

05/24/2019



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west virginia department of environmental protection

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

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

Monday, May 20, 2019  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

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

Re: Permit Modification Approval for HILLROCK 9HM  
47-051-02066-00-00

**Lengthen horizontal lateral from 9613' to 10344'**

TUG HILL OPERATING, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before 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: HILLROCK 9HM  
Farm Name: TERRY E. & DEBORAH SIMMS  
U.S. WELL NUMBER: 47-051-02066-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 05/20/2019

Promoting a healthy environment.

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 New Martinsville  
Operator ID County District Quadrangle

2) Operator's Well Number: Hillrock 9HM Well Pad Name: Simms

3) Farm Name/Surface Owner: Simms, Terry E. and Deborah Public Road Access: Rines Ridge Road (County Route 76)

4) Elevation, current ground: 1,219.50' Elevation, proposed post-construction: 1,219.50'

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

(b) If Gas Shallow  Deep   
Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus is the target formation at a depth of 6445' - 6495' thickness of 50' and anticipated pressure of approx. 3800 psi

8) Proposed Total Vertical Depth: 6,595'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 17,310'

11) Proposed Horizontal Leg Length: 10,344'

12) Approximate Fresh Water Strata Depths: 70', 812'

13) Method to Determine Fresh Water Depths: Use shallow offset wells to determine deepest freshwater. Or determine using predrill tests, testing while drilling or petrophysical evaluation of resistivity.

14) Approximate Saltwater Depths: 2,167'

15) Approximate Coal Seam Depths: Sewickly Coal - 706' and Pittsburgh Coal - 806'

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

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

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

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WW-6B  
(04/15)

05/24/2019  
API NO. 47-051 - 02066  
OPERATOR WELL NO. Hillrock 9HM  
Well Pad Name: Simms

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	13 3/8"	NEW	H40	48#	900'	900' ✓	975ft^3(CTS)
Coal	13 3/8"	NEW	H40	48#	900'	900' ✓	975ft^3(CTS)
Intermediate	9 5/8"	NEW	J55	36#	2,627'	2,627' ✓	867ft^3(CTS)
Production	5 1/2"	NEW	P110	20#	17,310'	17,310' ✓	4417ft^3(CTS)
Tubing	2 3/8"	NEW	N80	4.7#		6,707' ✓	
Liners							

12/18/18

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water	13 3/8"	17 1/2"	.33	1,730	1,384	SEE #24	1.2
Coal	13 3/8"	17 1/2"	.33	1,730	1,384	SEE#24	1.2
Intermediate	9 5/8"	12 1/4"	.352	3,520	2,816	SEE#24	1.19
Production	5 1/2"	8 7/8_8 3/4	.361	12,640 ✓	9,000	SEE#24	1.17/1.19
Tubing	2 3/8"		.19	11,200	8,960		
Liners							

PACKERS

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

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WW-6B  
(10/14)

API NO. 47-051 - 02064 05/24/2019  
OPERATOR WELL NO. Hillrock 9HM  
Well Pad Name: Simms

*ju*  
*12/18/18*

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

Drill through the Marcellus and TD Pilot Hole 100' into the Onondaga. Log vertical section and run a solid cement plug back to proposed KOP. Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

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

Well to be completed with approximately 25,860,000 lb proppant and 399,814 bbl of water. Max rate = 80 bpm; max psi = 9,000#. ✓

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 11.63 acres

22) Area to be disturbed for well pad only, less access road (acres): 3.19 acres

23) Describe centralizer placement for each casing string:

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

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

\*See Attachment

25) Proposed borehole conditioning procedures:

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

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\*Note: Attach additional sheets as needed.



## Tug Hill Operating, LLC Casing and Cement Program

### Hillrock 9HM

#### Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	13 3/8"	J55	17 1/2"	900'	CTS
Intermediate	9 5/8"	J55	12 1/4"	2,627'	CTS
Production	5 1/2"	CYHP110	8 7/8 x 8 3/4"	17,310'	CTS

#### Cement

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

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

Intermediate: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.19

Kick Off Plug: Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L - KOP Plug

Production: 50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 15.2ppg, Y = 1.19

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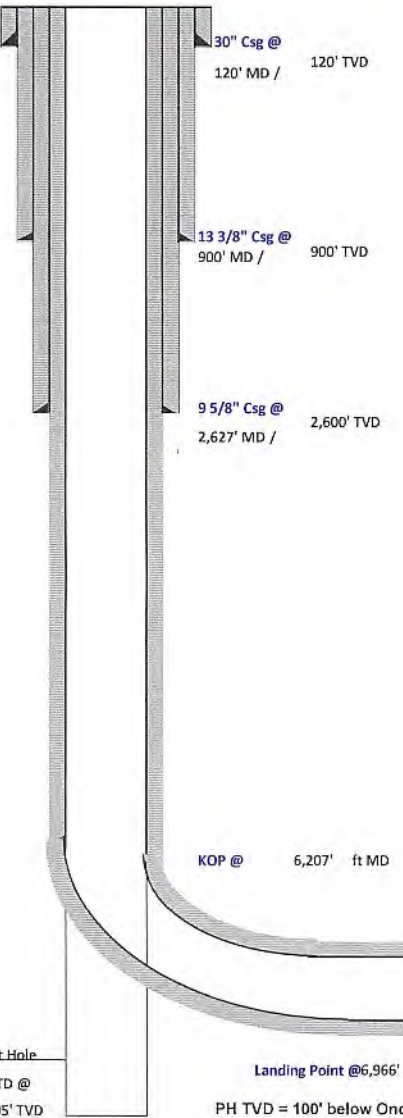


WELL NAME: Hillrock 9HM  
 STATE: WV COUNTY: Marshall  
 DISTRICT: Franklin  
 DF Elev: 1,219' GL Elev: 1,219'  
 TD: 17,310'  
 TH Latitude: 39.74603472  
 TH Longitude: -80.77026528  
 BH Latitude: 39.718705  
 BH Longitude: 80.746915

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	812
Sewickley Coal	706
Pittsburgh Coal	806
Big Lime	1943
Weir	2302
Berea	2517
Gordon	2759
Rhinestreet	5817
Geneseo/Burkett	6305
Tully	6350
Hamilton	6387
Marcellus	6445
Landing Depth	6479
Onondaga	6495
Pilot Hole Depth	6595

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	17.5	13 3/8	900'	900'	54.5	J55	Surface
Intermediate 1	12 1/4	9 5/8	2,627'	2,600'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	17,310'	6,642'	20	CYHP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	977	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	856	A	15	Air	1 Centralizer every other jt
Production	4,056	A	14.5	Air / SOBM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc



*Handwritten signature and date: 12/18/18*

Pilot Hole  
 PH TD @ 6,595' TVD  
 Landing Point @ 6,966' MD / 6,479' TVD  
 PH TVD = 100' below Onondaga Top  
 6,595' TVD ✓

Lateral TD @ 17,310' ft MD  
 6,642' ft TVD

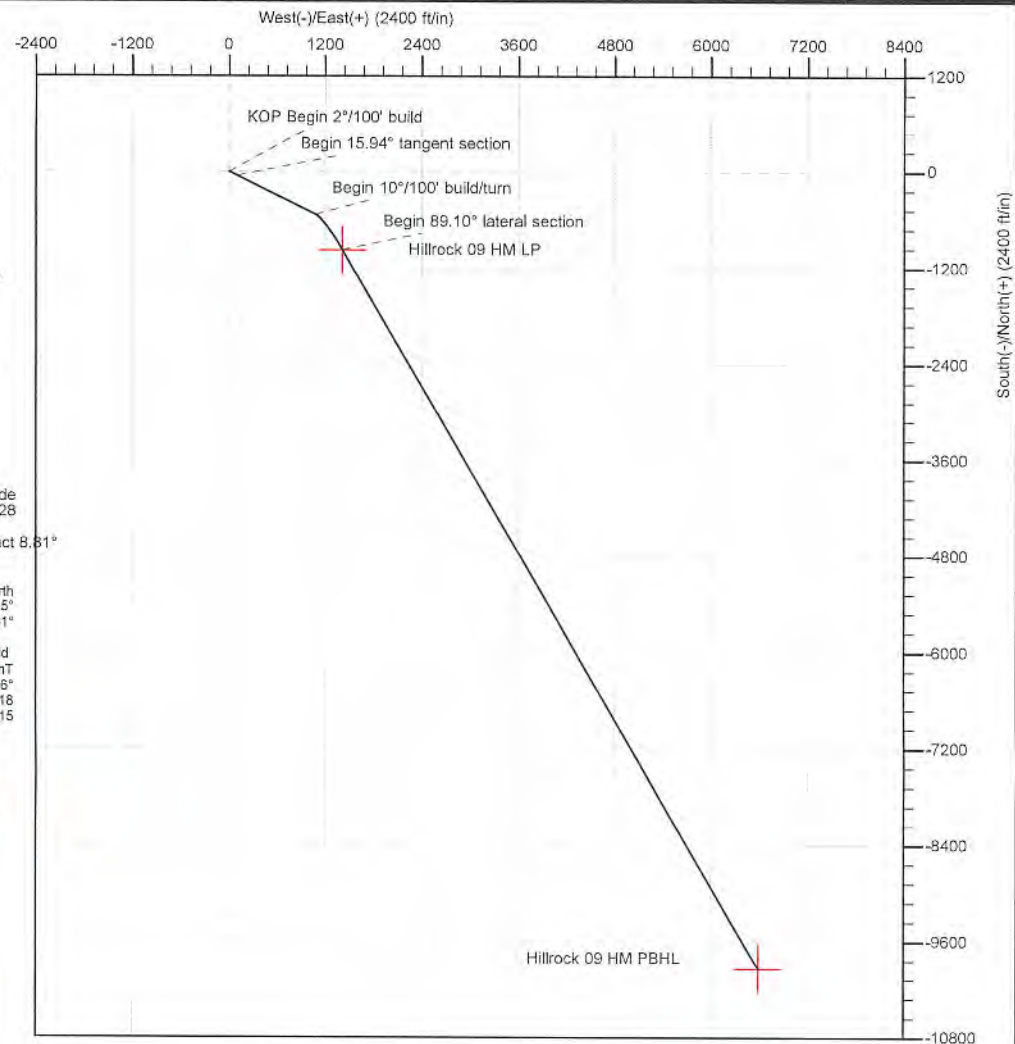
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Well: Hillrock 09 HM (i)  
 Site: Hillrock/Simms  
 Project: Marshall County, West Virginia.  
 Design: rev0

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2°/100' build
3	2196.97	15.94	116.22	2186.73	-48.67	98.81	2.00	116.22	95.18	Begin 15.94° tangent section
4	6206.59	15.94	116.22	6042.19	-535.19	1085.61	0.00	0.00	1046.74	Begin 10°/100' build/turn
5	6965.73	89.10	150.00	6479.00	-976.45	1420.17	10.00	34.97	1598.84	Begin 89.10° lateral section
6	17309.95	89.10	150.00	6642.00	-9933.75	6591.55	0.00	0.00	1921.74	PBHL/TD 17309.95 MD 6642.00 TVD

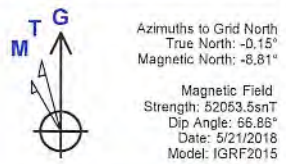


Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: NAD83 West Virginia - HARN  
 Ellipsoid: GRS 1980  
 Zone: Zone 17N (84 W to 78 W)

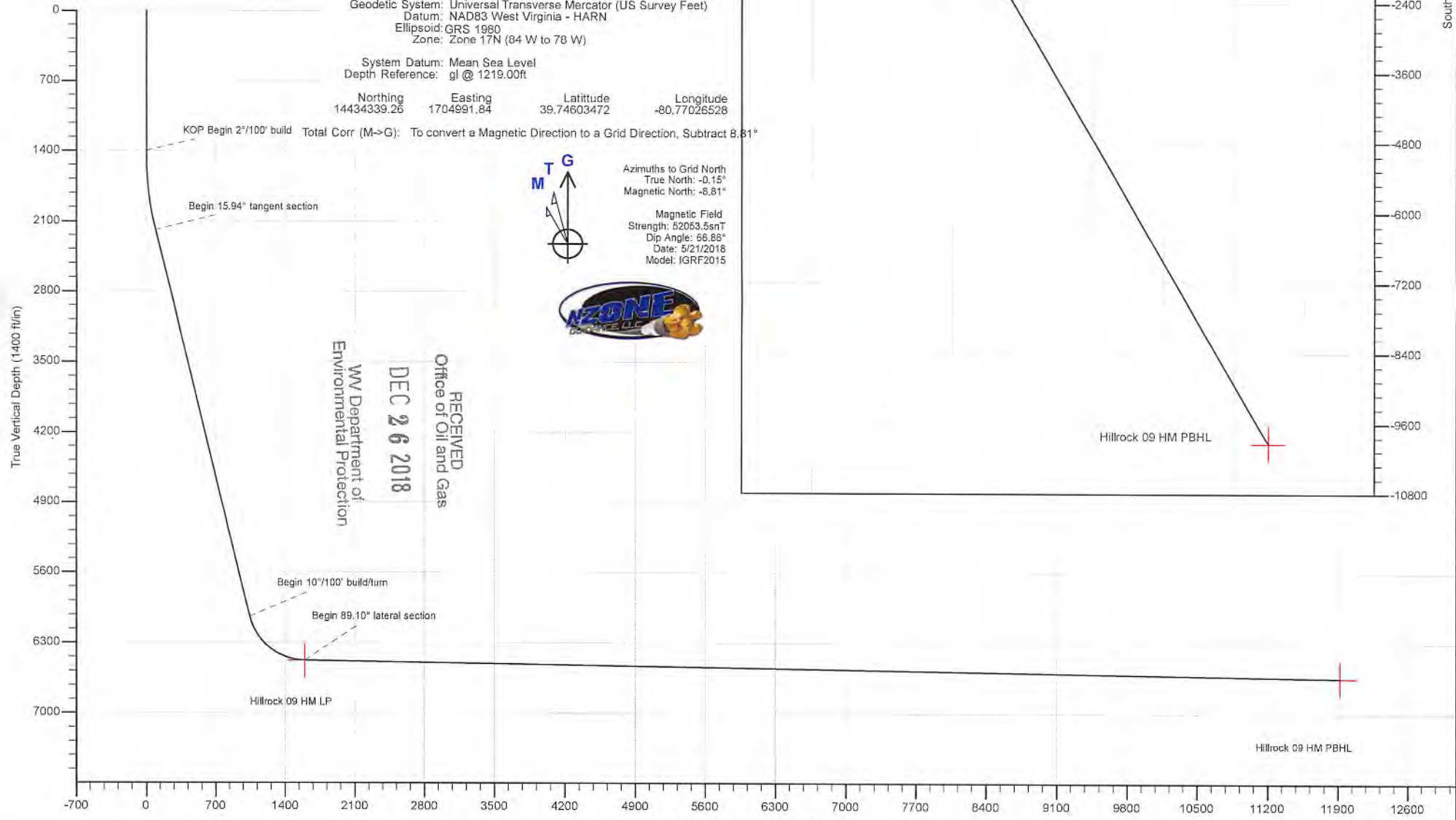
System Datum: Mean Sea Level  
 Depth Reference: gl @ 1219.00ft

Northing 14434339.26 Easting 1704991.84 Latitude 39.74603472 Longitude -80.77026528

KOP Begin 2°/100' build Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.81°



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Planning Report - Geographic

Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well Hillrock 09 HM (i)
Company:	Tug Hill Operating LLC	TVD Reference:	gl @ 1219.00ft
Project:	Marshall County, West Virginia.	MD Reference:	gl @ 1219.00ft
Site:	Hillrock/Simms	North Reference:	Grid
Well:	Hillrock 09 HM (i)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

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	Hillrock/Simms				
Site Position:		Northing:	14,434,279.29 usft	Latitude:	39.74587001
From:	Lat/Long	Easting:	1,704,992.60 usft	Longitude:	-80.77026312
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.15 °

Well	Hillrock 09 HM (i)					
Well Position	+N/-S	0.00 ft	Northing:	14,434,339.26 usft	Latitude:	39.74603472
	+E/-W	0.00 ft	Easting:	1,704,991.84 usft	Longitude:	-80.77026528
Position Uncertainty	0.00 ft	Wellhead Elevation:		Ground Level:	1,219.00 ft	

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/21/2018	-8.66	66.86	52,053.53143001

Design	rev0				
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	146.43	

Plan Survey Tool Program	Date	5/23/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	17,309.42 rev0 (Original Hole)	MWD MWD - Standard		

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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	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,196.97	15.94	116.22	2,186.73	-48.67	98.81	2.00	2.00	0.00	116.22	
6,206.59	15.94	116.22	6,042.19	-535.19	1,086.61	0.00	0.00	0.00	0.00	
6,965.73	89.10	150.00	6,479.00	-976.45	1,420.17	10.00	9.64	4.45	34.97	Hillrock 09 HM LP
17,309.95	89.10	150.00	6,642.00	-9,933.75	6,591.55	0.00	0.00	0.00	0.00	Hillrock 09 HM PBHL





Planning Report - Geographic

Database: DB\_Aug0116\_LT\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia.  
 Site: Hillrock/Simms  
 Well: Hillrock 09 HM (i)  
 Wellbore: Original Hole  
 Design: rev0

Local Co-ordinate Reference: Well Hillrock 09 HM (i)  
 TVD Reference: gl @ 1219.00ft  
 MD Reference: gl @ 1219.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
100.00	0.00	0.00	100.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
200.00	0.00	0.00	200.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
300.00	0.00	0.00	300.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
400.00	0.00	0.00	400.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
500.00	0.00	0.00	500.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
600.00	0.00	0.00	600.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
700.00	0.00	0.00	700.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
800.00	0.00	0.00	800.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
900.00	0.00	0.00	900.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,434,339.26	1,704,991.84	39.74603472	-80.77026528	
<b>KOP Begin 2°/100' build</b>										
1,500.00	2.00	116.22	1,499.98	-0.77	1.57	14,434,338.49	1,704,993.40	39.74603259	-80.77025972	
1,600.00	4.00	116.22	1,599.84	-3.08	6.26	14,434,336.18	1,704,998.10	39.74602621	-80.77024304	
1,700.00	6.00	116.22	1,699.45	-6.93	14.08	14,434,332.33	1,705,005.92	39.74601558	-80.77021526	
1,800.00	8.00	116.22	1,798.70	-12.32	25.01	14,434,328.94	1,705,016.85	39.74600071	-80.77017641	
1,900.00	10.00	116.22	1,897.47	-19.23	39.04	14,434,320.03	1,705,030.88	39.74598163	-80.77012655	
2,000.00	12.00	116.22	1,995.62	-27.66	56.16	14,434,311.60	1,705,048.00	39.74595836	-80.77006574	
2,100.00	14.00	116.22	2,093.06	-37.60	76.34	14,434,301.66	1,705,068.18	39.74593092	-80.76999404	
2,196.97	15.94	116.22	2,186.73	-48.67	98.81	14,434,290.60	1,705,090.64	39.74590037	-80.76991421	
<b>Begin 15.94° tangent section</b>										
2,200.00	15.94	116.22	2,189.64	-49.03	99.56	14,434,290.23	1,705,091.39	39.74589936	-80.76991155	
2,300.00	15.94	116.22	2,285.80	-61.17	124.19	14,434,278.10	1,705,116.03	39.74586586	-80.76982402	
2,400.00	15.94	116.22	2,381.95	-73.30	148.83	14,434,265.96	1,705,140.66	39.74583236	-80.76973648	
2,500.00	15.94	116.22	2,478.11	-85.44	173.46	14,434,253.83	1,705,165.30	39.74579887	-80.76964895	
2,600.00	15.94	116.22	2,574.26	-97.57	198.10	14,434,241.69	1,705,189.94	39.74576537	-80.76956142	
2,700.00	15.94	116.22	2,670.42	-109.70	222.73	14,434,229.56	1,705,214.57	39.74573187	-80.76947389	
2,800.00	15.94	116.22	2,766.58	-121.84	247.37	14,434,217.43	1,705,239.21	39.74569837	-80.76938635	
2,900.00	15.94	116.22	2,862.73	-133.97	272.01	14,434,205.29	1,705,263.84	39.74566488	-80.76929882	
3,000.00	15.94	116.22	2,958.89	-146.11	296.64	14,434,193.16	1,705,288.48	39.74563138	-80.76921129	
3,100.00	15.94	116.22	3,055.04	-158.24	321.28	14,434,181.02	1,705,313.11	39.74559788	-80.76912375	
3,200.00	15.94	116.22	3,151.20	-170.37	345.91	14,434,168.89	1,705,337.75	39.74556438	-80.76903622	
3,300.00	15.94	116.22	3,247.35	-182.51	370.55	14,434,156.76	1,705,362.39	39.74553088	-80.76894869	
3,400.00	15.94	116.22	3,343.51	-194.64	395.19	14,434,144.62	1,705,387.02	39.74549739	-80.76886116	
3,500.00	15.94	116.22	3,439.66	-206.78	419.82	14,434,132.49	1,705,411.66	39.74546389	-80.76877362	
3,600.00	15.94	116.22	3,535.82	-218.91	444.46	14,434,120.35	1,705,436.29	39.74543039	-80.76868609	
3,700.00	15.94	116.22	3,631.97	-231.04	469.09	14,434,108.22	1,705,460.93	39.74539689	-80.76859856	
3,800.00	15.94	116.22	3,728.13	-243.18	493.73	14,434,096.09	1,705,485.57	39.74536339	-80.76851103	
3,900.00	15.94	116.22	3,824.28	-255.31	518.37	14,434,083.95	1,705,510.20	39.74532990	-80.76842349	
4,000.00	15.94	116.22	3,920.44	-267.45	543.00	14,434,071.82	1,705,534.84	39.74529640	-80.76833596	
4,100.00	15.94	116.22	4,016.59	-279.58	567.64	14,434,059.68	1,705,559.47	39.74526290	-80.76824843	
4,200.00	15.94	116.22	4,112.75	-291.71	592.27	14,434,047.55	1,705,584.11	39.74522940	-80.76816090	
4,300.00	15.94	116.22	4,208.90	-303.85	616.91	14,434,035.42	1,705,608.74	39.74519590	-80.76807337	
4,400.00	15.94	116.22	4,305.06	-315.98	641.54	14,434,023.28	1,705,633.38	39.74516240	-80.76798583	
4,500.00	15.94	116.22	4,401.21	-328.12	666.18	14,434,011.15	1,705,658.02	39.74512891	-80.76789830	
4,600.00	15.94	116.22	4,497.37	-340.25	690.82	14,433,999.01	1,705,682.65	39.74509541	-80.76781077	
4,700.00	15.94	116.22	4,593.53	-352.38	715.45	14,433,986.88	1,705,707.29	39.74506191	-80.76772324	
4,800.00	15.94	116.22	4,689.68	-364.52	740.09	14,433,974.75	1,705,731.92	39.74502841	-80.76763571	
4,900.00	15.94	116.22	4,785.84	-376.65	764.72	14,433,962.61	1,705,756.56	39.74499491	-80.76754818	
5,000.00	15.94	116.22	4,881.99	-388.79	789.36	14,433,950.48	1,705,781.20	39.74496141	-80.76746065	



Planning Report - Geographic

Database: DB\_Aug0116\_LT\_v14  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia.  
 Site: Hillrock/Simms  
 Well: Hillrock 09 HM (i)  
 Wellbore: Original Hole  
 Design: rev0

Local Co-ordinate Reference: Well Hillrock 09 HM (i)  
 TVD Reference: gl @ 1219.00ft  
 MD Reference: gl @ 1219.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,100.00	15.94	116.22	4,978.15	-400.92	814.00	14,433,938.34	1,705,805.83	39.74492791	-80.76737311
5,200.00	15.94	116.22	5,074.30	-413.05	838.63	14,433,926.21	1,705,830.47	39.74489441	-80.76728558
5,300.00	15.94	116.22	5,170.46	-425.19	863.27	14,433,914.08	1,705,855.10	39.74486091	-80.76719805
5,400.00	15.94	116.22	5,266.61	-437.32	887.90	14,433,901.94	1,705,879.74	39.74482741	-80.76711052
5,500.00	15.94	116.22	5,362.77	-449.46	912.54	14,433,889.81	1,705,904.37	39.74479391	-80.76702299
5,600.00	15.94	116.22	5,458.92	-461.59	937.18	14,433,877.67	1,705,929.01	39.74476042	-80.76693546
5,700.00	15.94	116.22	5,555.08	-473.72	961.81	14,433,865.54	1,705,953.65	39.74472692	-80.76684793
5,800.00	15.94	116.22	5,651.23	-485.86	986.45	14,433,853.41	1,705,978.28	39.74469342	-80.76676040
5,900.00	15.94	116.22	5,747.39	-497.99	1,011.08	14,433,841.27	1,706,002.92	39.74465992	-80.76667287
6,000.00	15.94	116.22	5,843.54	-510.13	1,035.72	14,433,829.14	1,706,027.55	39.74462642	-80.76658534
6,100.00	15.94	116.22	5,939.70	-522.26	1,060.35	14,433,817.00	1,706,052.19	39.74459292	-80.76649781
6,200.00	15.94	116.22	6,035.85	-534.39	1,084.99	14,433,804.87	1,706,076.83	39.74455942	-80.76641028
6,206.59	15.94	116.22	6,042.19	-535.19	1,086.61	14,433,804.07	1,706,078.45	39.74455721	-80.76640451
<b>Begin 10°/100' build/turn</b>									
6,300.00	24.18	129.35	6,129.90	-553.03	1,112.97	14,433,786.23	1,706,104.81	39.74450804	-80.76631091
6,400.00	33.62	136.27	6,217.38	-586.10	1,148.03	14,433,753.16	1,706,139.86	39.74441696	-80.76618649
6,500.00	43.29	140.40	6,295.61	-632.64	1,189.12	14,433,706.62	1,706,180.95	39.74428886	-80.76604075
6,600.00	53.06	143.26	6,362.23	-691.23	1,234.99	14,433,648.03	1,706,226.83	39.74412763	-80.76587810
6,700.00	62.88	145.46	6,415.20	-760.09	1,284.25	14,433,579.17	1,706,276.09	39.74393816	-80.76570350
6,800.00	72.74	147.31	6,452.92	-837.13	1,335.41	14,433,502.14	1,706,327.24	39.74372622	-80.76552224
6,900.00	82.61	148.96	6,474.25	-920.01	1,386.90	14,433,419.26	1,706,378.73	39.74349825	-80.76533984
6,965.73	89.10	150.00	6,479.00	-976.45	1,420.17	14,433,362.82	1,706,412.00	39.74334300	-80.76522200
<b>Begin 89.10° lateral section</b>									
7,000.00	89.10	150.00	6,479.54	-1,006.13	1,437.30	14,433,333.14	1,706,429.13	39.74326138	-80.76516132
7,100.00	89.10	150.00	6,481.12	-1,092.72	1,487.29	14,433,246.55	1,706,479.13	39.74302321	-80.76498428
7,200.00	89.10	150.00	6,482.69	-1,179.31	1,537.29	14,433,159.95	1,706,529.12	39.74278504	-80.76480725
7,300.00	89.10	150.00	6,484.27	-1,265.90	1,587.28	14,433,073.36	1,706,579.11	39.74254687	-80.76463021
7,400.00	89.10	150.00	6,485.84	-1,352.50	1,637.27	14,432,986.77	1,706,629.11	39.74230871	-80.76445317
7,500.00	89.10	150.00	6,487.42	-1,439.09	1,687.27	14,432,900.18	1,706,679.10	39.74207054	-80.76427614
7,600.00	89.10	150.00	6,488.99	-1,525.68	1,737.26	14,432,813.59	1,706,729.09	39.74183237	-80.76409910
7,700.00	89.10	150.00	6,490.57	-1,612.27	1,787.25	14,432,726.99	1,706,779.08	39.74159420	-80.76392207
7,800.00	89.10	150.00	6,492.15	-1,698.87	1,837.24	14,432,640.40	1,706,829.08	39.74135603	-80.76374504
7,900.00	89.10	150.00	6,493.72	-1,785.46	1,887.24	14,432,553.81	1,706,879.07	39.74111786	-80.76356801
8,000.00	89.10	150.00	6,495.30	-1,872.05	1,937.23	14,432,467.22	1,706,929.06	39.74087969	-80.76339098
8,100.00	89.10	150.00	6,496.87	-1,958.64	1,987.22	14,432,380.62	1,706,979.06	39.74064152	-80.76321395
8,200.00	89.10	150.00	6,498.45	-2,045.23	2,037.22	14,432,294.03	1,707,029.05	39.74040335	-80.76303693
8,300.00	89.10	150.00	6,500.03	-2,131.83	2,087.21	14,432,207.44	1,707,079.04	39.74016518	-80.76285990
8,400.00	89.10	150.00	6,501.60	-2,218.42	2,137.20	14,432,120.85	1,707,129.03	39.73992701	-80.76268288
8,500.00	89.10	150.00	6,503.18	-2,305.01	2,187.19	14,432,034.26	1,707,179.03	39.73968884	-80.76250585
8,600.00	89.10	150.00	6,504.75	-2,391.60	2,237.19	14,431,947.66	1,707,229.02	39.73945067	-80.76232883
8,700.00	89.10	150.00	6,506.33	-2,478.20	2,287.18	14,431,861.07	1,707,279.01	39.73921250	-80.76215181
8,800.00	89.10	150.00	6,507.90	-2,564.79	2,337.17	14,431,774.48	1,707,329.01	39.73897432	-80.76197479
8,900.00	89.10	150.00	6,509.48	-2,651.38	2,387.17	14,431,687.89	1,707,379.00	39.73873615	-80.76179778
9,000.00	89.10	150.00	6,511.06	-2,737.97	2,437.16	14,431,601.30	1,707,429.99	39.73849798	-80.76162076
9,100.00	89.10	150.00	6,512.63	-2,824.57	2,487.15	14,431,514.70	1,707,479.98	39.73825981	-80.76144374
9,200.00	89.10	150.00	6,514.21	-2,911.16	2,537.15	14,431,428.11	1,707,529.98	39.73802163	-80.76126673
9,300.00	89.10	150.00	6,515.78	-2,997.75	2,587.14	14,431,341.52	1,707,579.97	39.73778346	-80.76108972
9,400.00	89.10	150.00	6,517.36	-3,084.34	2,637.13	14,431,254.93	1,707,629.96	39.73754529	-80.76091270
9,500.00	89.10	150.00	6,518.93	-3,170.93	2,687.12	14,431,168.34	1,707,679.96	39.73730711	-80.76073569
9,600.00	89.10	150.00	6,520.51	-3,257.53	2,737.12	14,431,081.74	1,707,729.95	39.73706894	-80.76055868
9,700.00	89.10	150.00	6,522.09	-3,344.12	2,787.11	14,430,995.15	1,707,779.94	39.73683077	-80.76038168
9,800.00	89.10	150.00	6,523.66	-3,430.71	2,837.10	14,430,908.56	1,707,829.93	39.73659259	-80.76020467
9,900.00	89.10	150.00	6,525.24	-3,517.30	2,887.10	14,430,821.97	1,707,879.93	39.73635442	-80.76002766
10,000.00	89.10	150.00	6,526.81	-3,603.90	2,937.09	14,430,735.38	1,707,929.92	39.73611624	-80.75985066



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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,100.00	89.10	150.00	6,528.39	-3,690.49	2,987.08	14,430,648.78	1,707,978.91	39.73587807	-80.75967366
10,200.00	89.10	150.00	6,529.96	-3,777.08	3,037.08	14,430,562.19	1,708,028.91	39.73563989	-80.75949665
10,300.00	89.10	150.00	6,531.54	-3,863.67	3,087.07	14,430,475.60	1,708,078.90	39.73540171	-80.75931965
10,400.00	89.10	150.00	6,533.12	-3,950.26	3,137.06	14,430,389.01	1,708,128.89	39.73516354	-80.75914265
10,500.00	89.10	150.00	6,534.69	-4,036.86	3,187.05	14,430,302.41	1,708,178.88	39.73492536	-80.75896565
10,600.00	89.10	150.00	6,536.27	-4,123.45	3,237.05	14,430,215.82	1,708,228.88	39.73468718	-80.75878866
10,700.00	89.10	150.00	6,537.84	-4,210.04	3,287.04	14,430,129.23	1,708,278.87	39.73444901	-80.75861166
10,800.00	89.10	150.00	6,539.42	-4,296.63	3,337.03	14,430,042.64	1,708,328.86	39.73421083	-80.75843467
10,900.00	89.10	150.00	6,540.99	-4,383.23	3,387.03	14,429,956.05	1,708,378.86	39.73397265	-80.75825767
11,000.00	89.10	150.00	6,542.57	-4,469.82	3,437.02	14,429,869.45	1,708,428.85	39.73373447	-80.75808068
11,100.00	89.10	150.00	6,544.15	-4,556.41	3,487.01	14,429,782.86	1,708,478.84	39.73349630	-80.75790369
11,200.00	89.10	150.00	6,545.72	-4,643.00	3,537.00	14,429,696.27	1,708,528.83	39.73325812	-80.75772670
11,300.00	89.10	150.00	6,547.30	-4,729.60	3,587.00	14,429,609.68	1,708,578.83	39.73301994	-80.75754971
11,400.00	89.10	150.00	6,548.87	-4,816.19	3,636.99	14,429,523.09	1,708,628.82	39.73278176	-80.75737272
11,500.00	89.10	150.00	6,550.45	-4,902.78	3,686.98	14,429,436.49	1,708,678.81	39.73254358	-80.75719574
11,600.00	89.10	150.00	6,552.03	-4,989.37	3,736.98	14,429,349.90	1,708,728.81	39.73230540	-80.75701875
11,700.00	89.10	150.00	6,553.60	-5,075.96	3,786.97	14,429,263.31	1,708,778.80	39.73206722	-80.75684177
11,800.00	89.10	150.00	6,555.18	-5,162.56	3,836.96	14,429,176.72	1,708,828.79	39.73182904	-80.75666479
11,900.00	89.10	150.00	6,556.75	-5,249.15	3,886.96	14,429,090.13	1,708,878.78	39.73159086	-80.75648780
12,000.00	89.10	150.00	6,558.33	-5,335.74	3,936.95	14,429,003.53	1,708,928.78	39.73135268	-80.75631082
12,100.00	89.10	150.00	6,559.90	-5,422.33	3,986.94	14,428,916.94	1,708,978.77	39.73111450	-80.75613384
12,200.00	89.10	150.00	6,561.48	-5,508.93	4,036.93	14,428,830.35	1,709,028.76	39.73087632	-80.75595687
12,300.00	89.10	150.00	6,563.06	-5,595.52	4,086.93	14,428,743.76	1,709,078.76	39.73063814	-80.75577989
12,400.00	89.10	150.00	6,564.63	-5,682.11	4,136.92	14,428,657.16	1,709,128.75	39.73039996	-80.75560292
12,500.00	89.10	150.00	6,566.21	-5,768.70	4,186.91	14,428,570.57	1,709,178.74	39.73016177	-80.75542594
12,600.00	89.10	150.00	6,567.78	-5,855.29	4,236.91	14,428,483.98	1,709,228.73	39.72992359	-80.75524897
12,700.00	89.10	150.00	6,569.36	-5,941.89	4,286.90	14,428,397.39	1,709,278.73	39.72968541	-80.75507200
12,800.00	89.10	150.00	6,570.93	-6,028.48	4,336.89	14,428,310.80	1,709,328.72	39.72944723	-80.75489503
12,900.00	89.10	150.00	6,572.51	-6,115.07	4,386.88	14,428,224.20	1,709,378.71	39.72920904	-80.75471806
13,000.00	89.10	150.00	6,574.09	-6,201.66	4,436.88	14,428,137.61	1,709,428.71	39.72897086	-80.75454109
13,100.00	89.10	150.00	6,575.66	-6,288.26	4,486.87	14,428,051.02	1,709,478.70	39.72873267	-80.75436412
13,200.00	89.10	150.00	6,577.24	-6,374.85	4,536.86	14,427,964.43	1,709,528.69	39.72849449	-80.75418716
13,300.00	89.10	150.00	6,578.81	-6,461.44	4,586.86	14,427,877.84	1,709,578.68	39.72825631	-80.75401019
13,400.00	89.10	150.00	6,580.39	-6,548.03	4,636.85	14,427,791.24	1,709,628.68	39.72801812	-80.75383323
13,500.00	89.10	150.00	6,581.96	-6,634.63	4,686.84	14,427,704.65	1,709,678.67	39.72777994	-80.75365627
13,600.00	89.10	150.00	6,583.54	-6,721.22	4,736.84	14,427,618.06	1,709,728.66	39.72754175	-80.75347931
13,700.00	89.10	150.00	6,585.12	-6,807.81	4,786.83	14,427,531.47	1,709,778.66	39.72730357	-80.75330235
13,800.00	89.10	150.00	6,586.69	-6,894.40	4,836.82	14,427,444.88	1,709,828.65	39.72706538	-80.75312539
13,900.00	89.10	150.00	6,588.27	-6,980.99	4,886.81	14,427,358.28	1,709,878.64	39.72682720	-80.75294843
14,000.00	89.10	150.00	6,589.84	-7,067.59	4,936.81	14,427,271.69	1,709,928.63	39.72658901	-80.75277147
14,100.00	89.10	150.00	6,591.42	-7,154.18	4,986.80	14,427,185.10	1,709,978.63	39.72635082	-80.75259452
14,200.00	89.10	150.00	6,592.99	-7,240.77	5,036.79	14,427,098.51	1,710,028.62	39.72611264	-80.75241757
14,300.00	89.10	150.00	6,594.57	-7,327.36	5,086.79	14,427,011.91	1,710,078.61	39.72587445	-80.75224061
14,400.00	89.10	150.00	6,596.15	-7,413.96	5,136.78	14,426,925.32	1,710,128.61	39.72563626	-80.75206366
14,500.00	89.10	150.00	6,597.72	-7,500.55	5,186.77	14,426,838.73	1,710,178.60	39.72539807	-80.75188671
14,600.00	89.10	150.00	6,599.30	-7,587.14	5,236.77	14,426,752.14	1,710,228.59	39.72515989	-80.75170976
14,700.00	89.10	150.00	6,600.87	-7,673.73	5,286.76	14,426,665.55	1,710,278.58	39.72492170	-80.75153282
14,800.00	89.10	150.00	6,602.45	-7,760.32	5,336.75	14,426,578.95	1,710,328.58	39.72468351	-80.75135587
14,900.00	89.10	150.00	6,604.03	-7,846.92	5,386.74	14,426,492.36	1,710,378.57	39.72444532	-80.75117893
15,000.00	89.10	150.00	6,605.60	-7,933.51	5,436.74	14,426,405.77	1,710,428.56	39.72420713	-80.75100198
15,100.00	89.10	150.00	6,607.18	-8,020.10	5,486.73	14,426,319.18	1,710,478.56	39.72396894	-80.75082504
15,200.00	89.10	150.00	6,608.75	-8,106.69	5,536.72	14,426,232.59	1,710,528.55	39.72373075	-80.75064810
15,300.00	89.10	150.00	6,610.33	-8,193.29	5,586.72	14,426,145.99	1,710,578.54	39.72349256	-80.75047116
15,400.00	89.10	150.00	6,611.90	-8,279.88	5,636.71	14,426,059.40	1,710,628.53	39.72325437	-80.75029422
15,500.00	89.10	150.00	6,613.48	-8,366.47	5,686.70	14,425,972.81	1,710,678.53	39.72301618	-80.75011728



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Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
15,600.00	89.10	150.00	6,615.06	-8,453.06	5,736.69	14,425,886.22	1,710,728.52	39.72277799	-80.74994034	
15,700.00	89.10	150.00	6,616.63	-8,539.66	5,786.69	14,425,799.63	1,710,778.51	39.72253980	-80.74976341	
15,800.00	89.10	150.00	6,618.21	-8,626.25	5,836.68	14,425,713.03	1,710,828.51	39.72230161	-80.74958648	
15,900.00	89.10	150.00	6,619.78	-8,712.84	5,886.67	14,425,626.44	1,710,878.50	39.72206342	-80.74940954	
16,000.00	89.10	150.00	6,621.36	-8,799.43	5,936.67	14,425,539.85	1,710,928.49	39.72182523	-80.74923261	
16,100.00	89.10	150.00	6,622.93	-8,886.02	5,986.66	14,425,453.26	1,710,978.48	39.72158704	-80.74905568	
16,200.00	89.10	150.00	6,624.51	-8,972.62	6,036.65	14,425,366.66	1,711,028.48	39.72134884	-80.74887875	
16,300.00	89.10	150.00	6,626.09	-9,059.21	6,086.65	14,425,280.07	1,711,078.47	39.72111065	-80.74870182	
16,400.00	89.10	150.00	6,627.66	-9,145.80	6,136.64	14,425,193.48	1,711,128.46	39.72087246	-80.74852490	
16,500.00	89.10	150.00	6,629.24	-9,232.39	6,186.63	14,425,106.89	1,711,178.46	39.72063427	-80.74834797	
16,600.00	89.10	150.00	6,630.81	-9,318.99	6,236.62	14,425,020.30	1,711,228.45	39.72039607	-80.74817105	
16,700.00	89.10	150.00	6,632.39	-9,405.58	6,286.62	14,424,933.70	1,711,278.44	39.72015788	-80.74799412	
16,800.00	89.10	150.00	6,633.96	-9,492.17	6,336.61	14,424,847.11	1,711,328.43	39.71991968	-80.74781720	
16,900.00	89.10	150.00	6,635.54	-9,578.76	6,386.60	14,424,760.52	1,711,378.43	39.71968149	-80.74764028	
17,000.00	89.10	150.00	6,637.12	-9,665.35	6,436.60	14,424,673.93	1,711,428.42	39.71944330	-80.74746336	
17,100.00	89.10	150.00	6,638.69	-9,751.95	6,486.59	14,424,587.34	1,711,478.41	39.71920510	-80.74728644	
17,200.00	89.10	150.00	6,640.27	-9,838.54	6,536.58	14,424,500.74	1,711,528.41	39.71896691	-80.74710953	
17,300.00	89.10	150.00	6,641.84	-9,925.13	6,586.57	14,424,414.15	1,711,578.40	39.71872871	-80.74693261	
17,309.95	89.10	150.00	6,642.00	-9,933.75	6,591.55	14,424,405.53	1,711,583.37	39.71870500	-80.74691500	

PBHL/TD 17309.95 MD 6642.00 TVD

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Hillrock 09 HM LP - hit/miss target - Shape - Point	0.00	0.00	6,479.00	-976.45	1,420.17	14,433,362.82	1,706,412.00	39.74334300	-80.76522200	
Hillrock 09 HM PBHL - plan hits target center - Point	0.00	0.00	6,642.00	-9,933.75	6,591.55	14,424,405.53	1,711,583.37	39.71870500	-80.74691500	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,400.00	1,400.00	0.00	0.00	KOP Begin 2°/100' build	
2,196.97	2,186.73	-48.67	98.81	Begin 15.94° tangent section	
6,206.59	6,042.19	-535.19	1,086.61	Begin 10°/100' build/turn	
6,965.73	6,479.00	-976.45	1,420.17	Begin 89.10° lateral section	
17,309.95	6,642.00	-9,933.75	6,591.55	PBHL/TD 17309.95 MD 6642.00 TVD	

## Area of Review

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

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

#### Data Sources Reviewed:

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

Contacted Devin Ducoeur 724-705-0444, [dducoeur@dpslandservices.com](mailto:dducoeur@dpslandservices.com) DPS GIS (05/24/2018) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

#### Request maps for:

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

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

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

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Environmental Protection

Permit well - Hillrock 9HM

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

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
4705101452	Tug Hill Operating	6584' TVD 11386' MD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101468	Tug Hill Operating	6599' TVD 12685' MD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101469	Tug Hill Operating	6631' TVD 12825' MD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101731	Tug Hill Operating	11492' TVD 16804' MD	Point Pleasant	Unknown	Yes, existing Point Pleasant producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Point Pleasant horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705130506	Perkins Carl D	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.	Well was plugged 10/14/1975
4705170353	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
4705170354	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
4705130458	Manufacturers Light & Heat	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.	Well was plugged 10/17/1963
4705170356	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
4705170357	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









WV Geological & Economic Survey Well: County = 51 Permit = 70357

Location Information: View Map

WELL	COUNTY	PERMIT	WELL_DISTRICT	QUAD_75	QUAD_15	LAT_DEC	LONG_DEC	UTM_E	UTM_N
6150170357	Marshall	70357	Franklin	ben/Marshallville	ben/Marshallville	39.7549	-80.72004	541197.4	4362452.4

There is no Bottom Hole Location data for this well

Owner Information

WELL	COMP_ID	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE_NUM	MINERAL_OWN	OPERATOR	PLAT_COMPLETION	PROP_VD	PROP_TRST_FM	TRH_EST_FM
6150170357	...	...	...	...	...	...	...	...	...	...	...	...	...

Completion Information

WELL	COMP_ID	SPUD_DT	ELLY	DATION	FIELD	DEEPEST_FM	DISPEST_FM	INITIAL_CLASS	FINAL_CLASS	TYPE	NO	COMP_MTHD	HYD	TRD	NEHYTIG	KOD	Q_BEP	Q_AFT	Q_AFT	WQ_BEP	WQ_L	
6150170357	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

There is no Stratigraphy data for this well

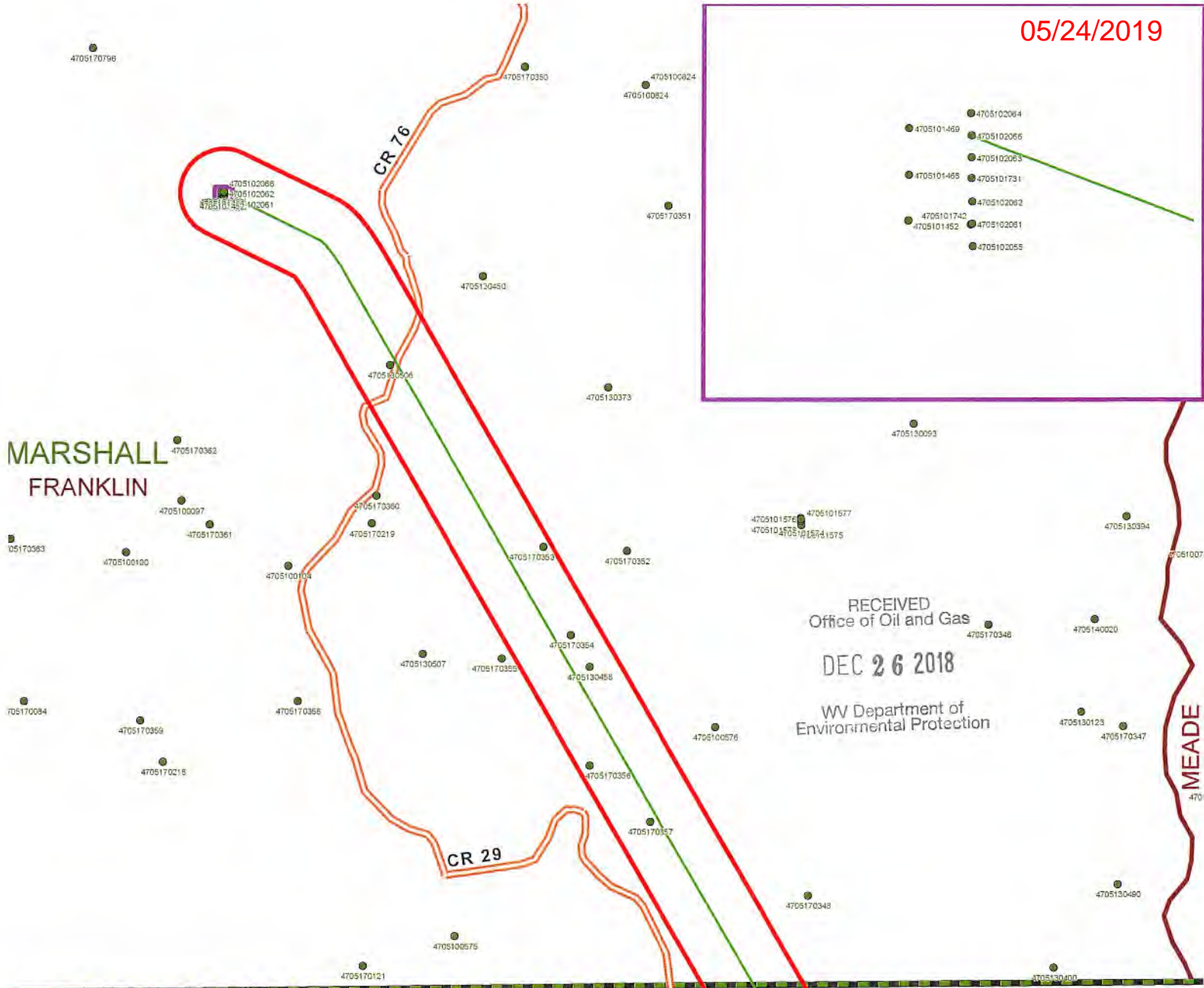
There is no Wireline (E-Log) data for this well

There is no Plugging data for this well

There is no Sample data for this well

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05/24/2019



MARSHALL  
FRANKLIN

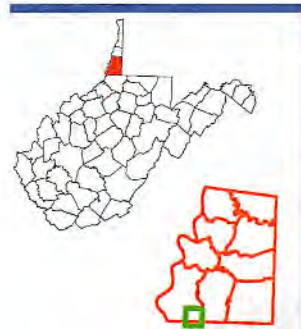
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470

**Legend**

- Well Locations (ims.wvgs.wvnet.edu)
- Major Highways
- Major Roads
- Hillrock-9HM
- 500 Ft. Buffer
- ▭ Counties
- ▭ Districts

# Hillrock - 9HM Franklin District Marshall County, WV



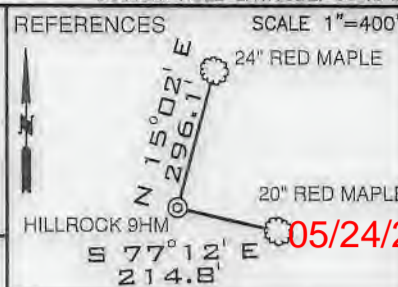
Map Created: December 10, 2018

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

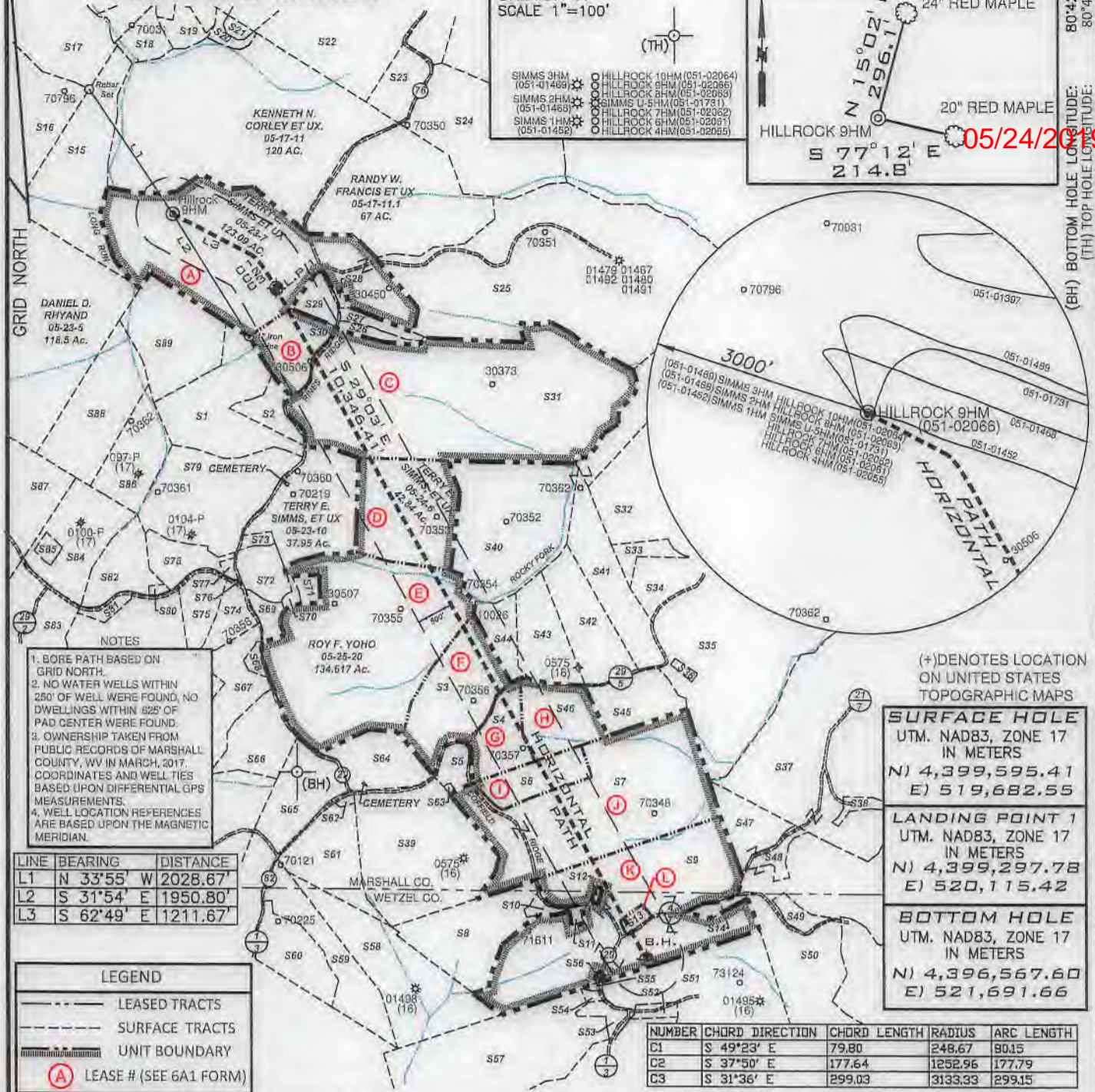
# HILLROCK LEASE WELL 9HM 752.758± ACRES

TOP HOLE LATITUDE: 39°45'00"  
BOTTOM HOLE LATITUDE: 39°45'00"

DETAIL  
SKETCH "A"  
SCALE 1"=100'



- SIMMS 3HM (051-01488)
- SIMMS 2HM (051-01463)
- SIMMS 1HM (051-01452)
- HILLROCK 10HM (051-02064)
- HILLROCK 9HM (051-02063)
- HILLROCK 8HM (051-02062)
- SIMMS U-5HM (051-01731)
- HILLROCK 7HM (051-02062)
- HILLROCK 6HM (051-02061)
- HILLROCK 4HM (051-02055)



- NOTES
- BORE PATH BASED ON GRID NORTH.
  - NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
  - OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 2017. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
  - WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.

LINE	BEARING	DISTANCE
L1	N 33°55' W	2028.67'
L2	S 31°54' E	1950.80'
L3	S 62°49' E	1211.67'

**LEGEND**

- LEASED TRACTS
- SURFACE TRACTS
- UNIT BOUNDARY
- (A) LEASE # (SEE 6A1 FORM)

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

<b>SURFACE HOLE</b>	UTM. NAD83, ZONE 17 IN METERS
N)	4,399,595.41
E)	519,682.55
<b>LANDING POINT 1</b>	UTM. NAD83, ZONE 17 IN METERS
N)	4,399,297.78
E)	520,115.42
<b>BOTTOM HOLE</b>	UTM. NAD83, ZONE 17 IN METERS
N)	4,396,567.60
E)	521,691.66

NUMBER	CHORD DIRECTION	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 49°23' E	79.80	248.67	90.15
C2	S 37°50' E	177.64	1252.96	177.79
C3	S 31°36' E	299.03	3133.33	299.15

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

DRAWING NUMBER HILLROCK\_9HM\_Rev 0

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

P.S. 708

*David L Jackson*

JACKSON SURVEYING INC.  
P.O. Box 1460  
Clarksburg, WV 25302  
304-623-5851



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

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

DATE: JUNE 26, 2018  
REVISED DATE: DECEMBER 11, 2018  
OPERATORS WELL NO. HILLROCK 9HM  
API WELL NO. 47-051-02066  
STATE WV COUNTY MARSHALL PERMIT ADD

LOCATION ELEVATION 1219.5' WATERSHED (HUC 10) FISH CREEK  
DISTRICT FRANKLIN COUNTY MARSHALL  
QUADRANGLE NEW MARTINSVILLE 7.5' LEASE NUMBER SEE WW-6A1 Form

SURFACE OWNER TERRY E. & DEBORAH SIMMS ACREAGE 123.09  
OIL & GAS ROYALTY OWNER TERRY E. & DEBORAH L. SIMMS, ET AL - SEE WW-6A1 FORM LEASE ACREAGE 319.91  
PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_  
PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE (SPECIFY) \_\_\_\_\_

TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD 6,595' TMD: 17,310'

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

COUNTY NAME PERMIT

**HILLROCK LEASE  
WELL 9HM  
752.758± ACRES**

05/24/2019

Number	TAX MAP-PARCEL	ADJOINER OWNER	ACRES
S1	05-24-5.4	Thomas V. Tuttle, et ux	38.224
S2	05-24-5.3	Thomas V. Tuttle, et ux	8.543
S3 (F)	05-25-01	Michael L. Mason	35.43
S4 (G)	05-25-13	Nicolas J. & Debra L. Klug	16.014
S5	05-25-13.2	David A. Klug	5.89
S6 (I)	05-25-12.1	Kent & Betty Mason	15.0
S7 (J)	05-25-12	Marion Parsons Jr., et al	85.16
S8	05-25-11.4	Edward W. Klug, et ux	32.787
S9 (K)	05-25-11.2	James W. Klug	114.305
S10	05-25-11.1	Edward W. Klug et ux	2.343
S11	12-03-44	James A. & Jo C. Estep	1.10
S12	12-03-47	Wetzel County Emergency Ambulance	0.50
S13 (L)	12-03-43	Adam W. Ferrell & Brittany M. Loy	1.97
S14	12-03-42	J. M. Klug	2.617
S15	05-23-06	James A. Channing, et al	48.0
S16	05-18-21	Curtis E. & Michelle J. Hall	43.119
S17	05-18-20	Wayne E. Channing, et al	75.6
S18	05-18-31	Kenneth E. Rastall	6.94
S19	05-18-32	Kenneth E. Rastall	5.335
S20	05-17-12	James A. & Jill C. Corley	3.33
S21	05-17-12.1	Williams Ohio Valley Midstream, LLC	1.67
S22	05-17-10	James A. Corley, et al	92.61
S23	05-17-9.3	James A. Corley, et ux	12.478
S24	05-17-9.4	Vicki L. Bowen	60.3
S25	05-24-1	Linda L. Hendrickson	175.0
S26	05-24-5.2	James D. Watkins, et ux	3.151
S27	05-24-5.1	James D. Watkins, et ux	4.6
S28	05-23-7.1	H.J. Weigand, et ux	0.549
S29	05-23-7.2	H.J. Weigand, et ux	6.354
S30 (B)	05-24-5.5	H.J. Weigand, et ux	17.194
S31 (C)	05-24-5	Robert C. Francis et ux (Life)	145.788
S32	05-24-3.2	T.H. Exploration II, LLC	49.0
S33	05-24-3.1	T.H. Exploration II, LLC	5.50
S34	05-25-2.2	John G. Klug, Sr. et ux	10.0
S35	05-25-2	James W. Klug	122.3
S36	05-25-2.1	Nancy Jackson	1.0
S37	05-25-3	S.D. Fertitta, et ux	181.548
S38	05-25-3.1	S.D. Fertitta, et ux	3.022
S39	05-25-14.1	Bernard R. Weigand, et ux	65.0
S40	05-24-04	Terry E. Simms, et ux	84.05
S41	05-25-1.4	Samantha J. & Philip A. Namluk	100.7235
S42	05-25-1.3	Michael E. & Annie A. Chapman	26.2
S43	05-25-1.2	William Jr. & Andrea J. Dubiel	20.1
S44	05-25-1.1	Ryan A. & Jacqueline E. Layman	9.79
S45	05-25-13.3	William M. Sr. & Cynthia A. Ferda	17.21

Number	TAX MAP-PARCEL	ADJOINER OWNER	ACRES
S46 (H)	05-25-1.5	Ryan J. Bratton	21.35
S47	05-25-10	Terry L. & Tammy J. Kirkland	18.75
S48	05-25-10.1	Terry L. & Tammy J. Kirkland (Life)	5.250
S49	12-03-41	Carl L. Kirkland	4.102
S50	12-03-41.1	Terry L. & Tammy J. Kirkland	74.138
S51	12-03-4	Albert L. & Mary Hohman et al	85.0
S52	12-03-02	Robert Lee & Diana G. Smith	2.48
S53	12-03-4.3	Joseph P. & Barbara A. Cain	3.619
S54	12-03-4.6	Steven P. Wayman	1.009
S55	12-03-4.5	Hazel M. Blair	0.451
S56	12-03-01	James W. Klug	0.375
S57	12-03-4.7	Joseph P. & Barbara A. Cain	67.3
S58	12-02-14	David L. Cunningham	56.23
S59	12-02-14.2	Donald Lee Anderson, et al	4.2
S60	12-02-14.1	Richard Joseph Otte, et ux	1.25
S61	15-25-16.1	David L. Cunningham	6.34
S62	05-25-16.2	Rodney J. Loy	1.087
S63	05-25-13.1	Morgan Chad Gump, et ux	0.9
S64	05-25-14	Roy F. Yoho	23.0
S65	05-25-16	Emily Jones Irrevocable Trust	23.5
S66	05-25-17	Emily Jones Irrevocable Trust	22.79
S67	05-25-18	Joseph Johnson, et ux (Life)	37.746
S68	05-25-19	Joseph Johnson, et ux (Life)	1.973
S69	05-25-20.3	James A. & Jo C. Estep	4.49
S70	05-25-20.2	James M. Zombotti	1.347
S71	05-25-20.1	James M. Zombotti	2.746
S72	05-23-11	Roy F. Yoho	3.445
S73	05-23-11.7	Bryan L. Huggins	1.835
S74	05-23-11.5	Roy F. Yoho	9.25
S75	05-23-11.3	Colin R. Yoho	11.29
S76	05-23-11.6	T.H. Exploration II, LLC & Atinum Marcellus I, LLC	0.094
S77	05-23-11.2	Evelyn Hudson	1.154
S78	05-23-11.4	Evelyn Hudson	10.879
S79	05-23-11.1	John H. & Sonya D. Holliday	46.482
S80	05-23-13.1	James R. & Pamela J. Ferrell	0.7625
S81	05-23-12	Mark A. Yoho	3.05
S82	05-23-13	Linda D. Greathouse	14.24
S83	05-23-9.1	John W. Van Orden et ux	23.376
S84	05-23-9.2	Linda D. Greathouse	25.58
S85	05-23-9.4	Jackson R. Sr. & Deanna L. Davis	2.087
S86	05-23-9.3	Linda D. Greathouse	17.5
S87	05-23-14	Dominion Transmission, Inc.	59.5
S88	05-23-08	Carl David & Suzanne L. Guseman	29.5
S89	05-23-8.1	William & Virginia Roupe	34.0



P.S. 708 *David L Jackson*



**TUG HILL**  
OPERATING

OPERATOR'S  
WELL #: HILLROCK 9HM  
DISTRICT: Franklin  
COUNTY: Marshall  
STATE: WV

WELL PLAT  
PAGE 2 OF 2  
DATE: 06/26/2018  
REVISED DATE:  
12/11/2018

WW-6A1  
(5/13)

Operator's Well No. Hillrock 9HM

**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

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

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

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

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

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



**ASSIGNMENT AND CONVEYANCE**

This Assignment and Conveyance (this "*Assignment*") is from SWN PRODUCTION COMPANY, LLC, a Texas limited liability company ("*Assignor*"), to TH Exploration, LLC, a Texas limited liability company ("*Assignee*"), and is executed on December 18, 2017 (the "*Effective Date*"). Assignor and Assignee may be referred to herein collectively as the "*Parties*," or individually as a "*Party*." Capitalized terms used herein but not otherwise defined herein (including in Section 3.7) shall have the meanings given such terms in that certain Acreage Trade Agreement between the Assignor and the Assignee dated August 24, 2017 (the "*Acreage Trade Agreement*").

**ARTICLE 1  
ASSIGNMENT OF ASSETS**

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

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

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

**ARTICLE 2  
SPECIAL WARRANTY OF TITLE AND DISCLAIMERS**

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

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

(a) EXCEPT AS EXPRESSLY REPRESENTED OTHERWISE IN SECTION VI OF THE ACREAGE TRADE AGREEMENT OR THIS ASSIGNMENT, ASSIGNOR MAKES NO, AND HEREBY EXPRESSLY DISCLAIMS, ANY REPRESENTATION OR



STATE OF WEST VIRGINIA §  
§  
COUNTY OF MARSHALL §

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 18th day of May, 2018, and made effective December 12, 2017 (the "Effective Date"), by and between AMERICAN PETROLEUM PARTNERS OPERATING, LLC, (hereinafter "Assignor") and THE EXPLORATION, LLC (hereinafter "Assignee") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated December 12, 2017 (the "Acreage Trade Agreement"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

WITNESSETH:

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

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

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

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

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

2. Special Warranty. Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered (other than Permitted Encumbrances) its interest in the

Marshall County  
Jan Pest, Clerk  
Instrument 1440860  
05/25/2018 @ 02:36:09 PM  
ASSIGNMENTS  
Book 42 @ Page 109  
Pages Recorded 9  
Recording Cost \$ 15.00

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Lease No.	Tags	Parcel	Lessor	Lessee	Royalty	Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*14140	A	5-23-7	TERRY E SIMMS AND DEBORAH L SIMMS	TRIENERGY, INC	1/8+	666	529	NA	20/348 Trienergy, Inc to AB Resources LLC	21/491 AB Resources LLC to Chief Exploration & Development LLC	685/643 Chief Exploration & Development and Radler 2000 Limited Partnership to Enerplus Resources Corp	24/39 AB Resources LLC, Chief Exploration & Development LLC, Radler 2000 Limited Partnership and Enerplus Resources Corp to Gastar Exploration USA, Inc	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14797	B	5-24-5.5	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14814	B	5-24-5.5	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	537	NA	NA	NA	NA	NA	WW-6A1 Supplement	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14815	B	5-24-5.5	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	535	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14817	B	5-24-5.5	DONNA V YOHO	GASTAR EXPLORATION INC	1/8+	874	351	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14818	B	5-24-5.5	DEWEY A MILICIA	GASTAR EXPLORATION INC	1/8+	875	591	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14819	B	5-24-5.5	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION INC	1/8+	875	593	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14820	B	5-24-5.5	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION INC	1/8+	875	595	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14821	B	5-24-5.5	JANICE HAUDENSCHILT	GASTAR EXPLORATION INC	1/8+	875	597	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14822	B	5-24-5.5	ONWARD E BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14823	B	5-24-5.5	SARAH L BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*17181	B	5-24-5.5	PAUL F HAMMERS	CHESAPEAKE APPALACHIA LLC	1/8+	705	593	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC merger SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17182	B	5-24-5.5	TWILA ORA WHIPKEY	CHESAPEAKE APPALACHIA LLC	1/8+	715	505	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC merger SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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10*17184	B	5-24-5.5	KERMIT L. PARSONS	CHESAPEAKE APPALACHIA LLC	1/8+	716	83	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC merger SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17195	B	5-24-5.5	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17196	B	5-24-5.5	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17197	B	5-24-5.5	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17199	B	5-24-5.5	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17200	B	5-24-5.5	STEPHANIE L. HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17201	B	5-24-5.5	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17202	B	5-24-5.5	JANE GALE	GASTAR EXPLORATION USA INC	1/8+	697	385	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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10*17203	B	5-24-5.5	BARRY RAY MOORE	GASTAR EXPLORATION USA INC	1/8+	697	387	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17204	B	5-24-5.5	CLARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	391	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17206	B	5-24-5.5	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA INC	1/8+	697	399	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17207	B	5-24-5.5	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA INC	1/8+	697	389	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17210	B	5-24-5.5	MARILYN NOEL	GASTAR EXPLORATION USA INC	1/8+	697	393	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17211	B	5-24-5.5	GARY WAYNE ZESIGER & VICKIE ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	397	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17212	B	5-24-5.5	DARRELL NEWLAND LYDIA NEWLAND	GASTAR EXPLORATION USA INC	1/8+	697	158	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17213	B	5-24-5.5	CAROL DEEN GARDNER	GASTAR EXPLORATION USA INC	1/8+	697	154	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*18275	B	5-24-5.5	BETTY JEAN NEELY	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA

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10*18366	B	5-24-5.5	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	B	5-24-5.5	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	B	5-24-5.5	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA
10*18379	B	5-24-5.5	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA	NA
10*19540	B	5-24-5.5	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*19652	B	5-24-5.5	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA
10*19903	B	5-24-5.5	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*14797	C	5-24-5	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14814	C	5-24-5	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	537	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14815	C	5-24-5	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	535	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14817	C	5-24-5	DONNA V YOHO	GASTAR EXPLORATION INC	1/8+	874	351	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14818	C	5-24-5	DEWEY A MILICIA	GASTAR EXPLORATION INC	1/8+	875	591	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14819	C	5-24-5	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION INC	1/8+	875	593	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14820	C	5-24-5	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION INC	1/8+	875	595	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14821	C	5-24-5	JANICE HAUDENSCHILT	GASTAR EXPLORATION INC	1/8+	875	597	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14822	C	5-24-5	ONWARD E BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14823	C	5-24-5	SARAH L BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*17181	C	5-24-5	PAUL F HAMMERS	CHESAPEAKE APPALACHIA LLC	1/8+	705	593	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC merger SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

10*17182	C	5-24-5	TWILA ORA WHIPKEY	CHESAPEAKE APPALACHIA LLC	1/8+	715	505	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC merger SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17184	C	5-24-5	KERMIT L. PARSONS	CHESAPEAKE APPALACHIA LLC	1/8+	716	83	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC merger SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17195	C	5-24-5	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17196	C	5-24-5	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17197	C	5-24-5	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17199	C	5-24-5	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17200	C	5-24-5	STEPHANIE L. HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17201	C	5-24-5	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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10*17202	C	5-24-5	JANE GALE	GASTAR EXPLORATION USA INC	1/8+	697	385	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17203	C	5-24-5	BARRY RAY MOORE	GASTAR EXPLORATION USA INC	1/8+	697	387	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17204	C	5-24-5	CLARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	391	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17206	C	5-24-5	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA INC	1/8+	697	399	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17207	C	5-24-5	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA INC	1/8+	697	389	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17210	C	5-24-5	MARILYN NOEL	GASTAR EXPLORATION USA INC	1/8+	697	393	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17211	C	5-24-5	GARY WAYNE ZESIGER & VICKIE ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	397	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17212	C	5-24-5	DARRELL NEWLAND LYDIA NEWLAND	GASTAR EXPLORATION USA INC	1/8+	697	158	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

10*17213	C	5-24-5	CAROL DEEN GARDNER	GASTAR EXPLORATION USA INC	1/8+	697	154	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*18275	C	5-24-5	BETTY JEAN NEELY	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA
10*18366	C	5-24-5	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	C	5-24-5	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	C	5-24-5	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA
10*18379	C	5-24-5	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA	NA
10*19540	C	5-24-5	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*19652	C	5-24-5	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA
10*19903	C	5-24-5	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*14558	D	5-24-6	KLOVA ANN MORRIS	GASTAR EXPLORATION USA INC	1/8+	765	434	NA	NA	27/639 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	28/499 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	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*14559	D	5-24-6	WILLIAM L LITMAN	GASTAR EXPLORATION USA INC	1/8+	767	258	NA	NA	27/639 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	28/499 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	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*14560	D	5-24-6	AARON DEAN LITMAN	GASTAR EXPLORATION USA INC	1/8+	767	262	NA	NA	27/639 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	28/499 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	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*14561	D	5-24-6	THE ESTATE OF MERNA NELSON C/O ULA NELSON	GASTAR EXPLORATION USA INC	1/8+	770	474	NA	NA	27/639 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	28/499 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	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*14562	D	5-24-6	MARY VOLTZ	GASTAR EXPLORATION USA INC	1/8+	773	575	NA	NA	27/639 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	28/499 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	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*14563	D	5-24-6	JACK MICHAEL FOREMAN	GASTAR EXPLORATION USA INC	1/8+	796	44	NA	NA	27/639 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	28/499 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	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*14564	D	5-24-6	JULIE SPRINGWATER	GASTAR EXPLORATION USA INC	1/8+	799	57	NA	NA	27/639 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	28/499 Gastar Exploration USA, Inc to Atinum Marcellus I LLC	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*17597	D	5-24-6	JOHN P ICARD AND REVA J ICARD	TH EXPLORATION, LLC	1/8+	765	432	NA	NA	NA	NA	NA	NA	NA
10*17626	D	5-24-6	VICKI LYNN AND RICHARD FRANKLIN WOOD	TH EXPLORATION, LLC	1/8+	917	60	NA	NA	NA	NA	NA	NA	NA
10*18174	D	5-24-6	THE ESTATE OF ROY JOSEPH LEACH	TH EXPLORATION, LLC	1/8+	927	647	NA	NA	NA	NA	NA	NA	NA

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10*21455	D	5-24-6	MELISSA MILLER GIBSON AND JAMES GIBSON	TH EXPLORATION, LLC	1/8+	953	308	NA	NA	NA	NA	NA	NA	NA
10*14786	E	5-25-20	TWILA ORA WHIPKEY	GASTAR EXPLORATION USA INC	1/8+	799	61	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14792	E	5-25-20	TIMOTHY YOHO	GASTAR EXPLORATION USA INC	1/8+	799	536	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14795	E	5-25-20	LARRY YOHO	GASTAR EXPLORATION USA INC	1/8+	799	526	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14797	E	5-25-20	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14798	E	5-25-20	CECILIA D. NEWLAND	GASTAR EXPLORATION USA INC	1/8+	800	609	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14800	E	5-25-20	DAPHNE HUFFMAN & CHARLES HUFFM	GASTAR EXPLORATION USA INC	1/8+	800	613	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14804	E	5-25-20	DEBORAH K. & FRANK KLIMASZEWSK	GASTAR EXPLORATION USA INC	1/8+	801	333	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14805	E	5-25-20	HAROLD C. SIMMONS	GASTAR EXPLORATION USA INC	1/8+	803	148	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14806	E	5-25-20	DONNA VIVIAN YOHO	GASTAR EXPLORATION USA INC	1/8+	809	558	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14807	E	5-25-20	JANICE N HAUDENSCHILT	GASTAR EXPLORATION USA INC	1/8+	809	555	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14808	E	5-25-20	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION USA INC	1/8+	809	552	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14809	E	5-25-20	DEWEY A. MILICIA	GASTAR EXPLORATION USA INC	1/8+	809	549	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14810	E	5-25-20	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION USA INC	1/8+	809	546	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14811	E	5-25-20	MARK YOHO AND MARY YOHO	GASTAR EXPLORATION USA INC	1/8+	809	543	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14812	E	5-25-20	DENISE ANN GALE	GASTAR EXPLORATION USA INC	1/8+	815	224	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC

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10*14813	E	5-25-20	DEBRA JANE GALE	GASTAR EXPLORATION USA INC	1/8+	818	568	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14814	E	5-25-20	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	537	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14815	E	5-25-20	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	535	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14822	E	5-25-20	ONWARD E BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14823	E	5-25-20	SARAH L BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*17195	E	5-25-20	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17196	E	5-25-20	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17197	E	5-25-20	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17199	E	5-25-20	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17200	E	5-25-20	STEPHANIE L. HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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10*17201	E	5-25-20	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17202	E	5-25-20	JANE GALE	GASTAR EXPLORATION USA INC	1/8+	697	385	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17203	E	5-25-20	BARRY RAY MOORE	GASTAR EXPLORATION USA INC	1/8+	697	387	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17204	E	5-25-20	CLARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	391	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17206	E	5-25-20	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA INC	1/8+	697	399	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17207	E	5-25-20	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA INC	1/8+	697	389	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17210	E	5-25-20	MARILYN NOEL	GASTAR EXPLORATION USA INC	1/8+	697	393	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17211	E	5-25-20	GARY WAYNE ZESIGER & VICKIE ZESIGER Office of Oil and Gas	GASTAR EXPLORATION USA INC	1/8+	697	397	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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Well ID	Operator	Effective Date	Owner	Operator	Interest	Acres	Production	Production	Production	Production	Production	Production	Production	Production
10*17212	E	5-25-20	DARRELL NEWLAND LYDIA NEWLAND	WV Department of Environmental Protection GASTAR EXPLORATION USA INC	1/8+	697	158	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17213	E	5-25-20	CAROL DEEN GARDNER	GASTAR EXPLORATION USA INC	1/8+	697	154	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*18275	E	5-25-20	BETTY JEAN NEELY	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA
10*18366	E	5-25-20	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	E	5-25-20	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	E	5-25-20	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA
10*18379	E	5-25-20	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA	NA
10*19540	E	5-25-20	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*19652	E	5-25-20	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA
10*19662	E	5-25-20	CHESTNUT HOLDINGS INC	TH EXPLORATION, LLC	1/8+	949	311	NA	NA	NA	NA	NA	NA	NA
10*19903	E	5-25-20	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*21179	E	5-25-20	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	952	188	NA	NA	NA	NA	NA	NA	NA
10*21180	E	5-25-20	ANTOINE E GERAUD	TH EXPLORATION, LLC	1/8+	952	192	NA	NA	NA	NA	NA	NA	NA
10*21183	E	5-25-20	DONALD R NEWLAND AND SUZANNE NEWLAND	TH EXPLORATION, LLC	1/8+	952	205	NA	NA	NA	NA	NA	NA	NA
10*21241	E	5-25-20	DARRELL NEWLAND	TH EXPLORATION, LLC	1/8+	952	636	NA	NA	NA	NA	NA	NA	NA
10*21315	E	5-25-20	CLAUDIA LOWERY MALLOY	TH EXPLORATION, LLC	1/8+	953	302	NA	NA	NA	NA	NA	NA	NA
10*21316	E	5-25-20	JAMES MICHAEL YOHO	TH EXPLORATION, LLC	1/8+	953	300	NA	NA	NA	NA	NA	NA	NA
10*21317	E	5-25-20	BRADFORD D LOWERY & DEBORAH BRADFORD	TH EXPLORATION, LLC	1/8+	953	297	NA	NA	NA	NA	NA	NA	NA
10*21383	E	5-25-20	JANET LEE SPARKS	TH EXPLORATION, LLC	1/8+	957	27	NA	NA	NA	NA	NA	NA	NA
10*21419	E	5-25-20	DAPHNE HUFFMAN AND CHARLES HUFFMAN	TH EXPLORATION, LLC	1/8+	957	59	NA	NA	NA	NA	NA	NA	NA
10*21431	E	5-25-20	GARY WAYNE ZESIGER & VICKIE ZESIGER	TH EXPLORATION, LLC	1/8+	957	57	NA	NA	NA	NA	NA	NA	NA
10*21436	E	5-25-20	CECILIA D NEWLAND	TH EXPLORATION, LLC	1/8+	957	55	NA	NA	NA	NA	NA	NA	NA
10*21439	E	5-25-20	M VIRGINIA & EDWARD C MARSH	TH EXPLORATION, LLC	1/8+	957	53	NA	NA	NA	NA	NA	NA	NA

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10*21456	E	5-25-20	TONI JO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	953	540	NA	NA	NA	NA	NA	NA	NA
10*21469	E	5-25-20	KIMBERLY S DENNY AND JAMES E DENNY	TH EXPLORATION, LLC	1/8+	957	244	NA	NA	NA	NA	NA	NA	NA
10*21471	E	5-25-20	RICHARD ROSS WILSON	TH EXPLORATION, LLC	1/8+	960	190	NA	NA	NA	NA	NA	NA	NA
10*21620	E	5-25-20	ROBERT CRAIG MONTGOMERY AND CYNTHIA R MONTGOMERY	TH EXPLORATION, LLC	1/8+	959	496	NA	NA	NA	NA	NA	NA	NA
10*21621	E	5-25-20	MARILYN NOEL	TH EXPLORATION, LLC	1/8+	959	494	NA	NA	NA	NA	NA	NA	NA
10*21658	E	5-25-20	CLARENCE RICHARD ZESIGER & MARY ZESIGER	TH EXPLORATION, LLC	1/8+	959	490	NA	NA	NA	NA	NA	NA	NA
10*21659	E	5-25-20	DEBORAH BLOUGH	TH EXPLORATION, LLC	1/8+	958	392	NA	NA	NA	NA	NA	NA	NA
10*21660	E	5-25-20	PAMELA L DRAZIC AND JEFFREY DRAZIC	TH EXPLORATION, LLC	1/8+	958	390	NA	NA	NA	NA	NA	NA	NA
10*21830	E	5-25-20	MARISSA MASON	TH EXPLORATION, LLC	1/8+	960	200	NA	NA	NA	NA	NA	NA	NA
10*21831	E	5-25-20	MATTHEW MASON	TH EXPLORATION, LLC	1/8+	966	122	NA	NA	NA	NA	NA	NA	NA
10*21834	E	5-25-20	GEORGE DANIEL KRUGER	TH EXPLORATION, LLC	1/8+	960	204	NA	NA	NA	NA	NA	NA	NA
10*21947	E	5-25-20	WALLACE LYNN WENDEL	TH EXPLORATION, LLC	1/8+	965	59	NA	NA	NA	NA	NA	NA	NA
10*21988	E	5-25-20	ERICA M MASON	TH EXPLORATION, LLC	1/8+	960	552	NA	NA	NA	NA	NA	NA	NA
10*22007	E	5-25-20	DEBORAH K KLIMASZEWSI AND FRANK KLIMASZEWSKI	TH EXPLORATION, LLC	1/8+	959	492	NA	NA	NA	NA	NA	NA	NA
10*22008	E	5-25-20	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA
10*22008	E	5-25-20	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA
10*22009	E	5-25-20	MARGARET F RICHMOND	TH EXPLORATION, LLC	1/8+	954	626	NA	NA	NA	NA	NA	NA	NA
10*22010	E	5-25-20	ROBERT I BONAR SR	TH EXPLORATION, LLC	1/8+	954	624	NA	NA	NA	NA	NA	NA	NA
10*22011	E	5-25-20	BARBARA ANN MAYNARD	TH EXPLORATION, LLC	1/8+	954	628	NA	NA	NA	NA	NA	NA	NA
10*22012	E	5-25-20	PAUL F HAMMER	TH EXPLORATION, LLC	1/8+	954	622	NA	NA	NA	NA	NA	NA	NA
10*22025	E	5-25-20	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA
10*22025	E	5-25-20	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA
10*22031	E	5-25-20	PHILLIP YOHO AND PATRICIA YOHO	TH EXPLORATION, LLC	1/8+	960	535	NA	NA	NA	NA	NA	NA	NA
10*22032	E	5-25-20	JOANNE E RAY	TH EXPLORATION, LLC	1/8+	960	537	NA	NA	NA	NA	NA	NA	NA
10*22106	E	5-25-20	BARRY RAY MOORE	TH EXPLORATION, LLC	1/8+	954	643	NA	NA	NA	NA	NA	NA	NA
10*22129	E	5-25-20	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA
10*22129	E	5-25-20	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA
10*22137	E	5-25-20	CONNIE L NEELY	TH EXPLORATION, LLC	1/8+	961	466	NA	NA	NA	NA	NA	NA	NA
10*22152	E	5-25-20	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	954	622	NA	NA	NA	NA	NA	NA	NA

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10*22285	E	5-25-20	DONALD JAMES WILSON AND SANDY L WILSON	TH EXPLORATION, LLC	1/8+	962	193	NA	NA	NA	NA	NA	NA	NA	NA
10*22334	E	5-25-20	JOHN BRYANT	TH EXPLORATION, LLC	1/8+	962	540	NA	NA	NA	NA	NA	NA	NA	NA
10*22441	E	5-25-20	APRIL ROSE POSTLETHWAIT	TH EXPLORATION, LLC	1/8+	963	646	NA	NA	NA	NA	NA	NA	NA	NA
10*22510	E	5-25-20	DONNA YOHO	TH EXPLORATION, LLC	1/8+	964	432	NA	NA	NA	NA	NA	NA	NA	NA
10*22561	E	5-25-20	MARY ROSE YOHO	TH EXPLORATION, LLC	1/8+	968	200	NA	NA	NA	NA	NA	NA	NA	NA
10*22562	E	5-25-20	HAROLD C SIMMONS	TH EXPLORATION, LLC	1/8+	966	100	NA	NA	NA	NA	NA	NA	NA	NA
10*22563	E	5-25-20	KIMBERLY D STRAUCH	TH EXPLORATION, LLC	1/8+	966	522	NA	NA	NA	NA	NA	NA	NA	NA
10*22718	E	5-25-20	WILLIAM R RICHMOND AND CONNIE S RICHMOND	TH EXPLORATION, LLC	1/8+	963	389	NA	NA	NA	NA	NA	NA	NA	NA
10*14728	F	5-25-1	IRIS K MOELLENDICK	GASTAR EXPLORATION INC	1/8+	839	509	NA	NA	NA	NA	NA	NA	NA	36/9 Gstar Exploration, Inc. to TH Exploration II, LLC
10*14729	F	5-25-1	BONNIE S SHANNON	GASTAR EXPLORATION INC	1/8+	839	511	NA	NA	NA	NA	NA	NA	NA	36/9 Gstar Exploration, Inc. to TH Exploration II, LLC
10*14730	F	5-25-1	CATHIE K LAKE	GASTAR EXPLORATION INC	1/8+	839	513	NA	NA	NA	NA	NA	NA	NA	36/9 Gstar Exploration, Inc. to TH Exploration II, LLC
10*14731	F	5-25-1	RICHARD KLUG	GASTAR EXPLORATION INC	1/8+	839	515	NA	NA	NA	NA	NA	NA	NA	36/9 Gstar Exploration, Inc. to TH Exploration II, LLC
10*14734	F	5-25-1	CLARENCE BAXTER, BY RODNEY BAX	GASTAR EXPLORATION INC	1/8+	842	376	NA	NA	NA	NA	NA	NA	NA	36/9 Gstar Exploration, Inc. to TH Exploration II, LLC
10*14735	F	5-25-1	GLENNALEE COZART	GASTAR EXPLORATION INC	1/8+	842	378	NA	NA	NA	NA	NA	NA	NA	36/9 Gstar Exploration, Inc. to TH Exploration II, LLC
10*14737	F	5-25-1	MARION PARSONS JR	GASTAR EXPLORATION INC	1/8+	844	83	NA	NA	NA	NA	NA	NA	NA	36/9 Gstar Exploration, Inc. to TH Exploration II, LLC
10*19914	F	5-25-1	MICHAEL L MASON	TH EXPLORATION, LLC	1/8+	945	436	NA	NA	NA	NA	NA	NA	NA	NA
10*14728	G	5-25-13	IRIS K MOELLENDICK	GASTAR EXPLORATION INC	1/8+	839	509	NA	NA	NA	NA	NA	NA	NA	36/9 Gstar Exploration, Inc. to TH Exploration II, LLC
10*14729	G	5-25-13	BONNIE S SHANNON	GASTAR EXPLORATION INC	1/8+	839	511	NA	NA	NA	NA	NA	NA	NA	36/9 Gstar Exploration, Inc. to TH Exploration II, LLC
10*14730	G	5-25-13	CATHIE K LAKE	GASTAR EXPLORATION INC	1/8+	839	513	NA	NA	NA	NA	NA	NA	NA	36/9 Gstar Exploration, Inc. to TH Exploration II, LLC
10*14733	G	5-25-13	NICHOLAS J KLUG AND DEBRA L KL	GASTAR EXPLORATION INC	1/8+	842	374	NA	NA	NA	NA	NA	NA	NA	36/9 Gstar Exploration, Inc. to TH Exploration II, LLC

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10*14734	G	5-25-13	CLARENCE BAXTER, BY RODNEY BAX	GASTAR EXPLORATION INC	1/8+	842	376	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14735	G	5-25-13	GLENNALEE COZART	GASTAR EXPLORATION INC	1/8+	842	378	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14737	G	5-25-13	MARION PARSONS JR	GASTAR EXPLORATION INC	1/8+	844	83	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14728	H	5-25-1.5	IRIS K MOELLENDICK	GASTAR EXPLORATION INC	1/8+	839	509	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14729	H	5-25-1.5	BONNIE S SHANNON	GASTAR EXPLORATION INC	1/8+	839	511	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14730	H	5-25-1.5	CATHIE K LAKE	GASTAR EXPLORATION INC	1/8+	839	513	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14731	H	5-25-1.5	RICHARD KLUG	GASTAR EXPLORATION INC	1/8+	839	515	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14734	H	5-25-1.5	CLARENCE BAXTER, BY RODNEY BAX	GASTAR EXPLORATION INC	1/8+	842	376	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14735	H	5-25-1.5	GLENNALEE COZART	GASTAR EXPLORATION INC	1/8+	842	378	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14737	H	5-25-1.5	MARION PARSONS JR	GASTAR EXPLORATION INC	1/8+	844	83	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14913	H	5-25-1.5	RYAN BRATTON	GASTAR EXPLORATION INC	1/8+	827	284	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*18120	I	5-25-12.1	KENT & BETTY MASON	TH EXPLORATION, LLC	1/8+	927	75	NA	NA	NA	NA	NA	NA	NA
10*14926	J	5-25-12	NILA JUNE MASON	GASTAR EXPLORATION INC	1/8+	842	394	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14927	J	5-25-12	MARION PARSONS JR	GASTAR EXPLORATION INC	1/8+	842	396	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*18535	J	5-25-12	WILLAJEAN NEVA HORES AND DONALD HORES	TH EXPLORATION, LLC	1/8+	933	639	NA	NA	NA	NA	NA	NA	NA
10*18536	J	5-25-12	MIRIAM D LYDICK	TH EXPLORATION, LLC	1/8+	933	637	NA	NA	NA	NA	NA	NA	NA
10*18599	J	5-25-12	JANICE F BROOKOVER	TH EXPLORATION, LLC	1/8+	935	56	NA	NA	NA	NA	NA	NA	NA
10*18600	J	5-25-12	KATHLEEN I FRANCIS	TH EXPLORATION, LLC	1/8+	935	58	NA	NA	NA	NA	NA	NA	NA
10*18601	J	5-25-12	BARBARA BARNHART AND WALTER BARNHART	TH EXPLORATION, LLC	1/8+	935	60	NA	NA	NA	NA	NA	NA	NA

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10*18602	J	5-25-12	JEANETTE M HEATH	TH EXPLORATION, LLC	1/8+	935	62	NA	NA	NA	NA	NA	NA	NA
10*18603	J	5-25-12	ARELENA B HORNER AND QUAY ALLEN HORNER	TH EXPLORATION, LLC	1/8+	935	64	NA	NA	NA	NA	NA	NA	NA
10*18604	J	5-25-12	SARA JANE RINEHART AND JAMES RINEHART	TH EXPLORATION, LLC	1/8+	935	66	NA	NA	NA	NA	NA	NA	NA
10*18690	J	5-25-12	S RICHARD MELLON	TH EXPLORATION, LLC	1/8+	936	89	NA	NA	NA	NA	NA	NA	NA
10*18691	J	5-25-12	MADELYN E MOSSOR DO NOT USE	TH EXPLORATION, LLC	1/8+	936	126	NA	NA	NA	NA	NA	NA	NA
10*18746	J	5-25-12	ELSIE KAREN PADGELEK	TH EXPLORATION, LLC	1/8+	938	456	NA	NA	NA	NA	NA	NA	NA
10*18815	J	5-25-12	GEORGE CUMBERLEDGE	TH EXPLORATION, LLC	1/8+	938	30	NA	NA	NA	NA	NA	NA	NA
10*18995	J	5-25-12	THOMAS JACOB BELL	TH EXPLORATION, LLC	1/8+	940	135	NA	NA	NA	NA	NA	NA	NA
10*18996	J	5-25-12	CHARLES R PARSONS AND LINDA R PARSONS	TH EXPLORATION, LLC	1/8+	940	141	NA	NA	NA	NA	NA	NA	NA
10*19389	J	5-25-12	MICHELLE E OVERALL AND JAMES E OVERALL	TH EXPLORATION, LLC	1/8+	940	268	NA	NA	NA	NA	NA	NA	NA
10*19541	J	5-25-12	CHERYL RIDGELY	TH EXPLORATION, LLC	1/8+	941	645	NA	NA	NA	NA	NA	NA	NA
10*19651	J	5-25-12	CAROL JUNE MILLER	TH EXPLORATION, LLC	1/8+	944	95	NA	NA	NA	NA	NA	NA	NA
10*19895	J	5-25-12	DAVID BELL	TH EXPLORATION, LLC	1/8+	948	589	NA	NA	NA	NA	NA	NA	NA
10*19896	J	5-25-12	ISABEL GEORGE AND HENSLEY J GEORGE	TH EXPLORATION, LLC	1/8+	949	231	NA	NA	NA	NA	NA	NA	NA
10*19897	J	5-25-12	ROSE BELL	TH EXPLORATION, LLC	1/8+	949	223	NA	NA	NA	NA	NA	NA	NA
10*19898	J	5-25-12	NANCY J TODD	TH EXPLORATION, LLC	1/8+	949	226	NA	NA	NA	NA	NA	NA	NA
10*19899	J	5-25-12	WILLIAM H BELL	TH EXPLORATION, LLC	1/8+	948	228	NA	NA	NA	NA	NA	NA	NA
10*19965	J	5-25-12	HARRY R BELL	TH EXPLORATION, LLC	1/8+	948	221	NA	NA	NA	NA	NA	NA	NA
10*19969	J	5-25-12	MATTHEW E WEAR AND LEIGH ANN WEAR	TH EXPLORATION, LLC	1/8+	948	232	NA	NA	NA	NA	NA	NA	NA
10*21128	J	5-25-12	BARBARA J CONWAY AND JAMES G CONWAY	TH EXPLORATION, LLC	1/8+	952	218	NA	NA	NA	NA	NA	NA	NA
10*22193	J	5-25-12	CAROLE PARSONS	TH EXPLORATION, LLC	1/8+	952	625	NA	NA	NA	NA	NA	NA	NA
10*22331	J	5-25-12	TIMOTHY J CAROLL AND KATHLEEN A CARROLL	TH EXPLORATION, LLC	1/8+	957	472	NA	NA	NA	NA	NA	NA	NA
10*22454	J	5-25-12	NANCY ELAINE BELL	TH EXPLORATION, LLC	1/8+	958	385	NA	NA	NA	NA	NA	NA	NA
10*22841	J	5-25-12	AARON PATRICK WEAR	TH EXPLORATION, LLC	1/8+	962	313	NA	NA	NA	NA	NA	NA	NA
10*22983	J	5-25-12	SEAN MICHAEL WEAR	TH EXPLORATION, LLC	1/8+	962	318	NA	NA	NA	NA	NA	NA	NA
10*22496	K	5-25-11.2	JAMES W KLUG	AMERICAN PETROLEUM PARTNERS LLC	1/8+	923	543	NA	NA	NA	NA	NA	NA	42/109 American Petroleum Partners Operating, LLC to TH Exploration, LLC
10*24576	L	12-3-43	ADAM W AND BRITTANY M FERRELL	TH EXPLORATION, LLC	1/8+	218A	837	NA	NA	NA	NA	NA	NA	NA

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Environmental Protection



05/24/2019 ✓



December 19, 2018

WVDEP Office of Oil & Gas  
Attn: Laura Adkins  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304-2345

Subject: **Permit Modification Request** for Hillrock 9HM API # 47-051-02066  
Franklin District; Marshall County, WV  
**Changes to Permit: Lateral extension**

Dear Laura:

Tug Hill is requesting a modification to the above-mentioned permit that will allow us to lengthen the bottom hole location of this lateral. Enclosed please find the following:

- Revised WW-6B (approved by Jim Nicholson)
- Revised Mylar Well Plat
- Updated WW-6A1 Information
- Revised Area of Review for Communication Purposes

If you have any question or need any additional information, please feel free to call me at 304-376-0111.  
Thank you for your consideration in this matter.

Sincerely,

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

Amy L. Miller  
Permitting Specialist – Appalachia Region

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