



west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Wednesday, September 4, 2019
WELL WORK PERMIT
Horizontal 6A / New Drill

TUG HILL OPERATING, LLC
380 SOUTHPOINTE BLVD
CANONSBURG, PA 15317

Re: Permit approval for BLAKE N-11HU
47-051-02205-00-00

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: BLAKE N-11HU
Farm Name: RUSSELL BLAKE, ET UX
U.S. WELL NUMBER: 47-051-02205-00-00
Horizontal 6A: New Drill
Date Issued: 9/4/2019

Promoting a healthy environment.

PERMIT CONDITIONS

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

CONDITIONS

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

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.



west virginia department of environmental protection

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

Barry K. Lay, Chairman
dep.wv.gov

June 18, 2019

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

RE: Application for Deep Well Permit – API #47-051-02205

COMPANY: Tug Hill Operating, LLC

FARM: Russell Blake, et al Blake N-11HU

COUNTY: Marshall DISTRICT: Franklin QUAD: Powhatan Point

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? Yes; withdrawn prior to hearing
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: yes; 47-051-02193; 47-051-02194, 47-051-01766, 47-051-02203, 47-051-02204, 47-051-01896, 47-051-01895, 47-051-01894, 47-051-02143, 47-051-02147
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

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: Blake N-11HU Well Pad Name: Blake

3) Farm Name/Surface Owner: Russell Blake, et ux, William Bungard, et ux Public Road Access: Burch Ridge Road - CR 29

4) Elevation, current ground: 1326.20' Elevation, proposed post-construction: 1326.20'

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

(b) If Gas Shallow _____ Deep
Horizontal _____

6) Existing Pad: Yes or No Yes

JW
3/27/19

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,225' - 11,103' - thickness of 122' and anticipated pressure of approx. 9500 psi

8) Proposed Total Vertical Depth: 11,375'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 21,526'

11) Proposed Horizontal Leg Length: 9,852.53'

12) Approximate Fresh Water Strata Depths: 70' ; 922'

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 - 816' ; Pittsburgh Coal - 916'

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: _____

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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#	1020'	1020'	1,644FT^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2800'	2800'	1,974FT^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	10,111'	10,111'	3,305FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	21,526'	21,526'	5,103FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,212'	
Liners							

5/21/19

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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Jan
3/27/19

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 24,627,500 lb proppant and 380,759 bbl of water. Max rate = 80 bpm; max psi = 12,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 20.72 acres

22) Area to be disturbed for well pad only, less access road (acres): 5.94 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

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25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.

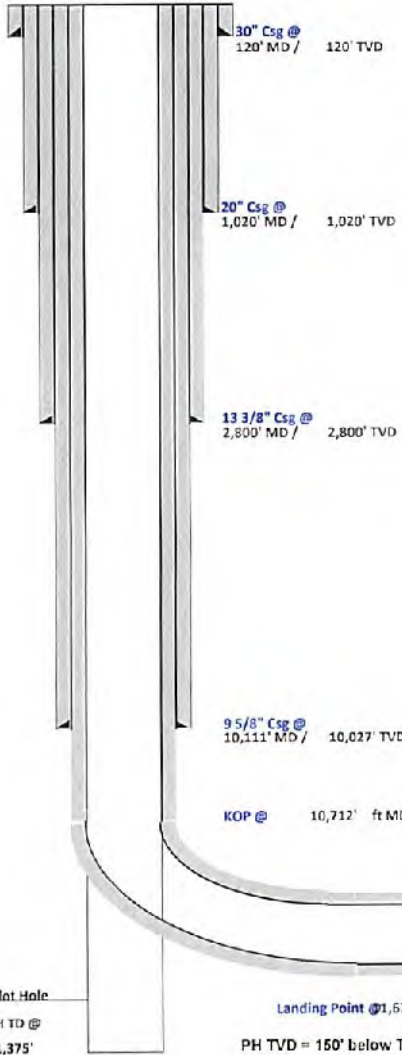


WELL NAME: Blake N-11HU
STATE: WV **COUNTY:** Marshall
DISTRICT: Franklin
DF Elev: 1,326' **GL Elev:** 1,326'
TD: 21,526'
TH Latitude: 39.76390935
TH Longitude: -80.80503901
BH Latitude: 39.79148804
BH Longitude: 80.8244694

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	922'
Sewickley Coal	816'
Pittsburgh Coal	916'
Big Lime	2,042'
Berea	2,585'
Tully	6,437'
Marcellus	6,406'
Onondaga	6,548'
Salina	7,209'
Lockport	8,231'
Utica	10,884'
Point Pleasant	11,103'
Landing Depth	11,153'
Trenton	11,225'
Pilot Hole TD	11,375'

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	1,020'	1,020'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,800'	2,800'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,111'	10,027'	47	HPP110	Surface
Production	8 1/2	5 1/2	21,526'	10,981'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,772	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,140	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,718	A	14.5	Air	1 Centralizer every other jt
Production	4,402	A	15	Air / SOBMM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc



Handwritten signature and date: 11/29/18

Pilot Hole PH TD @ 11,375'
 Landing Point @ 11,153' TVD
 PH TVD = 150' below Trenton Top

Lateral TD @ 21,526' ft MD
 10,981' ft TVD

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Tug Hill Operating, LLC Casing and Cement Program

Blake N-11HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	1,020'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,800'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,111'	CTS
Production	5 1/2"	HCP110	8 1/2"	21,526'	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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Well Site Safety Plan
Tug Hill Operating, LLC *11/29/18*

Well Name: Blake N-11HU

Pad Location: Blake

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

NORTHING - 4,401,572.17

EASTING - 516,698.99

November 2018

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Well: Blake 11 HU (slot L)
 Site: Blake Pad
 Project: Marshall County, West Virginia.
 Design: rev1

Geocetic 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 @ 1326.00ft

Northing: 14440824.70 Easting: 1695203.27 Latitude: 39.76390935 Longitude: -80.80503801

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

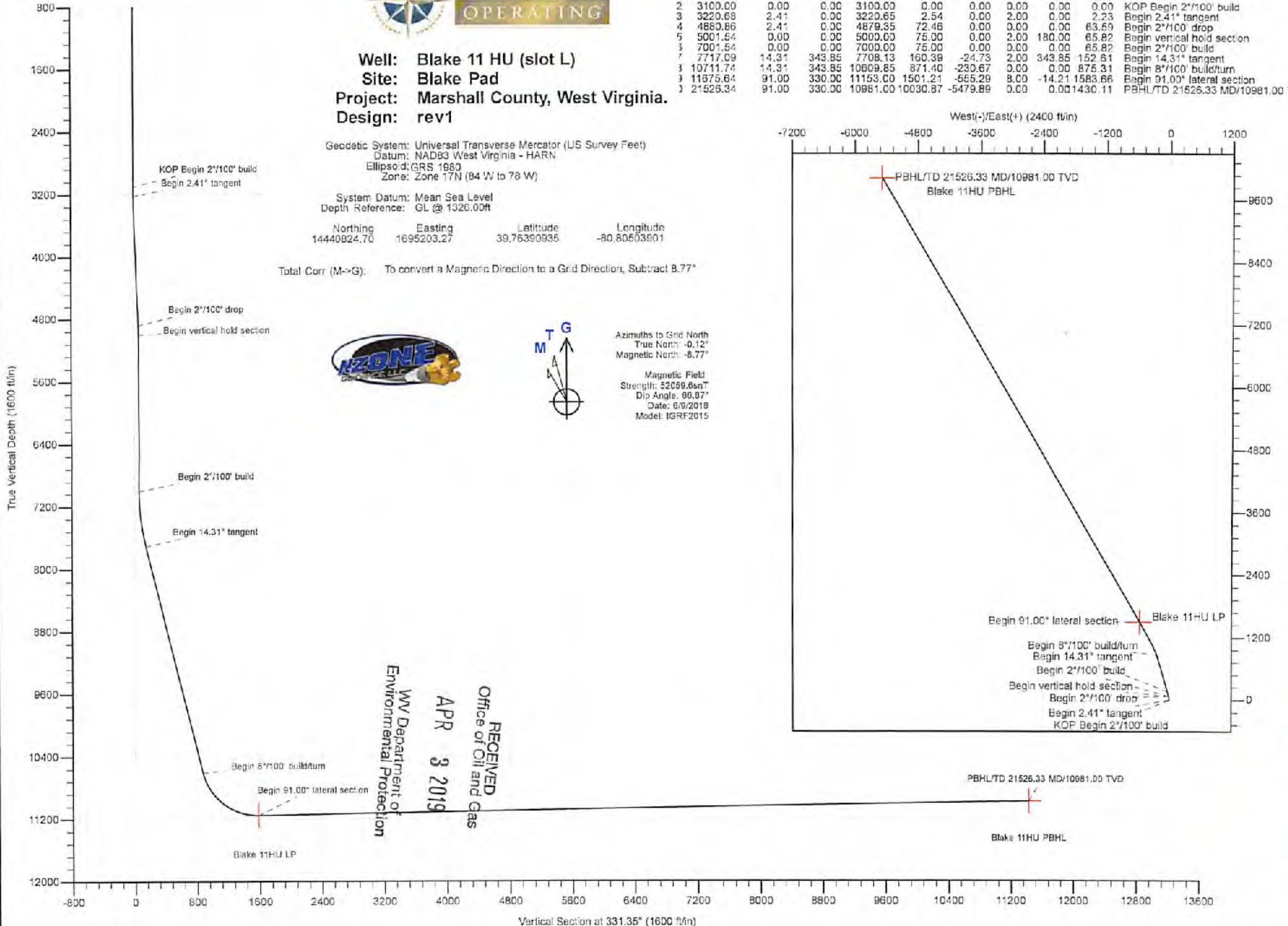


Azimuths to Grid North
 True North: -0.12°
 Magnetic North: -8.77°

Magnetic Field
 Strength: 52059.6nT
 Dip Angle: 66.87°
 Date: 6/9/2018
 Model: IGRF2015

SECTION DETAILS

Sec	MD	Inc	Az	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	3220.68	2.41	0.00	3220.65	2.54	0.00	2.00	0.00	2.23	Begin 2.41° tangent
4	4860.86	2.41	0.00	4879.35	72.46	0.00	0.00	0.00	63.69	Begin 2'/100' drop
5	5001.54	0.00	0.00	5000.00	75.00	0.00	2.00	180.00	65.82	Begin vertical hold section
7	7001.54	0.00	0.00	7000.00	75.00	0.00	0.00	0.00	65.82	Begin 2'/100' build
7	7717.09	14.31	343.85	7708.13	160.39	-24.73	2.00	343.85	152.61	Begin 14.31° tangent
3	10711.74	14.31	343.85	10609.85	871.40	-230.67	0.00	0.00	875.31	Begin 8'/100' build/turn
3	11975.64	91.00	330.00	11153.00	1501.21	-555.29	8.00	-14.21	1583.66	Begin 91.00° lateral section
3	21525.34	91.00	330.00	10981.00	10030.87	-5479.89	0.00	0.00	1430.11	PBHL/TD 21525.33 MD/10981.00 TVD



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51-03205



Planning Report - Geographic

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Blake 11 HU (slot L)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1326.00ft
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1326.00ft
Site:	Blake Pad	North Reference:	Grid
Well:	Blake 11 HU (slot L)	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	Blake Pad				
Site Position:		Northing:	14,440,917.72 usft	Latitude:	39.76416471
From:	Lat/Long	Easting:	1,695,217.29 usft	Longitude:	-80.80496839
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.12 °

Well	Blake 11 HU (slot L)					
Well Position	+N/-S	0.00 ft	Northing:	14,440,824.71 usft	Latitude:	39.76390935
	+E/-W	0.00 ft	Easting:	1,695,203.26 usft	Longitude:	-80.80503901
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	1,326.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/9/2018	-8.65	66.87	52,059.56633753

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	331.35

Plan Survey Tool Program	Date 6/16/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,526.34 rev1 (Original Hole)	MWD	MWD - Standard

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Site:	Blake Pad	North Reference:	Grid
Well:	Blake 11 HU (slot L)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

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		
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00		
3,220.68	2.41	0.00	3,220.65	2.54	0.00	2.00	2.00	0.00	0.00		
4,880.86	2.41	0.00	4,879.35	72.46	0.00	0.00	0.00	0.00	0.00		
5,001.54	0.00	0.00	5,000.00	75.00	0.00	2.00	-2.00	0.00	180.00		
7,001.54	0.00	0.00	7,000.00	75.00	0.00	0.00	0.00	0.00	0.00		
7,717.09	14.31	343.85	7,708.13	160.39	-24.73	2.00	2.00	0.00	343.85		
10,711.74	14.31	343.85	10,609.85	871.40	-230.67	0.00	0.00	0.00	0.00		
11,675.64	91.00	330.00	11,153.00	1,501.21	-555.29	8.00	7.96	-1.44	-14.21	Blake 11HU LP	
21,526.34	91.00	330.00	10,981.00	10,030.87	-5,479.89	0.00	0.00	0.00	0.00	Blake 11HU PBHL	

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Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1326.00ft
Site:	Blake Pad	North Reference:	Grid
Well:	Blake 11 HU (slot L)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

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	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
100.00	0.00	0.00	100.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
200.00	0.00	0.00	200.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
300.00	0.00	0.00	300.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
400.00	0.00	0.00	400.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
500.00	0.00	0.00	500.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
600.00	0.00	0.00	600.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
700.00	0.00	0.00	700.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
800.00	0.00	0.00	800.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
900.00	0.00	0.00	900.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,440,824.71	1,695,203.26	39.76390935	-80.80503901	
KOP Begin 2°/100' build										
3,200.00	2.00	0.00	3,199.98	1.75	0.00	14,440,826.45	1,695,203.26	39.76391414	-80.80503900	
3,220.88	2.41	0.00	3,220.65	2.54	0.00	14,440,827.26	1,695,203.26	39.78391633	-80.80503999	
Begin 2.41° tangent										
3,300.00	2.41	0.00	3,299.89	5.88	0.00	14,440,830.59	1,695,203.26	39.76392551	-80.80503897	
3,400.00	2.41	0.00	3,399.81	10.09	0.00	14,440,834.80	1,695,203.26	39.76393707	-80.80503893	
3,500.00	2.41	0.00	3,499.72	14.30	0.00	14,440,839.01	1,695,203.26	39.76394864	-80.80503890	
3,600.00	2.41	0.00	3,599.63	18.52	0.00	14,440,843.22	1,695,203.26	39.76396020	-80.80503887	
3,700.00	2.41	0.00	3,699.54	22.73	0.00	14,440,847.44	1,695,203.26	39.76397177	-80.80503884	
3,800.00	2.41	0.00	3,799.45	26.94	0.00	14,440,851.65	1,695,203.26	39.76398333	-80.80503880	
3,900.00	2.41	0.00	3,899.36	31.15	0.00	14,440,855.86	1,695,203.26	39.76399490	-80.80503877	
4,000.00	2.41	0.00	3,999.27	35.36	0.00	14,440,860.07	1,695,203.26	39.76400647	-80.80503874	
4,100.00	2.41	0.00	4,099.18	39.57	0.00	14,440,864.28	1,695,203.26	39.76401803	-80.80503870	
4,200.00	2.41	0.00	4,199.10	43.78	0.00	14,440,868.49	1,695,203.26	39.76402960	-80.80503867	
4,300.00	2.41	0.00	4,299.01	48.00	0.00	14,440,872.70	1,695,203.26	39.76404116	-80.80503864	
4,400.00	2.41	0.00	4,398.92	52.21	0.00	14,440,876.92	1,695,203.26	39.76405273	-80.80503861	
4,500.00	2.41	0.00	4,498.83	56.42	0.00	14,440,881.13	1,695,203.26	39.76406429	-80.80503857	
4,600.00	2.41	0.00	4,598.74	60.63	0.00	14,440,885.34	1,695,203.26	39.76407586	-80.80503854	
4,700.00	2.41	0.00	4,698.65	64.84	0.00	14,440,889.55	1,695,203.26	39.76408743	-80.80503851	
4,800.00	2.41	0.00	4,798.56	69.05	0.00	14,440,893.76	1,695,203.26	39.76409899	-80.80503848	
4,880.86	2.41	0.00	4,879.35	72.46	0.00	14,440,897.17	1,695,203.26	39.76410834	-80.80503845	
Begin 2°/100' drop										

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Planning Report - Geographic

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Blake 11 HU (slot L)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1326.00ft
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1326.00ft
Site:	Blake Pad	North Reference:	Grid
Well:	Blake 11 HU (slot L)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,900.00	2.03	0.00	4,898.48	73.20	0.00	14,440,897.91	1,695,203.26	39.76411038	-80.80503844	
5,000.00	0.03	0.00	4,988.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
5,001.54	0.00	0.00	5,000.00	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
Begin vertical hold section										
5,100.00	0.00	0.00	5,098.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
5,200.00	0.00	0.00	5,198.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
5,300.00	0.00	0.00	5,298.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
5,400.00	0.00	0.00	5,398.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
5,500.00	0.00	0.00	5,498.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
5,600.00	0.00	0.00	5,598.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
5,700.00	0.00	0.00	5,698.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
5,800.00	0.00	0.00	5,798.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
5,900.00	0.00	0.00	5,898.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
6,000.00	0.00	0.00	5,998.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
6,100.00	0.00	0.00	6,098.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
6,200.00	0.00	0.00	6,198.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
6,300.00	0.00	0.00	6,298.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
6,400.00	0.00	0.00	6,398.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
6,500.00	0.00	0.00	6,498.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
6,600.00	0.00	0.00	6,598.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
6,700.00	0.00	0.00	6,698.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
6,800.00	0.00	0.00	6,798.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
6,900.00	0.00	0.00	6,898.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
7,000.00	0.00	0.00	6,998.46	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
7,001.54	0.00	0.00	7,000.00	75.00	0.00	14,440,899.71	1,695,203.26	39.76411532	-80.80503843	
Begin 2°/100' build										
7,100.00	1.97	343.85	7,098.44	76.62	-0.47	14,440,901.33	1,695,202.79	39.76411979	-80.80504009	
7,200.00	3.97	343.85	7,198.30	81.60	-1.91	14,440,906.31	1,695,201.35	39.76413348	-80.80504518	
7,300.00	5.97	343.85	7,297.92	89.92	-4.32	14,440,914.63	1,695,198.94	39.76415632	-80.80505369	
7,400.00	7.97	343.85	7,397.17	101.57	-7.70	14,440,926.26	1,695,195.57	39.76418835	-80.80506561	
7,500.00	9.97	343.85	7,495.94	116.55	-12.03	14,440,941.25	1,695,191.23	39.76422950	-80.80508093	
7,600.00	11.97	343.85	7,594.11	134.82	-17.33	14,440,959.53	1,695,185.94	39.76427972	-80.80509963	
7,700.00	13.97	343.85	7,691.56	156.38	-23.57	14,440,981.09	1,695,179.69	39.76433895	-80.80512168	
7,717.09	14.31	343.85	7,708.13	160.39	-24.73	14,440,985.10	1,695,178.53	39.76434997	-80.80512578	
Begin 14.31° tangent										
7,800.00	14.31	343.85	7,788.47	180.07	-30.43	14,441,004.78	1,695,172.83	39.76440407	-80.80514591	
7,900.00	14.31	343.85	7,885.36	203.82	-37.31	14,441,028.52	1,695,165.95	39.76448931	-80.80517020	
8,000.00	14.31	343.85	7,982.26	227.56	-44.19	14,441,052.27	1,695,159.08	39.76453456	-80.80519448	
8,100.00	14.31	343.85	8,079.16	251.30	-51.06	14,441,076.01	1,695,152.20	39.76458980	-80.80521878	
8,200.00	14.31	343.85	8,176.05	275.04	-57.94	14,441,099.75	1,695,145.32	39.76466505	-80.80524307	
8,300.00	14.31	343.85	8,272.95	298.79	-64.82	14,441,123.49	1,695,138.45	39.76473029	-80.80526735	
8,400.00	14.31	343.85	8,369.85	322.53	-71.69	14,441,147.24	1,695,131.57	39.76479554	-80.80529164	
8,500.00	14.31	343.85	8,466.74	346.27	-78.57	14,441,170.98	1,695,124.69	39.76486078	-80.80531593	
8,600.00	14.31	343.85	8,563.64	370.02	-85.45	14,441,194.72	1,695,117.82	39.76492603	-80.80534022	
8,700.00	14.31	343.85	8,660.54	393.76	-92.32	14,441,218.46	1,695,110.94	39.76499127	-80.80536450	
8,800.00	14.31	343.85	8,757.43	417.50	-99.20	14,441,242.21	1,695,104.06	39.76505652	-80.80538879	
8,900.00	14.31	343.85	8,854.33	441.24	-106.08	14,441,265.95	1,695,097.19	39.76512176	-80.80541308	
9,000.00	14.31	343.85	8,951.23	464.99	-112.95	14,441,289.69	1,695,090.31	39.76518701	-80.80543737	
9,100.00	14.31	343.85	9,048.12	488.73	-119.83	14,441,313.44	1,695,083.43	39.76525225	-80.80546166	
9,200.00	14.31	343.85	9,145.02	512.47	-126.71	14,441,337.18	1,695,076.56	39.76531750	-80.80548595	
9,300.00	14.31	343.85	9,241.92	536.21	-133.58	14,441,360.92	1,695,069.68	39.76538274	-80.80551023	
9,400.00	14.31	343.85	9,338.82	559.96	-140.46	14,441,384.66	1,695,062.80	39.76544799	-80.80553452	
9,500.00	14.31	343.85	9,435.71	583.70	-147.34	14,441,408.41	1,695,055.93	39.76551324	-80.80555881	
9,600.00	14.31	343.85	9,532.61	607.44	-154.22	14,441,432.15	1,695,049.05	39.76557848	-80.80558310	

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Planning Report - Geographic

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Blake 11 HU (slot L)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1326.00ft
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1326.00ft
Site:	Blake Pad	North Reference:	Grid
Well:	Blake 11 HU (slot L)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,700.00	14.31	343.85	9,629.51	631.18	-161.09	14,441,455.89	1,695,042.17	39.78564373	-80.80560739	
9,800.00	14.31	343.85	9,726.40	654.93	-167.97	14,441,479.63	1,695,035.30	39.78570897	-80.80563168	
9,900.00	14.31	343.85	9,823.30	678.67	-174.85	14,441,503.38	1,695,028.42	39.78577422	-80.80565598	
10,000.00	14.31	343.85	9,920.20	702.41	-181.72	14,441,527.12	1,695,021.54	39.78583946	-80.80568025	
10,100.00	14.31	343.85	10,017.09	726.16	-188.60	14,441,550.86	1,695,014.66	39.78589471	-80.80570454	
10,200.00	14.31	343.85	10,113.99	749.90	-195.46	14,441,574.60	1,695,007.79	39.78595995	-80.80572883	
10,300.00	14.31	343.85	10,210.89	773.64	-202.35	14,441,598.35	1,695,000.91	39.78603520	-80.80575312	
10,400.00	14.31	343.85	10,307.78	797.38	-209.23	14,441,622.09	1,694,994.03	39.78610044	-80.80577741	
10,500.00	14.31	343.85	10,404.68	821.13	-216.11	14,441,645.83	1,694,987.16	39.78616569	-80.80580170	
10,600.00	14.31	343.85	10,501.58	844.87	-222.98	14,441,669.57	1,694,980.28	39.78623093	-80.80582598	
10,700.00	14.31	343.85	10,598.47	868.61	-229.86	14,441,693.32	1,694,973.40	39.78629618	-80.80585027	
10,711.74	14.31	343.85	10,609.85	871.40	-230.67	14,441,696.10	1,694,972.60	39.78630384	-80.80585312	
Begin 8°/100' build/turn										
10,800.00	21.23	339.07	10,693.85	898.83	-239.42	14,441,721.54	1,694,963.84	39.78637373	-80.80588408	
10,900.00	29.14	336.32	10,784.28	936.10	-255.69	14,441,760.81	1,694,947.57	39.78648167	-80.80594169	
11,000.00	37.09	334.67	10,867.97	985.74	-278.41	14,441,810.44	1,694,924.85	39.78661812	-80.80602214	
11,100.00	45.06	333.54	10,943.30	1,044.77	-307.13	14,441,869.48	1,694,896.14	39.78678042	-80.80612388	
11,200.00	53.03	332.68	11,008.79	1,112.08	-341.26	14,441,936.76	1,694,861.98	39.78695540	-80.80624492	
11,300.00	61.01	331.99	11,063.18	1,186.28	-380.22	14,442,010.99	1,694,823.05	39.78716948	-80.80638290	
11,400.00	68.99	331.40	11,105.41	1,268.00	-423.17	14,442,090.71	1,694,780.09	39.78738868	-80.80653514	
11,500.00	76.98	330.87	11,134.65	1,349.67	-469.31	14,442,174.36	1,694,733.96	39.78761873	-80.80669868	
11,600.00	84.96	330.37	11,150.34	1,435.66	-517.73	14,442,260.36	1,694,685.54	39.78785515	-80.80687034	
11,675.64	91.00	330.00	11,153.00	1,501.21	-555.30	14,442,325.92	1,694,647.97	39.78803541	-80.80700353	
Begin 91.00° lateral section										
11,700.00	91.00	330.00	11,152.57	1,522.30	-567.47	14,442,347.01	1,694,635.79	39.78809341	-80.80704671	
11,800.00	91.00	330.00	11,150.83	1,608.89	-617.47	14,442,433.60	1,694,585.80	39.78833150	-80.80722396	
11,900.00	91.00	330.00	11,149.08	1,695.48	-667.46	14,442,520.19	1,694,535.81	39.78856959	-80.80740121	
12,000.00	91.00	330.00	11,147.34	1,782.07	-717.45	14,442,606.78	1,694,485.81	39.78880769	-80.80757845	
12,100.00	91.00	330.00	11,145.59	1,868.66	-767.44	14,442,693.37	1,694,435.82	39.78904578	-80.80775571	
12,200.00	91.00	330.00	11,143.84	1,955.25	-817.44	14,442,779.95	1,694,385.83	39.78928387	-80.80793296	
12,300.00	91.00	330.00	11,142.10	2,041.84	-867.43	14,442,866.54	1,694,335.84	39.78952197	-80.80811021	
12,400.00	91.00	330.00	11,140.35	2,128.43	-917.42	14,442,953.13	1,694,285.85	39.78976006	-80.80828746	
12,500.00	91.00	330.00	11,138.61	2,215.02	-967.41	14,443,039.72	1,694,235.85	39.78999815	-80.80846472	
12,600.00	91.00	330.00	11,136.86	2,301.61	-1,017.40	14,443,126.31	1,694,185.86	39.77023625	-80.80864198	
12,700.00	91.00	330.00	11,135.11	2,388.20	-1,067.40	14,443,212.90	1,694,135.87	39.77047434	-80.80881923	
12,800.00	91.00	330.00	11,133.37	2,474.79	-1,117.39	14,443,299.49	1,694,085.88	39.77071243	-80.80899649	
12,900.00	91.00	330.00	11,131.62	2,561.38	-1,167.38	14,443,386.08	1,694,035.88	39.77095052	-80.80917375	
13,000.00	91.00	330.00	11,129.88	2,647.97	-1,217.37	14,443,472.67	1,693,985.89	39.77118861	-80.80935101	
13,100.00	91.00	330.00	11,128.13	2,734.56	-1,267.37	14,443,559.26	1,693,935.90	39.77142670	-80.80952828	
13,200.00	91.00	330.00	11,126.38	2,821.14	-1,317.36	14,443,645.85	1,693,885.91	39.77166479	-80.80970554	
13,300.00	91.00	330.00	11,124.64	2,907.73	-1,367.35	14,443,732.44	1,693,835.91	39.77190288	-80.80988280	
13,400.00	91.00	330.00	11,122.89	2,994.32	-1,417.34	14,443,819.02	1,693,785.92	39.77214097	-80.81006007	
13,500.00	91.00	330.00	11,121.15	3,080.91	-1,467.34	14,443,905.61	1,693,735.93	39.77237906	-80.81023734	
13,600.00	91.00	330.00	11,119.40	3,167.50	-1,517.33	14,443,992.20	1,693,685.94	39.77261715	-80.81041461	
13,700.00	91.00	330.00	11,117.65	3,254.09	-1,567.32	14,444,078.79	1,693,635.95	39.77285524	-80.81059188	
13,800.00	91.00	330.00	11,115.91	3,340.68	-1,617.31	14,444,165.38	1,693,585.95	39.77309333	-80.81076915	
13,900.00	91.00	330.00	11,114.16	3,427.27	-1,667.31	14,444,251.97	1,693,535.96	39.77333142	-80.81094642	
14,000.00	91.00	330.00	11,112.42	3,513.86	-1,717.30	14,444,338.56	1,693,485.97	39.77356951	-80.81112369	
14,100.00	91.00	330.00	11,110.67	3,600.45	-1,767.29	14,444,425.15	1,693,435.98	39.77380759	-80.81130097	
14,200.00	91.00	330.00	11,108.92	3,687.04	-1,817.28	14,444,511.74	1,693,385.98	39.77404568	-80.81147824	
14,300.00	91.00	330.00	11,107.18	3,773.63	-1,867.28	14,444,598.33	1,693,335.99	39.77428377	-80.81165552	
14,400.00	91.00	330.00	11,105.43	3,860.22	-1,917.27	14,444,684.92	1,693,285.00	39.77452186	-80.81183280	
14,500.00	91.00	330.00	11,103.68	3,946.81	-1,967.26	14,444,771.51	1,693,235.01	39.77475994	-80.81201008	
14,600.00	91.00	330.00	11,101.94	4,033.40	-2,017.25	14,444,858.10	1,693,185.02	39.77499803	-80.81218736	

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Planning Report - Geographic

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Blake 11 HU (slot L)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1326.00ft
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1326.00ft
Site:	Blake Pad	North Reference:	Grid
Well:	Blake 11 HU (slot L)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
14,700.00	91.00	330.00	11,100.19	4,119.98	-2,067.24	14,444,944.68	1,693,136.02	39.77523612	-80.81236464	
14,800.00	91.00	330.00	11,096.45	4,206.57	-2,117.24	14,445,031.27	1,693,086.03	39.77547420	-80.81254193	
14,900.00	91.00	330.00	11,096.70	4,293.16	-2,167.23	14,445,117.86	1,693,036.04	39.77571229	-80.81271921	
15,000.00	91.00	330.00	11,094.95	4,379.75	-2,217.22	14,445,204.45	1,692,986.05	39.77595037	-80.81289650	
15,100.00	91.00	330.00	11,093.21	4,466.34	-2,267.21	14,445,291.04	1,692,936.05	39.77618846	-80.81307378	
15,200.00	91.00	330.00	11,091.46	4,552.93	-2,317.21	14,445,377.63	1,692,886.06	39.77642654	-80.81325107	
15,300.00	91.00	330.00	11,089.72	4,639.52	-2,367.20	14,445,464.22	1,692,836.07	39.77666463	-80.81342836	
15,400.00	91.00	330.00	11,087.97	4,726.11	-2,417.19	14,445,550.81	1,692,786.08	39.77690271	-80.81360565	
15,500.00	91.00	330.00	11,086.22	4,812.70	-2,467.18	14,445,637.40	1,692,736.08	39.77714080	-80.81378294	
15,600.00	91.00	330.00	11,084.48	4,899.29	-2,517.18	14,445,723.99	1,692,686.09	39.77737888	-80.81396024	
15,700.00	91.00	330.00	11,082.73	4,985.88	-2,567.17	14,445,810.58	1,692,636.10	39.77761697	-80.81413753	
15,800.00	91.00	330.00	11,080.99	5,072.47	-2,617.16	14,445,897.17	1,692,586.11	39.77785505	-80.81431483	
15,900.00	91.00	330.00	11,079.24	5,159.06	-2,667.15	14,445,983.75	1,692,536.12	39.77809313	-80.81449212	
16,000.00	91.00	330.00	11,077.49	5,245.65	-2,717.15	14,446,070.34	1,692,486.12	39.77833121	-80.81466942	
16,100.00	91.00	330.00	11,075.75	5,332.24	-2,767.14	14,446,156.93	1,692,436.13	39.77856930	-80.81484672	
16,200.00	91.00	330.00	11,074.00	5,418.82	-2,817.13	14,446,243.52	1,692,386.14	39.77880738	-80.81502402	
16,300.00	91.00	330.00	11,072.26	5,505.41	-2,867.12	14,446,330.11	1,692,336.15	39.77904546	-80.81520132	
16,400.00	91.00	330.00	11,070.51	5,592.00	-2,917.11	14,446,416.70	1,692,286.15	39.77928354	-80.81537862	
16,500.00	91.00	330.00	11,068.78	5,678.59	-2,967.11	14,446,503.29	1,692,236.16	39.77952162	-80.81555593	
16,600.00	91.00	330.00	11,067.02	5,765.18	-3,017.10	14,446,589.88	1,692,186.17	39.77975971	-80.81573323	
16,700.00	91.00	330.00	11,065.27	5,851.77	-3,067.09	14,446,676.47	1,692,136.18	39.77999779	-80.81591054	
16,800.00	91.00	330.00	11,063.53	5,938.36	-3,117.08	14,446,763.06	1,692,086.19	39.78023587	-80.81608785	
16,900.00	91.00	330.00	11,061.78	6,024.95	-3,167.08	14,446,849.65	1,692,036.19	39.78047395	-80.81626516	
17,000.00	91.00	330.00	11,060.03	6,111.54	-3,217.07	14,446,936.24	1,691,986.20	39.78071203	-80.81644247	
17,100.00	91.00	330.00	11,058.29	6,198.13	-3,267.06	14,447,022.82	1,691,936.21	39.78095011	-80.81661978	
17,200.00	91.00	330.00	11,056.54	6,284.72	-3,317.05	14,447,109.41	1,691,886.22	39.78118819	-80.81679709	
17,300.00	91.00	330.00	11,054.80	6,371.31	-3,367.05	14,447,196.00	1,691,836.22	39.78142627	-80.81697440	
17,400.00	91.00	330.00	11,053.05	6,457.90	-3,417.04	14,447,282.59	1,691,786.23	39.78166434	-80.81715172	
17,500.00	91.00	330.00	11,051.30	6,544.49	-3,467.03	14,447,369.18	1,691,736.24	39.78190242	-80.81732904	
17,600.00	91.00	330.00	11,049.56	6,631.08	-3,517.02	14,447,455.77	1,691,686.25	39.78214050	-80.81750635	
17,700.00	91.00	330.00	11,047.81	6,717.67	-3,567.02	14,447,542.36	1,691,636.25	39.78237858	-80.81768367	
17,800.00	91.00	330.00	11,046.06	6,804.26	-3,617.01	14,447,628.95	1,691,586.26	39.78261666	-80.81786099	
17,900.00	91.00	330.00	11,044.32	6,890.84	-3,667.00	14,447,715.54	1,691,536.27	39.78285473	-80.81803831	
18,000.00	91.00	330.00	11,042.57	6,977.43	-3,716.99	14,447,802.13	1,691,486.28	39.78309281	-80.81821564	
18,100.00	91.00	330.00	11,040.83	7,064.02	-3,766.99	14,447,888.72	1,691,436.29	39.78333089	-80.81839296	
18,200.00	91.00	330.00	11,039.08	7,150.61	-3,816.98	14,447,975.31	1,691,386.29	39.78356897	-80.81857028	
18,300.00	91.00	330.00	11,037.33	7,237.20	-3,866.97	14,448,061.90	1,691,336.30	39.78380704	-80.81874761	
18,400.00	91.00	330.00	11,035.59	7,323.79	-3,916.96	14,448,148.48	1,691,286.31	39.78404512	-80.81892494	
18,500.00	91.00	330.00	11,033.84	7,410.38	-3,966.95	14,448,235.07	1,691,236.32	39.78428319	-80.81910227	
18,600.00	91.00	330.00	11,032.10	7,496.97	-4,016.95	14,448,321.66	1,691,186.32	39.78452127	-80.81927959	
18,700.00	91.00	330.00	11,030.35	7,583.56	-4,066.94	14,448,408.25	1,691,136.33	39.78475934	-80.81945693	
18,800.00	91.00	330.00	11,028.60	7,670.15	-4,116.93	14,448,494.84	1,691,086.34	39.78499742	-80.81963426	
18,900.00	91.00	330.00	11,028.86	7,756.74	-4,166.92	14,448,581.43	1,691,036.35	39.78523549	-80.81981159	
19,000.00	91.00	330.00	11,025.11	7,843.33	-4,216.92	14,448,668.02	1,690,986.36	39.78547357	-80.81998893	
19,100.00	91.00	330.00	11,023.37	7,929.92	-4,266.91	14,448,754.61	1,690,936.36	39.78571164	-80.82016626	
19,200.00	91.00	330.00	11,021.62	8,016.51	-4,316.90	14,448,841.20	1,690,886.37	39.78594972	-80.82034360	
19,300.00	91.00	330.00	11,019.87	8,103.09	-4,366.89	14,448,927.79	1,690,836.38	39.78618779	-80.82052094	
19,400.00	91.00	330.00	11,018.13	8,189.68	-4,416.89	14,449,014.38	1,690,786.39	39.78642586	-80.82069828	
19,500.00	91.00	330.00	11,016.38	8,276.27	-4,466.88	14,449,100.96	1,690,736.39	39.78666394	-80.82087562	
19,600.00	91.00	330.00	11,014.64	8,362.86	-4,516.87	14,449,187.55	1,690,686.40	39.78690201	-80.82105296	
19,700.00	91.00	330.00	11,012.89	8,449.45	-4,566.86	14,449,274.14	1,690,636.41	39.78714008	-80.82123030	
19,800.00	91.00	330.00	11,011.14	8,536.04	-4,616.86	14,449,360.73	1,690,586.42	39.78737815	-80.82140765	
19,900.00	91.00	330.00	11,009.40	8,622.63	-4,666.85	14,449,447.32	1,690,536.43	39.78761623	-80.82158499	
20,000.00	91.00	330.00	11,007.65	8,709.22	-4,716.84	14,449,533.91	1,690,486.43	39.78785430	-80.82176234	
20,100.00	91.00	330.00	11,005.91	8,795.81	-4,766.83	14,449,620.50	1,690,436.43	39.78809237	-80.82193969	

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WV Department of Environmental Protection



Planning Report - Geographic

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Blake 11 HU (slot L)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1326.00ft
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1326.00ft
Site:	Blake Pad	North Reference:	Grid
Well:	Blake 11 HU (slot L)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
20,200.00	91.00	330.00	11,004.16	8,882.40	-4,816.82	14,449,707.09	1,690,386.45	39.78833044	-80.82211704	
20,300.00	91.00	330.00	11,002.41	8,966.99	-4,866.82	14,449,793.68	1,690,336.46	39.78856851	-80.82229439	
20,400.00	91.00	330.00	11,000.67	9,055.58	-4,916.81	14,449,860.27	1,690,286.46	39.78880658	-80.82247174	
20,500.00	91.00	330.00	10,998.92	9,142.17	-4,966.80	14,449,968.86	1,690,236.47	39.78904465	-80.82264909	
20,600.00	91.00	330.00	10,997.17	9,228.76	-5,016.79	14,450,053.45	1,690,186.46	39.78928272	-80.82282644	
20,700.00	91.00	330.00	10,995.43	9,315.35	-5,066.79	14,450,140.03	1,690,136.49	39.78952078	-80.82300380	
20,800.00	91.00	330.00	10,993.68	9,401.93	-5,116.78	14,450,226.62	1,690,086.49	39.78975886	-80.82318116	
20,900.00	91.00	330.00	10,991.94	9,488.52	-5,166.77	14,450,313.21	1,690,036.50	39.78999693	-80.82335851	
21,000.00	91.00	330.00	10,990.19	9,575.11	-5,216.76	14,450,399.80	1,689,986.51	39.79023500	-80.82353587	
21,100.00	91.00	330.00	10,988.44	9,661.70	-5,266.76	14,450,488.39	1,689,936.52	39.79047307	-80.82371323	
21,200.00	91.00	330.00	10,986.70	9,748.29	-5,316.75	14,450,572.98	1,689,886.53	39.79071114	-80.82389059	
21,300.00	91.00	330.00	10,984.95	9,834.88	-5,366.74	14,450,659.57	1,689,836.53	39.79094920	-80.82406796	
21,400.00	91.00	330.00	10,983.21	9,921.47	-5,416.73	14,450,746.16	1,689,786.54	39.79118727	-80.82424532	
21,500.00	91.00	330.00	10,981.46	10,008.06	-5,466.73	14,450,832.75	1,689,736.55	39.79142534	-80.82442269	
21,526.33	91.00	330.00	10,981.00	10,030.88	-5,479.89	14,450,855.55	1,689,723.39	39.79146802	-80.82446939	
PBHL/TD 21526.33 MD/10981.00 TVD										
21,526.34	91.00	330.00	10,981.00	10,030.87	-5,479.89	14,450,855.55	1,689,723.38	39.79146804	-80.82446940	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Blake 11HU PBHL - plan hits target center - Point	0.00	0.00	10,981.00	10,030.87	-5,479.89	14,450,855.55	1,689,723.38	39.79146804	-80.82446940	
Blake 11HU LP - plan hits target center - Point	0.00	0.00	11,153.00	1,501.21	-555.29	14,442,325.91	1,894,647.97	39.76803540	-80.80700353	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
3,100.00	3,100.00	0.00	0.00	KOP Begin 2"/100' build	
3,220.68	3,220.85	2.54	0.00	Begin 2.41° tangent	
4,880.86	4,879.35	72.46	0.00	Begin 2"/100' drop	
5,001.54	5,000.00	75.00	0.00	Begin vertical hold section	
7,001.54	7,000.00	75.00	0.00	Begin 2"/100' build	
7,717.09	7,708.13	160.39	-24.73	Begin 14.31° tangent	
10,711.74	10,609.85	871.40	-230.67	Begin 8"/100' build/turn	
11,675.64	11,153.00	1,501.21	-555.30	Begin 91.00° lateral section	
21,526.33	10,981.00	10,030.86	-5,479.89	PBHL/TD 21526.33 MD/10981.00 TVD	

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Area of Review

4705 102205

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 DPS GIS (3/18/2019) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

Request maps for:

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

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

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

Permit well - Blake N-11HJ

Wells within 500' Buffer

Note: Well spots depicted on Area of Review map (page 3) are derived from State field coordinates. The spots may differ from those depicted on the Well Plat because the Plat locations represent actual field

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
4705101701	Tug Hill Operating	13,351' TMD 6,572' TVD	Marcellus	None	No, Marcellus producer > 1,000' above the Point Pleasant. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101598	Tug Hill Operating	12,673' TMD 6,562' TVD	Marcellus	None	No, Marcellus producer > 1,000' above the Point Pleasant. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101766	Tug Hill Operating	18,102' TMD 11,131' TVD	Point Pleasant	None	Yes, existing Point Pleasant producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705170806	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	State records are incomplete
4705101018	CNX	N/A	N/A	N/A	No	Cancelled location
4705170803	Manufactures Light & Heat Co.	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	State records are incomplete
4705102033	Tug Hill Operating	6,650' TVD	Marcellus	None	No, Marcellus producer > 1,000' above the Point Pleasant. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705102048	Tug Hill Operating	6,645' TVD	Marcellus	None	No, Marcellus producer > 1,000' above the Point Pleasant. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101539	Tug Hill Operating	11,480 TMD 6,488' TVD	Marcellus	None	No, Marcellus producer > 1,000' above the Point Pleasant. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705102052	Tug Hill Operating	6,647' TVD	Marcellus	None	No, Marcellus producer > 1,000' above the Point Pleasant. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705102034	Tug Hill Operating	6,647' TVD	Marcellus	None	No, Marcellus producer > 1,000' above the Point Pleasant. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705102049	Tug Hill Operating	6,645' TVD	Marcellus	None	No, Marcellus producer > 1,000' above the Point Pleasant. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101922	Tug Hill Operating	6,284' TVD	Marcellus	None	No, Marcellus producer > 1,000' above the Point Pleasant. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101921	Tug Hill Operating	6,284' TVD	Marcellus	None	No, Marcellus producer > 1,000' above the Point Pleasant. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101920	Tug Hill Operating	13,581 TMD 6,192' TVD	Marcellus	None	No, Marcellus producer > 1,000' above the Point Pleasant. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101017	CNX	N/A	N/A	N/A	No	Cancelled location

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4705 102205

Well: County=81 Permit #8108

DATE	TIME	DEPTH	TEMP	QUALITY	...
11/01/09	08:30	10	10.0	Good	
11/01/09	08:45	20	10.0	Good	
11/01/09	09:00	30	10.0	Good	
11/01/09	09:15	40	10.0	Good	
11/01/09	09:30	50	10.0	Good	
11/01/09	09:45	60	10.0	Good	
11/01/09	10:00	70	10.0	Good	
11/01/09	10:15	80	10.0	Good	
11/01/09	10:30	90	10.0	Good	
11/01/09	10:45	100	10.0	Good	
11/01/09	11:00	110	10.0	Good	
11/01/09	11:15	120	10.0	Good	
11/01/09	11:30	130	10.0	Good	
11/01/09	11:45	140	10.0	Good	
11/01/09	12:00	150	10.0	Good	

Production History Information Columns in Capital

DATE	TIME	DEPTH	TEMP	QUALITY	...
11/01/09	08:30	10	10.0	Good	
11/01/09	08:45	20	10.0	Good	
11/01/09	09:00	30	10.0	Good	
11/01/09	09:15	40	10.0	Good	
11/01/09	09:30	50	10.0	Good	
11/01/09	09:45	60	10.0	Good	
11/01/09	10:00	70	10.0	Good	
11/01/09	10:15	80	10.0	Good	
11/01/09	10:30	90	10.0	Good	
11/01/09	10:45	100	10.0	Good	
11/01/09	11:00	110	10.0	Good	
11/01/09	11:15	120	10.0	Good	
11/01/09	11:30	130	10.0	Good	
11/01/09	11:45	140	10.0	Good	
11/01/09	12:00	150	10.0	Good	

There is no flowline (D-Log) data for this well.
There is no PI-logging data for this well.
There is no sample data for this well.

Well: County=81 Permit #8108

DATE	TIME	DEPTH	TEMP	QUALITY	...
11/01/09	08:30	10	10.0	Good	
11/01/09	08:45	20	10.0	Good	
11/01/09	09:00	30	10.0	Good	
11/01/09	09:15	40	10.0	Good	
11/01/09	09:30	50	10.0	Good	
11/01/09	09:45	60	10.0	Good	
11/01/09	10:00	70	10.0	Good	
11/01/09	10:15	80	10.0	Good	
11/01/09	10:30	90	10.0	Good	
11/01/09	10:45	100	10.0	Good	
11/01/09	11:00	110	10.0	Good	
11/01/09	11:15	120	10.0	Good	
11/01/09	11:30	130	10.0	Good	
11/01/09	11:45	140	10.0	Good	
11/01/09	12:00	150	10.0	Good	

4705 102205

Production NGL Information - Values in Bbl - If none reported, then not reported (NGL Under CI)

WELL	PERMITS	OPERATOR	PROD_YEAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
4705-0785	51	WELLSERV	2014	14	0	0	0	0	0	0	0	0
4705-0786	51	WELLSERV	2014	14	0	0	0	0	0	0	0	0

Production Water Information - Values in Gallons

WELL	PERMITS	OPERATOR	PROD_YEAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
4705-0785	51	WELLSERV	2014	14	0	0	0	0	0	0	0	0
4705-0786	51	WELLSERV	2014	14	0	0	0	0	0	0	0	0

Stratigraphy Information

WELL	DEPTH	FORMATION	UNIT	THICKNESS	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
4705-0785	20	Chalk	100	100	100	100	100	100	100	100	100	100
4705-0786	20	Chalk	100	100	100	100	100	100	100	100	100	100

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

There is no Plugging data for this well.

There is no Surface data for this well.

Well: County = 51 Permit = 76904

Logbook Information - View Data

LOGBOOK INFORMATION - View Data

There is no Bottom Hole Location data for this well.

Logbook Information - View Data

LOGBOOK INFORMATION - View Data

There is no Pay data for this well.

There is no Production Gas data for this well.

There is no Production Oil data for this well.

There is no Production NGL data for this well.

There is no Production Water data for this well.

There is no Stratigraphy data for this well.

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

There is no Plugging data for this well.

There is no Surface data for this well.

Well: County = 51 Permit = 61018

Logbook Information - View Data

LOGBOOK INFORMATION - View Data

There is no Bottom Hole Location data for this well.

Logbook Information - View Data

LOGBOOK INFORMATION - View Data

There is no Pay data for this well.

There is no Production Gas data for this well.

There is no Production Oil data for this well.

There is no Production NGL data for this well.

There is no Production Water data for this well.

There is no Stratigraphy data for this well.

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

There is no Plugging data for this well.

There is no Surface data for this well.

Well: County = 51 Permit = 76903

Logbook Information - View Data

LOGBOOK INFORMATION - View Data

There is no Bottom Hole Location data for this well.

Logbook Information - View Data

LOGBOOK INFORMATION - View Data

There is no Pay data for this well.

There is no Production Gas data for this well.

There is no Production Oil data for this well.

There is no Production NGL data for this well.

There is no Production Water data for this well.

There is no Stratigraphy data for this well.

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

There is no Plugging data for this well.

There is no Surface data for this well.

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4705 102205

Well: County = 41 Permit = 02042

Well Information: Well ID: 4705102205, County: 41, Permit: 02042, Status: Active, Type: Oil, Location: ...

Operator Information: Operator Name: ...

Completion Information: Completion Date: ...

There is no Pay data for this well.

There is no Production Data for this well.

There is no Production Cost data for this well.

There is no Production NGL data for this well.

There is no Production Water data for this well.

There is no Production Gas data for this well.

There is no Flugging data for this well.

There is no Sample data for this well.

Well: County = 41 Permit = 02048

Well Information: Well ID: 4705102208, County: 41, Permit: 02048, Status: Active, Type: Oil, Location: ...

Operator Information: Operator Name: ...

Completion Information: Completion Date: ...

There is no Pay data for this well.

There is no Production Data for this well.

There is no Production Cost data for this well.

There is no Production NGL data for this well.

There is no Production Water data for this well.

There is no Production Gas data for this well.

There is no Flugging data for this well.

There is no Sample data for this well.

Well: County = 41 Permit = 01029

Well Information: Well ID: 4705101029, County: 41, Permit: 01029, Status: Active, Type: Oil, Location: ...

Operator Information: Operator Name: ...

Completion Information: Completion Date: ...

Production Data Information: Production Data for 2018 (Oil, Gas, Water, NGL) for various wells.

Well ID	Year	Oil (bbl)	Gas (Mcf)	Water (bbl)	NGL (bbl)
4705101029	2018	1000	1000	1000	1000
4705101030	2018	1000	1000	1000	1000
4705101031	2018	1000	1000	1000	1000
4705101032	2018	1000	1000	1000	1000
4705101033	2018	1000	1000	1000	1000
4705101034	2018	1000	1000	1000	1000
4705101035	2018	1000	1000	1000	1000
4705101036	2018	1000	1000	1000	1000
4705101037	2018	1000	1000	1000	1000
4705101038	2018	1000	1000	1000	1000
4705101039	2018	1000	1000	1000	1000
4705101040	2018	1000	1000	1000	1000
4705101041	2018	1000	1000	1000	1000
4705101042	2018	1000	1000	1000	1000
4705101043	2018	1000	1000	1000	1000
4705101044	2018	1000	1000	1000	1000
4705101045	2018	1000	1000	1000	1000
4705101046	2018	1000	1000	1000	1000
4705101047	2018	1000	1000	1000	1000
4705101048	2018	1000	1000	1000	1000
4705101049	2018	1000	1000	1000	1000
4705101050	2018	1000	1000	1000	1000
4705101051	2018	1000	1000	1000	1000
4705101052	2018	1000	1000	1000	1000
4705101053	2018	1000	1000	1000	1000
4705101054	2018	1000	1000	1000	1000
4705101055	2018	1000	1000	1000	1000
4705101056	2018	1000	1000	1000	1000
4705101057	2018	1000	1000	1000	1000
4705101058	2018	1000	1000	1000	1000
4705101059	2018	1000	1000	1000	1000
4705101060	2018	1000	1000	1000	1000
4705101061	2018	1000	1000	1000	1000
4705101062	2018	1000	1000	1000	1000
4705101063	2018	1000	1000	1000	1000
4705101064	2018	1000	1000	1000	1000
4705101065	2018	1000	1000	1000	1000
4705101066	2018	1000	1000	1000	1000
4705101067	2018	1000	1000	1000	1000
4705101068	2018	1000	1000	1000	1000
4705101069	2018	1000	1000	1000	1000
4705101070	2018	1000	1000	1000	1000
4705101071	2018	1000	1000	1000	1000
4705101072	2018	1000	1000	1000	1000
4705101073	2018	1000	1000	1000	1000
4705101074	2018	1000	1000	1000	1000
4705101075	2018	1000	1000	1000	1000
4705101076	2018	1000	1000	1000	1000
4705101077	2018	1000	1000	1000	1000
4705101078	2018	1000	1000	1000	1000
4705101079	2018	1000	1000	1000	1000
4705101080	2018	1000	1000	1000	1000
4705101081	2018	1000	1000	1000	1000
4705101082	2018	1000	1000	1000	1000
4705101083	2018	1000	1000	1000	1000
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4705101085	2018	1000	1000	1000	1000
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4705101087	2018	1000	1000	1000	1000
4705101088	2018	1000	1000	1000	1000
4705101089	2018	1000	1000	1000	1000
4705101090	2018	1000	1000	1000	1000
4705101091	2018	1000	1000	1000	1000
4705101092	2018	1000	1000	1000	1000
4705101093	2018	1000	1000	1000	1000
4705101094	2018	1000	1000	1000	1000
4705101095	2018	1000	1000	1000	1000
4705101096	2018	1000	1000	1000	1000
4705101097	2018	1000	1000	1000	1000
4705101098	2018	1000	1000	1000	1000
4705101099	2018	1000	1000	1000	1000
4705101100	2018	1000	1000	1000	1000

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Well: County # 81 Perms # 02002

Location Information [View Map](#)

Geographic Information

Completion Information

There is no Pay data for this well

There is no Production Oil data for this well -- some operators may have reported NOL under Oil

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (IS-Lug) data for this well

There is no Logging data for this well

There is no Sample data for this well

Well: County # 81 Perms # 02064

Location Information [View Map](#)

Geographic Information

Completion Information

There is no Pay data for this well

There is no Production Oil data for this well -- some operators may have reported NOL under Oil

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (IS-Lug) data for this well

There is no Logging data for this well

There is no Sample data for this well

Well: County # 81 Perms # 02049

Location Information [View Map](#)

Geographic Information

Completion Information

There is no Pay data for this well

There is no Production Oil data for this well -- some operators may have reported NOL under Oil

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (IS-Lug) data for this well

There is no Logging data for this well

There is no Sample data for this well

4705 102205

WV Design & Reporting Form Well: County = 51 Permit = 01922

Location Information [View Log](#)
 WELL IDENTIFICATION: 51-01922-0001
 WELL NAME: 51-01922-0001
 WELL TYPE: 51-01922-0001
 WELL STATUS: 51-01922-0001

Operator Information
 OPERATOR: 51-01922-0001
 OPERATOR TYPE: 51-01922-0001

Completion Information
 COMPLETION DATE: 51-01922-0001
 COMPLETION TYPE: 51-01922-0001

Production Data for this well

Production Data Information	2013 Data for this well only. Other wells are incomplete at this time.
Production Oil Information	2013 Data for this well only. Other wells are incomplete at this time.
Production Gas Information	2013 Data for this well only. Other wells are incomplete at this time.
Production Water Information	2013 Data for this well only. Other wells are incomplete at this time.

WV Design & Reporting Form Well: County = 51 Permit = 01921

Location Information [View Log](#)
 WELL IDENTIFICATION: 51-01921-0001
 WELL NAME: 51-01921-0001
 WELL TYPE: 51-01921-0001
 WELL STATUS: 51-01921-0001

Operator Information
 OPERATOR: 51-01921-0001
 OPERATOR TYPE: 51-01921-0001

Completion Information
 COMPLETION DATE: 51-01921-0001
 COMPLETION TYPE: 51-01921-0001

Production Data for this well

Production Data Information	2013 Data for this well only. Other wells are incomplete at this time.
Production Oil Information	2013 Data for this well only. Other wells are incomplete at this time.
Production Gas Information	2013 Data for this well only. Other wells are incomplete at this time.
Production Water Information	2013 Data for this well only. Other wells are incomplete at this time.

WV Design & Reporting Form Well: County = 51 Permit = 01920

Location Information [View Log](#)
 WELL IDENTIFICATION: 51-01920-0001
 WELL NAME: 51-01920-0001
 WELL TYPE: 51-01920-0001
 WELL STATUS: 51-01920-0001

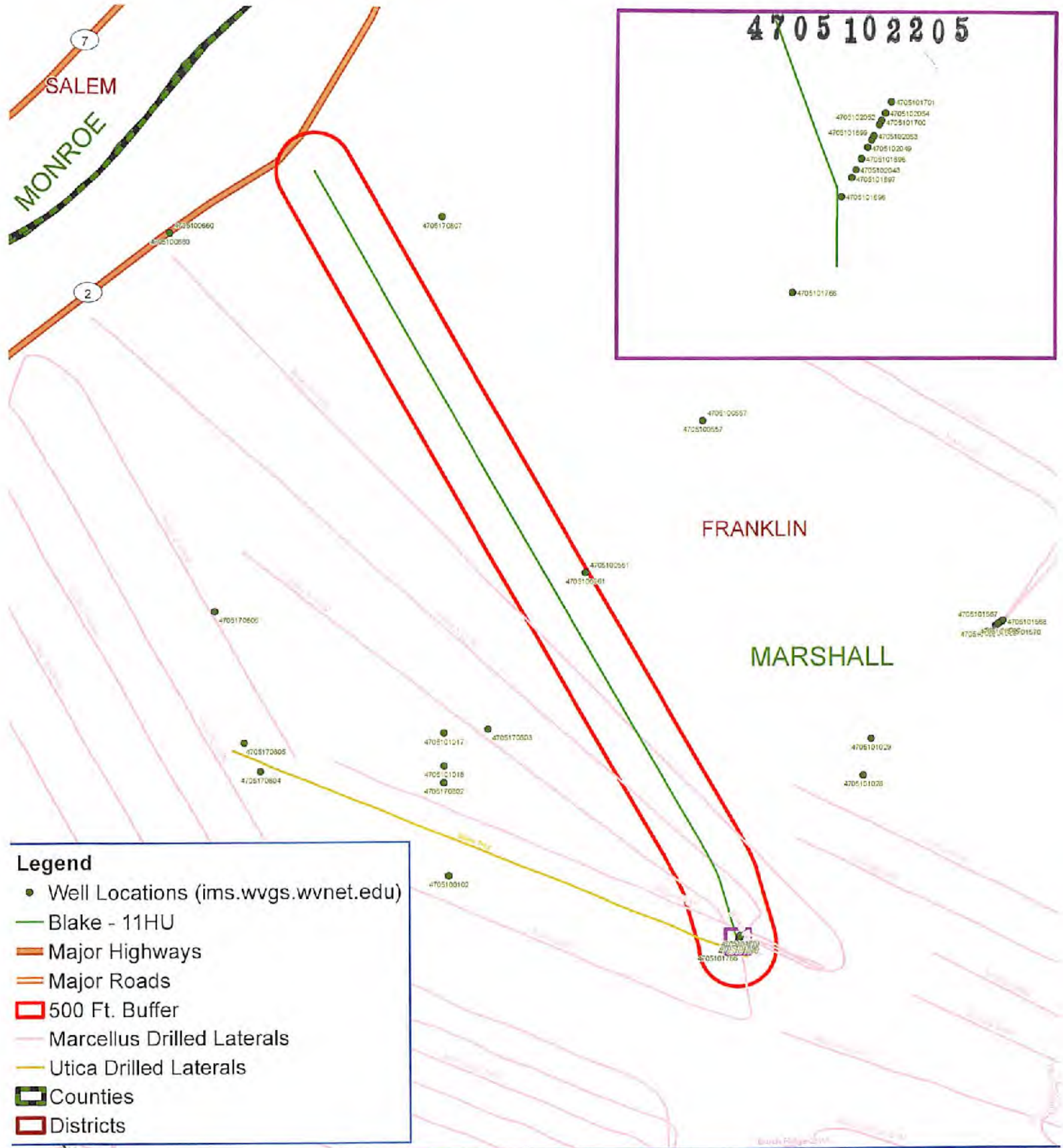
Operator Information
 OPERATOR: 51-01920-0001
 OPERATOR TYPE: 51-01920-0001

Completion Information
 COMPLETION DATE: 51-01920-0001
 COMPLETION TYPE: 51-01920-0001

Production Data for this well

Production Data Information	2013 Data for this well only. Other wells are incomplete at this time.
Production Oil Information	2013 Data for this well only. Other wells are incomplete at this time.
Production Gas Information	2013 Data for this well only. Other wells are incomplete at this time.
Production Water Information	2013 Data for this well only. Other wells are incomplete at this time.

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Legend

- Well Locations (ims.wvgs.wvnet.edu)
- Blake - 11HU
- Major Highways
- Major Roads
- 500 Ft. Buffer
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- ▭ Counties
- ▭ Districts



Blake - 11HU
 Franklin District
 Marshall County, WV



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



WW-9
(4/16)

API Number 47 - 051 - _____
Operator's Well No. Blake N-11HU

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

Watershed (HUC 10) Fish Creek - Ohio River (Undefined) 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 _____)

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

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

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

Additives to be used in drilling medium? Barite for weight

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

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

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

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

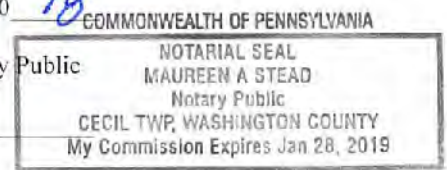
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature James A. Pancake RECEIVED
Office of Oil and Gas
Company Official (Typed Name) James Pancake APR 3 2019
Company Official Title Vice President - Geoscience
WV Department of Environmental Protection

Subscribed and sworn before me this 27 day of NOVEMBER, 20 18

Maureen A Stead Notary Public

My commission expires 1/28/19



Form WW-9

Operator's Well No. Blake N-11HU

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 20.72 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: *Jim Wilson*

Comments: _____

Title: Oil and Gas Inspector

Date: 11/29/18

Field Reviewed? Yes No

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Environmental Protection

WW-9

PROPOSED BLAKE
N-11 HU

SUPPLEMENT PG 1

REFERENCE IS HEREBY MADE TO THE WVD 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 EARTH-WORK 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 WVDOT 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.

WILBERT II BUNGARD ET UX
T.M. 19/21
114,582 Acres

RUSSELL BLAKE ET UX
T.M. 19/19
66 Acres

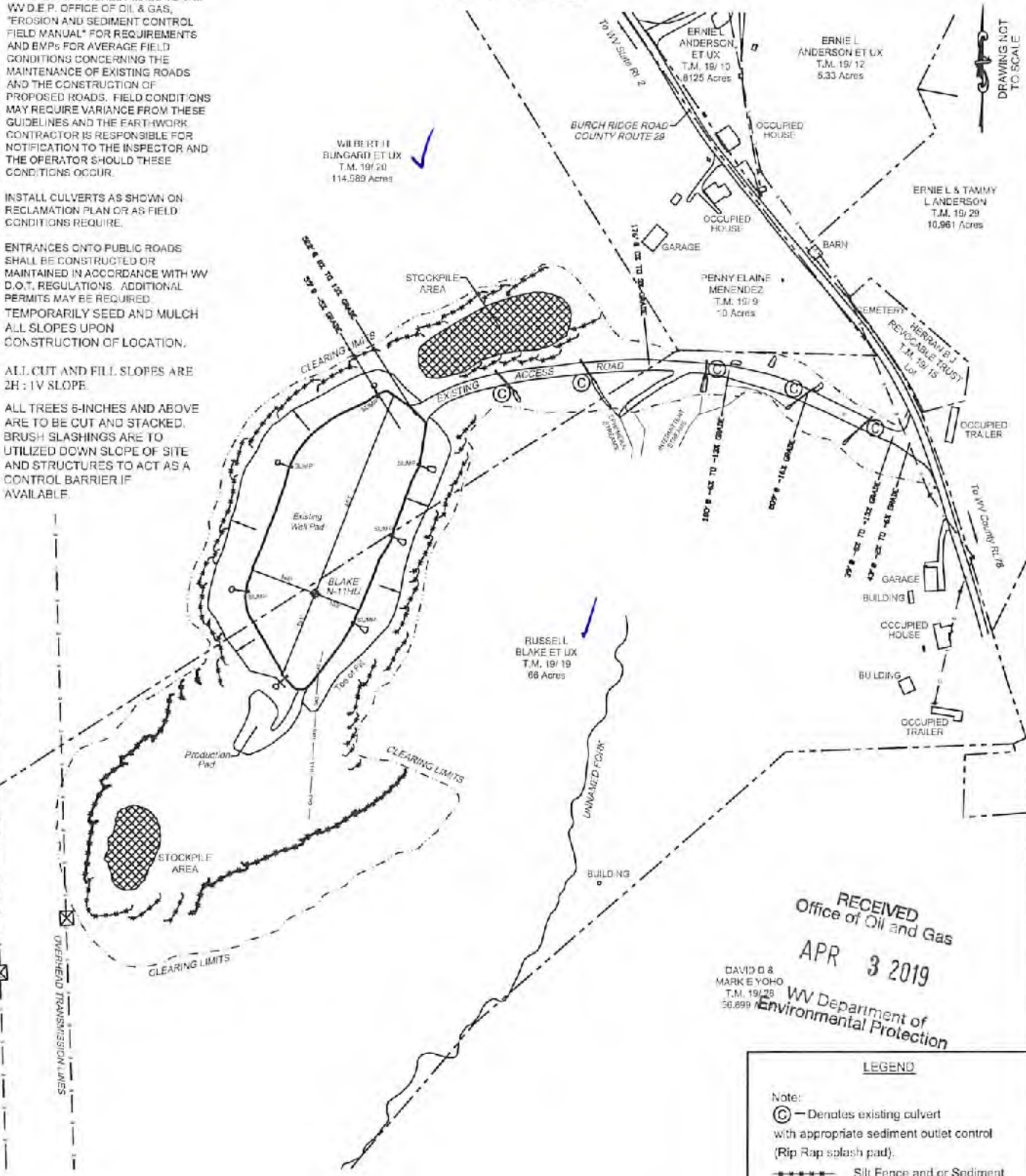
ERNIEL ANDERSON ET UX
T.M. 19/10
8125 Acres

ERNIE L ANDERSON ET UX
T.M. 19/12
5.33 Acres

ERNIE L & TANNY L ANDERSON
T.M. 19/29
10,961 Acres

PENNY ELAINE MENENDEZ
T.M. 19/9
10 Acres

RUSSELL BLAKE ET UX
T.M. 19/19
66 Acres



DRAWING NOT TO SCALE

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DAVID B & MARK E YOHO
T.M. 19/28
26,899
WV Department of Environmental Protection

LEGEND

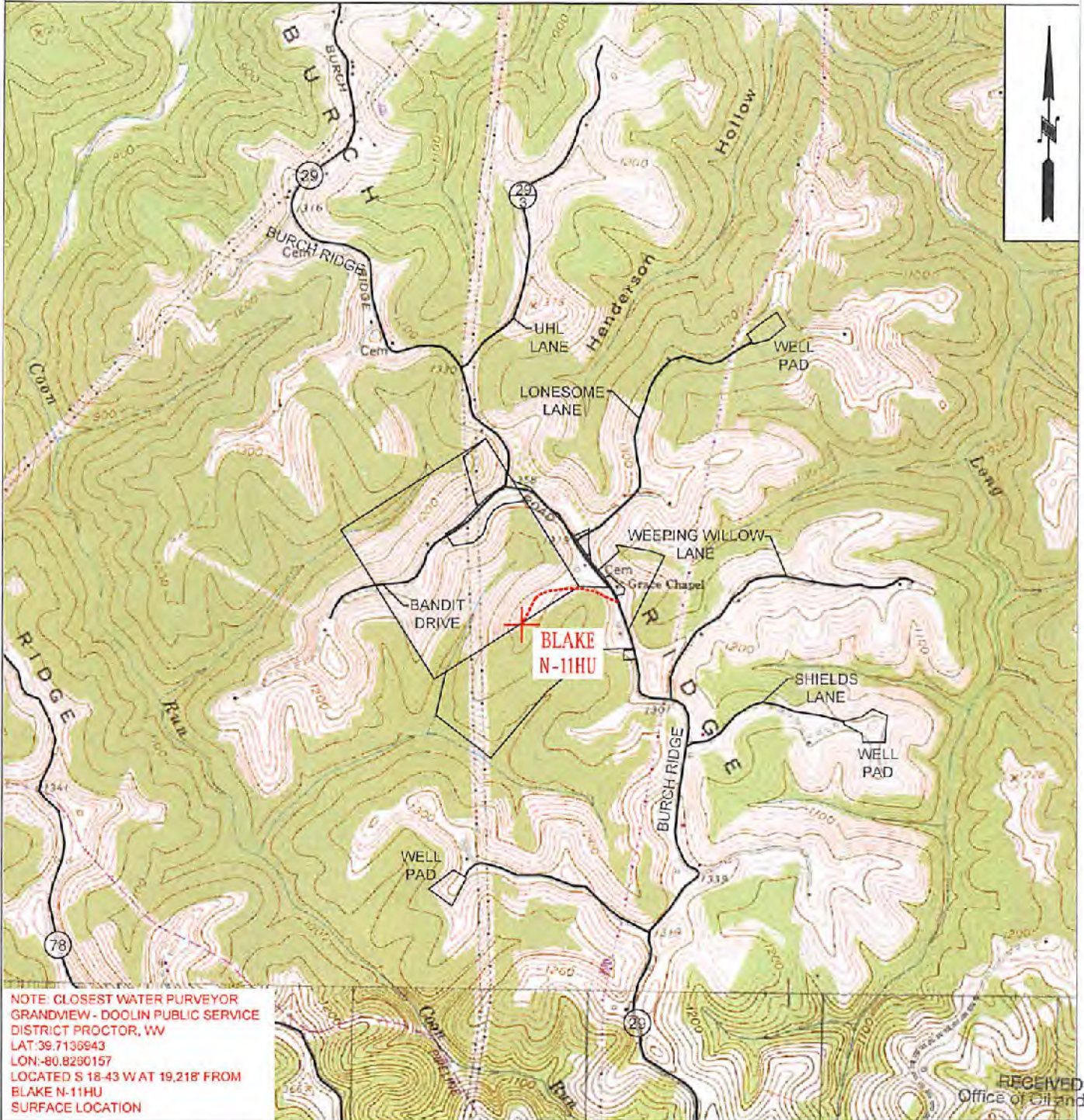
- Note:
- ⊙ - Denotes existing culvert with appropriate sediment outlet control (Rip Rap splash pad).
 - Silt Fence and or Sediment and Erosion Control Measure.
 - Surface Boundary

SI-02205


WW-9

SUPPLEMENT PG 2

PROPOSED BLAKE N-11HU



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Office of Oil and Gas

 TUG HILL OPERATING	OPERATOR 494510851 TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	TOPO SECTION POWHATAN POINT 7.5' SCALE: 1" = 2000'	LEASE NAME APR 3 2019 BLAKE WV Department of Environmental Protection DATE: DATE: 11-20-2018
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WW-6A1
(5/13)

Operator's Well No. Blake N-11HM

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
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*See attached pages

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

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

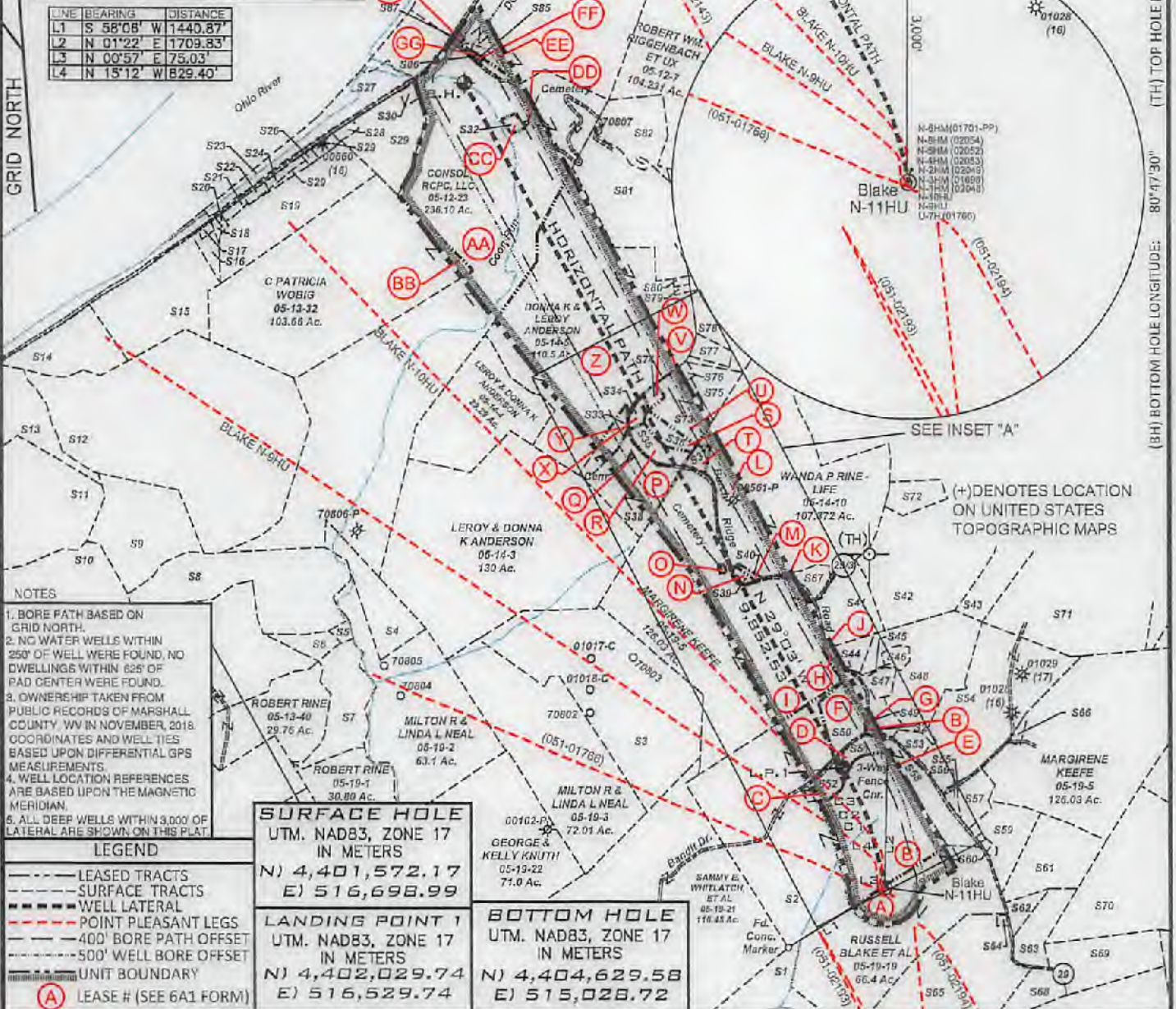
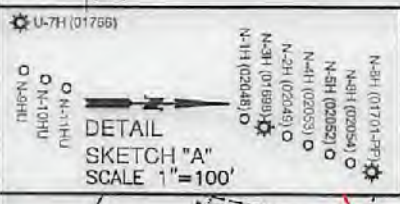
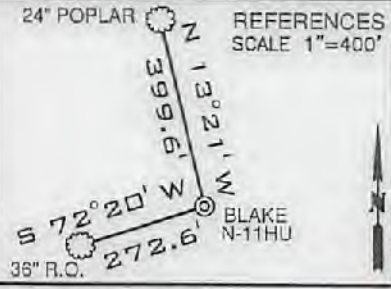
- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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

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

BLAKE LEASE WELL N-11HU 389.2782± ACRES

NUMBER	CHORD DIRECTION	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 20°11' W	66.40	556.18	69.44
C2	N 24°41' W	150.36	2788.89	156.89
C3	N 27°30' W	407.51	5523.50	407.62



FILE NUMBER _____

DRAWING NUMBER BLAKE_N-11HU_REV 1

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 1480
Clarksburg, WV 26302
304-823-6551

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

DATE: APRIL 01, 2019

REVISED: APRIL 12, 2019

OPERATORS WELL NO. BLAKE N-11HU

API WELL NO. 47-051-02205 H&A Deep

STATE COUNTY PERMIT

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

LOCATION ELEVATION 1326.0' WATERSHED (HUC 10) FRENCH CREEK - OHIO RIVER

DISTRICT FRANKLIN COUNTY MARSHALL

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

SURFACE OWNER RUSSELL BLAKE, ET UX ACREAGE 66.0

OIL & GAS ROYALTY OWNER RUSSELL BLAKE, ET UX LEASE ACREAGE 66.0

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

PLUG & ABANDON CLEAN OUT & REPLUG

TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,375' TMD: 21,526'

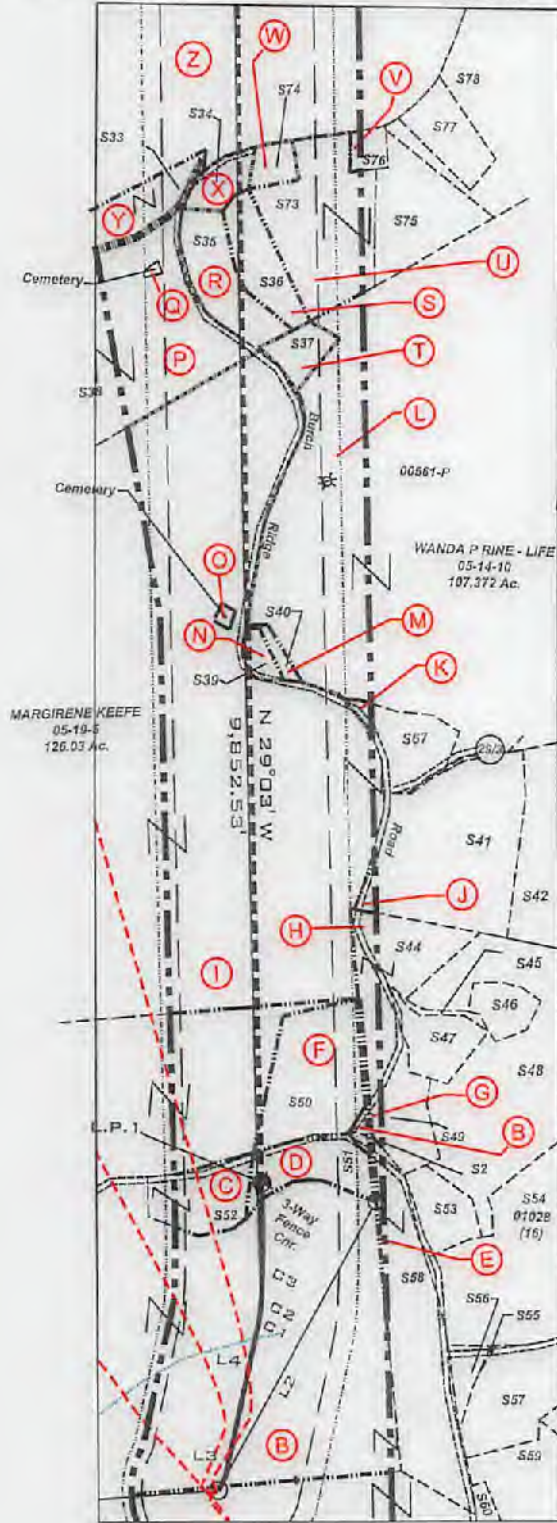
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER
CT CORPORATION SYSTEM

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

COUNTY NAME PERMIT

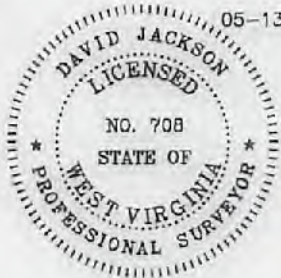
**BLAKE LEASE
WELL N-11HU
389.2782± ACRES**

INSET "A"



NOTES:

- 05-13-41A MAPPED AS PART OF 05-13-41
- 05-13-41B MAPPED AS PART OF 05-13-41, INCORRECTLY ASSESSED AS 05-25-22 4.15 ACRES
- 05-13-41C MAPPED AS PART OF 05-13-41, NOT ASSESSED.



47-051-02205H6A
Deep

David L Jackson

P.S.
708

Number	TAX MAP-PARCEL	SURFACE OWNER	ACRES
S1	05-22-04	CONSOL RCPC, LLC	159.05
S2	B 05-19-20	WILBERT H. BUNGARD ET UX	114.989
S3	05-19-04	JUSTIN RINE	82.75
S4	05-14-02	JOHN B. WILLIAMS, ET AL	20.17
S5	05-13-41C	BENTON DARRAH, LILLIE MAY DUGAN, ALMA BITMER, ALBERTA PALMER & AUDREY HOWARD	1.0
S6	05-13-41B	LARRY & JUDY DARRAH	2.50
S7	05-13-41A	RODNEY & RHONDA JACKSON	17.05
S8	05-13-42	THOMAS & VICTORIA BOWMAN	45.0
S9	05-13-34	DAVID J. MAST	40.0
S10	05-13-35	DAVID J. MAST	24.90
S11	05-13-23	DAVID J. MAST	69.59
S12	05-13-33	NATHAN D. YODER	142.03
S13	05-13-25	AARON PAUL HOLDREN, ET UX	30.0
S14	05-13-27	AARON PAUL HOLDREN, ET UX	25.0
S15	05-13-28	AARON PAUL HOLDREN, ET UX	17.0
S16	05-13-30	CINDY D. ALIFF	3.0
S17	05-13-28.1	CINDY D. ALIFF	1.80
S18	05-13-29	W.V. DEPT. OF HIGHWAYS	1.0
S19	05-13-31	CNX LAND RESOURCES, INC.	31.723
S20	05-13-31.1	W.V. DEPT. OF HIGHWAYS	0.277
S21	05-13-31.2	CNX LAND RESOURCES, INC.	0.938
S22	05-12-27	CONSOL RCPC, LLC	0.67
S23	05-12-26	OHIO RIVER R.R. CO.	4.00
S24	05-12-28	W.V. DEPT. OF HIGHWAYS	1.1
S26	05-12-24.2	W.V. DEPT. OF HIGHWAYS	0.539
S27	05-12-25	OHIO RIVER R.R. CO.	12.8
S28	05-12-24	W.V. DEPT. OF HIGHWAYS	0.964
S29	05-12-24.3	CONSOL RCPC, LLC	18.523
S30	05-12-24.1	W.V. DEPT. OF HIGHWAYS	0.994
S31	05-12-23.2	CONSOLIDATION COAL COMPANY MURRAY ENERGY & CONSOL RCPC, LLC	12.50
S32	CC 05-12-22	CONSOL RCPC, LLC	0.944
S33	Y 05-14-07	DONNA K. & LEROY ANDERSON	4.60
S34	X 05-14-16	GEORGE A. KNUTH	1.6386
S35	R 05-14-9.3	VERNIE A. RINE, ET UX	4.118
S36	S 05-14-9.4	VERNIE A. RINE, ET UX	3.404
S37	T 05-14-10.3	VERNIE A. & JODY K. RINE	1.54
S38	P 05-14-08	LAWRENCE EUGENE ANDERSON	18.29
S39	N 05-14-10.1	IDA RUTAN (LIFE), RALPH R. HOYT	0.50
S40	M 05-14-10.2	(DA RUTAN (LIFE), RALPH R. HOYT	0.495
S41	J 05-14-11	DALE R. GALLAHER, ET AL	12
S42	05-14-12	DALE R. GALLAHER, ET AL	135.100
S43	05-14-14	ROBERT L. SHIELDS, ET AL	29.05
S44	H 05-19-08	BELINDA K. MEADOWS, REBECCA ANN SHEILDS & OLAN RUTAN	5.1099
S45	05-19-7.3	OLAN V. RUTAN, ET UX	0.341
S46	05-19-7.4	OLAN V. RUTAN, ET UX	1.787
S47	05-19-7.2	OLAN RUTAN	2.783
S48	05-19-7	OLAN V. RUTAN, ET UX	32.4801
S49	G 05-19-7.1	ROBERT L. SHIELDS, ET AL	3.399
S50	F 05-19-20.2	CASANDRA L. HARMON	7.448
S51	D 05-19-20.1	JOHN J. EBERT, (LIFE)	3.848
S52	C 05-19-20.3	SIDNEY HARMON	3.715
S53	05-19-7.5	ADAM T. & JESSE L. ROBINSON	2.640
S54	05-19-8	CONSOL RCPC, LLC	40
S55	05-19-11	ERNIE L. ANDERSON, ET UX	0.08
S56	05-19-10	ERNIE L. ANDERSON, ET UX	0.8125
S57	05-19-12	ERNIE L. ANDERSON, ET UX	5.33
S58	E 05-19-09	PENNY ELAINE MENENDEZ	10.44
S59	05-19-29	ERNIE L. & TAMMY L. ANDERSON	10.961
S60	05-19-15	B.J. HERRAN REVOCABLE TRUST	0.177
S61	05-19-30	ERNIE & TAMMY ANDERSON	19.037
S62	05-19-30.1	ERIC R.W. & ASHLEY A. HUGGINS	2.911
S63	05-19-31	CHARLES F. & DIANA L. HAYNES	8.779
S64	05-19-32	JASPER N. BURCH ET AL - TRUSTEES	0.397
S65	05-19-28	DAVID E. YOHO & MARK E. YOHO	56.899
S66	05-19-13.1	DONALD SHIELDS	0.800
S67	K 05-14-10.4	ADAM R. & JESSE L. ROBINSON	3.343
S68	05-19-27	DAVID E. YOHO & MARK E. YOHO	7.041
S69	05-19-14	JAMES & SHERRY BEEGLE	18.356
S70	05-18-01	DIANA HENRY HAYNES & CAROL C. HENRY	62.908
S71	05-14-15	ROBERT L. SHIELDS, ET AL	53.00
S72	05-14-12.1	HENRY WILSON PLUNKERT, JR.	5.00
S73	U 05-14-09	WALTER W. STREIGHT, JR., ET UX	9.311
S74	W 05-14-17	JUSTIN E. & JODY RINE	1.1044
S75	05-14-9.5	MARIA T. FLORES	6.024
S76	V 05-14-19	BRIAN A. & CHARLOTTE MULL	0.92
S77	05-14-9.1	MARIA T. FLORES	2.882
S78	05-14-9.2	MARIA T. FLORES	25.00
S79	05-12-19	JONI LYN LEON	0.457
S80	05-12-20	JONI LYN LEON	0.457
S81	05-12-21	EDWARD L. GIBSON (LIFE)	73.436
S82	05-12-21.1	ROBERT W., JR. & WENDY L. RIGGENBACH	14.222
S83	EE 05-12-06	CONSOL RCPC, LLC	70.81
S84	05-12-6.2	CONSOLIDATION COAL COMPANY/ MURRAY ENERGY	25.50
S85	FF 05-12-23.1	JAMES N. DAUGHERTY	0.28
S86	GG 05-12-23.3	W.V. D.O.H.	0.111
S87	HH 05-12-6.1	W.V. D.O.H.	0.31



**TUG HILL
OPERATING**

OPERATOR'S
WELL #: Blake N-11HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV

WELL PLAT
PAGE 2 OF 3
DATE: 04/01/2019
REVISED: 04/12/2019

**BLAKE LEASE
WELL N-11HU
389.2782± ACRES**

Lease No.	Tag	Parcel	Grantor, Lessor, etc.	Book	Pg
10*14634	A	5-19-19	RUSSELL BLAKE & MARY BLAKE	773	568
10*14141	B	5-19-20.3	DAVID TAKACH AND WIFE DEBORAH	720	233
10*14636	C	5-19-9	WANDA RIDING	794	503
10*14638	D	5-19-9	HUGH YOHO	794	478
10*14141	E	5-19-20.2	DAVID TAKACH AND WIFE DEBORAH ET AL	720	233
10*17958	F	5-14-10.2	IDA RUTAN	958	402
10*18121	G	5-14-8	LAWRENCE EUGENE ANDERSON AND NICOLE M ANDERSON	927	68
10*14619	H	5-14-9.3	SHIRLEY R MILLER	715	414
10*14623	I	5-14-9.3	DUANE D MILLER	717	149
10*14624	J	5-14-9.3	DOUGLAS E MILLER	725	559
10*14625	L	5-14-9.3	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	715	616
10*14626	M	5-14-9.3	STEVEN POND	715	622
10*14627	N	5-14-9.3	BRIAN AND LENA POND	717	51
10*14628	P	5-14-9.3	TEXYN L AND GEORGIA A MILLER	715	514
10*14629	R	5-14-9.3	GERALD R AND LEE A MILLER ET AL	717	1
10*14553	S	5-14-10.3	VERNIE RINE AND JODY K. RINE ET AL	764	302
10*14624	T	5-14-19	DOUGLAS E MILLER	725	559
10*14619	U	5-14-17	SHIRLEY R MILLER ET AL	715	414
10*14625	V	5-14-19	JACQUELYN J JOHNSON AND SAMMY R JOHNSON ET AL	715	616
41112	W	5-12-22	COLUMBIAN CHEMICAL COMPANY ET AL	691	363
Q083768093	X	5-14-5	David Lee Evans, Jr. and Novella Evans, husband and wife ET AL	864	180
Q083768115	Y	5-14-9	Brian P. Powderly and Anita Powderly, h/w	890	566
Q083768116	Z	5-14-16	Susanne S. Quarterman, single ET AL	890	606
10*14141	AA	5-19-20	DAVID TAKACH AND WIFE DEBORAH	720	233
10*14141	BB	5-19-20.1	DAVID TAKACH AND WIFE DEBORAH ET AL	720	233
10*14637	CC	5-19-9	KIMBERLY S. DENNY	794	511
10*14420	EE	5-14-10	ELLIS V. RINE AND WANDA P. RINE ET AL	725	141
10*17968	FF	5-14-10.1	IDA RUTAN	958	402
10*14553	GG	5-14-9.3	VERNIE RINE AND JODY K. RINE	764	302
10*14620	HH	5-14-9.3	ANITA R MILLER ET AL	715	416



47-051-0 2205 H.6A Deep

P.S.
708

David L Jackson



**TUG HILL
OPERATING**

OPERATOR'S
WELL #: Blake N-11HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV

WELL PLAT
PAGE 3 OF 3
DATE: 04/01/2019
REVISED: 04/12/2019

SPE 10-18

Lease No.	Tag	Parcel	Lessor	Lessee	Royalty	Book	Pg	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*14634	A	5-19-19	RUSSELL BLAKE & MARY BLAKE	GASTAR EXPLORATION USA, INC	1/8+	773	568	NA	NA	NA	NA	NA	NA	28/499 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14141	B	5-19-20	DAVID TAKACH AND WIFE DEBORAH	GASTAR EXPLORATION USA, INC	1/8+	720	233	NA	NA	NA	NA	NA	NA	735/263 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14141	C	5-19-20.3	DAVID TAKACH AND WIFE DEBORAH	GASTAR EXPLORATION USA, INC	1/8+	720	233	NA	NA	NA	NA	NA	NA	735/263 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14141	D	5-19-20.1	DAVID TAKACH AND WIFE DEBORAH	GASTAR EXPLORATION USA, INC	1/8+	720	233	NA	NA	NA	NA	NA	NA	735/263 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14635	E	5-19-9	ROBERT PATRICK KIRWAN AND COMMERCIAL OPTICAL MANUFACTURING INC	GASTAR EXPLORATION USA, INC	1/8+	775	21	NA	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14636	E	5-19-9	WANDA RIDING	GASTAR EXPLORATION USA, INC	1/8+	794	503	NA	NA	NA	NA	NA	NA	806/1 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14637	E	5-19-9	KIMBERLY S. DENNY	GASTAR EXPLORATION USA, INC	1/8+	794	511	NA	NA	NA	NA	NA	NA	806/1 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14638	E	5-19-9	HUGH YOHO	GASTAR EXPLORATION USA, INC	1/8+	794	478	NA	NA	NA	NA	NA	NA	806/1 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14639	E	5-19-9	GARY PARSONS	GASTAR EXPLORATION USA, INC	1/8+	794	521	NA	NA	NA	NA	NA	NA	806/1 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14640	E	5-19-9	SHERRI SNYDER	GASTAR EXPLORATION USA, INC	1/8+	799	545	NA	NA	NA	NA	NA	NA	806/1 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14641	E	5-19-9	LORA LANGLEY	GASTAR EXPLORATION USA, INC	1/8+	800	521	NA	NA	NA	NA	NA	NA	806/1 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14642	E	5-19-9	MARY B. FERRIS BY REBECCA R. F	GASTAR EXPLORATION USA, INC	1/8+	808	457	NA	NA	NA	NA	NA	NA	31/184 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14643	E	5-19-9	MARTHA RENEE ROBINSON	GASTAR EXPLORATION USA, INC	1/8+	805	541	NA	NA	NA	NA	NA	NA	31/184 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14644	E	5-19-9	CHERYL HILL	GASTAR EXPLORATION USA, INC	1/8+	809	517	NA	NA	NA	NA	NA	NA	31/184 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14645	E	5-19-9	RANDY BERISFORD	GASTAR EXPLORATION USA, INC	1/8+	810	328	NA	NA	NA	NA	NA	NA	31/184 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14646	E	5-19-9	PENNY ELAINE MENENDEZ	GASTAR EXPLORATION INC	1/8+	822	266	NA	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14647	E	5-19-9	JAMES W ROBINSON III	GASTAR EXPLORATION INC	1/8+	836	102	NA	NA	NA	NA	NA	NA	NA	32/428 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14648	E	5-19-9	LORI ANN ROBINSON	GASTAR EXPLORATION INC	1/8+	836	104	NA	NA	NA	NA	NA	NA	NA	32/428 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14649	E	5-19-9	DONALD GARY GROVES II	GASTAR EXPLORATION USA, INC	1/8+	842	382	NA	NA	NA	NA	NA	NA	NA	33/308 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14650	E	5-19-9	TIMOTHY DWIGHT GROVES	GASTAR EXPLORATION INC	1/8+	842	384	NA	NA	NA	NA	NA	NA	NA	33/308 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14651	E	5-19-9	DAVID V CALDWELL	GASTAR EXPLORATION INC	1/8+	842	386	NA	NA	NA	NA	NA	NA	NA	33/308 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14652	E	5-19-9	CANDICE GUTIERREZ	GASTAR EXPLORATION INC	1/8+	842	388	NA	NA	NA	NA	NA	NA	NA	33/308 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14653	E	5-19-9	KRISTIN DOUGLAS	GASTAR EXPLORATION INC	1/8+	842	390	NA	NA	NA	NA	NA	NA	NA	33/308 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II, LLC

50220-15

10*17968	N	5-14-10.1	IDA RUTAN	TH EXPLORATION, LLC	1/8+	958	402	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18121	P	5-14-8	LAWRENCE EUGENE ANDERSON AND NICOLE M ANDERSON	TH EXPLORATION, LLC	1/8+	927	68	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14553	R	5-14-9.3	VERNIE RINE AND JODY K. RINE	GASTAR EXPLORATION USA, INC	1/8+	764	302	NA	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14619	R	5-14-9.3	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	414	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14620	R	5-14-9.3	ANITA R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14621	R	5-14-9.3	WILLIAM DALE AND NOREEN G MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14622	R	5-14-9.3	KELLY D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14623	R	5-14-9.3	DUANE D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14624	R	5-14-9.3	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	725	559	NA	NA	NA	NA	NA	25/582 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14625	R	5-14-9.3	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA, LLC	1/8+	715	616	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14626	R	5-14-9.3	STEVEN POND	CHESAPEAKE APPALACHIA, LLC	1/8+	715	622	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14627	R	5-14-9.3	BRIAN AND LENA POND	CHESAPEAKE APPALACHIA, LLC	1/8+	717	51	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC

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10*18212	R	5-14-9.3	THOMAS C DAVIS AND MARY ELLEN DAVIS	TH EXPLORATION, LLC	1/8+	929	92	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18213	R	5-14-9.3	THOMAS A POWDERLY	TH EXPLORATION, LLC	1/8+	929	94	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18214	R	5-14-9.3	ANNE M AND JOHN LEACH	TH EXPLORATION, LLC	1/8+	929	96	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18215	R	5-14-9.3	MARGARET J WHITFORD AND LANCE W WHITFORD	TH EXPLORATION, LLC	1/8+	929	103	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18218	R	5-14-9.3	ERIN E SCHOLL	TH EXPLORATION, LLC	1/8+	929	106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18806	R	5-14-9.3	E SHEILA PAVLOVICH	TH EXPLORATION, LLC	1/8+	929	576	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19787	R	5-14-9.3	JOSEPH N POWDERLY III	TH EXPLORATION, LLC	1/8+	935	47	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21223	R	5-14-9.3	EUGENE C GRIEB AND SHIRLEY K GRIEB	TH EXPLORATION, LLC	1/8+	961	468	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21924	R	5-14-9.3	BEVERLY A MILLER	TH EXPLORATION, LLC	1/8+	953	533	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21926	R	5-14-9.3	VIOLA JANE BREON AND JAMES RONALD BREON	TH EXPLORATION, LLC	1/8+	953	360	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21930	R	5-14-9.3	JAMES A GRENOBLE AND MARY JANE GRENOBLE	TH EXPLORATION, LLC	1/8+	953	263	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21938	R	5-14-9.3	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION, LLC	1/8+	960	91	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22442	R	5-14-9.3	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION, LLC	1/8+	966	106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22449	R	5-14-9.3	MARGARET CLICKNER	TH EXPLORATION, LLC	1/8+	963	644	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22511	R	5-14-9.3	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION, LLC	1/8+	966	104	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22645	R	5-14-9.3	STANLEY EUGENE STOWE	TH EXPLORATION, LLC	1/8+	968	204	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22744	R	5-14-9.3	BRIDGET A POWDERLY	TH EXPLORATION, LLC	1/8+	968	206	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23896	R	5-14-9.3	MOLLY AND JOHN D MCMAHON	TH EXPLORATION, LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	R	5-14-9.3	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION, LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24673	R	5-14-9.3	MICHAEL POWDERLY	TH EXPLORATION, LLC	1/8+	1025	287	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24673	S	5-14-9.4	MICHAEL POWDERLY	TH EXPLORATION, LLC	1/8+	1025	287	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14553	S	5-14-9.4	VERNIE RINE AND JODY K. RINE	GASTAR EXPLORATION USA, INC	1/8+	764	302	NA	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC

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10*14619	S	5-14-9.4	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	414	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14620	S	5-14-9.4	ANITA R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14621	S	5-14-9.4	WILLIAM DALE AND NOREEN G MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14622	S	5-14-9.4	KELLY D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14623	S	5-14-9.4	DUANE D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14624	S	5-14-9.4	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	725	559	NA	NA	NA	NA	NA	25/582 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14625	S	5-14-9.4	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA, LLC	1/8+	715	616	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14626	S	5-14-9.4	STEVEN POND	CHESAPEAKE APPALACHIA, LLC	1/8+	715	622	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14627	S	5-14-9.4	BRIAN AND LENA POND	CHESAPEAKE APPALACHIA, LLC	1/8+	717	51	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14628	S	5-14-9.4	TEXYN L AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	514	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC

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10*18213	S	5-14-9.4	THOMAS A POWDERLY	TH EXPLORATION, LLC	1/8+	929	94	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18214	S	5-14-9.4	ANNE M AND JOHN LEACH	TH EXPLORATION, LLC	1/8+	929	96	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18215	S	5-14-9.4	MARGARET J WHITFORD AND LANCE W WHITFORD	TH EXPLORATION, LLC	1/8+	929	103	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18218	S	5-14-9.4	ERIN E SCHOLL	TH EXPLORATION, LLC	1/8+	929	106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18806	S	5-14-9.4	E SHEILA PAVLOVICH	TH EXPLORATION, LLC	1/8+	929	576	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19787	S	5-14-9.4	JOSEPH N POWDERLY III	TH EXPLORATION, LLC	1/8+	935	47	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21223	S	5-14-9.4	EUGENE C GRIEB AND SHIRLEY K GRIEB	TH EXPLORATION, LLC	1/8+	961	468	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21924	S	5-14-9.4	BEVERLY A MILLER	TH EXPLORATION, LLC	1/8+	953	533	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21926	S	5-14-9.4	VIOLA JANE BREON AND JAMES RONALD BREON	TH EXPLORATION, LLC	1/8+	953	360	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21930	S	5-14-9.4	JAMES A GRENOBLE AND MARY JANE GRENOBLE	TH EXPLORATION, LLC	1/8+	953	263	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21938	S	5-14-9.4	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION, LLC	1/8+	960	91	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22442	S	5-14-9.4	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION, LLC	1/8+	966	106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22449	S	5-14-9.4	MARGARET CLICKNER	TH EXPLORATION, LLC	1/8+	963	644	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22511	S	5-14-9.4	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION, LLC	1/8+	955	104	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22645	S	5-14-9.4	STANLEY EUGENE STOWE	TH EXPLORATION, LLC	1/8+	958	204	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22744	S	5-14-9.4	BRIDGET A POWDERLY	TH EXPLORATION, LLC	1/8+	958	206	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23896	S	5-14-9.4	MOLLY AND JOHN D MCMAHON	TH EXPLORATION, LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	S	5-14-9.4	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION, LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14553	T	5-14-10.3	VERNIE RINE AND JODY K. RINE	GASTAR EXPLORATION USA, INC	1/8+	764	302	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC	
10*14619	U	5-14-9	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	414	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC	
10*14620	U	5-14-9	ANITA R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	416	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC	

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10*14621	U	5-14-9	WILLIAM DALE AND NOREEN G MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14622	U	5-14-9	KELLY D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14623	U	5-14-9	DUANE D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14624	U	5-14-9	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	725	559	NA	NA	NA	NA	NA	25/582 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14625	U	5-14-9	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA, LLC	1/8+	715	616	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14626	U	5-14-9	STEVEN POND	CHESAPEAKE APPALACHIA, LLC	1/8+	715	622	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14627	U	5-14-9	BRIAN AND LENA POND	CHESAPEAKE APPALACHIA, LLC	1/8+	717	51	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14628	U	5-14-9	TEXYN L AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	514	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14629	U	5-14-9	GERALD R AND LEE A MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	717	1	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14630	U	5-14-9	BARBARA K BURLEY	CHESAPEAKE APPALACHIA, LLC	1/8+	716	637	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14631	U	5-14-9	LISA ANN MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	520	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC

10*21938	U	5-14-9	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION, LLC	1/8+	960	91	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22449	U	5-14-9	MARGARET CLICKNER	TH EXPLORATION LLC	1/8+	963	644	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22511	U	5-14-9	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION, LLC	1/8+	966	104	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21926	U	5-14-9	VIOLA JANE BREON AND JAMES RONALD BREON	TH EXPLORATION LLC	1/8+	953	360	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21930	U	5-14-9	JAMES A GRENOBLE AND MARY JANE GRENOBLE	TH EXPLORATION LLC	1/8+	953	263	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22442	U	5-14-9	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION LLC	1/8+	966	106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22645	U	5-14-9	STANLEY EUGENE STOWE	TH EXPLORATION LLC	1/8+	968	204	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22744	U	5-14-9	BRIDGET A POWDERLY	TH EXPLORATION LLC	1/8+	968	206	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	U	5-14-9	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19787	U	5-14-9	JOSEPH N POWDERLY III	TH EXPLORATION LLC	1/8+	935	47	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21223	U	5-14-9	EUGENE C GRIEB AND SHIRLEY K GRIEB	TH EXPLORATION LLC	1/8+	961	468	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21924	U	5-14-9	BEVERLY A MILLER	TH EXPLORATION LLC	1/8+	953	533	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24673	U	5-14-9	MICHAEL POWDERLY	TH EXPLORATION, LLC	1/8+	1025	287	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24917	U	5-14-9	WALTER AND CONNIE J STREIGHT	TH EXPLORATION, LLC	1/8+	1027	281	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14619	V	5-14-19	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	414	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC	
10*14620	V	5-14-19	ANITA R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	416	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC	
10*14621	V	5-14-19	WILLIAM DALE AND NOREEN G MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	415	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC	
10*14622	V	5-14-19	KELLY D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	713	606	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC	

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10*14623	V	5-14-19	DUANE D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14624	V	5-14-19	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	725	559	NA	NA	NA	NA	NA	25/582 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14625	V	5-14-19	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA, LLC	1/8+	715	616	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14626	V	5-14-19	STEVEN POND	CHESAPEAKE APPALACHIA, LLC	1/8+	715	622	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14627	V	5-14-19	BRIAN AND LENA POND	CHESAPEAKE APPALACHIA, LLC	1/8+	717	51	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC	
10*14628	V	5-14-19	TEKYN L AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	514	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC	
10*14629	V	5-14-19	GERALD R AND LEE A MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	717	1	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14630	V	5-14-19	BARBARA K BURLEY	CHESAPEAKE APPALACHIA, LLC	1/8+	716	637	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14631	V	5-14-19	LISA ANN MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	520	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14898	V	5-14-19	SHERLEY RAY STOWE	GASTAR EXPLORATION USA, INC	1/8+	813	444	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II, LLC	
10*14899	V	5-14-19	SANDRA J HARMON AND WALTER D HARMON	GASTAR EXPLORATION USA, INC	1/8+	813	442	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II, LLC	
10*14900	V	5-14-19	STANLEY EUGENE STOWE	GASTAR EXPLORATION USA, INC	1/8+	813	440	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II, LLC	

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10*21930	V	5-14-19	JAMES A GRENOBLE AND MARY JANE GRENOBLE	TH EXPLORATION, LLC	1/8+	953	263	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21938	V	5-14-19	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION, LLC	1/8+	960	91	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22442	V	5-14-19	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION, LLC	1/8+	966	106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22449	V	5-14-19	MARGARET CLICKNER	TH EXPLORATION, LLC	1/8+	963	644	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22511	V	5-14-19	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION, LLC	1/8+	966	104	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22645	V	5-14-19	STANLEY EUGENE STOWE	TH EXPLORATION, LLC	1/8+	968	204	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22744	V	5-14-19	BRIDGET A POWDERLY	TH EXPLORATION, LLC	1/8+	968	206	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23896	V	5-14-19	MOLLY AND JOHN D MCMAHON	TH EXPLORATION, LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	V	5-14-19	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION, LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24673	V	5-14-19	MICHAEL POWDERLY	TH EXPLORATION, LLC	1/8+	1025	287	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14619	W	5-14-17	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	414	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14620	W	5-14-17	ANITA R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14621	W	5-14-17	WILLIAM DALE AND NOREEN G MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14622	W	5-14-17	KELLY D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14623	W	5-14-17	DUANE D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14624	W	5-14-17	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	725	559	NA	NA	NA	NA	NA	25/582 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC

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10*23896	W	5-14-17	MOLLY AND JOHN D MCMAHON	TH EXPLORATION, LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA	
10*23969	W	5-14-17	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION, LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA	
10*24869	W	5-14-17	JUSTIN E AND JODY RINE	TH EXPLORATION, LLC	1/8+	1028	99	NA	NA	NA	NA	NA	NA	NA	NA	NA	
10*24673	W	5-14-17	MICHAEL POWDERLY	TH EXPLORATION, LLC	1/8+	1025	287	NA	NA	NA	NA	NA	NA	NA	NA	NA	
10*14619	X	5-14-16	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	414	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gstar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gstar Exploration USA, Inc and Gstar Exploration Inc merger	36/9 Gstar Exploration Inc to TH Exploration II, LLC	
10*14620	X	5-14-16	ANITA R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gstar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gstar Exploration USA, Inc and Gstar Exploration Inc merger	36/9 Gstar Exploration Inc to TH Exploration II, LLC	
10*14621	X	5-14-16	WILLIAM DALE AND NOREEN G MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gstar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gstar Exploration USA, Inc and Gstar Exploration Inc merger	36/9 Gstar Exploration Inc to TH Exploration II, LLC	
10*14622	X	5-14-16	KELLY D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gstar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gstar Exploration USA, Inc and Gstar Exploration Inc merger	36/9 Gstar Exploration Inc to TH Exploration II, LLC	
10*14623	X	5-14-16	DUANE D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gstar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gstar Exploration USA, Inc and Gstar Exploration Inc merger	36/9 Gstar Exploration Inc to TH Exploration II, LLC	
10*14624	X	5-14-16	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	725	559	NA	NA	NA	NA	NA	NA	25/582 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gstar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gstar Exploration USA, Inc and Gstar Exploration Inc merger	36/9 Gstar Exploration Inc to TH Exploration II, LLC
10*14625	X	5-14-16	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA, LLC	1/8+	715	616	NA	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gstar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gstar Exploration USA, Inc and Gstar Exploration Inc merger	36/9 Gstar Exploration Inc to TH Exploration II, LLC
10*14626	X	5-14-16	STEVEN POND	CHESAPEAKE APPALACHIA, LLC	1/8+	715	622	NA	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gstar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gstar Exploration USA, Inc and Gstar Exploration Inc merger	36/9 Gstar Exploration Inc to TH Exploration II, LLC
10*14627	X	5-14-16	BRIAN AND LENA POND	CHESAPEAKE APPALACHIA, LLC	1/8+	717	51	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gstar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gstar Exploration USA, Inc and Gstar Exploration Inc merger	36/9 Gstar Exploration Inc to TH Exploration II, LLC	

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10*18212	X	5-14-16	THOMAS C DAVIS AND MARY ELLEN DAVIS	TH EXPLORATION, LLC	1/8+	929	92	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18213	X	5-14-16	THOMAS A POWDERLY	TH EXPLORATION, LLC	1/8+	929	94	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18214	X	5-14-16	ANNE M AND JOHN LEACH	TH EXPLORATION, LLC	1/8+	929	96	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18215	X	5-14-16	MARGARET J WHITFORD AND LANCE W WHITFORD	TH EXPLORATION, LLC	1/8+	929	103	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18218	X	5-14-16	ERIN E SCHOLL	TH EXPLORATION, LLC	1/8+	929	106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18806	X	5-14-16	E SHEILA PAVLOVICH	TH EXPLORATION, LLC	1/8+	929	576	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19787	X	5-14-16	JOSEPH N POWDERLY III	TH EXPLORATION, LLC	1/8+	935	47	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21223	X	5-14-16	EUGENE C GRIEB AND SHIRLEY K GRIEB	TH EXPLORATION, LLC	1/8+	961	468	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21924	X	5-14-16	BEVERLY A MILLER	TH EXPLORATION, LLC	1/8+	953	533	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21926	X	5-14-16	VIOLA JANE BREON AND JAMES RONALD BREON	TH EXPLORATION, LLC	1/8+	953	360	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21930	X	5-14-16	JAMES A GRENOBLE AND MARY JANE GRENOBLE	TH EXPLORATION, LLC	1/8+	953	263	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21938	X	5-14-16	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION, LLC	1/8+	960	91	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22442	X	5-14-16	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION, LLC	1/8+	966	106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22449	X	5-14-16	MARGARET CLICKNER	TH EXPLORATION, LLC	1/8+	963	644	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22511	X	5-14-16	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION, LLC	1/8+	966	104	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22645	X	5-14-16	STANLEY EUGENE STOWE	TH EXPLORATION, LLC	1/8+	968	204	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22744	X	5-14-16	BRIDGET A POWDERLY	TH EXPLORATION, LLC	1/8+	968	206	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23896	X	5-14-16	MOLLY AND JOHN D MCMAHON	TH EXPLORATION, LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	X	5-14-16	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION, LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14945	Y	5-14-7	LEROY ANDERSON AND DONNA K ANDERSON	TRIENERGY HOLDINGS, LLC	1/8+	735	433	NA	NA	NA	25/449 TriEnergy Holdings, LLC to NAPAR, LLC	756/332 NPAR, LLC to Chevron USA Inc	32/355 Chevron USA Inc to Gastar Exploration, Inc and Atinum Marcellus I LLC	32/370 Chevron USA Inc to Gastar Exploration, Inc and Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II, LLC	NA
10*24673	X	5-14-16	MICHAEL POWDERLY	TH EXPLORATION, LLC	1/8+	1025	287	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24870	X	5-14-16	GEORGE A KNUTH	TH EXPLORATION, LLC	1/8+	1028	101	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14568	Z	5-14-5	LEROY ANDERSON & DONNA K ANDERSON	GASTAR EXPLORATION USA, INC	1/8+	772	69	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC	NA

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10*14619	Z	5-14-5	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	414	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14620	Z	5-14-5	ANITA R MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14621	Z	5-14-5	WILLIAM DALE AND NOREEN G MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14622	Z	5-14-5	KELLY D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14623	Z	5-14-5	DUANE D MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14624	Z	5-14-5	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	725	559	NA	NA	NA	NA	NA	25/582 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14625	Z	5-14-5	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA, LLC	1/8+	715	616	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14626	Z	5-14-5	STEVEN POND	CHESAPEAKE APPALACHIA, LLC	1/8+	715	622	NA	NA	NA	NA	NA	24/204 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14627	Z	5-14-5	BRIAN AND LENA POND	CHESAPEAKE APPALACHIA, LLC	1/8+	717	51	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC
10*14628	Z	5-14-5	TEXYN L AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA, LLC	1/8+	715	514	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc to Gastar Exploration USA, Inc and Atinum Marcellus I LLC	21/41 Gastar Exploration USA, Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II, LLC

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41112	CC	5-12-22	COLUMBIAN CHEMICAL COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	NA	NA	NA	NA	745/117 CNX Land Resources Inc to CNX Gas Company	752/66 CNX Gas Company LLC to Noble Energy Inc	909/94 CNX Gas Company LLC to Noble Energy Inc	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
624146	EE	5-12-6	OHIO POWER COMPANY	CONSOLIDATION COAL COMPANY	1/8+	321	319	NA	NA	NA	646/493 CNX Land Resources, Consolidation Coal Company, Conso Pennsylvania Coal Company, Conrhehl Coal Company, McElroy Coal Company, Reserve Coal Properties Company and CNX Gas Company LLC	745/117 CNX Land Resources Inc to CNX Gas Company	752/66 CNX Gas Company LLC to Noble Energy Inc	909/94 CNX Gas Company LLC to Noble Energy Inc	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
041112	EE	5-12-6	COLUMBIAN CHEMICAL COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	NA	NA	NA	NA	745/117 CNX Land Resources Inc to CNX Gas Company	752/66 CNX Gas Company LLC to Noble Energy Inc	909/94 CNX Gas Company LLC to Noble Energy Inc	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
041112	FF	5-12-23.1	COLUMBIAN CHEMICAL COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	NA	NA	NA	NA	745/117 CNX Land Resources Inc to CNX Gas Company	752/66 CNX Gas Company LLC to Noble Energy Inc	909/94 CNX Gas Company LLC to Noble Energy Inc	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
041112	GG	5-12-23.3	COLUMBIAN CHEMICAL COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	NA	NA	NA	NA	745/117 CNX Land Resources Inc to CNX Gas Company	752/66 CNX Gas Company LLC to Noble Energy Inc	909/94 CNX Gas Company LLC to Noble Energy Inc	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q081144000	HH	5-12-6.1	HOWARD N WAYNE AND DENISE D WAYNE	NOBLE ENERGY, INC	1/8+	816	532	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
041111	HH	5-12-6.1	EDWARD DOUGLAS GUIRE ET AL	CNX LAND RESOURCES INC	1/8+	663	91	NA	NA	NA	NA	745/117 CNX Land Resources Inc to CNX Gas Company LLC	752/66 CNX Gas Company LLC to Noble Energy Inc	909/94 CNX Gas Company LLC to Noble Energy Inc	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
041112	HH	5-12-6.1	COLUMBIAN CHEMICAL COMPANY	CNX LAND RESOURCES INC	1/8+	691	363	NA	NA	NA	NA	745/117 CNX Land Resources Inc to CNX Gas Company LLC	752/66 CNX Gas Company LLC to Noble Energy Inc	909/94 CNX Gas Company LLC to Noble Energy Inc	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768116	Z	5-14-5	Susanne S. Quarterman, single	Noble Energy, Inc.	1/8+	890	606	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768098	Z	5-14-5	Rodney F. Peterson, widower	Noble Energy, Inc.	1/8+	870	380	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768112	Z	5-14-5	Nora K. Powderly, single	Noble Energy, Inc.	1/8+	881	32	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768103	Z	5-14-5	Nora C. Powderly, single	Noble Energy, Inc.	1/8+	873	83	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768094	Z	5-14-5	Muriel Anne Miller and Alan Powell, wife and husband	Noble Energy, Inc.	1/8+	860	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768114	Z	5-14-5	Mary S. Scholl, single	Noble Energy, Inc.	1/8+	890	572	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768105	Z	5-14-5	Mary F. Weiland, widow	Noble Energy, Inc.	1/8+	873	126	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768113	Z	5-14-5	Kevin M. Powderly, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	890	515	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768095	Z	5-14-5	Kathleen A. Sullivan and Thomas Sullivan, wife and husband	Noble Energy, Inc.	1/8+	870	364	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768106	Z	5-14-5	Jane H. Barnsteiner and Joanne M. Disch, her spouse	Noble Energy, Inc.	1/8+	873	132	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768108	Z	5-14-5	James T. Scholl, single	Noble Energy, Inc.	1/8+	878	365	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768101	Z	5-14-5	James E. Herman, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	873	130	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768091	Z	5-14-5	Harriet C. Ventura and Rocco Ventura, wife and husband	Noble Energy, Inc.	1/8+	894	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768100	Z	5-14-5	Harriet C. Herman and Joseph H. Wilkinson, a wife and husband	Noble Energy, Inc.	1/8+	873	122	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768096	Z	5-14-5	Francis F. Fischer and Jacqueline Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	366	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768104	Z	5-14-5	Eugenia A. Kerr, widow	Noble Energy, Inc.	1/8+	873	120	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768099	Z	5-14-5	Eileen T. Powderly, single	Noble Energy, Inc.	1/8+	873	81	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768102	Z	5-14-5	Edward P. Powderly and Marilyn Powderly, husband and wife	Noble Energy, Inc.	1/8+	873	85	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768097	Z	5-14-5	Dennis Fischer and Sharron A. Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	358	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768093	Z	5-14-5	David Lee Evans, Jr. and Novella Evans, husband and wife	Noble Energy, Inc.	1/8+	864	180	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768111	Z	5-14-5	Bridget A. Powderly, single	Noble Energy, Inc.	1/8+	881	26	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768115	Z	5-14-5	Brian P. Powderly and Anita Powderly, h/w	Noble Energy, Inc.	1/8+	890	566	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768080	Z	5-14-5	Anthony T. Powderly and Barbara M. Powderly, husband and wife	Noble Energy, Inc.	1/8+	878	363	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768107	Z	5-14-5	Anne Galbally and James F. Galbally, h/w	Noble Energy, Inc.	1/8+	878	373	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768116	S	5-14-9.4	Susanne S. Quarterman, single	Noble Energy, Inc.	1/8+	890	606	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768098	S	5-14-9.4	Rodney F. Peterson, widower	Noble Energy, Inc.	1/8+	870	380	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768112	S	5-14-9.4	Nora K. Powderly, single	Noble Energy, Inc.	1/8+	881	32	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768103	S	5-14-9.4	Nora C. Powderly, single	Noble Energy, Inc.	1/8+	873	83	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768094	S	5-14-9.4	Muriel Anne Miller and Alan Powell, wife and husband	Noble Energy, Inc.	1/8+	860	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768114	S	5-14-9.4	Mary S. Scholl, single	Noble Energy, Inc.	1/8+	890	572	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768105	S	5-14-9.4	Mary F. Welland, widow	Noble Energy, Inc.	1/8+	873	126	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768113	S	5-14-9.4	Kevin M. Powderly, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	890	515	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768095	S	5-14-9.4	Kathleen A. Sullivan and Thomas Sullivan, wife and husband	Noble Energy, Inc.	1/8+	870	364	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768106	S	5-14-9.4	Jane H. Barnsteiner and Joanne M. Dirsch, her spouse	Noble Energy, Inc.	1/8+	873	132	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768108	S	5-14-9.4	James T. Scholl, single	Noble Energy, Inc.	1/8+	878	365	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768101	S	5-14-9.4	James E. Herman, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	873	130	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768091	S	5-14-9.4	Harriet C. Ventura and Rocco Ventura, wife and husband	Noble Energy, Inc.	1/8+	894	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768100	S	5-14-9.4	Harriet C. Herman and Joseph H. Wilkinson, a wife and husband	Noble Energy, Inc.	1/8+	873	122	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768096	S	5-14-9.4	Francis F. Fischer and Jacqueline Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	366	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768104	S	5-14-9.4	Eugenia A. Kerr, widow	Noble Energy, Inc.	1/8+	873	120	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768099	S	5-14-9.4	Eileen T. Powderly, single	Noble Energy, Inc.	1/8+	873	81	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768102	S	5-14-9.4	Edward P. Powderly and Marilyn Powderly, husband and wife	Noble Energy, Inc.	1/8+	873	85	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768097	S	5-14-9.4	Dennis Fischer and Sharron A. Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	358	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768093	S	5-14-9.4	David Lee Evans, Jr. and Novella Evans, husband and wife	Noble Energy, Inc.	1/8+	864	180	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768111	S	5-14-9.4	Bridget A. Powderly, single	Noble Energy, Inc.	1/8+	881	26	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768115	S	5-14-9.4	Brian P. Powderly and Anita Powderly, h/w	Noble Energy, Inc.	1/8+	890	566	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768080	S	5-14-9.4	Anthony T. Powderly and Barbara M. Powderly, husband and wife	Noble Energy, Inc.	1/8+	878	363	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768107	S	5-14-9.4	Anne Galbally and James F. Galbally, h/w	Noble Energy, Inc.	1/8+	878	373	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768116	R	5-14-9.3	Susanne S. Quarterman, single	Noble Energy, Inc.	1/8+	890	606	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768098	R	5-14-9.3	Rodney F. Peterson, widower	Noble Energy, Inc.	1/8+	870	380	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768112	R	5-14-9.3	Nora K. Powderly, single	Noble Energy, Inc.	1/8+	881	32	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768103	R	5-14-9.3	Nora C. Powderly, single	Noble Energy, Inc.	1/8+	873	83	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768094	R	5-14-9.3	Muriel Anne Miller and Alan Powell, wife and husband	Noble Energy, Inc.	1/8+	860	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768114	R	5-14-9.3	Mary S. Scholl, single	Noble Energy, Inc.	1/8+	890	572	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768105	R	5-14-9.3	Mary F. Welland, widow	Noble Energy, Inc.	1/8+	873	126	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768113	R	5-14-9.3	Kevin M. Powderly, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	890	515	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768095	R	5-14-9.3	Kathleen A. Sullivan and Thomas Sullivan, wife and husband	Noble Energy, Inc.	1/8+	870	364	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768106	R	5-14-9.3	Jane H. Barnsteiner and Joanne M. Disch, her spouse	Noble Energy, Inc.	1/8+	873	132	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768108	R	5-14-9.3	James T. Scholl, single	Noble Energy, Inc.	1/8+	878	365	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768101	R	5-14-9.3	James E. Herman, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	873	130	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768091	R	5-14-9.3	Harriet C. Ventura and Rocco Ventura, wife and husband	Noble Energy, Inc.	1/8+	894	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768100	R	5-14-9.3	Harriet C. Herman and Joseph H. Wilkinson, a wife and husband	Noble Energy, Inc.	1/8+	873	122	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768096	R	5-14-9.3	Francis F. Fischer and Jacqueline Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	366	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768104	R	5-14-9.3	Eugenia A. Kerr, widow	Noble Energy, Inc.	1/8+	873	120	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768099	R	5-14-9.3	Eileen T. Powderly, single	Noble Energy, Inc.	1/8+	873	81	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768102	R	5-14-9.3	Edward P. Powderly and Marilyn Powderly, husband and wife	Noble Energy, Inc.	1/8+	873	85	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768097	R	5-14-9.3	Dennis Fischer and Sharron A. Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	358	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768093	R	5-14-9.3	David Lee Evans, Jr. and Novella Evans, husband and wife	Noble Energy, Inc.	1/8+	864	180	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768111	R	5-14-9.3	Bridget A. Powderly, single	Noble Energy, Inc.	1/8+	881	26	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768115	R	5-14-9.3	Brian P. Powderly and Anita Powderly, h/w	Noble Energy, Inc.	1/8+	890	566	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768080	R	5-14-9.3	Anthony T. Powderly and Barbara M. Powderly, husband and wife	Noble Energy, Inc.	1/8+	878	363	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768107	R	5-14-9.3	Anne Galbally and James F. Galbally, h/w	Noble Energy, Inc.	1/8+	878	373	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768116	U	5-14-9	Susanne S. Quarterman, single	Noble Energy, Inc.	1/8+	890	606	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768098	U	5-14-9	Rodney F. Peterson, widower	Noble Energy, Inc.	1/8+	870	380	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768112	U	5-14-9	Nora K. Powderly, single	Noble Energy, Inc.	1/8+	881	32	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768103	U	5-14-9	Nora C. Powderly, single	Noble Energy, Inc.	1/8+	873	83	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768094	U	5-14-9	Muriel Anne Miller and Alan Powell, wife and husband	Noble Energy, Inc.	1/8+	860	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768114	U	5-14-9	Mary S. Scholl, single	Noble Energy, Inc.	1/8+	890	572	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768105	U	5-14-9	Mary F. Welland, widow	Noble Energy, Inc.	1/8+	873	126	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768113	U	5-14-9	Kevin M. Powderly, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	890	515	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768095	U	5-14-9	Kathleen A. Sullivan and Thomas Sullivan, wife and husband	Noble Energy, Inc.	1/8+	870	364	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768106	U	5-14-9	Jane H. Barnsteiner and Joanne M. Disch, her spouse	Noble Energy, Inc.	1/8+	873	132	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768108	U	5-14-9	James T. Scholl, single	Noble Energy, Inc.	1/8+	878	365	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768101	U	5-14-9	James E. Herman, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	873	130	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768091	U	5-14-9	Harriet C. Ventura and Rocco Ventura, wife and husband	Noble Energy, Inc.	1/8+	894	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768100	U	5-14-9	Harriet C. Herman and Joseph H. Wilkinson, a wife and husband	Noble Energy, Inc.	1/8+	873	122	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768096	U	5-14-9	Francis F. Fischer and Jacqueline Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	366	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768104	U	5-14-9	Eugenia A. Kerr, widow	Noble Energy, Inc.	1/8+	873	120	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768099	U	5-14-9	Eileen T. Powderly, single	Noble Energy, Inc.	1/8+	873	81	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768102	U	5-14-9	Edward P. Powderly and Marilyn Powderly, husband and wife	Noble Energy, Inc.	1/8+	873	85	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768097	U	5-14-9	Dennis Fischer and Sharron A. Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	358	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768093	U	5-14-9	David Lee Evans, Jr. and Novella Evans, husband and wife	Noble Energy, Inc.	1/8+	864	180	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768111	U	5-14-9	Bridget A. Powderly, single	Noble Energy, Inc.	1/8+	881	26	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768115	U	5-14-9	Brian P. Powderly and Anita Powderly, h/w	Noble Energy, Inc.	1/8+	890	566	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768080	U	5-14-9	Anthony T. Powderly and Barbara M. Powderly, husband and wife	Noble Energy, Inc.	1/8+	878	363	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768107	U	5-14-9	Anne Galbally and James F. Galbally, h/w	Noble Energy, Inc.	1/8+	878	373	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768116	V	5-14-19	Susanne S. Quarterman, single	Noble Energy, Inc.	1/8+	890	606	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768098	V	5-14-19	Rodney F. Peterson, widower	Noble Energy, Inc.	1/8+	870	380	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768112	V	5-14-19	Nora K. Powderly, single	Noble Energy, Inc.	1/8+	881	32	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768103	V	5-14-19	Nora C. Powderly, single	Noble Energy, Inc.	1/8+	873	83	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768094	V	5-14-19	Muriel Anne Miller and Alan Powell, wife and husband	Noble Energy, Inc.	1/8+	860	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768114	V	5-14-19	Mary S. Scholl, single	Noble Energy, Inc.	1/8+	890	572	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768105	V	5-14-19	Mary F. Weiland, widow	Noble Energy, Inc.	1/8+	873	126	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768113	V	5-14-19	Kevin M. Powderly, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	890	515	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768095	V	5-14-19	Kathleen A. Sullivan and Thomas Sullivan, wife and husband	Noble Energy, Inc.	1/8+	870	364	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768106	V	5-14-19	Jane H. Barnsteiner and Joanne M. Disch, her spouse	Noble Energy, Inc.	1/8+	873	132	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768108	V	5-14-19	James T. Scholl, single	Noble Energy, Inc.	1/8+	878	365	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768101	V	5-14-19	James E. Herman, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	873	130	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768091	V	5-14-19	Harriet C. Ventura and Rocco Ventura, wife and husband	Noble Energy, Inc.	1/8+	894	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768100	V	5-14-19	Harriet C. Herman and Joseph H. Wilkinson, a wife and husband	Noble Energy, Inc.	1/8+	873	122	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768096	V	5-14-19	Francis F. Fischer and Jacqueline Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	366	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768104	V	5-14-19	Eugenia A. Kerr, widow	Noble Energy, Inc.	1/8+	873	120	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768099	V	5-14-19	Eileen T. Powderly, single	Noble Energy, Inc.	1/8+	873	81	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768102	V	5-14-19	Edward P. Powderly and Marilyn Powderly, husband and wife	Noble Energy, Inc.	1/8+	873	85	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768097	V	5-14-19	Dennis Fischer and Sharron A. Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	358	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768093	V	5-14-19	David Lee Evans, Jr. and Novella Evans, husband and wife	Noble Energy, Inc.	1/8+	864	180	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768111	V	5-14-19	Bridget A. Powderly, single	Noble Energy, Inc.	1/8+	881	26	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768115	V	5-14-19	Brian P. Powderly and Anita Powderly, h/w	Noble Energy, Inc.	1/8+	890	566	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768080	V	5-14-19	Anthony T. Powderly and Barbara M. Powderly, husband and wife	Noble Energy, Inc.	1/8+	878	363	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768107	V	5-14-19	Anne Galbally and James F. Galbally, h/w	Noble Energy, Inc.	1/8+	878	373	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768116	W	5-14-17	Susanne S. Quarterman, single	Noble Energy, Inc.	1/8+	890	606	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768098	W	5-14-17	Rodney F. Peterson, widower	Noble Energy, Inc.	1/8+	870	380	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768112	W	5-14-17	Nora K. Powderly, single	Noble Energy, Inc.	1/8+	881	32	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768103	W	5-14-17	Nora C. Powderly, single	Noble Energy, Inc.	1/8+	873	83	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768094	W	5-14-17	Muriel Anne Miller and Alan Powell, wife and husband	Noble Energy, Inc.	1/8+	860	541	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768114	W	5-14-17	Mary S. Scholl, single	Noble Energy, Inc.	1/8+	890	572	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768105	W	5-14-17	Mary F. Weiland, widow	Noble Energy, Inc.	1/8+	873	126	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768113	W	5-14-17	Kevin M. Powderly, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	890	515	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768095	W	5-14-17	Kathleen A. Sullivan and Thomas Sullivan, wife and husband	Noble Energy, Inc.	1/8+	870	364	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768106	W	5-14-17	Jane H. Barnsteiner and Joanne M. Disch, her spouse	Noble Energy, Inc.	1/8+	873	132	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768108	W	5-14-17	James T. Scholl, single	Noble Energy, Inc.	1/8+	878	365	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768101	W	5-14-17	James E. Herman, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	873	130	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768091	W	5-14-17	Harriet C. Ventura and Rocco Ventura, wife and husband	Noble Energy, Inc.	1/8+	894	541	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768100	W	5-14-17	Harriet C. Herman and Joseph H. Wilkinson, a wife and husband	Noble Energy, Inc.	1/8+	873	122	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768096	W	5-14-17	Francis F. Fischer and Jacqueline Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	366	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768104	W	5-14-17	Eugenia A. Kerr, widow	Noble Energy, Inc.	1/8+	873	120	NA	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768099	W	5-14-17	Eileen T. Powderly, single	Noble Energy, Inc.	1/8+	873	81	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768102	W	5-14-17	Edward P. Powderly and Marilyn Powderly, husband and wife	Noble Energy, Inc.	1/8+	873	85	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768097	W	5-14-17	Dennis Fischer and Sharron A. Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	358	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768093	W	5-14-17	David Lee Evans, Jr. and Novella Evans, husband and wife	Noble Energy, Inc.	1/8+	864	180	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768111	W	5-14-17	Bridget A. Powderly, single	Noble Energy, Inc.	1/8+	881	26	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768115	W	5-14-17	Brian P. Powderly and Anita Powderly, h/w	Noble Energy, Inc.	1/8+	890	566	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768080	W	5-14-17	Anthony T. Powderly and Barbara M. Powderly, husband and wife	Noble Energy, Inc.	1/8+	878	363	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768107	W	5-14-17	Anne Galbally and James F. Galbally, h/w	Noble Energy, Inc.	1/8+	878	373	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768116	X	5-14-16	Susanne S. Quarterman, single	Noble Energy, Inc.	1/8+	890	606	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768098	X	5-14-16	Rodney F. Peterson, widower	Noble Energy, Inc.	1/8+	870	380	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768112	X	5-14-16	Nora K. Powderly, single	Noble Energy, Inc.	1/8+	881	32	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768103	X	5-14-16	Nora C. Powderly, single	Noble Energy, Inc.	1/8+	873	83	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768094	X	5-14-16	Muriel Anne Miller and Alan Powell, wife and husband	Noble Energy, Inc.	1/8+	860	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768114	X	5-14-16	Mary S. Scholl, single	Noble Energy, Inc.	1/8+	890	572	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768105	X	5-14-16	Mary F. Welland, widow	Noble Energy, Inc.	1/8+	873	126	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768113	X	5-14-16	Kevin M. Powderly, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	890	515	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768095	X	5-14-16	Kathleen A. Sullivan and Thomas Sullivan, wife and husband	Noble Energy, Inc.	1/8+	870	364	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768106	X	5-14-16	Jane H. Barnstener and Joanne M. Disch, her spouse	Noble Energy, Inc.	1/8+	873	132	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768108	X	5-14-16	James T. Scholl, single	Noble Energy, Inc.	1/8+	878	365	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768101	X	5-14-16	James E. Herman, a married man dealing in his sole and separate property	Noble Energy, Inc.	1/8+	873	130	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768091	X	5-14-16	Harriet C. Ventura and Rocco Ventura, wife and husband	Noble Energy, Inc.	1/8+	894	541	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768100	X	5-14-16	Harriet C. Herman and Joseph H. Wilkinson, a wife and husband	Noble Energy, Inc.	1/8+	873	122	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768096	X	5-14-16	Francis F. Fischer and Jacqueline Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	366	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768104	X	5-14-16	Eugenia A. Kerr, widow	Noble Energy, Inc.	1/8+	873	120	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

Q083768099	X	5-14-16	Eileen T. Powderly, single	Noble Energy, Inc.	1/8+	873	81	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768102	X	5-14-16	Edward P. Powderly and Marilyn Powderly, husband and wife	Noble Energy, Inc.	1/8+	873	85	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768097	X	5-14-16	Dennis Fischer and Sharron A. Fischer, husband and wife	Noble Energy, Inc.	1/8+	870	358	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768093	X	5-14-16	David Lee Evans, Jr. and Novella Evans, husband and wife	Noble Energy, Inc.	1/8+	864	180	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768111	X	5-14-16	Bridget A. Powderly, single	Noble Energy, Inc.	1/8+	881	26	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768115	X	5-14-16	Brian P. Powderly and Anita Powderly, h/w	Noble Energy, Inc.	1/8+	890	566	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768080	X	5-14-16	Anthony T. Powderly and Barbara M. Powderly, husband and wife	Noble Energy, Inc.	1/8+	878	363	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC
Q083768107	X	5-14-16	Anne Gaibally and James F. Gaibally, h/w	Noble Energy, Inc.	1/8+	878	373	NA	NA	NA	NA	NA	NA	NA	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia, LLC

AFFIDAVIT

STATE OF TEXAS §
 § SS
COUNTY OF TARRANT §

On this 18th day of October, 2016, before me, the undersigned authority, personally appeared David D. Kalish ("Affiant") who being first duly sworn under oath, deposes and saith:

1. TH Exploration, LLC, TH Exploration II, LLC and TH Exploration III, LLC are wholly owned subsidiaries of THQ Appalachia I, LLC.
2. Tug Hill Operating, LLC provides oil and gas operations services to THQ Appalachia I, LLC under an Operating Services Agreement dated July 23, 2014.
3. David D. Kalish, the Affiant, is the Vice President of Tug Hill Operating, LLC, THQ Appalachia I, LLC, TH Exploration, LLC, TH Exploration II, LLC and TH Exploration III, LLC, and;
3. Tug Hill Operating, LLC is authorized to operate and maintain the assets owned by THQ Appalachia I, LLC, including, as referenced above, TH Exploration, LLC, TH Exploration II, LLC, and TH Exploration III, LLC, including oil and gas leases, wells, pipelines, surface facilities, and other all other assets that support the business of THQ Appalachia I, LLC, and;
4. Specifically, Tug Hill Operating, LLC is authorized to submit and obtain well work permits and carry out all activities pursuant to such work permits for assets owned by TH Exploration, LLC, TH Exploration II, LLC, TH Exploration III, LLC.

FURTHER, AFFIANT SAITH NOT.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this 18th day of October, 2016.

David D. Kalish
Affiant: David D. Kalish

Jan Pest
MARSHALL County 03:44:28 PM
Instrument No 1416299
Date Recorded 10/19/2016
Document Type HIS
Pages Recorded 1
Book-Page 28-62
Recording Fee \$5.00
Additional \$6.00

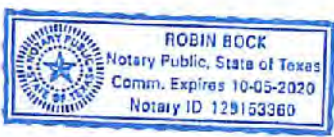
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STATE OF TEXAS §
 § SS
COUNTY OF TARRANT §

Sworn and subscribed to (or affirmed) before me on this, the 18th day of October, 2016, by David D. Kalish

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

My Commission Expires: 10-05-2020
Signature/Notary Public: Robin Bock
Name/Notary Public (Print): Robin Bock



Jay Pest
MARSHALL County 01:22:38 PM
Instrukt No 1403489
Date Recorded 04/27/2016
Document Type AEN
Pages Recorded 77
Book-Page 36-9
Recording Fee \$77.00
Additional \$13.00

SI-02205

WHEN RECORDED RETURN TO:
TH Exploration II, LLC
1320 South University Drive, Suite 500
Fort Worth, Texas 76107
Attn: David Kabis

Execution Version

ASSIGNMENT AND BILL OF SALE

STATE OF WV §
§ KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF MARSHALL §

THIS ASSIGNMENT AND BILL OF SALE (this "Assignment"), dated April 7, 2016, but effective as of 7:00 A.M. Houston time on January 1, 2016 (the "Effective Time"), is between Gasbar Exploration Inc, a Delaware corporation, whose address is 1331 Lamar Street, Suite 650 Houston, Texas 77010 ("Assignor"), and TH Exploration II, LLC, a Texas limited liability company, whose address is 1320 South University Drive, Suite 500, Fort Worth, Texas 76107 ("Assignee"). Assignor and Assignee are each, individually, referred to herein as a "Party" and, collectively, as the "Parties".

Capitalized terms used but not defined herein shall have the respective meanings set forth in that certain Purchase and Sale Agreement (the "Purchase Agreement"), dated as of February 19, 2016, by and between Assignor and Assignee (as Successor-in-interest).

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

For Ten Dollars (\$10.00) and other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged), Assignor does hereby forever GRANT, BARGAIN, SELL, CONVEY, ASSIGN, TRANSFER, SET OVER AND DELIVER unto Assignee, all of Assignor's right, title and interest in and to the following interests and properties (such right, title and interest described in subsections (a) through (b) of this Section 1, less and except the Excluded Assets, collectively, the "Conveyed Interests");

(a) all oil, gas and/or mineral leases of Assignor, together with any and all other right, title and interest of Assignor in and to the leasehold estates created thereby, including subleases, royalties, overriding royalties, net profits interest, carried interests or similar rights or interests in such leases, and together with all rights, privileges, benefits and powers conferred upon Assignor with respect to the use and occupation of the lands covered thereby that may be necessary, convenient or incidental to the possession and enjoyment of such leases, located in Marshall, Wetzel, Doddridge, Harrison, Lewis, Marion, and Monongalia Counties, West Virginia and Greene, Butler, Fayette, Somerset, and Clearfield Counties, Pennsylvania, including those described on Exhibit A—Part I attached hereto (subject to any reservations, limitations or depth restrictions described on Exhibit A—Part I), (Assignor's interest in such leases and other right, title and interest as so limited, the "Leases");

(b) all rights and interests in, under or derived from all unitization agreements in effect with respect to any of the Leases and the units created thereby, including those described

US 4080@b

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MEMORANDUM OF OPERATING AGREEMENT AND FINANCING STATEMENT

This Memorandum of Operating Agreement and Financing Statement (hereinafter referred to as "Memorandum") is executed to be effective concurrently with that certain Operating Agreement (the "Operating Agreement") by and between TH Exploration, LLC, as Operator, and HG Energy II Appalachia, LLC and TH Exploration II, LLC, as Non-Operators, covering, among other things, the development and production of crude oil, natural gas and associated substances from the leases (hereinafter called the "Contract Area") described on Exhibit "A-1" and Exhibit "A-2" attached hereto and owned by Operator and Non-Operator in the respective percentages of shares indicated on Exhibit "A" to the Operating Agreement.

The Operating Agreement contains an Accounting Procedure, along with provisions giving the parties hereto mutual liens and security interests where one or more parties hereto are or may become Debtors to one or more other parties hereto. This Memorandum incorporates by reference all of the terms and conditions of the Operating Agreement, including but not limited to the lien and security interest provisions.

The purpose of this Memorandum is to place third parties on notice of the Operating Agreement, and to secure and perfect the mutual liens and security interests of the parties hereto.

The Operating Agreement specifically provides and the parties do hereby confirm and agree that:

1. The Operator shall conduct and direct and have full control of all operations on the Contract Area as permitted and required by, and within the limits of, the Operating Agreement
2. The liability of the parties under the Operating Agreement shall be several, not joint or collective. Each party shall be responsible only for its obligations and shall be liable only for its proportionate share of costs.
3. Each Non-Operator grants to Operator a lien upon its oil and gas rights, oil and gas leases and mineral interests in the Contract Area, and a security interest in its share of oil and/or gas when extracted and its interest in all fixtures, inventory, personal property and equipment located on or used on the Contract Area and in all its contract rights and receivables related thereto and arising therefrom to secure payment of its present and future share of costs and expenses, together with interest thereon at the rate provided in the Accounting Procedure referred to above. To the extent that Operator has a security interest under the Uniform Commercial Code ("Code") of the state or states in which the Contract Area is located, Operator without prejudice and in addition to all other legal, equitable and contractual remedies which are expressly reserved, shall be entitled to exercise the rights and remedies of a secured party under the Code. The bringing of a suit and the obtaining of judgment by Operator for the secured indebtedness shall not be deemed an election of remedies or otherwise affect the rights or security interests for the payment thereof.
4. The Operator grants to Non-Operator a lien and security interest equivalent to that granted to Operator as described in Paragraph 3 above, to secure payment by Operator of its own share of costs and expenses when due.

51-0-2205



March 29, 2019

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

RE: Blake N-11HU

Subject: Marshall County Route 29 and Route 29/3 Road Crossing Letter

Dear Laura:

Tug Hill Operating, LLC (THO) hereby submits this letter as confirmation that THO has obtained the right to drill, extract and produce the minerals under Marshall County Route 29 and Route 29/3 in the area reflected on the Blake N-11HU well plat. THO has conducted a full title search in the relevant Court House to confirm its ownership under said County Routes and is not currently aware of any recorded document that would suggest an ownership other than THO.

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

Sincerely,

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

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Office of Oil and Gas
APR 3 2019
WV Department of
Environmental Protection

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

Date of Notice Certification: 03/29/2019

API No. 47- 051 - 02205
Operator's Well No. Blake N-11HU
Well Pad Name: Blake

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>518,698.99</u>
County:	<u>Marshall</u>		Northing:	<u>4,401,572.17</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>Wibert H. Bungard, et ux</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.

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: *PLEASE CHECK ALL THAT APPLY <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED <input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED <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) <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION <input checked="" type="checkbox"/> 5. PUBLIC NOTICE <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		OOG OFFICE USE ONLY <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED
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Required Attachments:

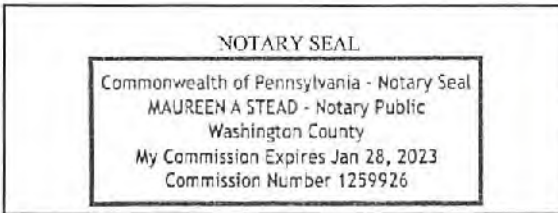
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

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>Amy Miller</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 29 day of MARCH.
Maureen A Stead Notary Public
My Commission Expires 1/28/23

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.

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WW-6A
(9-13)

API NO. 47- 051 - 02205
OPERATOR WELL NO. Blake N-11HU
Well Pad Name: Blake

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

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

Date of Notice: 3/26/2019 **Date Permit Application Filed:** 3/29/2019

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: Wilbert H. and Pamela June Bungard (access road and well pad)
Address: 243 Bandit Drive
Proctor, WV 26055

Name: Russell and Mary Blake (access road and well pad)
Address: 3343 Burch Ridge Road
Proctor, WV 26055

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

Name: _____
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE

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

COAL OPERATOR

Name: _____
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: Wilbert H. Bungard and Pamela June Bungard (*See attached list)
Address: 243 Bandit Drive
Proctor, WV 26055

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

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Office of Oil and Gas
APR 3 2019
WV Department of
Environmental Protection

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) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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

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

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

Well Location Restrictions

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

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WW-6A
(8-13)

API NO. 47-051 - 02205
OPERATOR WELL NO. Blake N-11HU
Well Pad Name: Blake

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

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Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WW-6A
(8-13)

API NO. 47- 051 - 02205
OPERATOR WELL NO. Blake N-11HU
Well Pad Name: Blake

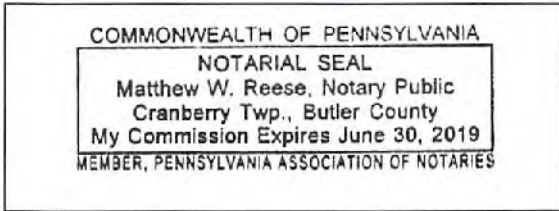
Notice is hereby given by:

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



Subscribed and sworn before me this 20 day of MAR 2019 .

[Signature] Notary Public

My Commission Expires 6-30-2019

WW-6A

Supplement Pg. 1A

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

WATER WELL REPORT

Well: BLAKE N -11HU
 District: Franklin
 County: Marshall
 State: WV

There appears to be Sixteen (16) possible water sources within 2,000 feet of the above referenced well location.

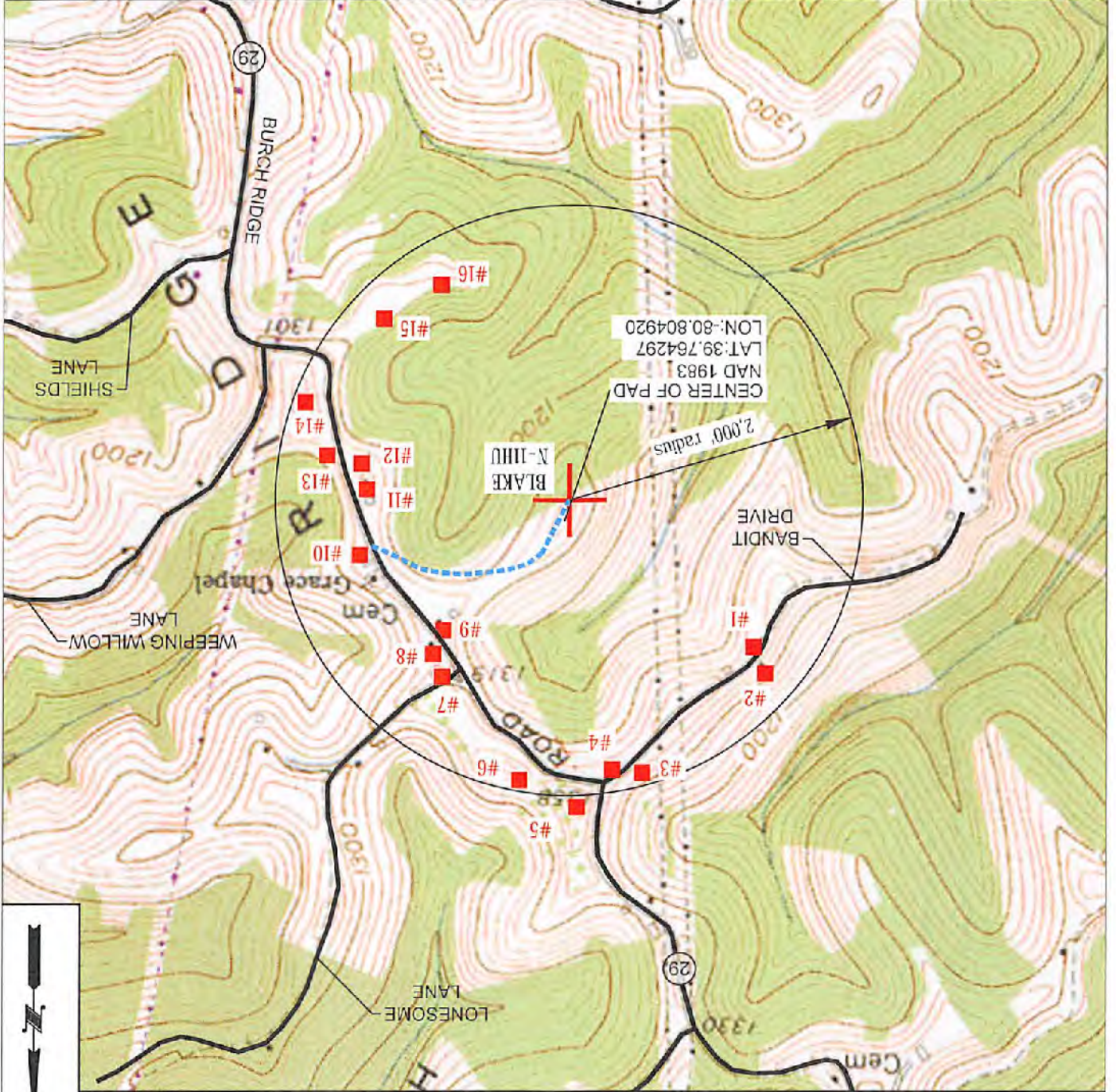
Topo Spot # 1 (House) TM 19 Par. 20 Wilbert H. Bungard, et ux 304-476-6494 243 Bandit Drive Proctor, WV 26055	Topo Spot #2 (Abandoned House) TM 19 Par. 20 Wilbert H. Bungard, et ux 304-476-6494 243 Bandit Drive Proctor, WV 26055	Topo Spot # 3 (House) TM 19 Par. 20.2 Casandra L. Harmon 304-639-9837 37 Bandit Drive Proctor, WV 26055
Topo Spot # 4 (House) TM 19 Par. 20.1 John J. Ebert (Life) 304-455-3967 26 Bandit Drive Proctor, WV 26055	Topo Spot # 5 (House) TM 19 Par. 7.1 Robert L. Shields, et ux 304-455-5387 2756 Burch Ridge Rd. Proctor, WV 26055	Topo Spot # 6 (House) TM 19 Par. 7.5 Adam & Jesse Robinson 304-280-9745 2932 Burch Ridge Rd. Proctor, WV 26055
Topo Spot # 7 (House-New) TM 19 Par. 10 Ernie L. Anderson, et ux 304-455-3818 3156 Burch Ridge Rd. Proctor, WV 26055	Topo Spot # 8 (House) TM 19 Par. 10 Ernie L. Anderson, et ux 304-455-3818 3156 Burch Ridge Rd. Proctor, WV 26055	Topo Spot # 9 (House) TM 19 Par. 9 Penny E. Menendez 304-455-5338 3171 Burch Ridge Rd. Proctor, WV 26055
Topo Spot # 10 (Trailer) TM 19 Par. 29 Ernie L. & Tammy L. Anderson 304-455-3818 3156 Burch Ridge Rd. (3298 Burch Ridge Rd.) Proctor, WV 26055	Topo Spot # 11 (House) TM 19 Par. 19 Russell Blake, et al 304-455-1158 3343 Burch Ridge Rd. Proctor, WV 26055	Topo Spot # 12 (Trailer) TM 19 Par. 19 Russell Blake, et al 304-455-1158 3343 Burch Ridge Rd. (3435 Burch Ridge Rd.) Proctor, WV 26055

<p>Topo Spot # 13 (House) TM 19 Par. 30 Ernie & Tammy Anderson 304-455-3818 3156 Burch Ridge Rd. (3486 Burch Ridge Rd.) Proctor, WV 26055</p>	<p>Topo Spot # 14 (House) TM 19 Par. 31 Charles F. & Diana L. Haynes 304-312-5210 3508 Burch Ridge Rd. Proctor, WV 26055</p>	<p>Topo Spot # 15 (House) TM 19 Par. 28 David D. Yoho & Mark E. Yoho 304-455-3176 3555 Burch Ridge Rd. Proctor, WV 26055</p>
<p>Topo Spot # 16 (House) TM 19 Par. 28 David D. Yoho & Mark E. Yoho 304-455-3176 3555 Burch Ridge Rd. Proctor, WV 26055</p>		

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Environmental Protection



OPERATOR	494510851	TOPO SECTION	POWHATAN POINT 75'	LEASE NAME	BLAKE
TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		SCALE:	1" = 1000'	DATE:	11-20-2018



There appears to be Sixteen (16) possible water sources within 2,000';

PROPOSED BLAKE N-11HU

SUPPLEMENT PG 1

WV-6A

51-02205

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: 10/22/2018 **Date of Planned Entry:** 10/29/2018

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: Wilbert H. and Pamela June Bungard (access road and well pad)
 Address: 243 Bendit Drive
Proctor, WV 26055

Name: Russell and Mary Blake (access road and well pad)
 Address: 3343 Burch Ridge Road
Proctor, WV 26035

Name: _____
 Address: _____

COAL OWNER OR LESSEE

Name: GNX Land Resources
 Address: 1000 Consol Energy Drive
Canonsburg, PA 15318

MINERAL OWNER(s)

Name: David A. and Deborah Takach (*See Attached List)
 Address: 14 Zilko Terrace
Glen Dale, WV 26038

*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>39.76422598, -80.80495697</u>
County: <u>Marshall</u>	Public Road Access: <u>Burch Ridge Road - CR 29</u>
District: <u>Franklin</u>	Watershed: <u>huc-10: FRENCH CREEK - OHIO RIVER (UNDEFINDED)</u>
Quadrangle: <u>Powhatan Point 7.5'</u>	Generally used farm name: <u>Blake, Russell Et Al</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

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

Address: 330 Southpointe Boulevard, Plaza II, Suite 200
Canonsburg, PA 15317
 Facsimile: 724-338-2030

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Office of Oil and Gas
APR 3 2019
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.

**WW-6A3 Notice Attachment
Blake N-11HU**

Mineral Owners

Russell and Mary Blake
3343 Burch Ridge Road
Proctor, WV 26055

Gary L. and Pamela S. Witschey
2645 Paden Fork Road
New Martinsville, WV 26155

Gordon L. Witschey
160 E. Thistle Drive
New Martinsville, WV 26155

Carl Coffield
970 Allendale Avenue
Akron, OH 44306

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

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

Date of Notice: 03/28/2019 **Date Permit Application Filed:** 03/29/2019

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

CERTIFIED MAIL **HAND**
RETURN RECEIPT REQUESTED **DELIVERY**

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

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Wilbert H. and Pamela June Bungard
Address: 243 Bandit Drive
Proctor, WV 26055

Name: Russell and Mary Blake
Address: 3343 Burch Ridge Road
Proctor, WV 26055

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>516,698.99</u>
County:	<u>Marshall</u>		Northing:	<u>4,401,572.17</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>Blake, Russell, et al</u>	
Watershed:	<u>French Creek - Ohio River</u>			

This Notice Shall Include:

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

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

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

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WV Department of
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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 of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

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

June 19, 2018

Jill M. Newman
 Deputy Commissioner

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

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

Blake N-11HU

Dear Mr. Martin,

This well site will be accessed from Permit #06-2013-0426 transferred 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,

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

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

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



PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Well No. Blake N-11HU

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

WEST VIRGINIA COUNTY MAP



**WVDEP OOG
ACCEPTED AS-BUILT**

WJ 6/14/2018

Blake Well Site
Site Design, Construction Plan, &
Erosion and Sediment Control Plans
Tug Hill Operating
Marshall County
Franklin District
Latitude 39.76429745°
Longitude -80.80492031°
Stillhouse Run - Ohio River Watershed

Pertinent Site Information
Blake Well Site
Emergency Number: 304-845-1920
Franklin District, Marshall County, WV
Watershed: Stillhouse Run - Ohio River Watershed
Site 911 Address:
Tug Hill Contact Number: 1-817-632-3400

Property Owner Information - Blake Well Site

Owner	Acres	Parcel ID	Parcel Area	Parcel Value	Parcel Category	Parcel Status
Franklin District	11.25	4.01	0.08	0.01	0.01	0.01
Watershed	1.00	1.00	1.00	1.00	1.00	1.00

Exhibit A: Final Design: Issue for Permitting

Well ID	Well Type	Well Depth	Well Diameter	Well Location
WV-NAD-01-0001	Production	100	4	...
WV-NAD-01-0002	Production	100	4	...
WV-NAD-01-0003	Production	100	4	...
WV-NAD-01-0004	Production	100	4	...
WV-NAD-01-0005	Production	100	4	...
WV-NAD-01-0006	Production	100	4	...
WV-NAD-01-0007	Production	100	4	...
WV-NAD-01-0008	Production	100	4	...
WV-NAD-01-0009	Production	100	4	...
WV-NAD-01-0010	Production	100	4	...
WV-NAD-01-0011	Production	100	4	...
WV-NAD-01-0012	Production	100	4	...
WV-NAD-01-0013	Production	100	4	...
WV-NAD-01-0014	Production	100	4	...
WV-NAD-01-0015	Production	100	4	...
WV-NAD-01-0016	Production	100	4	...
WV-NAD-01-0017	Production	100	4	...
WV-NAD-01-0018	Production	100	4	...
WV-NAD-01-0019	Production	100	4	...
WV-NAD-01-0020	Production	100	4	...
WV-NAD-01-0021	Production	100	4	...
WV-NAD-01-0022	Production	100	4	...
WV-NAD-01-0023	Production	100	4	...
WV-NAD-01-0024	Production	100 </td <td>4</td> <td>...</td>	4	...
WV-NAD-01-0025	Production	100	4	...
WV-NAD-01-0026	Production	100	4	...
WV-NAD-01-0027	Production	100	4	...
WV-NAD-01-0028	Production	100	4	...
WV-NAD-01-0029	Production	100	4	...
WV-NAD-01-0030	Production	100	4	...
WV-NAD-01-0031	Production	100	4	...
WV-NAD-01-0032	Production	100	4	...
WV-NAD-01-0033	Production	100	4	...
WV-NAD-01-0034	Production	100	4	...
WV-NAD-01-0035	Production	100	4	...
WV-NAD-01-0036	Production	100	4	...
WV-NAD-01-0037	Production	100	4	...
WV-NAD-01-0038	Production	100	4	...
WV-NAD-01-0039	Production	100	4	...
WV-NAD-01-0040	Production	100	4	...
WV-NAD-01-0041	Production	100	4	...
WV-NAD-01-0042	Production	100	4	...
WV-NAD-01-0043	Production	100	4	...
WV-NAD-01-0044	Production	100	4	...
WV-NAD-01-0045	Production	100	4	...
WV-NAD-01-0046	Production	100	4	...
WV-NAD-01-0047	Production	100	4	...
WV-NAD-01-0048	Production	100	4	...
WV-NAD-01-0049	Production	100	4	...
WV-NAD-01-0050	Production	100	4	...



Area Break

Area	Area (Acres)	Area (Sq. Feet)	Area (Sq. Yards)
Disturbed Area	1.00	136,000	15,556
Construction Area	0.50	68,000	7,778
Production Area	10.75	143,600	16,289

Disturbed Area

Activity	Area (Acres)
Disturbance	1.00
Construction	0.50
Production	10.75

Blake Well Site Quantities

Item	Quantity	Unit
Excavation	100	Cu Yd
Production	100	Cu Yd
Construction	100	Cu Yd

Project Contacts

Lead/Client
Tug Hill Operating LLC
1000...
...
...

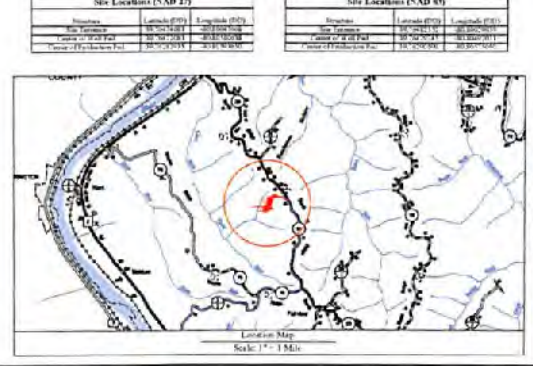
Design/Engineer
...
...
...

Site Locations (NAD 83)

Well ID	Latitude (NAD 83)	Longitude (NAD 83)
WV-NAD-01-0001	39.76429745	-80.80492031
WV-NAD-01-0002	39.76429745	-80.80492031

Approach Route

From the intersection of WV Rt 2 and US Rt 70, turn North on WV Rt 2 for 1.0 mi. Turn Right onto Co Rd 27 (Wagon Ridge). Follow Co Rd 27 for 2.4 mi. Turn Right onto Co Rd 28 (Wagon Ridge). Follow Co Rd 28 for 1.8 mi. Turn Left onto Co Rd 29 (Duck Ridge Rd). Follow Co Rd 29 for 1.05 mi. The site address will be on the Left (L) side of the road.



Well Location Restrictions

1) All well locations shall be in the approved well location plan.

2) All well locations shall be in the approved well location plan.

3) All well locations shall be in the approved well location plan.

4) All well locations shall be in the approved well location plan.

5) All well locations shall be in the approved well location plan.

6) All well locations shall be in the approved well location plan.

7) All well locations shall be in the approved well location plan.

8) All well locations shall be in the approved well location plan.

9) All well locations shall be in the approved well location plan.

10) All well locations shall be in the approved well location plan.

Sheet

Sheet	Description
1	Overall Sheet
1-1	Schedule of Quantities
1-2	Site Notes
2	Disturbance/Production Pad
3	Construction Area
4	Site Soil Map
5	Erosion Control
6	Overall Plan View
7	Disturbance Area
8	Key Plan
9	Plan View
10	Construction Area
11	Construction - Well Pad
12	Construction - Production Pad
13	Construction - Access Road
14	Construction - Erosion Control
15	Construction - Sediment Control
16	Construction - Sediment Control
17	Construction - Sediment Control
18	Construction - Sediment Control
19	Construction - Sediment Control
20	Construction - Sediment Control

Environmental

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MISS UTILITY OF WEST VIRGINIA

3-300-245-4848

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Regulatory Conditions

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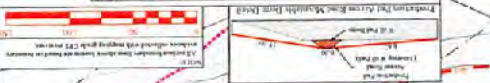
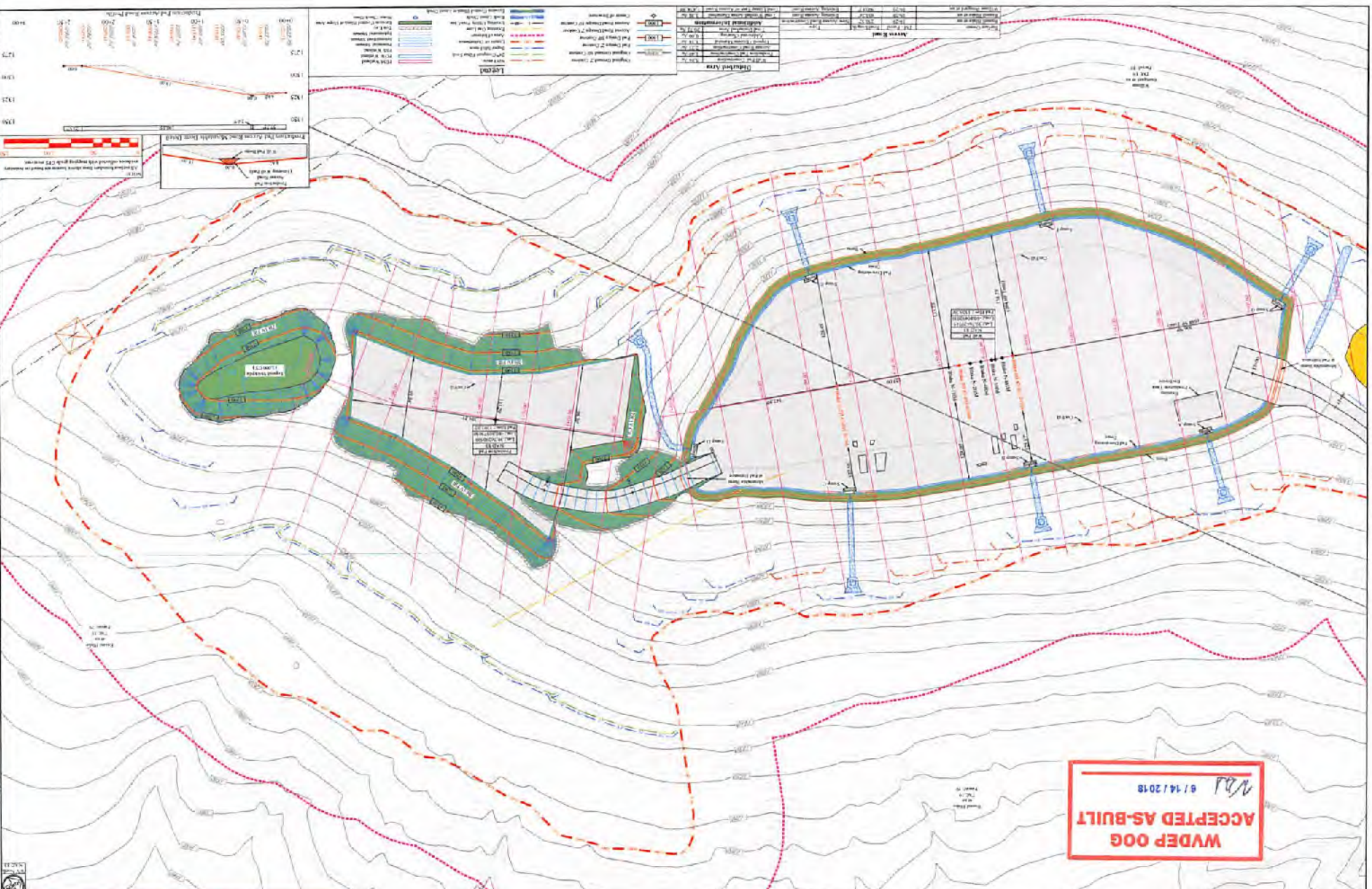


STATE OF WEST VIRGINIA

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WDEP 00G
ACCEPTED AS-BUILT
8/14/2018
MPL

Blake Well Site
1 ug Hill Operating
Exhibit A: Final Design Issue for Permitting



LEGEND

Symbol	Description
Blue circle with 'W'	Well Location
Dashed line	Flow Line
Solid line	Property Boundary
Red dashed line	100' Flood Protection
Blue dashed line	50' Flood Protection
Green shaded area	100' Flood Protection
Yellow shaded area	50' Flood Protection
Blue shaded area	25' Flood Protection
Red dashed line with dots	100' Flood Protection
Blue dashed line with dots	50' Flood Protection
Green shaded area with dots	100' Flood Protection
Yellow shaded area with dots	50' Flood Protection
Blue shaded area with dots	25' Flood Protection

TABLE 1: WELL DATA

Well No.	Depth (ft)	Casing Type	Flow Line
W1	120	4" Schedule 40	Flow Line 1
W2	130	4" Schedule 40	Flow Line 2
W3	140	4" Schedule 40	Flow Line 3
W4	150	4" Schedule 40	Flow Line 4
W5	160	4" Schedule 40	Flow Line 5
W6	170	4" Schedule 40	Flow Line 6
W7	180	4" Schedule 40	Flow Line 7
W8	190	4" Schedule 40	Flow Line 8
W9	200	4" Schedule 40	Flow Line 9
W10	210	4" Schedule 40	Flow Line 10