See attached list)

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

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

COAL OWNER OR LESSEE  
Name: Murray Energy Corporation  
Address: 46226 National Park Road W  
St. Clairsville, OH 43950 (\*See attached list)

COAL OPERATOR  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

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

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

\*Please attach additional forms if necessary

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API NO. 47-05-**4705102143**  
OPERATOR WELL NO. Woodford #1 **03/01/2019**  
Well Pad Name: Woodford

**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

**Well Location Restrictions**

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

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

**Water Well Testing:**

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

**Water Testing Laboratories:**

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

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

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

**Written Comment:**

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

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

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

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

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

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

**Comment Requirements**

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

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

**Permit Denial or Condition**

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

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

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

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

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WW-6A  
(8-13)

05102143  
API NO. 47-051  
OPERATOR WELL NO. ~~WOODFORD 06111~~ 037012019  
Well Pad Name: Woodford

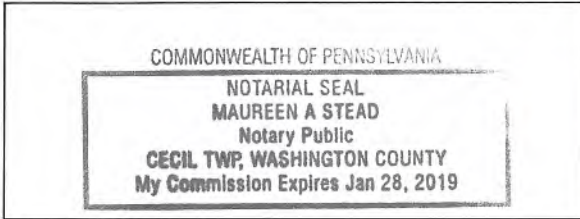
**Notice is hereby given by:**

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

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](mailto:deprivacyofficer@wv.gov).



Subscribed and sworn before me this 11 day of DEC, 2018.  
*Maureen A Stead* Notary Public  
My Commission Expires 1/28/19

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**WW-6A Additional Parties to Notice Information****Well: Woodford 6HU****Surface Owners (Access Road)**

Edward L. Gibson (Life) Gary E. Gibson (Remainder) 1200 Burch Ridge Road Proctor, WV 26055	Susan Winland and Paul M. Winland 18 Happy Trails Lane Moundsville, WV 26041
Betty J. Hamilton 622 Farmall Lane Proctor, WV 26055	Robert W. Jr. and Wendy L. Riggerbach 1048 Burch Ridge Road Proctor, WV 26055
Robert W. and Sharon Riggerbach 228 Farmall Lane Proctor, WV 26055	Raymond K. and Michele A. Miller 554 Farmall Lane Proctor, WV 26055
Anita Rae Miller – Life Estate 400 Filbert Avenue Moundsville, WV 26041	Raymond K. Miller (Remainder) 554 Farmall Lane Proctor, WV 26055
Gregg A. Miller (Remainder) 304 W. Brentwood Avenue Moundsville, WV 26041	Gerald L. Miller (Remainder) 95 Bills Lane Moundsville, WV 26041

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WW-6A

Supplement Pg. 1A

Tug Hill Operating, LLC  
 380 Southpointe BLVD, Suite 200  
 Canonsburg, PA 15317

### WATER WELL REPORT

Well: WOODFORD 6HU  
 District: Franklin  
 County: Marshall  
 State: WV

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There appears to be Eighteen (18) possible water sources within 2,000 feet of the above referenced well location.

Topo Spot # 1 TM 7A Par. 26 Albert Joseph White Est. c/o Orpha Ross 304-845-4130 201 Tomlinson Ave. Moundsville, WV 26041	Topo Spot # 2 TM 7A Par. 27 Paul W. Barrett 304-312-1975 101 Washington Lands Rd. (Apt. E6) Moundsville, WV 26041	Topo Spot # 3 TM 7A Par. 21 David A. Beyser 304-845-4347 76 Rolling Acres Moundsville, WV 26041
Topo Spot # 4 TM 7A Par. 20 Betty Sexton 208-888-1776 41 Dixie Ln. Wellsburg, WV 26070	Topo Spot # 5 TM 7A Par. 19 Shelia R. Rutan 304-905-4379 411 Magnolia Ave. Moundsville, WV 26041	Topo Spot # 6 TM 7A Par. 17 Carol Martin & Harry Yoho 843-384-3277 8724 Proctor Creek Rd. Proctor, WV 26055
Topo Spot # 7 TM 7A Par. 2 CNX RCPC, LLC 724-485-4000 1000 Consol Energy Dr. Canonsburg, PA 15317	Topo Spot # 8 TM 7A Par. 1 Lucille Meyers 139 Graysville Rd. Proctor, WV 26055	Topo Spot # 9 TM 7B Par. 25 Cindy D. Aliff 304-771-1088 34 Steelton St. New Martinsville, WV 26155
Topo Spot # 10 TM 7B Par. 26 Cindy D. Aliff 304-771-1088 34 Steelton St. New Martinsville, WV 26155	Topo Spot # 11 TM 7B Par. 29 Patricia A. Johnson 304-376-1338 171 Graysville Rd. Proctor, WV 26055	Topo Spot # 12 TM 7B Par. 33 Albert J. Anderson Jr. 216-288-1266 227 Graysville Rd. Proctor, WV 26055

Topo Spot # 13 TM 7 Par. 42.1 Holly Rice 304-843-2212 657 Long Run Rd. Proctor, WV 26055	Topo Spot # 14 TM 7 Par. 44 Crystal B. Darrah 304-280-6747 703 W. Brentwood Ave. Moundsville, WV 26041	Topo Spot # 15 TM 7 Par. 44 Crystal B. Darrah 304-280-6747 703 W. Brentwood Ave. Moundsville, WV 26041
Topo Spot # 16 TM 7 Par. 42.2 Steven & Rhonda Lloyd 304-843-0171 743 Long Run Ln. Proctor, WV 26055	Topo Spot # 17 TM 7 Par. 42.3 Joshua David Hartley 304-845-1399 759 Long Run Ln, Proctor, WV 26055	Topo Spot # 18 TM 7 Par. 42 Tracy M. Kesterson 304-830-7356 773 Long Run Ln Proctor, WV

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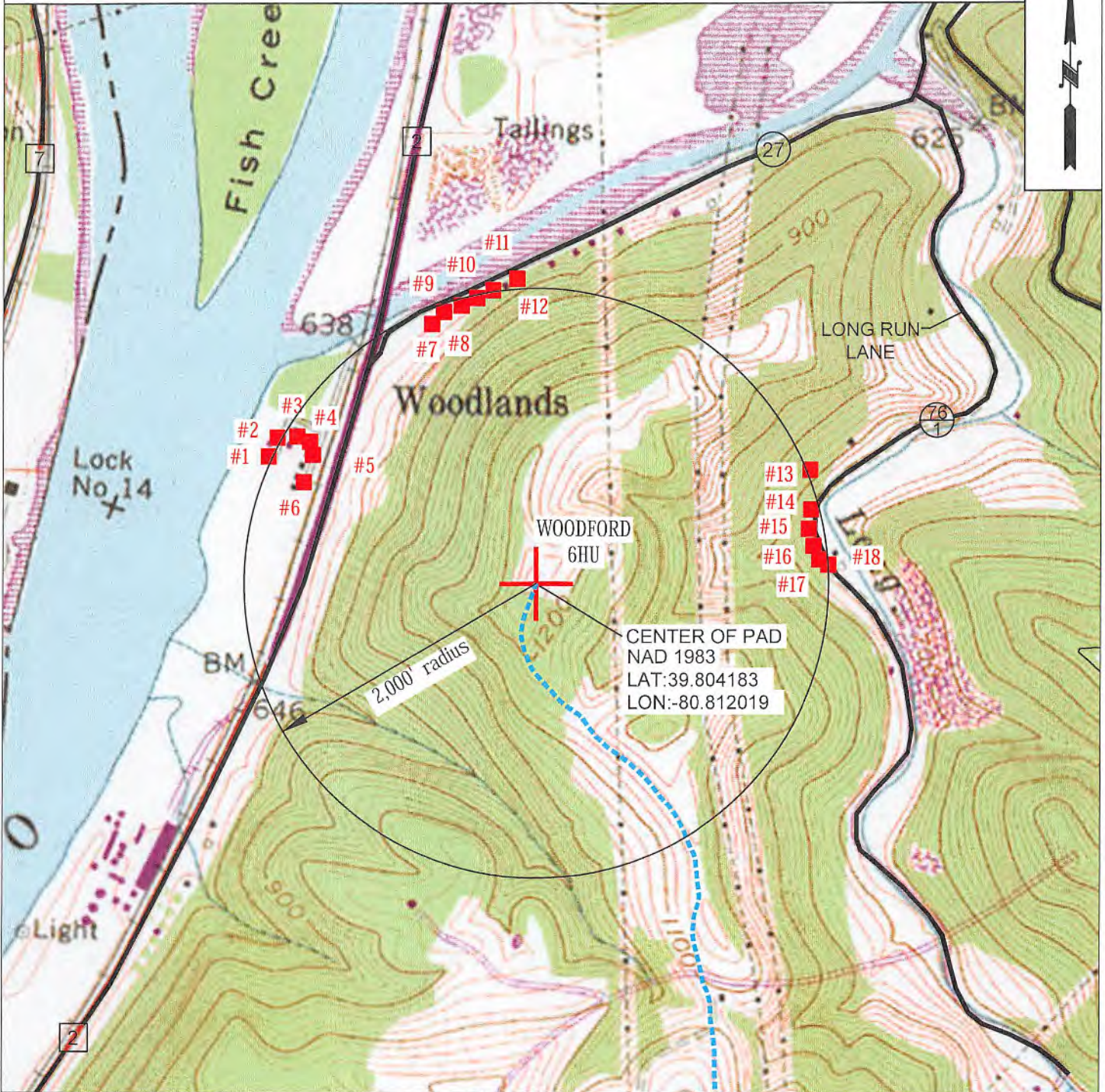
PROPOSED

SUPPLEMENT PG 1

WV Department of  
Environmental Protection

WOODFORD 6HU

There appears to be Eighteen (18) possible water sources within 2,000'.



 <b>TUG HILL</b> OPERATING	OPERATOR	494510851	TOPO SECTION	LEASE NAME
	TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		POWHATAN POINT 7.5'	WOODFORD
			SCALE:	DATE:
			1" = 1000'	DATE: 07-27-2018



03/01/2019

WW-6A3  
(1/12)Operator Well No. Woodford 6HU

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

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

**Date of Notice:** 6/11/2018      **Date of Planned Entry:** 6/18/2018

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

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

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

**Notice is hereby provided to:**

SURFACE OWNER(S)

Name: CNX Land Resources, LLC Attn: Casey Saunders /  
Address: 1000 Consol Energy Drive  
Canonsburg, PA 15318 (Well Pad)  
Name: Woodland Hill Church of God c/o Margirene W. Keefe, Trustee /  
Address: 8669 Kossuth Amanda Road  
Spencerville, OH 45887 (Access Road)  
Name: Linda E. Hamilton (Access Road) /  
Address: 651 Farmall Lane  
Proctor, WV 26055 (\*See attached list)

COAL OWNER OR LESSEE

Name: Murray Energy Corporation /  
Address: 46226 National Park Road W  
St. Clairsville, OH 43950 (\*See attached list)

MINERAL OWNER(S)

Name: HG Energy II Appalachia, LLC /  
Address: 5260 Dupont Road  
Parkersburg, WV 26101 (\*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>39.80419523 ; -80.81200643</u>
County:	<u>Marshall</u>	Public Road Access:	<u>Burch Ridge Road - County Route 29</u>
District:	<u>Franklin</u>	Watershed:	<u>Fish Creek - Ohio River (HUC 10)</u>
Quadrangle:	<u>Powhatan Point</u>	Generally used farm name:	<u></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 57<sup>th</sup> 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](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

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**Notice is hereby given by:**

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

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

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](mailto:depprivacyofficer@wv.gov).

**WW-6A3 Additional Parties to Notice Information**

05 102 143

**Well: Woodford 6HU****Surface Owners (Access Road)**

Edward L. Gibson (Life) Gary E. Gibson (Remainder) 1200 Burch Ridge Road Proctor, WV 26055	Susan Winland and Paul M. Winland 18 Happy Trails Lane Moundsville, WV 26041
Betty J. Hamilton 622 Farmall Lane Proctor, WV 26055	Robert W. Jr. and Wendy L. Riggerbach 1048 Burch Ridge Road Proctor, WV 26055
Robert W. and Sharon Riggerbach 228 Farmall Lane Proctor, WV 26055	Raymond K. and Michele A. Miller 554 Farmall Lane Proctor, WV 26055
Anita Rae Miller – Life Estate 400 Filbert Avenue Moundsville, WV 26041	Raymond K. Miller (Remainder) 554 Farmall Lane Proctor, WV 26055
Gregg A. Miller (Remainder) 304 W. Brentwood Avenue Moundsville, WV 26041	Gerald L. Miller (Remainder) 95 Bills Lane Moundsville, WV 26041

**Mineral Owners (Well Pad)**

CNX Land Resources, LLC  
Attn: Casey Saunders  
1000 Consol Energy Drive  
Canonsburg, PA 15318

**Coal Owners (Well Pad)**

CNX Land Resources, LLC  
Attn: Casey Saunders  
1000 Consol Energy Drive  
Canonsburg, PA 15318

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Environmental Protection

WW-6A5  
(1/12)

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

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

**Date of Notice:** 12/13/2018      **Date Permit Application Filed:** 12/13/2018

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

CERTIFIED MAIL       HAND  
RETURN RECEIPT REQUESTED      DELIVERY

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

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

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

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

Name: Woodland Hill Church of God c/o Margirena W. Keefe, Trustee  
Address: 8669 Kossuth Amanda Road  
Spencerville, OH (Access Road) \* See Attached List

**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>516,094.61</u>
County:	<u>Marshall</u>		Northing:	<u>4,406,040.02</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Burch Ridge Road (County Route 29)</u>	
Quadrangle:	<u>Powhatan Point 7.5'</u>	Generally used farm name:	<u>CNX RCPC, LLC</u>	
Watershed:	<u>French Creek - Ohio River (HUC 10)</u>			

**This Notice Shall Include:**

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

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

Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317  
Facsimile: 724-749-8388

**Oil and Gas Privacy Notice:**

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

**WW-6A5 Additional Parties to Notice Information****Surface Owners (Access Road)**

Edward L. Gibson (Life) Gary E. Gibson (Remainder) 1200 Burch Ridge Road Proctor, WV 26055	Susan Winland and Paul M. Winland 18 Happy Trails Lane Moundsville, WV 26041
Betty J. Hamilton 622 Farmall Lane Proctor, WV 26055	Robert W. Jr. and Wendy L. Rikkenbach 1048 Burch Ridge Road Proctor, WV 26055
Robert W. and Sharon Rikkenbach 228 Farmall Lane Proctor, WV 26055	Raymond K. and Michele A. Miller 554 Farmall Lane Proctor, WV 26055
Anita Rae Miller – Life Estate 400 Filbert Avenue Moundsville, WV 26041	Raymond K. Miller (Remainder) 554 Farmall Lane Proctor, WV 26055
Gregg A. Miller (Remainder) 304 W. Brentwood Avenue Moundsville, WV 26041	Gerald L. Miller (Remainder) 95 Bills Lane Moundsville, WV 26041
Linda E. Hamilton 651 Farmall Lane Proctor, WV 26055	

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

**Division of Highways**

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

Thomas J. Smith, P. E.  
Secretary of Transportation/  
Commissioner of Highways

Jill M. Newman  
Deputy Commissioner

June 19, 2018 ✓

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

Subject: DOH Permits for the Woodford Well Pad, Marshall County

Woodford 6HU

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Dear Mr. Martin,

This well site will be accessed from Permit #06-2018-0460 issued to Tug Hill Operating for access to the State Road for a well site located off of Marshall County Route 29 SLS.

The 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 January 3, 2012.

Very Truly Yours,

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

Cc: Jonathan White  
Tug Hill Operating  
CH, OM, D-6  
File



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

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

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WEST VIRGINIA COUNTY MAP



APPROVED WVDEP OOG

8/15/2018

Woodford Well Site

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

Tug Hill Operating Marshall County Franklin District

Latitude 39.80418270° Longitude -80.81201864°

French Creek - Ohio River & Fish Creek Watershed

Pertinent Site Information Woodford Well Site Emergency Number: 304-845-1920 Franklin District, Marshall County, WV Watershed: French Creek - Ohio River & Fish Creek Watershed Tug Hill Contact Number: 1-817-632-3400

Table with 6 columns: Name, Elevation, Area, Capacity, and other site details.

Exhibit A: Final Design: Issue for Permitting



Table with 2 columns: Disturbed Area and Acres Acre.

Table with 4 columns: Woodford Well Site Quantities including Volume, Area, and other metrics.

Table with 4 columns: Erosion/Sediment Control Linear Feet.

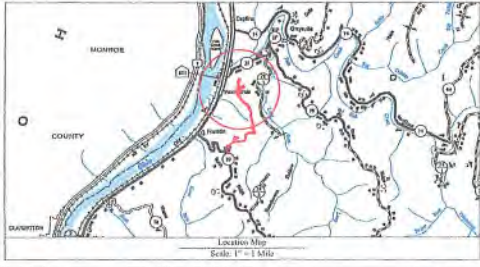
Large table with multiple columns listing various site details, coordinates, and identifiers.

USGS 7.5 Quadrangle Poolkates Point Watershed, French Creek - Ohio River & Fish Creek

Table with 2 columns: Site Location (OAD 23) and Site Location (OAD 87).

Project Contacts: List of names and phone numbers for project stakeholders.

Approach Routes: Directions from the intersection of WV Rts 2 and OH Rt 7 near Heronville, WV.



818 Location Restrictions: List of rules and regulations for the site, including no parking and no smoking.

Table with 2 columns: Sheet and Description, listing various site features and their corresponding sheet numbers.



Environmental: Information regarding the project's environmental impact and regulatory compliance.

811: Know what's below. Call before you dig. Information about underground utility services.

Flowchart detailing the permit process and the roles of various agencies and stakeholders.

Vertical sidebar containing logos for Tug Hill Operating, K&S Surveying, and project identification information.

