



west virginia department of environmental protection

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

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

Thursday, November 15, 2018
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

TUG HILL OPERATING, LLC
380 SOUTHPOINTE BLVD

CANONSBURG, PA 15317

Re: Permit Modification Approval for HILLROCK 4HM
47-051-02055-00-00

Lateral Extension

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

A handwritten signature in blue ink, appearing to read "James A. Martin", is written over the typed name and title.

Operator's Well Number: HILLROCK 4HM
Farm Name: TERRY E. & DEBORAH SIMMS
U.S. WELL NUMBER: 47-051-02055-00-00
Horizontal 6A New Drill
Date Modification Issued: November 15, 2018

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

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

2) Operator's Well Number: Hillrock 4HM 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 X Oil Underground Storage Other

(b) If Gas Shallow x Deep Horizontal X

6) Existing Pad: Yes or No Yes

9/4/18

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus is the target formation at a depth of 6466 - 6516' thickness of 50' and anticipated pressure of approx. 3800 psi

8) Proposed Total Vertical Depth: 6,616'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 18,408'

11) Proposed Horizontal Leg Length: 9,857'

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 pre-drill 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 X

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

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18) **CASING AND TUBING PROGRAM**

TYPE	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	30"	NEW	BW	BW	120'	120'	259FT^3(CTS)
Fresh Water	13 3/8"	NEW	H40	48#	920'	920'	989ft^3(CTS)
Coal	13 3/8"	NEW	H40	48#	920'	920'	989ft^3(CTS)
Intermediate	9 5/8"	NEW	J55	36#	2,650'	2,650'	897ft^3(CTS)
Production	5 1/2"	NEW	P110	20#	18,408'	18,408'	4706ft^3(CTS)
Tubing	2 3/8"	NEW	N80	4.7#		8,032'	
Liners							

9/4/18

TYPE	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
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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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 24,642,500 lb proppant and 383,991 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.

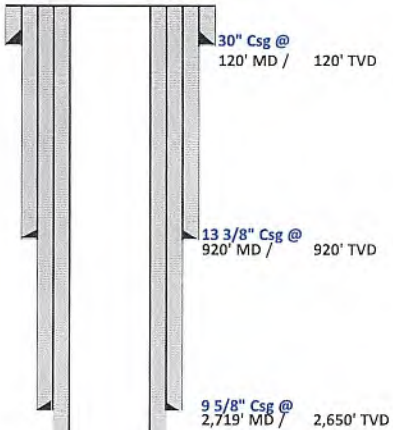


WELL NAME: Hillrock 4HM
 STATE: WV COUNTY: Marshall
 DISTRICT: Franklin
 DF Elev: 1,219' GL Elev: 1,219'
 TD: 18,408'
 TH Latitude: 39.74587001
 TH Longitude: -80.77026312
 BH Latitude: 39.72608153
 BH Longitude: -80.76469416

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	812
Sewickley Coal	706
Pittsburgh Coal	806
Big Lime	2007
Weir	2366
Berea	2581
Gordon	2823
Rhinestreet	5881
Geneseo/Burkett	6344
Tully	6415
Hamilton	6451
Marcellus	6466
Landing Depth	6499
Onondaga	6516
Pilot Hole Depth	6616

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	8W	BW	Surface
Surface	17.5	13 3/8	920'	920'	54.5	J55	Surface
Intermediate 1	12 1/4	9 5/8	2,719'	2,650'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	18,408'	6,653'	20	CYHP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	992	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	887	A	15	Air	1 Centralizer every other jt
Production	4,155	A	14.5	Air / SOBMM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc



KOP @ 7,232' ft MD

Pilot Hole
PH TD @
6,616' TVD

Landing Point @ 5,551' MD / 5,499' TVD
PH TVD = 100' below Onondaga Top

Lateral TD @ 18,408' ft MD
6,653' ft TVD

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Tug Hill Operating, LLC Casing and Cement Program

Hillrock 4HM

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	13 3/8"	J55	17 1/2"	920'	CTS
Intermediate	9 5/8"	J55	12 1/4"	2,719'	CTS
Production	5 1/2"	CYHP110	8 7/8 x 8 3/4	18,408'	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: Hillrock 04 HM (H)
 Site: Hillrock/Simms
 Project: Marshall County, West Virginia.
 Design: rev1

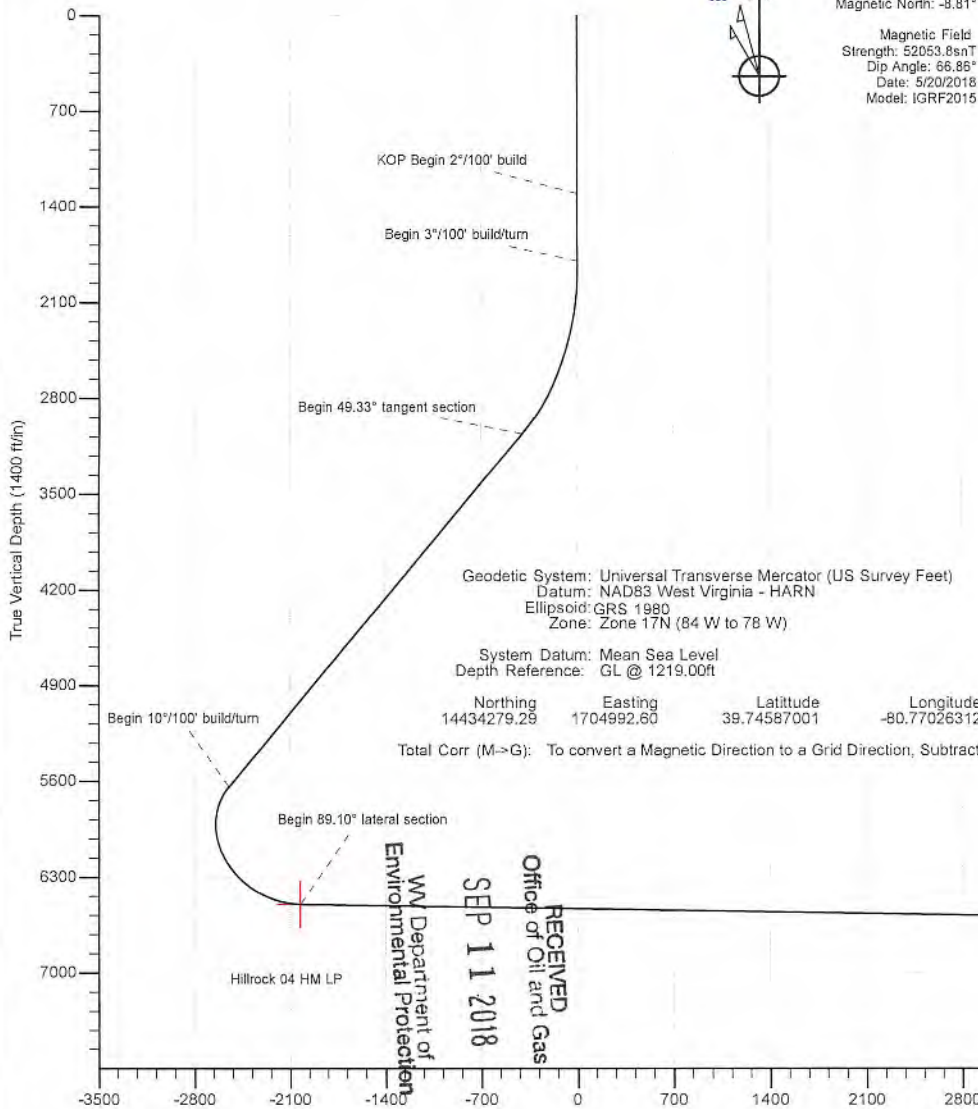
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2°/100' build
3	1800.00	10.00	250.00	1797.47	-14.89	-40.90	2.00	250.00	5.75	Begin 3°/100' build/turn
4	3263.37	49.33	303.26	3057.08	259.64	-654.68	3.00	61.24	-394.24	Begin 49.33° tangent section
5	7232.10	49.33	303.26	5643.33	1910.81	-3171.77	0.00	0.00	-2547.66	Begin 10°/100' build/turn
6	8550.59	89.10	150.00	6499.00	1333.94	-3343.95	10.00	-142.86	-2021.26	Begin 89.10° lateral section
7	18407.75	89.10	150.00	6653.05	-7201.42	1584.28	0.00	0.00	7373.63	PBHL/TD 18407.75 MD 6653.05 TVD



Azimuths to Grid North
 True North: -0.15°
 Magnetic North: -8.81°

Magnetic Field
 Strength: 52053.8nT
 Dip Angle: 66.86°
 Date: 5/20/2018
 Model: IGRF2015



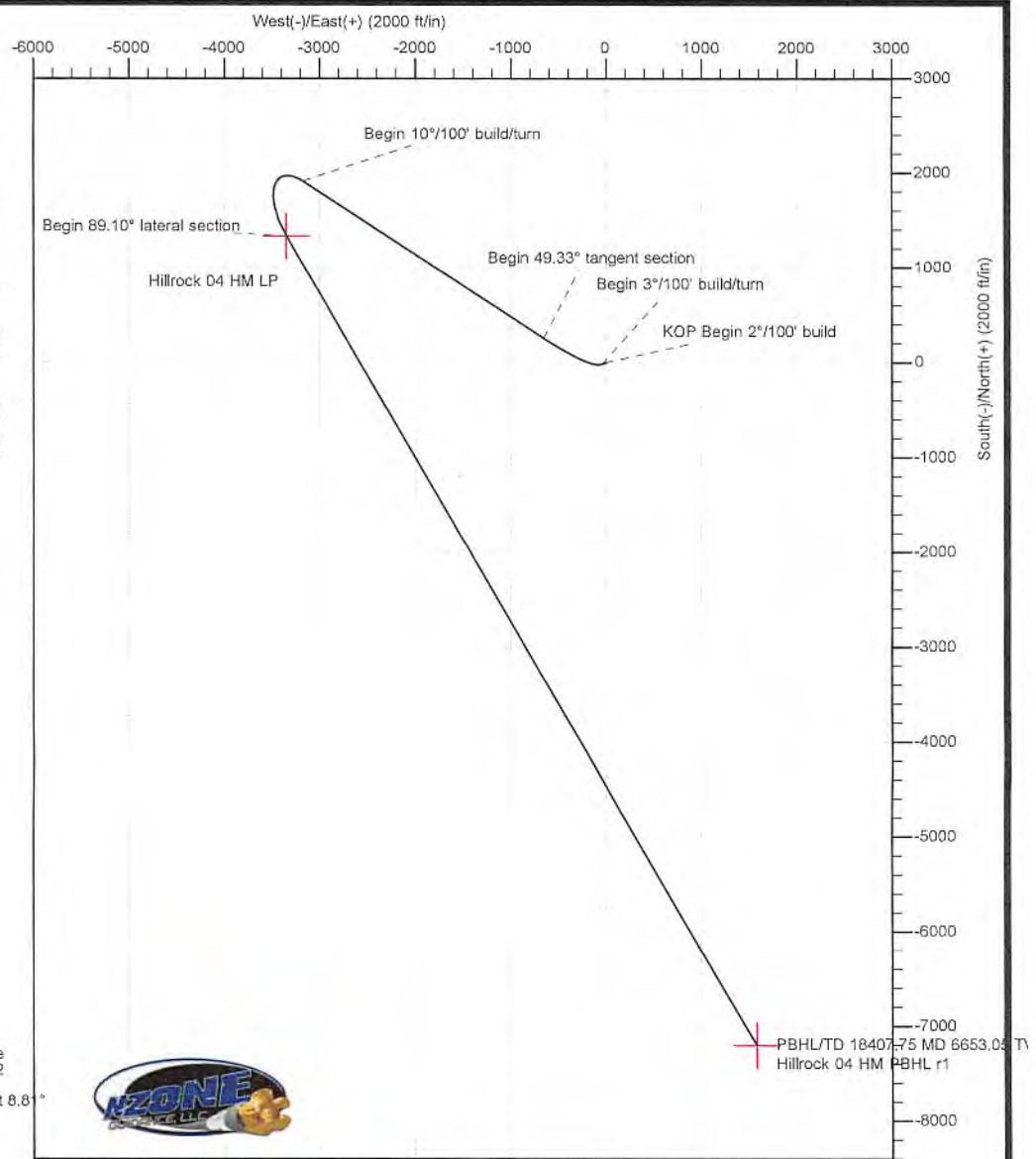
Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD83 West Virginia - HARN
 Ellipsoid: GRS 1980
 Zone: Zone 17N (84 W to 78 W)

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

Northing: 14434279.29 Easting: 1704992.60 Latitude: 39.74587001 Longitude: -80.77026312

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.81°

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PBHL/TD 18407.75 MD 6653.05 TVD
 Hillrock 04 HM PBHL r1

Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well Hillrock 04 HM (H)
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 04 HM (H)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

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

Site	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 04 HM (H)					
Well Position	+N/-S	0.00 ft	Northing:	14,434,279.29 usft	Latitude:	39.74587001
	+E/-W	0.00 ft	Easting:	1,704,992.60 usft	Longitude:	-80.77026312
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
	IGRF2015	5/20/2018	(°)	(°)	(nT)
			-8.66	66.86	52,053.76512155

Design	rev1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	167.59

Plan Survey Tool Program	Date	8/17/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,407.75 rev1 (Original Hole)	MWD	
			MWD - Standard	

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Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,800.00	10.00	250.00	1,797.47	-14.89	-40.90	2.00	2.00	0.00	250.00	
3,263.37	49.33	303.26	3,057.08	259.64	-654.68	3.00	2.69	3.64	61.24	
7,232.10	49.33	303.26	5,643.33	1,910.81	-3,171.77	0.00	0.00	0.00	0.00	
8,550.59	89.10	150.00	6,499.00	1,333.94	-3,343.95	10.00	3.02	-11.62	-142.86	Hillrock 04 HM LP
18,407.75	89.10	150.00	6,653.05	-7,201.42	1,584.28	0.00	0.00	0.00	0.00	Hillrock 04 HM PBHL

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Database: DB_Aug0116_LT_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia.
 Site: Hillrock/Simms
 Well: Hillrock 04 HM (H)
 Wellbore: Original Hole
 Design: rev1

Local Co-ordinate Reference: Well Hillrock 04 HM (H)
 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	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
100.00	0.00	0.00	100.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
200.00	0.00	0.00	200.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
300.00	0.00	0.00	300.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
400.00	0.00	0.00	400.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
500.00	0.00	0.00	500.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
600.00	0.00	0.00	600.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
700.00	0.00	0.00	700.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
800.00	0.00	0.00	800.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
900.00	0.00	0.00	900.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,434,279.29	1,704,992.60	39.74587001	-80.77026312	
KOP Begin 2°/100' build										
1,400.00	2.00	250.00	1,399.98	-0.60	-1.64	14,434,278.69	1,704,990.96	39.74586838	-80.77026896	
1,500.00	4.00	250.00	1,499.84	-2.39	-6.56	14,434,276.90	1,704,986.04	39.74586350	-80.77028647	
1,600.00	6.00	250.00	1,599.46	-5.37	-14.75	14,434,273.92	1,704,977.85	39.74585537	-80.77031564	
1,700.00	8.00	250.00	1,698.70	-9.54	-26.20	14,434,269.75	1,704,966.40	39.74584401	-80.77035641	
1,800.00	10.00	250.00	1,797.47	-14.89	-40.90	14,434,264.40	1,704,951.70	39.74582942	-80.77040875	
Begin 3°/100' build/turn										
1,900.00	11.74	263.03	1,895.69	-19.09	-59.16	14,434,260.20	1,704,933.44	39.74581800	-80.77047376	
2,000.00	13.91	272.41	1,993.20	-19.82	-81.27	14,434,259.47	1,704,911.33	39.74581615	-80.77055243	
2,100.00	16.34	279.17	2,089.73	-17.07	-107.17	14,434,262.22	1,704,885.43	39.74582389	-80.77064454	
2,200.00	18.93	284.18	2,185.03	-10.85	-136.79	14,434,268.44	1,704,855.81	39.74584117	-80.77074986	
2,300.00	21.62	288.00	2,278.83	-1.18	-170.05	14,434,278.11	1,704,822.55	39.74586796	-80.77086809	
2,400.00	24.39	291.01	2,370.87	11.92	-206.85	14,434,291.21	1,704,785.75	39.74590419	-80.77098890	
2,500.01	27.20	293.43	2,460.91	28.41	-247.10	14,434,307.70	1,704,745.50	39.74594976	-80.77114194	
2,600.01	30.04	295.42	2,548.68	48.24	-290.68	14,434,327.53	1,704,701.91	39.74600453	-80.77129682	
2,700.01	32.91	297.10	2,633.96	71.36	-337.48	14,434,350.65	1,704,655.12	39.74606836	-80.77146310	
2,800.01	35.80	298.54	2,716.51	97.71	-387.37	14,434,377.00	1,704,605.23	39.74614108	-80.77164034	
2,900.01	38.70	299.78	2,796.11	127.22	-440.21	14,434,406.51	1,704,552.39	39.74622249	-80.77182805	
3,000.01	41.62	300.88	2,872.53	159.80	-495.85	14,434,439.09	1,704,496.75	39.74631236	-80.77202572	
3,100.01	44.54	301.86	2,945.56	195.37	-554.15	14,434,474.66	1,704,438.45	39.74641044	-80.77223279	
3,200.01	47.47	302.75	3,015.01	233.82	-614.94	14,434,513.11	1,704,377.66	39.74651647	-80.77244872	
3,263.37	49.33	303.26	3,057.08	259.64	-654.68	14,434,538.93	1,704,337.92	39.74658764	-80.77258985	
Begin 49.33° tangent section										
3,300.01	49.33	303.26	3,080.95	274.88	-677.91	14,434,554.17	1,704,314.69	39.74662966	-80.77267237	
3,400.01	49.33	303.26	3,146.12	316.48	-741.34	14,434,595.77	1,704,251.26	39.74674436	-80.77289764	
3,500.01	49.33	303.26	3,211.28	358.09	-804.76	14,434,637.38	1,704,187.84	39.74685906	-80.77312290	
3,600.01	49.33	303.26	3,276.45	399.69	-868.18	14,434,678.98	1,704,124.42	39.74697376	-80.77334816	
3,700.01	49.33	303.26	3,341.62	441.30	-931.61	14,434,720.59	1,704,060.99	39.74708845	-80.77357343	
3,800.01	49.33	303.26	3,406.78	482.90	-995.03	14,434,762.19	1,703,997.57	39.74720315	-80.77379869	
3,900.01	49.33	303.26	3,471.95	524.51	-1,058.45	14,434,803.80	1,703,934.15	39.74731785	-80.77402396	
4,000.01	49.33	303.26	3,537.11	566.11	-1,121.88	14,434,845.40	1,703,870.72	39.74743255	-80.77424922	
4,100.01	49.33	303.26	3,602.28	607.72	-1,185.30	14,434,887.01	1,703,807.30	39.74754724	-80.77447449	
4,200.01	49.33	303.26	3,667.44	649.32	-1,248.72	14,434,928.61	1,703,743.88	39.74766194	-80.77469976	
4,300.01	49.33	303.26	3,732.61	690.93	-1,312.15	14,434,970.21	1,703,680.45	39.74777664	-80.77492503	
4,400.01	49.33	303.26	3,797.78	732.53	-1,375.57	14,435,011.82	1,703,617.03	39.74789133	-80.77515029	
4,500.01	49.33	303.26	3,862.94	774.14	-1,438.99	14,435,053.42	1,703,553.61	39.74800603	-80.77537556	
4,600.01	49.33	303.26	3,928.11	815.74	-1,502.42	14,435,095.03	1,703,490.18	39.74812072	-80.77560084	
4,700.01	49.33	303.26	3,993.27	857.34	-1,565.84	14,435,136.63	1,703,426.76	39.74823542	-80.77582611	
4,800.01	49.33	303.26	4,058.44	898.95	-1,629.26	14,435,178.24	1,703,363.34	39.74835011	-80.77605138	
4,900.01	49.33	303.26	4,123.60	940.55	-1,692.69	14,435,219.84	1,703,299.91	39.74846480	-80.77627665	

Database: DB_Aug0116_LT_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia.
 Site: Hillrock/Simms
 Well: Hillrock 04 HM (H)
 Wellbore: Original Hole
 Design: rev1

Local Co-ordinate Reference: Well Hillrock 04 HM (H)
 TVD Reference: GL @ 1219.00ft
 MD Reference: GL @ 1219.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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Planned Survey

WV Department of
 Environmental Protection

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,000.01	49.33	303.26	4,188.77	982.16	-1,756.11	14,435,261.45	1,703,236.49	39.74857950	-80.77650193
5,100.01	49.33	303.26	4,253.94	1,023.76	-1,819.53	14,435,303.05	1,703,173.07	39.74869419	-80.77672720
5,200.01	49.33	303.26	4,319.10	1,065.37	-1,882.96	14,435,344.66	1,703,109.65	39.74880888	-80.77695247
5,300.01	49.33	303.26	4,384.27	1,106.97	-1,946.38	14,435,386.26	1,703,046.22	39.74892357	-80.77717775
5,400.01	49.33	303.26	4,449.43	1,148.58	-2,009.80	14,435,427.86	1,702,982.80	39.74903826	-80.77740303
5,500.01	49.33	303.26	4,514.60	1,190.18	-2,073.23	14,435,469.47	1,702,919.38	39.74915295	-80.77762830
5,600.01	49.33	303.26	4,579.76	1,231.79	-2,136.65	14,435,511.07	1,702,855.95	39.74926764	-80.77785358
5,700.01	49.33	303.26	4,644.93	1,273.39	-2,200.07	14,435,552.68	1,702,792.53	39.74938233	-80.77807886
5,800.01	49.33	303.26	4,710.10	1,315.00	-2,263.50	14,435,594.28	1,702,729.11	39.74949702	-80.77830414
5,900.01	49.33	303.26	4,775.26	1,356.60	-2,326.92	14,435,635.89	1,702,665.68	39.74961171	-80.77852942
6,000.01	49.33	303.26	4,840.43	1,398.20	-2,390.34	14,435,677.49	1,702,602.26	39.74972640	-80.77875470
6,100.01	49.33	303.26	4,905.59	1,439.81	-2,453.77	14,435,719.10	1,702,538.84	39.74984109	-80.77897999
6,200.01	49.33	303.26	4,970.76	1,481.41	-2,517.19	14,435,760.70	1,702,475.41	39.74995578	-80.77920527
6,300.01	49.33	303.26	5,035.92	1,523.02	-2,580.61	14,435,802.31	1,702,411.99	39.75007046	-80.77943055
6,400.01	49.33	303.26	5,101.09	1,564.62	-2,644.04	14,435,843.91	1,702,348.57	39.75018515	-80.77965584
6,500.01	49.33	303.26	5,166.26	1,606.23	-2,707.46	14,435,885.51	1,702,285.14	39.75029984	-80.77988112
6,600.01	49.33	303.26	5,231.42	1,647.83	-2,770.88	14,435,927.12	1,702,221.72	39.75041452	-80.78010641
6,700.01	49.33	303.26	5,296.59	1,689.44	-2,834.31	14,435,968.72	1,702,158.30	39.75052921	-80.78033169
6,800.01	49.33	303.26	5,361.75	1,731.04	-2,897.73	14,436,010.33	1,702,094.87	39.75064389	-80.78055698
6,900.01	49.33	303.26	5,426.92	1,772.65	-2,961.15	14,436,051.93	1,702,031.45	39.75075858	-80.78078227
7,000.01	49.33	303.26	5,492.08	1,814.25	-3,024.58	14,436,093.54	1,701,968.03	39.75087326	-80.78100756
7,100.01	49.33	303.26	5,557.25	1,855.86	-3,088.00	14,436,135.14	1,701,904.60	39.75098795	-80.78123285
7,200.01	49.33	303.26	5,622.42	1,897.46	-3,151.42	14,436,176.75	1,701,841.18	39.75110263	-80.78145814
7,232.10	49.33	303.26	5,643.33	1,910.81	-3,171.77	14,436,190.10	1,701,820.83	39.75113943	-80.78153043
Begin 10°/100' build/turn									
7,300.01	44.06	297.37	5,689.91	1,935.82	-3,214.33	14,436,215.11	1,701,778.27	39.75120641	-80.78168162
7,400.01	37.01	286.42	5,765.96	1,960.38	-3,274.23	14,436,239.67	1,701,718.37	39.75127625	-80.78189453
7,500.02	31.33	271.70	5,848.81	1,969.68	-3,329.23	14,436,248.97	1,701,663.38	39.75130215	-80.78209011
7,600.02	27.88	252.60	5,935.94	1,963.44	-3,377.64	14,436,242.73	1,701,614.97	39.75128535	-80.78226241
7,700.02	27.52	231.00	6,024.71	1,941.85	-3,418.00	14,436,221.14	1,701,574.60	39.75122633	-80.78240620
7,800.02	30.37	211.09	6,112.41	1,905.57	-3,449.09	14,436,184.86	1,701,543.52	39.75112690	-80.78251711
7,900.02	35.66	195.44	6,196.39	1,855.70	-3,469.95	14,436,134.99	1,701,522.65	39.75099008	-80.78259177
8,000.02	42.48	183.78	6,274.09	1,793.76	-3,479.96	14,436,073.04	1,701,512.65	39.75082002	-80.78262792
8,100.02	50.20	174.96	6,343.15	1,721.62	-3,478.81	14,436,000.90	1,701,513.80	39.75062190	-80.78262444
8,200.02	58.44	167.98	6,401.47	1,641.47	-3,466.53	14,435,920.76	1,701,526.07	39.75040173	-80.78258146
8,300.02	67.01	162.17	6,447.28	1,555.77	-3,443.51	14,435,835.05	1,701,549.10	39.75016620	-80.78250027
8,400.02	75.76	157.05	6,479.19	1,467.10	-3,410.43	14,435,746.39	1,701,582.18	39.74992246	-80.78238335
8,500.02	84.61	152.32	6,496.23	1,378.16	-3,368.30	14,435,657.45	1,701,624.30	39.74967794	-80.78223424
8,550.59	89.10	150.00	6,499.00	1,333.94	-3,343.95	14,435,613.23	1,701,648.65	39.74955634	-80.78214799
Begin 89.10° lateral section									
8,600.02	89.10	150.00	6,499.77	1,291.14	-3,319.24	14,435,570.43	1,701,673.37	39.74943863	-80.78206044
8,700.02	89.10	150.00	6,501.34	1,204.55	-3,269.24	14,435,483.84	1,701,723.36	39.74920050	-80.78188331
8,800.02	89.10	150.00	6,502.90	1,117.96	-3,219.24	14,435,397.25	1,701,773.36	39.74896236	-80.78170619
8,900.02	89.10	150.00	6,504.46	1,031.37	-3,169.25	14,435,310.66	1,701,823.36	39.74872422	-80.78152906
9,000.02	89.10	150.00	6,506.02	944.78	-3,119.25	14,435,224.07	1,701,873.35	39.74848608	-80.78135194
9,100.02	89.10	150.00	6,507.59	858.19	-3,069.25	14,435,137.48	1,701,923.35	39.74824795	-80.78117482
9,200.02	89.10	150.00	6,509.15	771.60	-3,019.26	14,435,050.89	1,701,973.35	39.74800981	-80.78099770
9,300.02	89.10	150.00	6,510.71	685.01	-2,969.26	14,434,964.30	1,702,023.34	39.74777167	-80.78082058
9,400.02	89.10	150.00	6,512.27	598.42	-2,919.26	14,434,877.71	1,702,073.34	39.74753353	-80.78064346
9,500.02	89.10	150.00	6,513.84	511.83	-2,869.27	14,434,791.12	1,702,123.34	39.74729539	-80.78046634
9,600.02	89.10	150.00	6,515.40	425.24	-2,819.27	14,434,704.53	1,702,173.33	39.74705725	-80.78028923
9,700.02	89.10	150.00	6,516.96	338.65	-2,769.27	14,434,617.94	1,702,223.33	39.74681911	-80.78011211
9,800.02	89.10	150.00	6,518.53	252.06	-2,719.28	14,434,531.35	1,702,273.32	39.74658097	-80.77993500
9,900.02	89.10	150.00	6,520.09	165.47	-2,669.28	14,434,444.76	1,702,323.32	39.74634283	-80.77975789

Database: DB_Aug0116_LT_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia.
 Site: Hillrock/Simms
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Local Co-ordinate Reference: Well Hillrock 04 HM (H)
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 Survey Calculation Method: Minimum Curvature

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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,000.02	89.10	150.00	6,521.65	78.87	-2,619.29	14,434,358.16	1,702,373.32	39.74610469	-80.77958078
10,100.02	89.10	150.00	6,523.21	-7.72	-2,569.29	14,434,271.57	1,702,423.31	39.74586655	-80.77940367
10,200.02	89.10	150.00	6,524.78	-94.31	-2,519.29	14,434,184.98	1,702,473.31	39.74562841	-80.77922656
10,300.02	89.10	150.00	6,526.34	-180.90	-2,469.30	14,434,098.39	1,702,523.31	39.74539027	-80.77904945
10,400.02	89.10	150.00	6,527.90	-267.49	-2,419.30	14,434,011.80	1,702,573.30	39.74515213	-80.77887235
10,500.02	89.10	150.00	6,529.47	-354.08	-2,369.30	14,433,925.21	1,702,623.30	39.74491399	-80.77869524
10,600.02	89.10	150.00	6,531.03	-440.67	-2,319.31	14,433,838.62	1,702,673.30	39.74467584	-80.77851814
10,700.02	89.10	150.00	6,532.59	-527.26	-2,269.31	14,433,752.03	1,702,723.29	39.74443770	-80.77834104
10,800.02	89.10	150.00	6,534.15	-613.85	-2,219.31	14,433,665.44	1,702,773.29	39.74419956	-80.77816394
10,900.02	89.10	150.00	6,535.72	-700.44	-2,169.32	14,433,578.85	1,702,823.29	39.74396141	-80.77798684
11,000.02	89.10	150.00	6,537.28	-787.03	-2,119.32	14,433,492.26	1,702,873.28	39.74372327	-80.77780974
11,100.02	89.10	150.00	6,538.84	-873.62	-2,069.32	14,433,405.67	1,702,923.28	39.74348513	-80.77763264
11,200.02	89.10	150.00	6,540.40	-960.21	-2,019.33	14,433,319.08	1,702,973.27	39.74324698	-80.77745554
11,300.02	89.10	150.00	6,541.97	-1,046.80	-1,969.33	14,433,232.49	1,703,023.27	39.74300884	-80.77727845
11,400.02	89.10	150.00	6,543.53	-1,133.39	-1,919.33	14,433,145.90	1,703,073.27	39.74277070	-80.77710135
11,500.02	89.10	150.00	6,545.09	-1,219.99	-1,869.34	14,433,059.31	1,703,123.26	39.74253255	-80.77692426
11,600.02	89.10	150.00	6,546.66	-1,306.58	-1,819.34	14,432,972.72	1,703,173.26	39.74229441	-80.77674717
11,700.02	89.10	150.00	6,548.22	-1,393.17	-1,769.34	14,432,886.13	1,703,223.26	39.74205626	-80.77657008
11,800.02	89.10	150.00	6,549.78	-1,479.76	-1,719.35	14,432,799.54	1,703,273.25	39.74181812	-80.77639299
11,900.02	89.10	150.00	6,551.34	-1,566.35	-1,669.35	14,432,712.95	1,703,323.25	39.74157997	-80.77621590
12,000.02	89.10	150.00	6,552.91	-1,652.94	-1,619.35	14,432,626.35	1,703,373.25	39.74134182	-80.77603882
12,100.02	89.10	150.00	6,554.47	-1,739.53	-1,569.36	14,432,539.76	1,703,423.24	39.74110368	-80.77586173
12,200.02	89.10	150.00	6,556.03	-1,826.12	-1,519.36	14,432,453.17	1,703,473.24	39.74086553	-80.77568465
12,300.02	89.10	150.00	6,557.60	-1,912.71	-1,469.36	14,432,366.58	1,703,523.24	39.74062738	-80.77550757
12,400.03	89.10	150.00	6,559.16	-1,999.30	-1,419.37	14,432,279.99	1,703,573.23	39.74038924	-80.77533048
12,500.03	89.10	150.00	6,560.72	-2,085.89	-1,369.37	14,432,193.40	1,703,623.23	39.74015109	-80.77515340
12,600.03	89.10	150.00	6,562.28	-2,172.48	-1,319.38	14,432,106.81	1,703,673.23	39.73991294	-80.77497632
12,700.03	89.10	150.00	6,563.85	-2,259.07	-1,269.38	14,432,020.22	1,703,723.22	39.73967479	-80.77479925
12,800.03	89.10	150.00	6,565.41	-2,345.66	-1,219.38	14,431,933.63	1,703,773.22	39.73943665	-80.77462217
12,900.03	89.10	150.00	6,566.97	-2,432.25	-1,169.39	14,431,847.04	1,703,823.21	39.73919850	-80.77444509
13,000.03	89.10	150.00	6,568.53	-2,518.85	-1,119.39	14,431,760.45	1,703,873.21	39.73896035	-80.77426802
13,100.03	89.10	150.00	6,570.10	-2,605.44	-1,069.39	14,431,673.86	1,703,923.21	39.73872220	-80.77409095
13,200.03	89.10	150.00	6,571.66	-2,692.03	-1,019.40	14,431,587.27	1,703,973.20	39.73848405	-80.77391387
13,300.03	89.10	150.00	6,573.22	-2,778.62	-969.40	14,431,500.68	1,704,023.20	39.73824590	-80.77373680
13,400.03	89.10	150.00	6,574.79	-2,865.21	-919.40	14,431,414.09	1,704,073.20	39.73800775	-80.77355973
13,500.03	89.10	150.00	6,576.35	-2,951.80	-869.41	14,431,327.50	1,704,123.19	39.73776960	-80.77338267
13,600.03	89.10	150.00	6,577.91	-3,038.39	-819.41	14,431,240.91	1,704,173.19	39.73753145	-80.77320560
13,700.03	89.10	150.00	6,579.47	-3,124.98	-769.41	14,431,154.32	1,704,223.19	39.73729330	-80.77302853
13,800.03	89.10	150.00	6,581.04	-3,211.57	-719.42	14,431,067.73	1,704,273.18	39.73705515	-80.77285147
13,900.03	89.10	150.00	6,582.60	-3,298.16	-669.42	14,430,981.14	1,704,323.18	39.73681700	-80.77267441
14,000.03	89.10	150.00	6,584.16	-3,384.75	-619.42	14,430,894.54	1,704,373.18	39.73657884	-80.77249734
14,100.03	89.10	150.00	6,585.73	-3,471.34	-569.43	14,430,807.95	1,704,423.17	39.73634069	-80.77232028
14,200.03	89.10	150.00	6,587.29	-3,557.93	-519.43	14,430,721.36	1,704,473.17	39.73610254	-80.77214322
14,300.03	89.10	150.00	6,588.85	-3,644.52	-469.43	14,430,634.77	1,704,523.16	39.73586439	-80.77196616
14,400.03	89.10	150.00	6,590.41	-3,731.11	-419.44	14,430,548.18	1,704,573.16	39.73562624	-80.77178911
14,500.03	89.10	150.00	6,591.98	-3,817.71	-369.44	14,430,461.59	1,704,623.16	39.73538808	-80.77161205
14,600.03	89.10	150.00	6,593.54	-3,904.30	-319.44	14,430,375.00	1,704,673.15	39.73514993	-80.77143500
14,700.03	89.10	150.00	6,595.10	-3,990.89	-269.45	14,430,288.41	1,704,723.15	39.73491178	-80.77125794
14,800.03	89.10	150.00	6,596.66	-4,077.48	-219.45	14,430,201.82	1,704,773.15	39.73467362	-80.77108089
14,900.03	89.10	150.00	6,598.23	-4,164.07	-169.45	14,430,115.23	1,704,823.14	39.73443547	-80.77090384
15,000.03	89.10	150.00	6,599.79	-4,250.66	-119.46	14,430,028.64	1,704,873.14	39.73419731	-80.77072679
15,100.03	89.10	150.00	6,601.35	-4,337.25	-69.46	14,429,942.05	1,704,923.14	39.73395916	-80.77054974
15,200.03	89.10	150.00	6,602.92	-4,423.84	-19.46	14,429,855.46	1,704,973.13	39.73372100	-80.77037269
15,300.03	89.10	150.00	6,604.48	-4,510.43	30.53	14,429,768.87	1,705,023.13	39.73348285	-80.77019565
15,400.03	89.10	150.00	6,606.04	-4,597.02	80.53	14,429,682.28	1,705,073.13	39.73324469	-80.77001860

Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well Hillrock 04 HM (H)
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 04 HM (H)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,500.03	89.10	150.00	6,607.60	-4,683.61	130.52	14,429,595.69	1,705,123.12	39.73300654	-80.76984156
15,600.03	89.10	150.00	6,609.17	-4,770.20	180.52	14,429,509.10	1,705,173.12	39.73276838	-80.76966452
15,700.03	89.10	150.00	6,610.73	-4,856.79	230.52	14,429,422.51	1,705,223.12	39.73253023	-80.76948747
15,800.03	89.10	150.00	6,612.29	-4,943.38	280.51	14,429,335.92	1,705,273.11	39.73229207	-80.76931043
15,900.03	89.10	150.00	6,613.86	-5,029.97	330.51	14,429,249.33	1,705,323.11	39.73205391	-80.76913339
16,000.03	89.10	150.00	6,615.42	-5,116.57	380.51	14,429,162.74	1,705,373.10	39.73181575	-80.76895636
16,100.03	89.10	150.00	6,616.98	-5,203.16	430.50	14,429,076.14	1,705,423.10	39.73157760	-80.76877932
16,200.03	89.10	150.00	6,618.54	-5,289.75	480.50	14,428,989.55	1,705,473.10	39.73133944	-80.76860228
16,300.03	89.10	150.00	6,620.11	-5,376.34	530.50	14,428,902.96	1,705,523.09	39.73110128	-80.76842525
16,400.03	89.10	150.00	6,621.67	-5,462.93	580.49	14,428,816.37	1,705,573.09	39.73086312	-80.76824822
16,500.03	89.10	150.00	6,623.23	-5,549.52	630.49	14,428,729.78	1,705,623.09	39.73062497	-80.76807119
16,600.03	89.10	150.00	6,624.79	-5,636.11	680.49	14,428,643.19	1,705,673.08	39.73038681	-80.76789416
16,700.03	89.10	150.00	6,626.36	-5,722.70	730.48	14,428,556.60	1,705,723.08	39.73014865	-80.76771713
16,800.03	89.10	150.00	6,627.92	-5,809.29	780.48	14,428,470.01	1,705,773.08	39.72991049	-80.76754010
16,900.03	89.10	150.00	6,629.48	-5,895.88	830.48	14,428,383.42	1,705,823.07	39.72967233	-80.76736307
17,000.03	89.10	150.00	6,631.05	-5,982.47	880.47	14,428,296.83	1,705,873.07	39.72943417	-80.76718605
17,100.03	89.10	150.00	6,632.61	-6,069.06	930.47	14,428,210.24	1,705,923.07	39.72919601	-80.76700902
17,200.03	89.10	150.00	6,634.17	-6,155.65	980.47	14,428,123.65	1,705,973.06	39.72895785	-80.76683200
17,300.03	89.10	150.00	6,635.73	-6,242.24	1,030.46	14,428,037.06	1,706,023.06	39.72871969	-80.76665498
17,400.04	89.10	150.00	6,637.30	-6,328.83	1,080.46	14,427,950.47	1,706,073.05	39.72848153	-80.76647796
17,500.04	89.10	150.00	6,638.86	-6,415.43	1,130.46	14,427,863.88	1,706,123.05	39.72824337	-80.76630094
17,600.04	89.10	150.00	6,640.42	-6,502.02	1,180.45	14,427,777.29	1,706,173.05	39.72800520	-80.76612392
17,700.04	89.10	150.00	6,641.99	-6,588.61	1,230.45	14,427,690.70	1,706,223.04	39.72776704	-80.76594690
17,800.04	89.10	150.00	6,643.55	-6,675.20	1,280.45	14,427,604.11	1,706,273.04	39.72752888	-80.76576988
17,900.04	89.10	150.00	6,645.11	-6,761.79	1,330.44	14,427,517.52	1,706,323.04	39.72729072	-80.76559287
18,000.04	89.10	150.00	6,646.67	-6,848.38	1,380.44	14,427,430.93	1,706,373.03	39.72705255	-80.76541586
18,100.04	89.10	150.00	6,648.24	-6,934.97	1,430.43	14,427,344.33	1,706,423.03	39.72681439	-80.76523884
18,200.04	89.10	150.00	6,649.80	-7,021.56	1,480.43	14,427,257.74	1,706,473.03	39.72657623	-80.76506183
18,300.04	89.10	150.00	6,651.36	-7,108.15	1,530.43	14,427,171.15	1,706,523.02	39.72633807	-80.76488482
18,400.04	89.10	150.00	6,652.92	-7,194.74	1,580.42	14,427,084.56	1,706,573.02	39.72609990	-80.76470781
18,407.75	89.10	150.00	6,653.05	-7,201.42	1,584.28	14,427,077.88	1,706,576.88	39.72608153	-80.76469416

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PBHL/TD 18407.75 MD 6653.05 TVD

SEP 11 2018

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Hillrock 04 HM LP - hit/miss target - Shape - Point	0.00	0.01	6,499.00	1,333.94	-3,343.95	14,435,613.23	1,701,648.65	39.74955634	-80.78214799
Hillrock 04 HM PBHL r1 - plan misses target center by 0.01ft at 18407.75ft MD (6653.05 TVD, -7201.42 N, 1584.28 E) - Point	0.00	0.01	6,653.05	-7,201.42	1,584.28	14,427,077.88	1,706,576.88	39.72608152	-80.76469415

 WV Department of
 Environmental Protection

Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well Hillrock 04 HM (H)
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 04 HM (H)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,300.00	1,300.00	0.00	0.00	KOP Begin 2°/100' build
1,800.00	1,797.47	-14.89	-40.90	Begin 3°/100' build/turn
3,263.37	3,057.08	259.64	-654.68	Begin 49.33° tangent section
7,232.10	5,643.33	1,910.81	-3,171.77	Begin 10°/100' build/turn
8,550.59	6,499.00	1,333.94	-3,343.95	Begin 89.10° lateral section
18,407.75	6,653.05	-7,201.42	1,584.28	PBHL/TD 18407.75 MD 6653.05 TVD

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 Office of Oil and Gas

SEP 11 2018

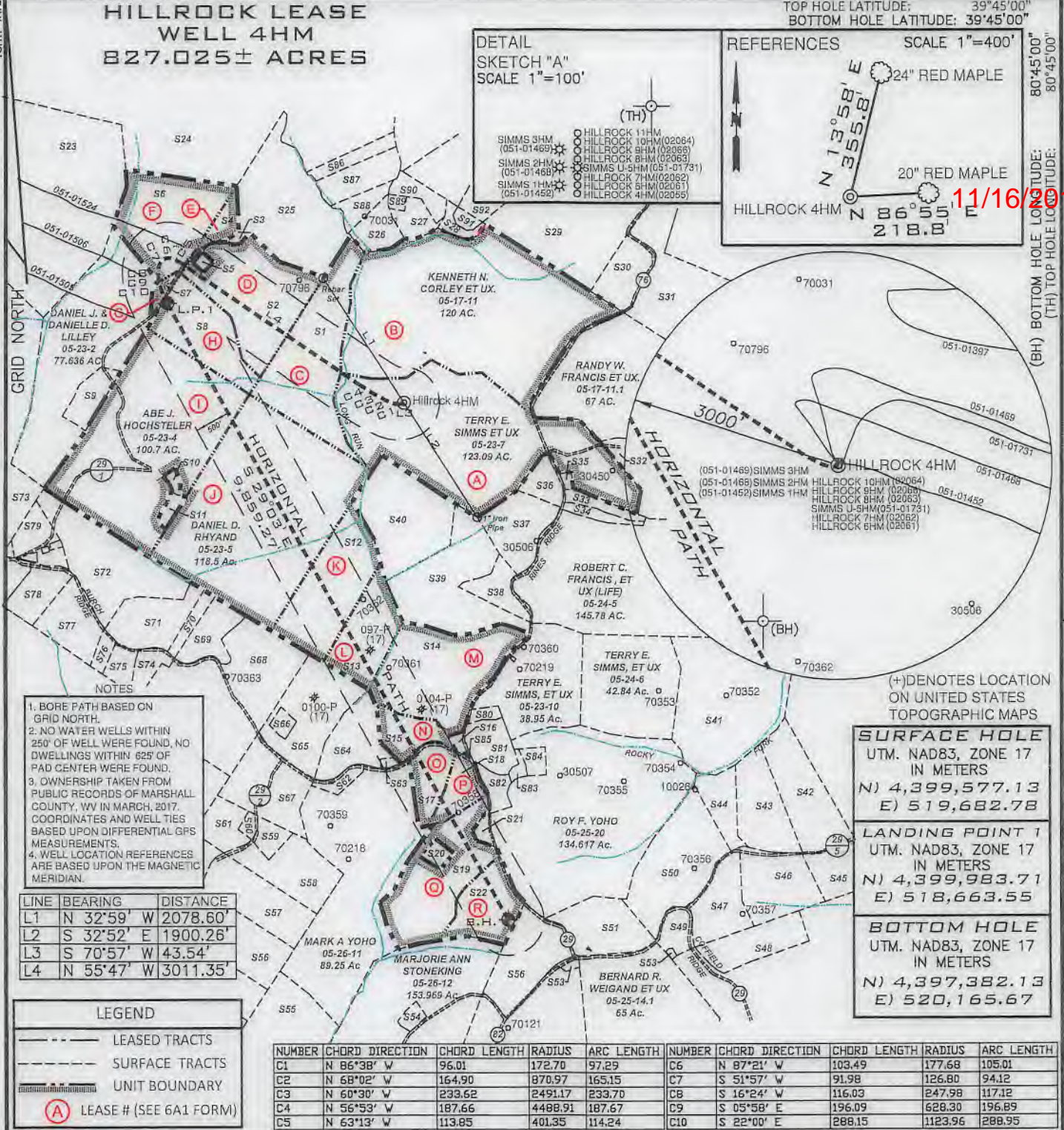
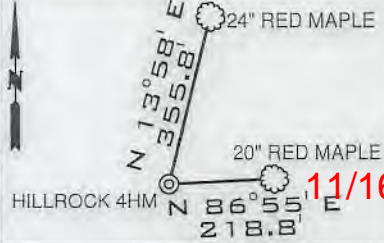
 WV Department of
 Environmental Protection

**HILLROCK LEASE
WELL 4HM
827.025± ACRES**

DETAIL
SKETCH "A"
SCALE 1"=100'

REFERENCES
SCALE 1"=400'

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



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

LINE	BEARING	DISTANCE
L1	N 32°59' W	2078.60'
L2	S 32°52' E	1900.26'
L3	S 70°57' W	43.54'
L4	N 55°47' W	3011.35'

LEGEND

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

NUMBER	CHORD DIRECTION	CHORD LENGTH	RADIUS	ARC LENGTH	NUMBER	CHORD DIRECTION	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 86°38' W	96.01	172.70	97.29	C6	N 87°21' W	103.49	177.68	105.01
C2	N 68°02' W	164.90	870.97	165.15	C7	S 51°57' W	91.98	126.80	94.12
C3	N 60°30' W	233.62	2491.17	233.70	C8	S 16°24' W	116.03	247.96	117.12
C4	N 56°53' W	187.66	4488.91	187.67	C9	S 05°58' E	196.09	628.30	196.89
C5	N 63°13' W	113.85	401.35	114.24	C10	S 22°00' E	288.15	1123.96	288.95

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,399,577.13
E) 519,682.78

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,399,983.71
E) 518,663.55

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,397,382.13
E) 520,165.67

FILE NUMBER _____

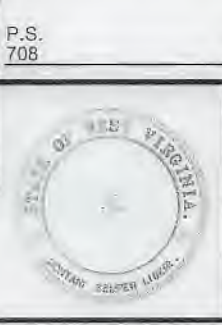
DRAWING NUMBER HILLROCK_4HM_REV_1

SCALE 1" = 2000'

MINIMUM DEGREE OF ACCURACY 1/200

PROVEN SOURCE OF ELEVATION SUBMETER MAPPING
GRADE GPS

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



David L Jackson

JACKSON SURVEYING INC.
P.O. Box 1460
Clarksburg, WV 26302
304-623-5951



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

DATE: JUNE 4, 2018
REVISED DATE: AUGUST 23, 2018
OPERATORS WELL NO. HILLROCK 4HM
API WELL NO. 47-051-02055
STATE WV COUNTY MARSHALL PERMIT 81169018

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

LOCATION ELEVATION 1219.50' 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) _____
PLUG & ABANDON ___ CLEAN OUT & REPLUG ___

TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD 6,616' TMD: 18,408'
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER
CT CORPORATION SYSTEM
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5400 D BIG TYLER ROAD
FORT WORTH, TX 76107 CHARLESTON, WV 25313

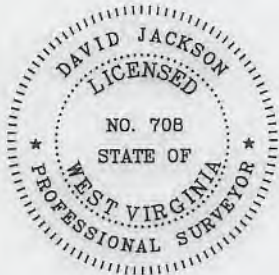
COUNTY NAME
PERMIT

PG 2 OF 2 HILLROCK LEASE
WELL 4HM
827.025± ACRES

11/16/2018

Number	TAX MAP-PARCEL	ADJOINER OWNER	ACRES
S1	05-23-06	James A. Channing, et al	48.0
S2	05-18-21	Curtis E. & Michelle J. Hall	43.119
S3	05-18-21.3	T.H. Exploration, LLC	0.811
S4	05-18-21.1	Rodney & Rhonda Jackson	5.47
S5	05-18-21.2	David P. Lassan, et ux (Life)	1.0
S6	05-18-22	Rodney & Rhonda Jackson	30.345
S7	05-23-2.1	William L. Janice M. Wayne	2.364
S8	05-23-03	Abe J. Hochstetler	50.0
S9	05-23-2.2	Jessica N. & Andrew L. Jones	7.636
S10	05-23-4.2	James S. & Jeanne B. Hall	1.169
S11	05-23-4.1	James S. & Jeanne B. Hall	2.1575
S12	05-23-08	Carl David & Suzanne L. Guseman	29.5
S13	05-23-9.3	Linda D. Greathouse	17.5
S14	05-23-11.1	John H. & Sonya D. Holliday	46.482
S15	05-23-11.4	Evelyn L. Hudson	10.879
S16	05-23-11.2	Evelyn Hudson	1.154
S17	05-23-11.3	Colin R. Yoho	11.29
S18	05-23-11.5	Roy F. Yoho	9.25
S19	05-25-18	Joseph Johnson, et ux (Life)	37.746
S20	05-25-18.1	Pamela Joan Ferrell, et vir	2.491
S21	05-25-19	Joseph Johnson, et ux (Life)	1.973
S22	05-25-17	Emily Jones Irrevocable Trust	22.79
S23	05-18-24	Duane Brunn	102.0
S24	05-18-23	Blaine E. Channing, et al	110.0
S25	05-18-20	Wayne E. Channing, et al	75.6
S26	05-18-31	Kenneth E. Rastall	6.94
S27	05-18-32	Kenneth E. Rastall	5.335
S28	05-17-12	James A. & Jill C. Corley	3.33
S29	05-17-10	James A. Corley, et al	92.61
S30	05-17-9.3	James A. Corley, et ux	12.478
S31	05-17-9.4	Vicki L. Bowen	60.3
S32	05-24-01	Linda L. Hendrickson	175.0
S33	05-24-5.1	James D. Watkins, et ux	4.6
S34	05-24-5.2	James D. Watkins, et ux	3.151
S35	05-23-7.1	H.J. Weigand, et ux	0.549
S36	05-23-7.2	H.J. Weigand, et ux	6.354
S37	05-24-5.5	H.J. Weigand, et ux	17.194
S38	05-24-5.3	Thomas V. Tuttle, et ux	8.543
S39	05-24-5.4	Thomas V. Tuttle, et ux	38.224
S40	05-23-8.1	William & Virginia Roupe	34.0
S41	05-23-04	Abe J. Hochstetler	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
S46	05-25-1.5	Ryan J. Bratton	21.35
S47	05-25-13	Nicholas J. & Debra L. Klug	16.014
S48	05-25-12.1	Kent & Betty Mason	15.0
S49	05-25-13.2	David A. Klug	5.89

Number	TAX MAP-PARCEL	ADJOINER OWNER	ACRES
S50	05-25-01	Michael L. Mason	35.43
S51	05-25-14	Roy F. Yoho	23.0
S52	05-25-16	Emily Jones Irrevocable Trust	23.5
S53	05-25-16.2	Rodney J. Loy	1.087
S54	05-26-12.1	Alvin F. Jr. & Kristen R. Stoneking	2.011
S55	05-26-13	Marjorie Ann Stoneking (Life)	40.0
S56	05-26-10	Robert D. & Bonnie L. Oliver Family Trust	24.94
S57	05-26-09	Robert D. & Bonnie L. Oliver Family Trust	21.75
S58	05-26-08	Richard Joseph Otte, et ux	18.27
S59	05-26-20	Donald Lee Anderson, et al	4.2
S60	05-26-21	Richard Joseph Otte, et ux	1.25
S61	05-26-22	Richard Joseph Otte, et ux	8.3
S62	05-23-12	Mark A. Yoho	3.05
S63	05-23-13.1	James R. & Pamela J. Ferrell	0.7625
S64	05-23-13	Linda D. Greathouse	14.24
S65	05-23-9.2	Linda D. Greathouse	25.58
S66	05-23-9.4	Jackson R. Sr. & Deanna L. Davis	2.087
S67	05-23-9.1	John W. Van Orden	23.376
S68	05-23-14	Dominion Transmission, Inc.	59.5
S69	05-23-15	Virginia Ethel Henry Est.	15.5
S70	05-23-16.1	Donald B. Henry	1.97
S71	05-23-16	Roy Friend Yoho Sr.	18.03
S72	05-23-18	Abe J. Hochstetler	35.382
S73	05-23-01	Patricia Accettolo, et al	146.66
S74	05-23-17.3	William & Katherine Flewelling	5.018
S75	05-23-17	Tammy & Thomas E. Brown	4.62
S76	05-23-17.4	Tammy D. Meadows	2.605
S77	05-23-17.2	Dick Jr. & Carol J. Rowan	14.92
S78	05-23-17.1	Curtis E. Hall, et ux	10.051
S79	05-23-18.1	Mark A. Yoho	7.8
S80	05-25-11.9	Bryan L. Huggins	1.835
S81	05-25-11	Roy F. Yoho	3.445
S82	05-25-20.3	James A. & Jo C. Estep	4.49
S83	05-25-20.2	James M. Zombotti	1.347
S84	05-25-20.1	James M. Zombotti	2.746
S85	05-23-11.6	T.H. Exploration II, LLC & Atinum Marcellus I, LLC	0.094
S86	05-18-30	Jon Schmidt, et al	5.46
S87	05-18-13.10	Carl Berg	10.88
S88	05-18-29	Carl B. Berg	5.319
S89	05-18-32.1	Lori D. Carpenter	1.165
S90	05-18-13.8	Lori D. Carpenter	5.545
S91	05-17-12.1	Williams Ohio Valley Midstream, LLC	1.67
S92	05-17-10.5	Williams Ohio Valley Midstream, LLC	4.24



P.S. 708 *David L Jackson*



TUG HILL
OPERATING

OPERATOR'S
WELL #: Hillrock 4HM
DISTRICT: Franklin
COUNTY: Marshall
STATE: W.V.

WELL PLAT
PAGE 2 OF 2
DATE: 06/04/2018
REVISED DATE:
08/23/2018

WW-6A1
(5/13)

Operator's Well No. Hillrock 4HM

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

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

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

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

*See attached pages

**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

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WV Department of
Environmental Protection

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

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

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*14126	B	5-17-11	SHARON MIDCAP	GASTAR EXPLORATION USA, INC	1/8+	697	152	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*17186	C	5-23-6	ROBERT J HENRY	CHESAPEAKE APPALACHIA LLC	1/8+	708	51	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC
10*22169	D	5-18-21	BARBARA KITTLE	TH EXPLORATION, LLC	1/8+	954	641	NA	NA	NA	NA	NA	NA	NA
10*23124	E	5-18-21.1	HILDA M GILBERTSON-WAYT	TH EXPLORATION, LLC	1/8+	983	576	NA	NA	NA	NA	NA	NA	NA
10*14022	F	5-18-22	HOWARD N WAYNE SR AND WIFE	GASTAR EXPLORATION USA, INC	1/8+	665	384	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*14943	G	5-23-2.1	WILLIAM L WAYNE AND JANICE M W	TRIENERGY HOLDINGS, LLC	1/8+	706	87	NA	NA	NA	24/180 Trienergy Holdings LLC to NPAR LLC	756/332 NPAR LLC to Chevron USA Inc	32/370 Chevron USA Inc to Gastar Exploration Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*21415	H	5-23-3	ABE J HOCHSTETLER AND ANNA E HOCHSTETLER	TH EXPLORATION, LLC	1/8+	957	7	NA	NA	NA	NA	NA	NA	NA
10*17145	I	5-23-4	JAMES J. CAMPBELL BETTY J. CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	458	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC
10*17146	I	5-23-4	CAROLYN CAMPBELL BRITTON ROBERT C. BRITTON	CHESAPEAKE APPALACHIA LLC	1/8+	685	464	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC
10*17147	I	5-23-4	JOANN J. PARSONS GARY D. PARSONS	CHESAPEAKE APPALACHIA LLC	1/8+	685	470	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC
10*17148	I	5-23-4	DONALD E. CAMPBELL JUNE L. CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	476	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC
10*17149	I	5-23-4	WANDA M. BLAKE	CHESAPEAKE APPALACHIA LLC	1/8+	685	482	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC
10*17150	I	5-23-4	IDA L. CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	488	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC
10*22332	I	5-23-4	DORIS WEST AND ROBERT WEST	TH EXPLORATION, LLC	1/8+	962	542	NA	NA	NA	NA	NA	NA	NA
10*22339	I	5-23-4	BETTY LEE HOWARD LOY	TH EXPLORATION, LLC	1/8+	963	392	NA	NA	NA	NA	NA	NA	NA
10*21222	I	5-23-4	PATRICIA J SHAW KELLER	TH EXPLORATION, LLC	1/8+	946	43	NA	NA	NA	NA	NA	NA	NA
10*21774	I	5-23-4	JOYCE KAY BURTON AND SAMUEL C BURTON	TH EXPLORATION, LLC	1/8+	957	467	NA	NA	NA	NA	NA	NA	NA

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10*21415	I	5-23-4	ABE J HOCHSTETLER AND ANNA E HOCHSTETLER	TH EXPLORATION, LLC	1/8+	957	7	NA	NA	NA	NA	NA	NA
10*22180	I	5-23-4	ANTHONY M AND CHANDRA TAYLOR	TH EXPLORATION, LLC	1/8+	949	186	NA	NA	NA	NA	NA	NA
10*14845	I	5-23-4	STANLEY GUSTELY	GASTAR EXPLORATION USA, INC	1/8+	805	88	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*14846	I	5-23-4	FAYE CAMPBELL	GASTAR EXPLORATION USA, INC	1/8+	805	91	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*14849	I	5-23-4	DAVID GUSTELY	GASTAR EXPLORATION USA, INC	1/8+	806	265	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*14850	I	5-23-4	CLARENCE EMERY	GASTAR EXPLORATION USA, INC	1/8+	805	94	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*14851	I	5-23-4	JOHN OBLOY	GASTAR EXPLORATION USA, INC	1/8+	806	262	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*14852	I	5-23-4	JOHN A. EMERY	GASTAR EXPLORATION USA, INC	1/8+	806	259	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*14853	I	5-23-4	DURWOOD WRIGHT	GASTAR EXPLORATION USA, INC	1/8+	809	507	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*14854	I	5-23-4	CATHERINE HUMMEL	GASTAR EXPLORATION USA, INC	1/8+	809	512	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*14855	I	5-23-4	JAMES D. DRAKE	GASTAR EXPLORATION USA, INC	1/8+	808	445	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*14856	I	5-23-4	GATHA CHAMBERS	GASTAR EXPLORATION USA, INC	1/8+	808	454	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*14860	I	5-23-4	KATHLEEN ROBERTSON	GASTAR EXPLORATION USA, INC	1/8+	809	522	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*14861	I	5-23-4	NANCY WHITLATCH	GASTAR EXPLORATION USA, INC	1/8+	809	526	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*14862	I	5-23-4	ANN GUSTELY	GASTAR EXPLORATION USA, INC	1/8+	809	568	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*14863	I	5-23-4	WILLIAM DAVIS CULLUM	GASTAR EXPLORATION USA, INC	1/8+	809	561	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*14864	I	5-23-4	CAROLYN DURWAY	GASTAR EXPLORATION USA, INC	1/8+	810	330	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*14865	I	5-23-4	VICKY STRAUSS	GASTAR EXPLORATION USA, INC	1/8+	810	325	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*14866	I	5-23-4	GARY CARMICHAEL	GASTAR EXPLORATION USA, INC	1/8+	810	316	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*14868	I	5-23-4	WOODROW CAMPBELL, JR.	GASTAR EXPLORATION USA, INC	1/8+	813	454	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*14869	I	5-23-4	RALPH VAUGHN TAYLOR	GASTAR EXPLORATION USA, INC	1/8+	813	561	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*14870	I	5-23-4	DAVID CARMICHAEL	GASTAR EXPLORATION USA, INC	1/8+	816	16	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*14871	I	5-23-4	BETTY PYSSELL	GASTAR EXPLORATION USA, INC	1/8+	816	348	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*14872	I	5-23-4	DWG OIL AND GAS ACQUISITIONS,	GASTAR EXPLORATION USA, INC	1/8+	817	312	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*14877	I	5-23-4	GARY OBOY	GASTAR EXPLORATION, INC	1/8+	836	112	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14878	I	5-23-4	ARTHUR BRUCE COULTER	GASTAR EXPLORATION, INC	1/8+	839	519	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14873	I	5-23-4	RAYMOND MILLER	GASTAR EXPLORATION USA, INC	1/8+	821	44	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*14874	I	5-23-4	RICHARD MILLER	GASTAR EXPLORATION, INC	1/8+	822	260	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14875	I	5-23-4	DAVID DRAKE	GASTAR EXPLORATION, INC	1/8+	827	273	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14876	I	5-23-4	SHIRLEY LARGENT	GASTAR EXPLORATION, INC	1/8+	827	228	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14879	I	5-23-4	THERESA RINE	GASTAR EXPLORATION, INC	1/8+	840	162	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14880	I	5-23-4	IRIS LUCAS	GASTAR EXPLORATION, INC	1/8+	849	545	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14881	I	5-23-4	MARY WHITLATCH	GASTAR EXPLORATION, INC	1/8+	849	548	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14882	I	5-23-4	GARY RINE	GASTAR EXPLORATION, INC	1/8+	849	551	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14883	I	5-23-4	PAUL WISE	GASTAR EXPLORATION, INC	1/8+	852	252	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14884	I	5-23-4	RENEE HAGERTY	GASTAR EXPLORATION, INC	1/8+	852	255	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC

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10*14885	I	5-23-4	HOWARD RINE	GASTAR EXPLORATION, INC	1/8+	854	601	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14886	I	5-23-4	JODI YOHO	GASTAR EXPLORATION, INC	1/8+	854	604	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14887	I	5-23-4	CHRISTINA ROBERTS	GASTAR EXPLORATION, INC	1/8+	867	392	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14888	I	5-23-4	DARLENE BUTLER	GASTAR EXPLORATION, INC	1/8+	867	395	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14889	I	5-23-4	HAROLD YOHO	GASTAR EXPLORATION, INC	1/8+	870	37	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14890	I	5-23-4	HENRY MALONE JR	GASTAR EXPLORATION, INC	1/8+	870	40	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14891	I	5-23-4	NANCY F FYE AND STEPHEN M FYE	GASTAR EXPLORATION, INC	1/8+	885	606	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*16034	I	5-23-4	GASTON FAMILY INVESTMENTS LLC	TH EXPLORATION, LLC	1/8+	959	502	NA	NA	NA	NA	NA	NA	NA
10*17502	I	5-23-4	PATRICIA E GUSTELY	TH EXPLORATION, LLC	1/8+	942	334	NA	NA	NA	NA	NA	NA	NA
10*17532	I	5-23-4	DONALD S BOBOVNIK AND DOLORES J BOBOVNIK	TH EXPLORATION, LLC	1/8+	942	346	NA	NA	NA	NA	NA	NA	NA
10*17539	I	5-23-4	JOANN HAGERTY	TH EXPLORATION, LLC	1/8+	942	342	NA	NA	NA	NA	NA	NA	NA
10*17535	I	5-23-4	RONALD L MAYER AND DEBRA A MAYER	TH EXPLORATION, LLC	1/8+	929	580	NA	NA	NA	NA	NA	NA	NA
10*17593	I	5-23-4	REBECCA HAGERTY	TH EXPLORATION, LLC	1/8+	942	350	NA	NA	NA	NA	NA	NA	NA
10*17594	I	5-23-4	MEGAN HAGERTY	TH EXPLORATION, LLC	1/8+	942	362	NA	NA	NA	NA	NA	NA	NA
10*17595	I	5-23-4	THOMAS E RINE AND MARY P RINE	TH EXPLORATION, LLC	1/8+	929	572	NA	NA	NA	NA	NA	NA	NA
10*17640	I	5-23-4	PATRICIA A GARCAR	TH EXPLORATION, LLC	1/8+	942	8	NA	NA	NA	NA	NA	NA	NA
10*17679	I	5-23-4	NORMA J ASH	TH EXPLORATION, LLC	1/8+	944	130	NA	NA	NA	NA	NA	NA	NA
10*17680	I	5-23-4	DAVID E CHURCH	TH EXPLORATION, LLC	1/8+	932	424	NA	NA	NA	NA	NA	NA	NA

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10*17681	I	5-23-4	WALTER E LOSEY AND CINDY L LOSEY	TH EXPLORATION, LLC	1/8+	942	338	NA	NA	NA	NA	NA	NA	NA
10*17682	I	5-23-4	JAMES E GARLOCH AND MARY K GARLOCH	TH EXPLORATION, LLC	1/8+	935	68	NA	NA	NA	NA	NA	NA	NA
10*17683	I	5-23-4	PATRICK HAGERTY AND DALANE HAGERTY	TH EXPLORATION, LLC	1/8+	942	358	NA	NA	NA	NA	NA	NA	NA
10*17715	I	5-23-4	ROBERT A SANDS AND JOYCE A SANDS	TH EXPLORATION, LLC	1/8+	942	354	NA	NA	NA	NA	NA	NA	NA
10*17719	I	5-23-4	ROBERT R DARROW	TH EXPLORATION, LLC	1/8+	942	380	NA	NA	NA	NA	NA	NA	NA
10*17720	I	5-23-4	WILLIAM KOTSON AND DEBRA KOTSON	TH EXPLORATION, LLC	1/8+	938	507	NA	NA	NA	NA	NA	NA	NA
10*17775	I	5-23-4	HAROLD H HAGERTY AND DEBORAH M HAGERTY	TH EXPLORATION, LLC	1/8+	942	370	NA	NA	NA	NA	NA	NA	NA
10*17776	I	5-23-4	JAMES GARCAR AND MELISSA GARCAR	TH EXPLORATION, LLC	1/8+	941	627	NA	NA	NA	NA	NA	NA	NA
10*17824	I	5-23-4	SARA FULTON	TH EXPLORATION, LLC	1/8+	942	384	NA	NA	NA	NA	NA	NA	NA
10*17901	I	5-23-4	ROBYN HAGERTY	TH EXPLORATION, LLC	1/8+	924	602	NA	NA	NA	NA	NA	NA	NA
10*17965	I	5-23-4	ROBERT DAVID BARNES AND RHONDA BARNES	TH EXPLORATION, LLC	1/8+	942	366	NA	NA	NA	NA	NA	NA	NA
10*18042	I	5-23-4	JOSEPH J ONORE	TH EXPLORATION, LLC	1/8+	927	101	NA	NA	NA	NA	NA	NA	NA
10*18043	I	5-23-4	JAMES M ONORE AND CINDY L ONORE	TH EXPLORATION, LLC	1/8+	927	105	NA	NA	NA	NA	NA	NA	NA
10*18176	I	5-23-4	CRYSTAL M HOOKER AND JAMES HOOKER	TH EXPLORATION, LLC	1/8+	929	568	NA	NA	NA	NA	NA	NA	NA
10*18247	I	5-23-4	MILDRED S KIRKPATRICK	TH EXPLORATION, LLC	1/8+	917	132	NA	NA	NA	NA	NA	NA	NA
10*18320	I	5-23-4	SAMUEL F HENRY	TH EXPLORATION, LLC	1/8+	931	246	NA	NA	NA	NA	NA	NA	NA
10*18598	I	5-23-4	MARK E GUSTELY	TH EXPLORATION, LLC	1/8+	935	52	NA	NA	NA	NA	NA	NA	NA
10*18329	I	5-23-4	COLLEEN HAGERTY	TH EXPLORATION, LLC	1/8+	929	560	NA	NA	NA	NA	NA	NA	NA

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10*18367	I	5-23-4	WALTER C SCHUBERT AND BARBARA A SCHUBERT	TH EXPLORATION, LLC	1/8+	931	377	NA	NA	NA	NA	NA	NA	NA
10*18368	I	5-23-4	ROBERTA K MILLER	TH EXPLORATION, LLC	1/8+	931	457	NA	NA	NA	NA	NA	NA	NA
10*18386	I	5-23-4	JOSEPH R RINE AND JENNIFER M RINE	TH EXPLORATION, LLC	1/8+	932	492	NA	NA	NA	NA	NA	NA	NA
10*18795	I	5-23-4	GASTON FAMILY INVESTMENTS LLC	TH EXPLORATION, LLC	1/8+	959	502	NA	NA	NA	NA	NA	NA	NA
10*21217	I	5-23-4	KEITH JAY FISCHER AND DAWN M FISCHER	TH EXPLORATION, LLC	1/8+	952	643	NA	NA	NA	NA	NA	NA	NA
10*18994	I	5-23-4	SHIRLEY ANN DRAKE	TH EXPLORATION, LLC	1/8+	940	137	NA	NA	NA	NA	NA	NA	NA
10*19736	I	5-23-4	DOROTHY HLINKA	TH EXPLORATION, LLC	1/8+	944	571	NA	NA	NA	NA	NA	NA	NA
10*21425	I	5-23-4	ORIE N YOUNG AND BERNIE A YOUNG	TH EXPLORATION, LLC	1/8+	957	29	NA	NA	NA	NA	NA	NA	NA
10*21428	I	5-23-4	FRANCIS R SMITH AND ANNA M SMITH	TH EXPLORATION, LLC	1/8+	957	37	NA	NA	NA	NA	NA	NA	NA
10*21434	I	5-23-4	CATHERINE HUMMEL	TH EXPLORATION, LLC	1/8+	957	33	NA	NA	NA	NA	NA	NA	NA
10*21451	I	5-23-4	RICHARD RICH AND KAREN RICH	TH EXPLORATION, LLC	1/8+	954	254	NA	NA	NA	NA	NA	NA	NA
10*21452	I	5-23-4	KIMBERLY COX	TH EXPLORATION, LLC	1/8+	954	262	NA	NA	NA	NA	NA	NA	NA
10*21457	I	5-23-4	WARREN L COULTER AND ROSLINA A COULTER	TH EXPLORATION, LLC	1/8+	954	249	NA	NA	NA	NA	NA	NA	NA
10*21458	I	5-23-4	HUSTON A SMITH JR AND ANN C SMITH	TH EXPLORATION, LLC	1/8+	957	45	NA	NA	NA	NA	NA	NA	NA
10*21459	I	5-23-4	JAMES L CHURCH	TH EXPLORATION, LLC	1/8+	957	41	NA	NA	NA	NA	NA	NA	NA
10*21498	I	5-23-4	MABEL SHILLINGBURG AND CLIFFORD SHILLINGBURG	TH EXPLORATION, LLC	1/8+	954	258	NA	NA	NA	NA	NA	NA	NA
10*21500	I	5-23-4	MATTHEW COULTER AND SIMONE COULTER	TH EXPLORATION, LLC	1/8+	954	245	NA	NA	NA	NA	NA	NA	NA
10*21501	I	5-23-4	EUGENIA E HOUSER	TH EXPLORATION, LLC	1/8+	954	241	NA	NA	NA	NA	NA	NA	NA

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10*21502	I	5-23-4	DEBRA MURIN	TH EXPLORATION, LLC	1/8+	954	237	NA	NA	NA	NA	NA	NA
10*21503	I	5-23-4	DARLENE M DAVIS	TH EXPLORATION, LLC	1/8+	954	233	NA	NA	NA	NA	NA	NA
10*21626	I	5-23-4	CLARENCE RANDALL EMERY AND PAULA JEAN EMERY	TH EXPLORATION, LLC	1/8+	958	344	NA	NA	NA	NA	NA	NA
10*21631	I	5-23-4	FAYE CAMPBELL	TH EXPLORATION, LLC	1/8+	959	343	NA	NA	NA	NA	NA	NA
10*21632	I	5-23-4	JOHN ARLES EMERY	TH EXPLORATION, LLC	1/8+	959	339	NA	NA	NA	NA	NA	NA
10*21655	I	5-23-4	STANLEY GUSTELY	TH EXPLORATION, LLC	1/8+	959	335	NA	NA	NA	NA	NA	NA
10*21656	I	5-23-4	JOHN OBLOY AND JANET L OBLOY	TH EXPLORATION, LLC	1/8+	959	331	NA	NA	NA	NA	NA	NA
10*21657	I	5-23-4	RONALD J SALKOVICK JR & SANDRA SALKOVICK	TH EXPLORATION, LLC	1/8+	958	373	NA	NA	NA	NA	NA	NA
10*21813	I	5-23-4	STUART WHITE AND BETTY WHITE	TH EXPLORATION, LLC	1/8+	958	352	NA	NA	NA	NA	NA	NA
10*21815	I	5-23-4	JAMES NEAL EMERY AND RENEE R EMERY	TH EXPLORATION, LLC	1/8+	958	348	NA	NA	NA	NA	NA	NA
10*21816	I	5-23-4	CINDY GREEN AND LARRY GREEN	TH EXPLORATION, LLC	1/8+	958	356	NA	NA	NA	NA	NA	NA
10*21817	I	5-23-4	MARY LOU HLINKA AND RICHARD G HLINKA SR	TH EXPLORATION, LLC	1/8+	959	514	NA	NA	NA	NA	NA	NA
10*21819	I	5-23-4	MARY CATHERINE THOMS OTT	TH EXPLORATION, LLC	1/8+	958	360	NA	NA	NA	NA	NA	NA
10*21820	I	5-23-4	MARION DAVID OTT & JANICE L OTT	TH EXPLORATION, LLC	1/8+	959	506	NA	NA	NA	NA	NA	NA
10*21832	I	5-23-4	MARQUITA CLYBURN	TH EXPLORATION, LLC	1/8+	959	510	NA	NA	NA	NA	NA	NA
10*21948	I	5-23-4	BARBARA H COAKLEY	TH EXPLORATION, LLC	1/8+	960	66	NA	NA	NA	NA	NA	NA
10*21949	I	5-23-4	ROBIN ADAIR GUMP AND LOUIS M GUMP	TH EXPLORATION, LLC	1/8+	960	70	NA	NA	NA	NA	NA	NA
10*21951	I	5-23-4	CHARLES DOUGLAS LANE	TH EXPLORATION, LLC	1/8+	960	77	NA	NA	NA	NA	NA	NA

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10*21994	I	5-23-4	MELISSA L DARROW	TH EXPLORATION, LLC	1/8+	954	328	NA	NA	NA	NA	NA	NA
10*22026	I	5-23-4	KEVIN D CHURCH	TH EXPLORATION, LLC	1/8+	957	49	NA	NA	NA	NA	NA	NA
10*22013	I	5-23-4	CHARLES J KNOX	TH EXPLORATION, LLC	1/8+	966	112	NA	NA	NA	NA	NA	NA
10*22014	I	5-23-4	SHERMAN E KNOX JR	TH EXPLORATION, LLC	1/8+	966	108	NA	NA	NA	NA	NA	NA
10*22018	I	5-23-4	KATHLEEN ROBERTSON	TH EXPLORATION, LLC	1/8+	960	539	NA	NA	NA	NA	NA	NA
10*22027	I	5-23-4	STEPHEN C EMERY AND CATHY J EMERY	TH EXPLORATION, LLC	1/8+	954	310	NA	NA	NA	NA	NA	NA
10*22093	I	5-23-4	TODD LEARN AND KENDA LEARN	TH EXPLORATION, LLC	1/8+	954	314	NA	NA	NA	NA	NA	NA
10*22102	I	5-23-4	BONNIE LOU GRUBER	TH EXPLORATION, LLC	1/8+	954	302	NA	NA	NA	NA	NA	NA
10*22178	I	5-23-4	ANGELA AND WILLIAM R HENTHORN	TH EXPLORATION, LLC	1/8+	949	196	NA	NA	NA	NA	NA	NA
10*22128	I	5-23-4	BETTY PYSELL	TH EXPLORATION, LLC	1/8+	961	433	NA	NA	NA	NA	NA	NA
10*22144	I	5-23-4	VICKY AND DENNIS STRAUSS	TH EXPLORATION, LLC	1/8+	961	429	NA	NA	NA	NA	NA	NA
10*22165	I	5-23-4	DEBRA L LYSESKI AND GERALD A LYSESKI	TH EXPLORATION, LLC	1/8+	954	306	NA	NA	NA	NA	NA	NA
10*22181	I	5-23-4	BRIAN S AND CAROLYN SUE TAYLOR	TH EXPLORATION, LLC	1/8+	949	191	NA	NA	NA	NA	NA	NA
10*22779	I	5-23-4	STEVEN WADE	TH EXPLORATION, LLC	1/8+	968	424	NA	NA	NA	NA	NA	NA
10*22436	I	5-23-4	TESSEAN FAMILY REVOCABLE TRUST	TH EXPLORATION, LLC	1/8+	963	626	NA	NA	NA	NA	NA	NA
10*22443	I	5-23-4	GATHA CHAMBERS	TH EXPLORATION, LLC	1/8+	963	622	NA	NA	NA	NA	NA	NA
10*22503	I	5-23-4	KENNETH R AND DONNA K SHAW	TH EXPLORATION, LLC	1/8+	966	518	NA	NA	NA	NA	NA	NA
10*22505	I	5-23-4	JAMES D AND DONNA K DRAKE	TH EXPLORATION, LLC	1/8+	964	425	NA	NA	NA	NA	NA	NA

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10*22594	I	5-23-4	JAMES WADE	TH EXPLORATION, LLC	1/8+	965	481	NA	NA	NA	NA	NA	NA	NA
10*22609	I	5-23-4	KATHY JO CULLUM	TH EXPLORATION, LLC	1/8+	966	514	NA	NA	NA	NA	NA	NA	NA
10*22613	I	5-23-4	JEWEL L CAMPBELL	TH EXPLORATION, LLC	1/8+	966	510	NA	NA	NA	NA	NA	NA	NA
10*22809	I	5-23-4	MARGARET AND WILLIAM MCMURRAY	TH EXPLORATION, LLC	1/8+	972	54	NA	NA	NA	NA	NA	NA	NA
10*22812	I	5-23-4	JOSEPH F GOBLOWSKY	TH EXPLORATION, LLC	1/8+	968	428	NA	NA	NA	NA	NA	NA	NA
10*22861	I	5-23-4	LAURINE C AND EDGAR A CURTIS	TH EXPLORATION, LLC	1/8+	976	147	NA	NA	NA	NA	NA	NA	NA
10*17145	J	5-23-5	JAMES J. CAMPBELL BETTY J. CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	458	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC
10*17192	K	5-23-8	ROBERT J HENRY	CHESAPEAKE APPALACHIA LLC	1/8+	716	193	NA	29/325 Chesapeake Appalachia, LLC to 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 Titleholder LLC	19/624 SWN Exchange Titleholder LLC merge SWN Production Company LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	40/408 American Petroleum Partners Operating LLC to TH Exploration LLC
10*19722	K	5-23-8	MASTER MINERAL HOLDINGS I LP	AMERICAN PETROLEUM PARTNERS LLC	1/8+	912	105	NA	NA	NA	NA	NA	NA	40/408 American Petroleum Partners Operating LLC to TH Exploration LLC
10*17189	L	5-23-9.3	ROBERT J HENRY	CHESAPEAKE APPALACHIA LLC	1/8+	716	197	NA	NA	29/325 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, 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	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*19903	M	5-23-11.1	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*22441	M	5-23-11.1	APRIL ROSE POSTLETHWAIT	TH EXPLORATION, LLC	1/8+	963	646	NA	NA	NA	NA	NA	NA	NA
10*22510	M	5-23-11.1	DONNA YOHO	TH EXPLORATION, LLC	1/8+	964	432	NA	NA	NA	NA	NA	NA	NA
10*19652	M	5-23-11.1	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA
10*17195	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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

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10*17200	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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*14807	M	5-23-11.1	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*14809	M	5-23-11.1	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*14808	M	5-23-11.1	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*14786	M	5-23-11.1	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*14806	M	5-23-11.1	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*14796	M	5-23-11.1	KIMBERLY S. DENNY	GASTAR EXPLORATION USA, INC	1/8+	799	540	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	M	5-23-11.1	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

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10*22129	M	5-23-11.1	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA
10*22008	M	5-23-11.1	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA
10*22025	M	5-23-11.1	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA
10*14785	M	5-23-11.1	DAVID W. STRAUCH	GASTAR EXPLORATION USA, INC	1/8+	799	64	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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	M	5-23-11.1	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*18275	M	5-23-11.1	BETTY JEAN NEELY	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA
10*18366	M	5-23-11.1	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	M	5-23-11.1	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	M	5-23-11.1	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA
10*18379	M	5-23-11.1	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	M	5-23-11.1	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*19903	N	5-23-11.4	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*22441	N	5-23-11.4	APRIL ROSE POSTLETHWAIT	TH EXPLORATION, LLC	1/8+	963	646	NA	NA	NA	NA	NA	NA	NA
10*22510	N	5-23-11.4	DONNA YOHO	TH EXPLORATION, LLC	1/8+	964	432	NA	NA	NA	NA	NA	NA	NA

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10*22334	N	5-23-11.4	JOHN BRYANT	TH EXPLORATION, LLC	1/8+	962	540	NA	NA	NA	NA	NA	NA	NA
10*22718	N	5-23-11.4	WILLIAM R AND CONNIE RICHMOND	TH EXPLORATION, LLC	1/8+	963	389	NA	NA	NA	NA	NA	NA	NA
10*19662	N	5-23-11.4	CHESTNUT HOLDINGS INC	TH EXPLORATION, LLC	1/8+	949	311	NA	NA	NA	NA	NA	NA	NA
10*17195	N	5-23-11.4	PATRICIA HARTMAN	GASTAR EXPLORATION USA, INC	1/8+	695	317	27/311 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	33/110 Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	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	N	5-23-11.4	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	N	5-23-11.4	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA, INC	1/8+	695	313	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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	N	5-23-11.4	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA, INC	1/8+	695	315	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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	N	5-23-11.4	STEPHANIE L. HALL	GASTAR EXPLORATION USA, INC	1/8+	697	156	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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	N	5-23-11.4	DENISE A GALE	GASTAR EXPLORATION USA, INC	1/8+	697	395	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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	N	5-23-11.4	JANE GALE	GASTAR EXPLORATION USA, INC	1/8+	697	385	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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	N	5-23-11.4	BARRY RAY MOORE	GASTAR EXPLORATION USA, INC	1/8+	697	387	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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	N	5-23-11.4	CLARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA, INC	1/8+	697	391	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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	N	5-23-11.4	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA, INC	1/8+	697	399	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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	N	5-23-11.4	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA, INC	1/8+	697	389	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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	N	5-23-11.4	MARILYN NOEL	GASTAR EXPLORATION USA, INC	1/8+	697	393	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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	N	5-23-11.4	GARY WAYNE ZESIGER & VICKIE ZESIGER	GASTAR EXPLORATION USA, INC	1/8+	697	397	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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	N	5-23-11.4	DARRELL NEWLAND LYDIA NEWLAND	GASTAR EXPLORATION USA, INC	1/8+	697	158	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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*17213	N	5-23-11.4	CAROL DEEN GARDNER	GASTAR EXPLORATION USA, INC	1/8+	697	154	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	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*19652	N	5-23-11.4	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA	NA
10*19903	N	5-23-11.4	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA	NA
10*21073	N	5-23-11.4	ARDITH R ROSE AND TOMMY E ROSE	TH EXPLORATION, LLC	1/8+	951	608	NA	NA	NA	NA	NA	NA	NA	NA
10*21944	N	5-23-11.4	JILL A BECK	TH EXPLORATION, LLC	1/8+	960	101	NA	NA	NA	NA	NA	NA	NA	NA
10*22434	N	5-23-11.4	EDWIN NELSON WOOD	TH EXPLORATION, LLC	1/8+	963	637	NA	NA	NA	NA	NA	NA	NA	NA
10*22585	N	5-23-11.4	CYNTHIA L CHICK	TH EXPLORATION, LLC	1/8+	966	102	NA	NA	NA	NA	NA	NA	NA	NA
10*14969	N	5-23-11.4	REBECCA S WORD	GASTAR EXPLORATION, INC	1/8+	872	219	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14970	N	5-23-11.4	GRACE EXLINE	GASTAR EXPLORATION, INC	1/8+	872	623	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*18541	N	5-23-11.4	PATRICK P MCHENRY	TH EXPLORATION, LLC	1/8+	933	649	NA	NA	NA	NA	NA	NA	NA	NA
10*18818	N	5-23-11.4	LUCILLE R MCHENRY	TH EXPLORATION, LLC	1/8+	937	624	NA	NA	NA	NA	NA	NA	NA	NA
10*19732	N	5-23-11.4	CARL M MCHENRY AND PAMELA MCHENRY	TH EXPLORATION, LLC	1/8+	944	469	NA	NA	NA	NA	NA	NA	NA	NA
10*19996	N	5-23-11.4	CHARLES D WOOD	TH EXPLORATION, LLC	1/8+	947	589	NA	NA	NA	NA	NA	NA	NA	NA
10*21074	N	5-23-11.4	MALCOLM E WOOD AND JOAN J WOOD	TH EXPLORATION, LLC	1/8+	951	610	NA	NA	NA	NA	NA	NA	NA	NA
10*21174	N	5-23-11.4	SHAWN M WOOD	TH EXPLORATION, LLC	1/8+	952	190	NA	NA	NA	NA	NA	NA	NA	NA
10*22025	N	5-23-11.4	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA	NA
10*14786	N	5-23-11.4	TWILA ORA WHIPKEY	GASTAR EXPLORATION USA, INC	1/8+	799	61	NA	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*14785	N	5-23-11.4	DAVID W. STRAUCH	GASTAR EXPLORATION USA, INC	1/8+	799	64	NA	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*14792	N	5-23-11.4	TIMOTHY YOHO	GASTAR EXPLORATION USA, INC	1/8+	799	536	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*14796	N	5-23-11.4	KIMBERLY S. DENNY	GASTAR EXPLORATION USA, INC	1/8+	799	540	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	N	5-23-11.4	DONNA VIVIAN YOHO	GASTAR EXPLORATION USA, INC	1/8+	809	558	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	N	5-23-11.4	JANICE N HAUDENSCHILT	GASTAR EXPLORATION USA, INC	1/8+	809	555	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	N	5-23-11.4	DEWEY A. MILICIA	GASTAR EXPLORATION USA, INC	1/8+	809	549	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	N	5-23-11.4	HAROLD C. SIMMONS	GASTAR EXPLORATION USA, INC	1/8+	803	148	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	N	5-23-11.4	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION USA, INC	1/8+	809	552	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	N	5-23-11.4	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION USA, INC	1/8+	809	546	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	N	5-23-11.4	DENISE ANN GALE	GASTAR EXPLORATION USA, INC	1/8+	815	224	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*14813	N	5-23-11.4	DEBRA JANE GALE	GASTAR EXPLORATION USA, INC	1/8+	818	568	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*14822	N	5-23-11.4	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	N	5-23-11.4	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*17822	N	5-23-11.4	ANTOINE E GERAUD	TH EXPLORATION, LLC	1/8+	943	560	NA	NA	NA	NA	NA	NA
10*18114	N	5-23-11.4	DARRELL NEWLAND	TH EXPLORATION, LLC	1/8+	927	66	NA	NA	NA	NA	NA	NA
10*18115	N	5-23-11.4	DONALD R NEWLAND AND SUZANNE NEWLAND	TH EXPLORATION, LLC	1/8+	927	73	NA	NA	NA	NA	NA	NA
10*18369	N	5-23-11.4	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA
10*18370	N	5-23-11.4	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA
10*18379	N	5-23-11.4	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA

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10*19486	N	5-23-11.4	BARBARA ANN MAYNARD	TH EXPLORATION, LLC	1/8+	941	229	NA	NA	NA	NA	NA	NA	NA
10*19540	N	5-23-11.4	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*19543	N	5-23-11.4	ROBERT I BONAR SR	TH EXPLORATION, LLC	1/8+	942	61	NA	NA	NA	NA	NA	NA	NA
10*19640	N	5-23-11.4	MARGARET F RICHMOND	TH EXPLORATION, LLC	1/8+	944	120	NA	NA	NA	NA	NA	NA	NA
10*19641	N	5-23-11.4	BRADFORD D LOWERY & DEBORAH BRADFORD	TH EXPLORATION, LLC	1/8+	944	122	NA	NA	NA	NA	NA	NA	NA
10*19650	N	5-23-11.4	CLAUDIA LOWERY MALLOY	TH EXPLORATION, LLC	1/8+	944	99	NA	NA	NA	NA	NA	NA	NA
10*19657	N	5-23-11.4	JANET LEE SPARKS	TH EXPLORATION, LLC	1/8+	964	440	NA	NA	NA	NA	NA	NA	NA
10*19858	N	5-23-11.4	JAMES MICHAEL YOHO	TH EXPLORATION, LLC	1/8+	960	188	NA	NA	NA	NA	NA	NA	NA
10*21419	N	5-23-11.4	DAPHNE HUFFMAN AND CHARLES HUFFMAN	TH EXPLORATION, LLC	1/8+	957	59	NA	NA	NA	NA	NA	NA	NA
10*21436	N	5-23-11.4	CECILIA D NEWLAND	TH EXPLORATION, LLC	1/8+	957	55	NA	NA	NA	NA	NA	NA	NA
10*21439	N	5-23-11.4	M VIRGINIA & EDWARD C MARSH	TH EXPLORATION, LLC	1/8+	957	53	NA	NA	NA	NA	NA	NA	NA
10*21431	N	5-23-11.4	GARY WAYNE ZESIGER & VICKIE ZESIGER	TH EXPLORATION, LLC	1/8+	957	57	NA	NA	NA	NA	NA	NA	NA
10*21469	N	5-23-11.4	KIMBERLY S DENNY AND JAMES E DENNY	TH EXPLORATION, LLC	1/8+	957	244	NA	NA	NA	NA	NA	NA	NA
10*21471	N	5-23-11.4	RICHARD ROSS WILSON	TH EXPLORATION, LLC	1/8+	960	190	NA	NA	NA	NA	NA	NA	NA
10*21620	N	5-23-11.4	ROBERT CRAIG MONTGOMERY AND CYNTHIA R MONTGOMERY	TH EXPLORATION, LLC	1/8+	959	496	NA	NA	NA	NA	NA	NA	NA
10*21621	N	5-23-11.4	MARILYN NOEL	TH EXPLORATION, LLC	1/8+	959	494	NA	NA	NA	NA	NA	NA	NA
10*21658	N	5-23-11.4	CLARENCE RICHARD ZESIGER & MARY ZESIGER	TH EXPLORATION, LLC	1/8+	959	490	NA	NA	NA	NA	NA	NA	NA
10*21659	N	5-23-11.4	DEBORAH BLOUGH	TH EXPLORATION, LLC	1/8+	958	392	NA	NA	NA	NA	NA	NA	NA

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10*21660	N	5-23-11.4	PAMELA L DRAZIC AND JEFFREY DRAZIC	TH EXPLORATION, LLC	1/8+	958	390	NA	NA	NA	NA	NA	NA	NA
10*21830	N	5-23-11.4	MARISSA MASON	TH EXPLORATION, LLC	1/8+	960	200	NA	NA	NA	NA	NA	NA	NA
10*22008	N	5-23-11.4	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA
10*21831	N	5-23-11.4	MATTHEW MASON	TH EXPLORATION, LLC	1/8+	966	122	NA	NA	NA	NA	NA	NA	NA
10*21834	N	5-23-11.4	GEORGE DANIEL KRUGER	TH EXPLORATION, LLC	1/8+	960	204	NA	NA	NA	NA	NA	NA	NA
10*22129	N	5-23-11.4	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA
10*21947	N	5-23-11.4	WALLACE LYNN WENDEL	TH EXPLORATION, LLC	1/8+	965	59	NA	NA	NA	NA	NA	NA	NA
10*22007	N	5-23-11.4	DEBORAH K KLIMASZEWSKI AND FRANK KLIMASZEWSKI	TH EXPLORATION, LLC	1/8+	959	492	NA	NA	NA	NA	NA	NA	NA
10*22031	N	5-23-11.4	PHILIP YOHO AND PATRICIA YOHO	TH EXPLORATION, LLC	1/8+	960	535	NA	NA	NA	NA	NA	NA	NA
10*22032	N	5-23-11.4	JOANNE E RAY	TH EXPLORATION, LLC	1/8+	960	537	NA	NA	NA	NA	NA	NA	NA
10*22106	N	5-23-11.4	BARRY RAY MOORE	TH EXPLORATION, LLC	1/8+	954	643	NA	NA	NA	NA	NA	NA	NA
10*22137	N	5-23-11.4	CONNIE L NEELY	TH EXPLORATION, LLC	1/8+	961	466	NA	NA	NA	NA	NA	NA	NA
10*22285	N	5-23-11.4	DONALD J AND SANDY L WILSON	TH EXPLORATION, LLC	1/8+	962	193	NA	NA	NA	NA	NA	NA	NA
10*22561	N	5-23-11.4	MARY ROSE YOHO	TH EXPLORATION, LLC	1/8+	968	200	NA	NA	NA	NA	NA	NA	NA
10*22562	N	5-23-11.4	HAROLD C SIMMONS	TH EXPLORATION, LLC	1/8+	966	100	NA	NA	NA	NA	NA	NA	NA
10*22563	N	5-23-11.4	KIMBERLY D STRAUCH	TH EXPLORATION, LLC	1/8+	966	522	NA	NA	NA	NA	NA	NA	NA
10*14807	N	5-23-11.4	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*14786	N	5-23-11.4	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

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10*14796	N	5-23-11.4	KIMBERLY S. DENNY	GASTAR EXPLORATION USA, INC	1/8+	799	540	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	N	5-23-11.4	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*14809	N	5-23-11.4	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*14808	N	5-23-11.4	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*14810	N	5-23-11.4	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*22008	N	5-23-11.4	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA
10*22025	N	5-23-11.4	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA
10*22129	N	5-23-11.4	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA
10*14785	N	5-23-11.4	DAVID W. STRAUCH	GASTAR EXPLORATION USA, INC	1/8+	799	64	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	N	5-23-11.4	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	N	5-23-11.4	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	N	5-23-11.4	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	N	5-23-11.4	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	N	5-23-11.4	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*18275	N	5-23-11.4	BETTY JEAN NEELY	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA
10*18366	N	5-23-11.4	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	N	5-23-11.4	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	N	5-23-11.4	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA

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10*18379	N	5-23-11.4	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	N	5-23-11.4	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*14785	O	5-23-11.3	DAVID W. STRAUCH	GASTAR EXPLORATION USA, INC	1/8+	799	64	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	O	5-23-11.3	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	O	5-23-11.3	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	O	5-23-11.3	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	O	5-23-11.3	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	O	5-23-11.3	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*18275	O	5-23-11.3	BETTY JEAN NEELY	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA
10*18366	O	5-23-11.3	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	O	5-23-11.3	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	O	5-23-11.3	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA
10*18379	O	5-23-11.3	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	O	5-23-11.3	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*14808	O	5-23-11.3	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*14806	O	5-23-11.3	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	O	5-23-11.3	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*14809	O	5-23-11.3	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

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10*14786	O	5-23-11.3	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*14810	O	5-23-11.3	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*14796	O	5-23-11.3	KIMBERLY S. DENNY	GASTAR EXPLORATION USA, INC	1/8+	799	540	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*22129	O	5-23-11.3	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA
10*22008	O	5-23-11.3	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA
10*22025	O	5-23-11.3	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA
10*17195	O	5-23-11.3	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	41/256 SWN Production Company, LLC to TH Exploration, LLC	41/238 Statoil USA Onshore Properties Inc. to TH Exploration, LLC
10*17196	O	5-23-11.3	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	41/256 SWN Production Company, LLC to TH Exploration, LLC	41/238 Statoil USA Onshore Properties Inc. to TH Exploration, LLC
10*17197	O	5-23-11.3	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	O	5-23-11.3	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	O	5-23-11.3	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	O	5-23-11.3	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	O	5-23-11.3	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	O	5-23-11.3	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	O	5-23-11.3	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	O	5-23-11.3	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	O	5-23-11.3	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	O	5-23-11.3	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

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10*17211	O	5-23-11.3	GARY WAYNE ZESIGER & VICKIE ZESIGER	GASTAR EXPLORATION USA, INC	1/8+	697	397	23/353 Gaster Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gaster 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	O	5-23-11.3	DARRELL NEWLAND LYDIA NEWLAND	GASTAR EXPLORATION USA, INC	1/8+	697	158	23/353 Gaster Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gaster 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	O	5-23-11.3	CAROL DEEN GARDNER	GASTAR EXPLORATION USA, INC	1/8+	697	154	23/353 Gaster Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gaster 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*19652	O	5-23-11.3	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA
10*22441	O	5-23-11.3	APRIL ROSE POSTLETHWAIT	TH EXPLORATION, LLC	1/8+	963	646	NA	NA	NA	NA	NA	NA	NA
10*22510	O	5-23-11.3	DONNA YOHO	TH EXPLORATION, LLC	1/8+	964	432	NA	NA	NA	NA	NA	NA	NA
10*19903	O	5-23-11.3	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*14785	P	5-23-11.5	DAVID W. STRAUCH	GASTAR EXPLORATION USA, INC	1/8+	799	64	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc to Gaster Exploration, Inc	36/9 Gaster Exploration, Inc. to TH Exploration II, LLC
10*14797	P	5-23-11.5	ORVILLE YOUNG	GASTAR EXPLORATION USA, INC	1/8+	800	598	NA	NA	NA	NA	NA	21/41 Gaster Exploration USA Inc to Gaster Exploration, Inc	36/9 Gaster Exploration, Inc. to TH Exploration II, LLC
10*14814	P	5-23-11.5	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION, INC	1/8+	827	537	NA	NA	NA	NA	NA	NA	36/9 Gaster Exploration, Inc. to TH Exploration II, LLC
10*14815	P	5-23-11.5	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION, INC	1/8+	827	535	NA	NA	NA	NA	NA	NA	36/9 Gaster Exploration, Inc. to TH Exploration II, LLC
10*14822	P	5-23-11.5	ONWARD E BURGE TRUST	GASTAR EXPLORATION, INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	36/9 Gaster Exploration, Inc. to TH Exploration II, LLC
10*14823	P	5-23-11.5	SARAH L BURGE TRUST	GASTAR EXPLORATION, INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	36/9 Gaster Exploration, Inc. to TH Exploration II, LLC
10*18275	P	5-23-11.5	BETTY JEAN NEELY	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA
10*18366	P	5-23-11.5	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	P	5-23-11.5	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	P	5-23-11.5	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA
10*18379	P	5-23-11.5	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

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10*19540	P	5-23-11.5	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*14807	P	5-23-11.5	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*22129	P	5-23-11.5	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459			NA	NA	NA	NA	NA
10*14808	P	5-23-11.5	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	P	5-23-11.5	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*14806	P	5-23-11.5	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*14786	P	5-23-11.5	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*14810	P	5-23-11.5	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*14796	P	5-23-11.5	KIMBERLY S. DENNY	GASTAR EXPLORATION USA, INC	1/8+	799	540	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*22025	P	5-23-11.5	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA
10*22008	P	5-23-11.5	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA
10*17195	P	5-23-11.5	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	P	5-23-11.5	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	P	5-23-11.5	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	P	5-23-11.5	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	P	5-23-11.5	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	P	5-23-11.5	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	P	5-23-11.5	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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Lease No.	Tags	Parcel	Lessor	Lessee	Royalty	Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*17203	P	5-23-11.5	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	P	5-23-11.5	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	P	5-23-11.5	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	P	5-23-11.5	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	P	5-23-11.5	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	P	5-23-11.5	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	P	5-23-11.5	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	P	5-23-11.5	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*19652	P	5-23-11.5	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA
10*22441	P	5-23-11.5	APRIL ROSE POSTLETHWAIT	TH EXPLORATION, LLC	1/8+	963	646	NA	NA	NA	NA	NA	NA	NA
10*22510	P	5-23-11.5	DONNA YOHO	TH EXPLORATION, LLC	1/8+	964	432	NA	NA	NA	NA	NA	NA	NA
10*19903	P	5-23-11.5	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*14785	Q	5-25-18	DAVID W. STRAUCH	GASTAR EXPLORATION USA, INC	1/8+	799	64	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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

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10*18275	Q	5-25-18	BETTY JEAN NEELY	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA
10*18366	Q	5-25-18	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	Q	5-25-18	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	Q	5-25-18	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA
10*18379	Q	5-25-18	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	Q	5-25-18	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*22129	Q	5-25-18	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA
10*14809	Q	5-25-18	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	Q	5-25-18	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*14786	Q	5-25-18	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*14796	Q	5-25-18	KIMBERLY S. DENNY	GASTAR EXPLORATION USA, INC	1/8+	799	540	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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*22008	Q	5-25-18	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA
10*22025	Q	5-25-18	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA
10*17195	Q	5-25-18	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	41/256 SWN Production Company, LLC to TH Exploration, LLC	41/238 Statoil USA Onshore Properties Inc. to TH Exploration, LLC
10*17196	Q	5-25-18	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

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Lease No.	Tags	Parcel	Lessor	Lessee	Royalty	Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*17197	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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	Q	5-25-18	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*19652	Q	5-25-18	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA
10*22441	Q	5-25-18	APRIL ROSE POSTLETHWAIT	TH EXPLORATION, LLC	1/8+	963	646	NA	NA	NA	NA	NA	NA	NA
10*22510	Q	5-25-18	DONNA YOHO	TH EXPLORATION, LLC	1/8+	964	432	NA	NA	NA	NA	NA	NA	NA
10*19903	Q	5-25-18	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*19903	R	5-25-17	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA

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Lease No.	Tags	Parcel	Lessor	Lessee	Royalty	Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*14810	R	5-25-17	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*22025	R	5-25-17	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA
10*14809	R	5-25-17	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*14786	R	5-25-17	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*14796	R	5-25-17	KIMBERLY S. DENNY	GASTAR EXPLORATION USA, INC	1/8+	799	540	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	R	5-25-17	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	R	5-25-17	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	R	5-25-17	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*22129	R	5-25-17	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA
10*22008	R	5-25-17	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA
10*14785	R	5-25-17	DAVID W. STRAUCH	GASTAR EXPLORATION USA, INC	1/8+	799	64	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	R	5-25-17	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	R	5-25-17	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	R	5-25-17	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	R	5-25-17	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	R	5-25-17	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*18275	R	5-25-17	BETTY JEAN NEELY	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA
10*18366	R	5-25-17	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA

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Lease No.	Tags	Parcel	Lessor	Lessee	Royalty	Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
10*18369	R	5-25-17	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	R	5-25-17	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA
10*18379	R	5-25-17	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	R	5-25-17	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA

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STATE OF TEXAS §
§ SS
COUNTY OF TARRANT §

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

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

FURTHER, AFFIANT SAITH NOT.

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

David D. Kalish
Affiant: David D. Kalish

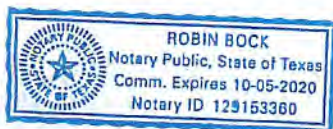
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Jan Pest
MARSHALL County 03:44:28 PM
Instrument No 1416299
Date Recorded 10/19/2016
Document Type MIS
Pages Recorded 1
Book-Page 28-62
Recording Fee \$5.00
Additional \$6.00

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

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



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

ASSIGNMENT AND CONVEYANCE

This Assignment and Conveyance (this "*Assignment*") is from STATOIL USA ONSHORE PROPERTIES INC., a Delaware corporation ("*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

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(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

11/16/2018



September 6, 2018

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

Subject: **Permit Modification Request** for Hillrock 4HM API # 47-051-02055
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

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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