



west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Tuesday, October 5, 2021
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

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

Re: Permit Modification Approval for MCMASTERS N-11HU
47-051-02317-00-00

Extending Lateral 1,872 ft.

TUG HILL OPERATING, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.


James A. Martin
Chief

Operator's Well Number: MCMASTERS N-11HU
Farm Name: ROBERT L. SHIELDS, ET AL
U.S. WELL NUMBER: 47-051-02317-00-00
Horizontal 6A New Drill
Date Modification Issued: 10/05/2021

Promoting a healthy environment.

10/08/2021

PERMIT CONDITIONS

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

CONDITIONS

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

API Number: _____

PERMIT CONDITIONS

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

10/08/2021



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-414-1239

Randall M. Albert, Chairman
dep.wv.gov

September 30, 2021

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

RE: Application for Deep Well Permit – API #47-051-02317 Modification

COMPANY: Tug Hill Operating, LLC

FARM: Robert L. Shields, et al

McMasters N-11HU

COUNTY: Marshall

DISTRICT: Franklin

QUAD: Powhatan Point

The deep well review of the application for the above company is Approved to drill to Trenton for Point Pleasant completion.

The applicant has complied with the provision of Chapter 22C-9, of the Code of West Virginia, nineteen hundred and thirty-one (1931), as amended, Oil and Gas Conservation Commission as follows:

1. Comments to Notice of Deviation filed? No.
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: ****yes**
4. Provided a plat showing that the productive interval of the well meets the requirements of the Rules of the Commission W. Va. C.S.R. § 39-1-4.2.

**Corley N-9HU 47-051-01983; Corley N-10HU 47-051-01998; Burch Ridge S-7HU 47-051-02194; Burch Ridge S-6HU 47-051-02193; Blake N-10HU 47-051-02204; Blake N-11HU 47-051-02205; Blake N-9HU 47-051-02203; Woodford 7HU 47-051-02147; Woodford 8HU 47-051-02149; Woodford 10HU 47-051-02152; Woodford 6HU 47-051-02143; Woodford 9HU 47-051-02150; Blake U-7H 47-051-01766; McMasters N-12HU 47-051-02316; McMasters N-13HU 47-051-02332; McMasters N-14HU 47-051-02333; McMasters N-15HU 47-051-02334; McMasters S-16HU 47-051-02337; McMasters S-17HU 47-051-02338; McMasters S-18HU 47-051-02339; McMasters S-19HU 47-051-02340; McMasters S-20HU 47-051-02341; Armstrong 1N-14HU 47-051-02260; Armstrong 1S-12HU 47-051-02258; Armstrong 1S-10HU 47-051-02256; Armstrong 1S-11HU 47-051-02257; Armstrong 1N-13HU 47-051-02259

10/08/2021

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

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

2) Operator's Well Number: McMasters N-11HU Well Pad Name: Shields

3) Farm Name/Surface Owner: Robert L. Shield, et al Public Road Access: Burch Ridge Road - CR 29

4) Elevation, current ground: 1,206' Elevation, proposed post-construction: 1,206'

5) Well Type (a) Gas Oil Underground Storage

Other _____

(b) If Gas Shallow _____ Deep

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s): Point Pleasant is the target formation at a depth of 11,104' - 11,221', thickness of 117' and anticipated pressure of approx. 7,500 psi. *Bony Step 7-21-21*

8) Proposed Total Vertical Depth: 11,371'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 29,038'

11) Proposed Horizontal Leg Length: 17,172.54'

12) Approximate Fresh Water Strata Depths: 70; 802'

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

14) Approximate Saltwater Depths: 1,306'

15) Approximate Coal Seam Depths: Sewickley Coal - 701' and Pittsburgh Coal - 796'

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

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

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

RECEIVED
Office of Oil and Gas
AUG 19 2021
WV Department of
Environmental Protection
10/08/2021

18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120' ✓	120'	259FT^3(CTS)
Fresh Water/Coal	20"	NEW	J55	106.5#	900' ✓	900'	1,463FT^3(CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2,597' ✓	2,597'	1,833FT^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,208' ✓	10,208'	3,326FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	29,038' ✓	29,038'	6,826FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		10'962'	
Liners							

B.S. 7-21-21

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30#	36#	1.0	2,333	1,866	CLASS A	1.2
Fresh Water	20"	26#	.5	2,410	1,928	SEE #24	1.2
Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.33
Production	5 1/2"	8 1/2"	.415	16,510	13,208	SEE #24	1.17/1.19
Tubing	2 7/8"			14,530	11,624		
Liners							

PACKERS

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

RECEIVED
 Office of Oil and Gas
 AUG 19 2021
 WV Department of
 Environmental Protection
 Page 2 of 3
 10/08/2021

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

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP (10,462'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform DBL from 60 deg to surface, make cleanout run, and stimulate.

B.S. 7-21-21

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

Well to be completed with approximately 43,000,000 lb. proppant and 775,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 17.76 acres

22) Area to be disturbed for well pad only, less access road (acres): 5.84 acres ✓

23) Describe centralizer placement for each casing string:

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

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

Sfc - Premium NE-1 + 2% CaCl; Int1 - Premium NE-1 + 1.5% CaCL + Flake; Int2 - Lead: Premium NE-1 + 5% BA-90 + .85% R-3 + 3% KCl + .75 gals/100sk FP-13L + 1% MPA-170 Tail: Premium NE-1 + .1% R-3 + 5% KCl + 1% CD-32 + .4% FL-52 + 2% ASA-301 + .6% Sodium Metasilicate; Kick Plug - Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L; Prod - Lead: 50:50 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .75 gal/100sk FP-13L Tail: 25:75 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .375 gal/100sk FP-13L

25) Proposed borehole conditioning procedures:

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

RECEIVED
Office of Oil and Gas
AUG 19 2021
WV Department of
Environmental Protection
Page 3 of 3
10/08/2021

*Note: Attach additional sheets as needed.

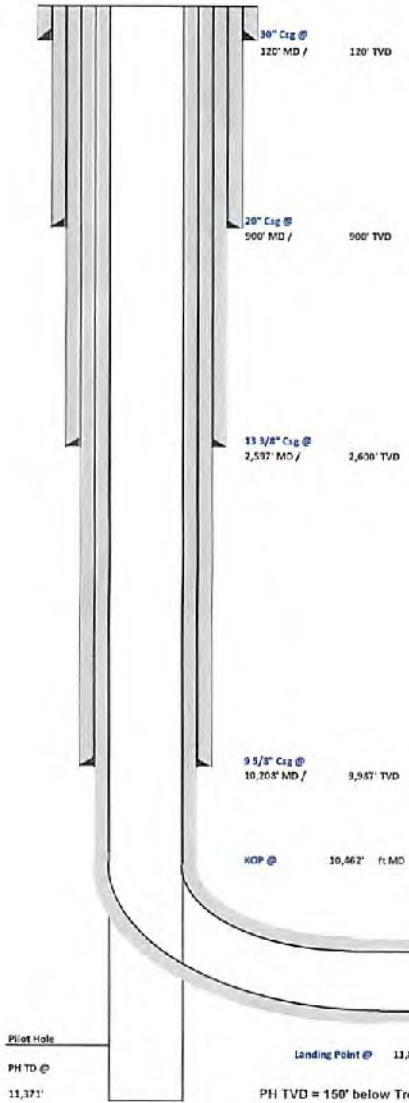


WELL NAME: McMasters N-13HU
 STATE: WV COUNTY: Marshall
 DISTRICT: Franklin
 DF Elev: 1,206' GL Elev: 1,206'
 TD: 29,038'
 TH Latitude: 39.760099
 TH Longitude: -80.78756
 BH Latitude: 39.79913
 BH Longitude: -80.825009

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	802'
Sewickley Coal	702'
Pittsburgh Coal	795'
Big Lane	1,578'
Berea	2,516'
Tully	6,353'
Marcellus	6,435'
Onondaga	6,485'
Salina	7,174'
Lockport	8,183'
Utica	10,858'
Point Pleasant	11,104'
Landing Depth	11,152'
Trenton	11,221'
Pilot Hole TD	11,371'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	26	20	900'	900'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,597'	2,600'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,238'	9,987'	47	HPP110	Surface
Production	8 1/2	5 1/2	29,038'	10,851'	23	HCP110	Surface

CEMENT SUMMARY			DRILLING DETAILS		
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,576	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	1,987	A	15	Air	1 Centralizer every other ft
Intermediate 2	2,822	A	14.5	Air	1 Centralizer every other ft
Production	6,102	A	15	Air / SOB M	1 every other joint in lateral; 1 per joint in curve; 1 every other ft to sfc



B.S. 7-21-21

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

Lateral TD @ 29,038' R MD
 10,851' R TVD

Landing Point @ 11,858 MD / 11,152' TVD
 PH TD = 150' below Trenton Top

Pilot Hole
 PH TD @
 11,371'



Tug Hill Operating, LLC Casing and Cement Program

McMasters N-11HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	900'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,597'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,208'	CTS
Production	5 1/2"	HCP110	8 1/2"	29,038'	CTS

Cement

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

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

Intermediate 2: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.99

Production: 50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 15.2ppg, Y = 1.18

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

10/08/2021



Well: **McMasters N-11 HU (slot D)**
 Site: **McMasters Shields**
 Project: **Marshall County, West Virginia**
 Design: **rev4**

West(-)/East(+) (3200 ft/in)

SECTION DETAILS Rig:

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	1550.00	3.00	250.00	1649.93	-1.34	-3.89	2.00	250.000	1.12	Begin 2°/100' build/turn
4	1733.80	4.25	232.00	1733.56	-4.00	-8.20	2.00	-51.536	1.68	Begin 4.25° tangent
5	2903.45	4.25	232.00	2900.00	-57.37	-76.50	0.00	0.000	-0.38	Begin 2°/100' build
6	3190.95	10.00	232.00	3185.16	-79.32	-104.59	2.00	0.000	-1.23	Begin 10.00° tangent
7	3815.26	10.00	232.00	3800.00	-146.05	-190.02	0.00	0.000	-3.81	Begin 2°/100' turn
8	3862.14	10.00	226.60	3846.16	-151.36	-196.19	2.00	-92.659	-4.39	Begin 10.00° tangent
9	6658.47	10.00	226.60	6600.00	-485.00	-548.96	0.00	0.000	-51.58	Begin 2°/100' build
10	7047.31	17.78	226.51	6977.18	-549.07	-816.76	2.00	0.020	-72.55	Begin 17.78° tangent
11	10461.50	17.78	226.51	10228.45	-1263.18	-1374.27	0.00	0.000	-195.16	Begin 6°/100' build/turn
12	11333.58	50.00	316.81	10976.56	-1101.59	-1724.24	6.00	104.550	144.95	Begin 8°/100' build/turn
13	11898.34	91.00	330.16	11152.00	-701.59	-2010.88	8.00	19.873	636.98	Begin 91.00° lateral
14	29037.70	91.00	330.16	10851.00	14189.51	-10552.04	0.00	0.00017682.98		PBHL/TD 29037.69 MD 10851.00 TVD

Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD93 West Virginia - HARN
 Ellipsoid: GRS 1980
 Zone: Zone 17N (84 W to 78 W)

System Datum: Mean Sea Level
 Depth Reference: CL @ 1206.00ft

Northing: 14439448.43
 Easting: 1790118.39
 Latitude: 39.76909900
 Longitude: -80.78756000

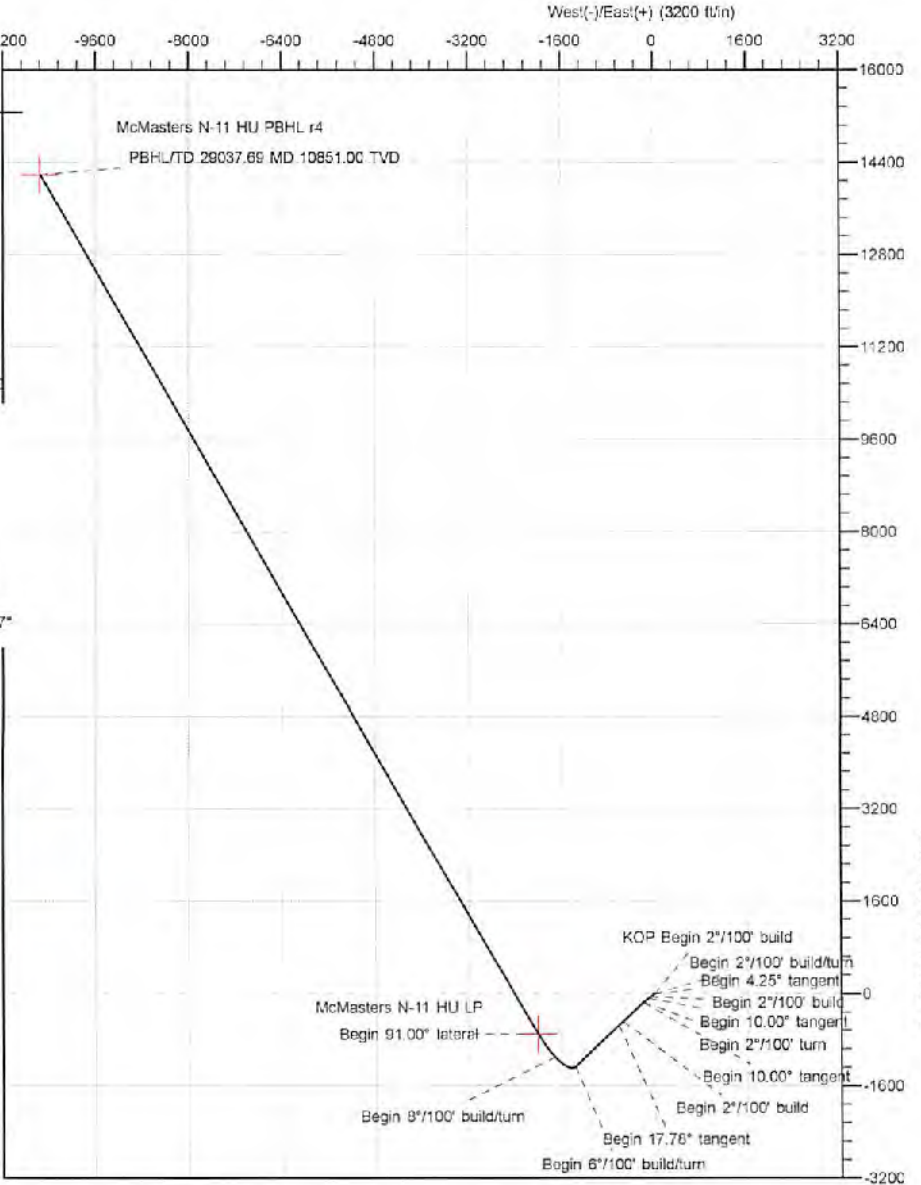
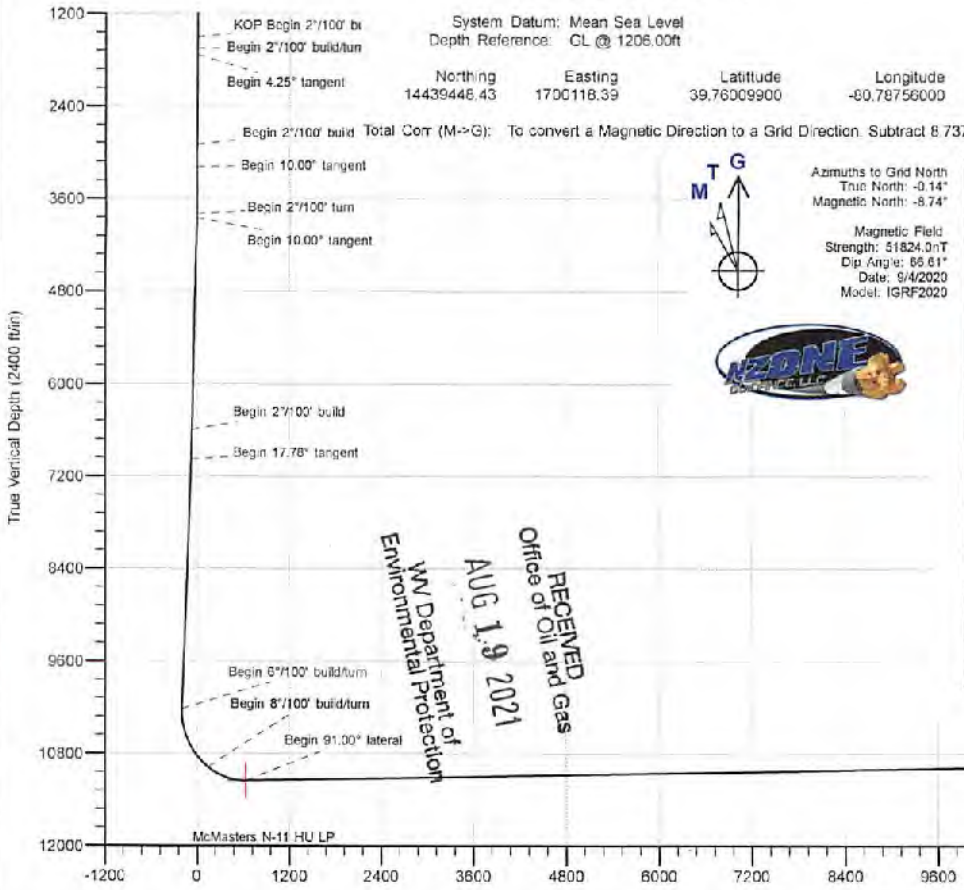
Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction. Subtract 8.73°



Magentic Field:
 Strength: 51824.0nT
 Dip Angle: 65.61°
 Date: 9/4/2020
 Model: IGRF2020



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



Vertical Section at 323.36° (2400 ft/in)



Planning Report

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well McMasters N-11 HU (slot D)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1206.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1206.00ft
Site:	McMasters Shields	North Reference:	Grid
Well:	McMasters N-11 HU (slot D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev4		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,650.00	3.00	250.00	1,649.93	-1.34	-3.69	2.00	2.00	0.00	250.000	
1,733.80	4.25	232.00	1,733.56	-4.00	-8.20	2.00	1.49	-21.48	-51.536	
2,903.45	4.25	232.00	2,900.00	-57.37	-76.50	0.00	0.00	0.00	0.000	
3,160.95	10.00	232.00	3,185.16	-79.32	-104.59	2.00	2.00	0.00	0.000	
3,815.28	10.00	232.00	3,800.00	-146.06	-190.02	0.00	0.00	0.00	0.000	
3,862.14	10.00	226.60	3,846.16	-151.36	-196.19	2.00	0.00	-11.52	-92.659	
6,658.47	10.00	226.60	6,600.00	-485.00	-548.99	0.00	0.00	0.00	0.000	
7,047.31	17.78	226.61	6,977.18	-549.07	-616.76	2.00	2.00	0.00	0.020	
10,461.60	17.78	226.61	10,228.45	-1,265.18	-1,374.27	0.00	0.00	0.00	0.000	
11,333.58	50.00	316.81	10,976.59	-1,101.59	-1,724.24	6.00	3.70	10.34	104.550	
11,868.34	91.00	330.16	11,152.00	-701.59	-2,010.88	8.00	7.67	2.50	19.873	
29,037.70	91.00	330.16	10,851.00	14,189.51	-10,552.04	0.00	0.00	0.00	0.000	McMasters N-11 HU F

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



Planning Report

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: McMasters Shields
 Well: McMasters N-11 HU (slot D)
 Wallbore: Original Hole
 Design: rev4

Local Co-ordinate Reference: Well McMasters N-11 HU (slot D)
 TVD Reference: GL @ 1206.00ft
 MD Reference: GL @ 1206.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

RECEIVED
 Office of Oil and Gas

AUG 19 2021

WV Department of
 Environmental Protection

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Build Rate (°/100ft)	Build Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	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	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 2°/100' build										
1,600.00	2.00	250.00	1,599.98	-0.60	-1.64	0.50	2.00	2.00	2.00	0.00
1,650.00	3.00	250.00	1,649.93	-1.34	-3.69	1.12	2.00	2.00	2.00	0.00
Begin 2°/100' build/turn										
1,700.00	3.71	237.79	1,699.85	-2.65	-6.29	1.62	2.00	1.41	1.41	-24.41
1,733.80	4.25	232.00	1,733.56	-4.00	-8.20	1.68	2.00	1.61	1.61	-17.14
Begin 4.25° tangent										
1,800.00	4.25	232.00	1,799.58	-7.03	-12.06	1.56	0.00	0.00	0.00	0.00
1,900.00	4.25	232.00	1,899.31	-11.59	-17.90	1.38	0.00	0.00	0.00	0.00
2,000.00	4.25	232.00	1,999.03	-16.15	-23.74	1.21	0.00	0.00	0.00	0.00
2,100.00	4.25	232.00	2,098.76	-20.71	-29.58	1.03	0.00	0.00	0.00	0.00
2,200.00	4.25	232.00	2,198.48	-25.28	-35.42	0.86	0.00	0.00	0.00	0.00
2,300.00	4.25	232.00	2,298.21	-29.84	-41.26	0.69	0.00	0.00	0.00	0.00
2,400.00	4.25	232.00	2,397.93	-34.40	-47.10	0.50	0.00	0.00	0.00	0.00
2,500.00	4.25	232.00	2,497.66	-38.96	-52.94	0.33	0.00	0.00	0.00	0.00
2,600.00	4.25	232.00	2,597.38	-43.53	-58.78	0.15	0.00	0.00	0.00	0.00
2,700.00	4.25	232.00	2,697.11	-48.09	-64.62	-0.03	0.00	0.00	0.00	0.00
2,800.00	4.25	232.00	2,796.83	-52.65	-70.46	-0.20	0.00	0.00	0.00	0.00
2,903.45	4.25	232.00	2,900.00	-57.37	-76.50	-0.38	0.00	0.00	0.00	0.00
Begin 2°/100' build										
3,000.00	6.18	232.00	2,996.14	-62.77	-83.42	-0.59	2.00	2.00	2.00	0.00
3,100.00	8.18	232.00	3,095.35	-70.47	-93.27	-0.89	2.00	2.00	2.00	0.00
3,190.95	10.00	232.00	3,185.16	-79.32	-104.59	-1.23	2.00	2.00	2.00	0.00
Begin 10.00° tangent										
3,200.00	10.00	232.00	3,194.07	-80.28	-105.83	-1.27	0.00	0.00	0.00	0.00
3,300.00	10.00	232.00	3,292.55	-90.97	-119.51	-1.66	0.00	0.00	0.00	0.00
3,400.00	10.00	232.00	3,391.03	-101.67	-133.20	-2.10	0.00	0.00	0.00	0.00
3,500.00	10.00	232.00	3,489.51	-112.36	-146.88	-2.51	0.00	0.00	0.00	0.00
3,600.00	10.00	232.00	3,587.99	-123.05	-160.56	-2.92	0.00	0.00	0.00	0.00
3,700.00	10.00	232.00	3,686.48	-133.74	-174.25	-3.34	0.00	0.00	0.00	0.00
3,800.00	10.00	232.00	3,784.95	-144.43	-187.93	-3.75	0.00	0.00	0.00	0.00
3,815.28	10.00	232.00	3,800.00	-146.06	-190.02	-3.81	0.00	0.00	0.00	0.00
Begin 2°/100' turn										
3,852.14	10.00	226.60	3,846.16	-151.36	-196.19	-4.39	2.00	0.00	0.00	-11.52
Begin 10.00° tangent										
3,900.00	10.00	226.60	3,883.44	-155.88	-200.96	-5.16	0.00	0.00	0.00	0.00
4,000.00	10.00	226.60	3,981.92	-167.81	-213.58	-7.21	0.00	0.00	0.00	0.00



Planning Report

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: McMasters Shields
 Well: McMasters N-11 HU (slot D)
 Wellbore: Original Hole
 Design: rev4

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well McMasters N-11 HU (slot D)
 GL @ 1206.00ft
 GL @ 1206.00ft
 Grid
 Minimum Curvature

RECEIVED
 Office of Oil and Gas
 AUG 19 2021

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,100.00	10.00	228.80	4,080.40	-179.74	-226.20	-9.25	0.00	0.00	0.00
4,200.00	10.00	228.80	4,178.88	-191.67	-238.81	-11.30	0.00	0.00	0.00
4,300.00	10.00	228.80	4,277.36	-203.60	-251.43	-13.34	0.00	0.00	0.00
4,400.00	10.00	228.80	4,375.84	-215.54	-264.05	-15.39	0.00	0.00	0.00
4,500.00	10.00	228.80	4,474.32	-227.47	-276.66	-17.43	0.00	0.00	0.00
4,600.00	10.00	228.80	4,572.80	-239.40	-289.28	-19.48	0.00	0.00	0.00
4,700.00	10.00	228.80	4,671.28	-251.33	-301.90	-21.52	0.00	0.00	0.00
4,800.00	10.00	228.80	4,769.76	-263.26	-314.51	-23.57	0.00	0.00	0.00
4,900.00	10.00	228.80	4,868.25	-275.19	-327.13	-25.61	0.00	0.00	0.00
5,000.00	10.00	228.80	4,966.73	-287.12	-339.75	-27.66	0.00	0.00	0.00
5,100.00	10.00	228.80	5,065.21	-299.05	-352.36	-29.70	0.00	0.00	0.00
5,200.00	10.00	228.80	5,163.69	-310.98	-364.98	-31.75	0.00	0.00	0.00
5,300.00	10.00	228.80	5,262.17	-322.92	-377.60	-33.79	0.00	0.00	0.00
5,400.00	10.00	228.80	5,360.65	-334.85	-390.21	-35.84	0.00	0.00	0.00
5,500.00	10.00	228.80	5,459.13	-346.78	-402.83	-37.89	0.00	0.00	0.00
5,600.00	10.00	228.80	5,557.61	-358.71	-415.45	-39.93	0.00	0.00	0.00
5,700.00	10.00	228.80	5,656.09	-370.64	-428.08	-41.98	0.00	0.00	0.00
5,800.00	10.00	228.80	5,754.57	-382.57	-440.68	-44.02	0.00	0.00	0.00
5,900.00	10.00	228.80	5,853.05	-394.50	-453.30	-46.07	0.00	0.00	0.00
6,000.00	10.00	228.80	5,951.53	-406.43	-465.92	-48.11	0.00	0.00	0.00
6,100.00	10.00	228.80	6,050.01	-418.37	-478.53	-50.16	0.00	0.00	0.00
6,200.00	10.00	228.80	6,148.50	-430.30	-491.15	-52.20	0.00	0.00	0.00
6,300.00	10.00	228.80	6,246.98	-442.23	-503.77	-54.25	0.00	0.00	0.00
6,400.00	10.00	228.80	6,345.46	-454.16	-516.38	-56.29	0.00	0.00	0.00
6,500.00	10.00	228.80	6,443.94	-466.09	-529.00	-58.34	0.00	0.00	0.00
6,600.00	10.00	228.80	6,542.42	-478.02	-541.62	-60.38	0.00	0.00	0.00
6,658.47	10.00	228.80	6,600.00	-485.00	-548.99	-61.58	0.00	0.00	0.00
Begin 2°/100' build									
6,700.00	10.83	226.60	6,640.85	-490.16	-554.45	-62.46	2.00	2.00	0.00
6,800.00	12.83	226.60	6,738.72	-504.24	-569.34	-64.87	2.00	2.00	0.00
6,900.00	14.83	226.61	6,835.81	-520.66	-588.71	-67.69	2.00	2.00	0.00
7,000.00	16.83	226.61	6,932.01	-539.40	-608.54	-70.90	2.00	2.00	0.00
7,047.31	17.78	226.61	6,977.18	-549.07	-618.76	-72.55	2.00	2.00	0.00
Begin 17.78° tangent									
7,100.00	17.78	228.61	7,027.36	-550.12	-628.45	-74.44	0.00	0.00	0.00
7,200.00	17.78	228.61	7,122.58	-581.09	-650.64	-78.04	0.00	0.00	0.00
7,300.00	17.78	228.61	7,217.81	-602.07	-672.82	-81.63	0.00	0.00	0.00
7,400.00	17.78	228.61	7,313.03	-623.04	-695.01	-85.22	0.00	0.00	0.00
7,500.00	17.78	228.61	7,408.26	-644.02	-717.20	-88.81	0.00	0.00	0.00
7,600.00	17.78	228.61	7,503.48	-664.99	-739.38	-92.40	0.00	0.00	0.00
7,700.00	17.78	228.61	7,598.71	-685.96	-761.57	-95.99	0.00	0.00	0.00
7,800.00	17.78	228.61	7,693.93	-706.94	-783.76	-99.58	0.00	0.00	0.00
7,900.00	17.78	228.61	7,789.16	-727.91	-805.94	-103.17	0.00	0.00	0.00
8,000.00	17.78	228.61	7,884.39	-748.89	-828.13	-106.76	0.00	0.00	0.00
8,100.00	17.78	228.61	7,979.61	-769.86	-850.31	-110.35	0.00	0.00	0.00
8,200.00	17.78	228.61	8,074.84	-790.84	-872.50	-113.95	0.00	0.00	0.00
8,300.00	17.78	228.61	8,170.06	-811.81	-894.69	-117.54	0.00	0.00	0.00
8,400.00	17.78	228.61	8,265.29	-832.78	-916.87	-121.13	0.00	0.00	0.00
8,500.00	17.78	228.61	8,360.51	-853.75	-939.06	-124.72	0.00	0.00	0.00
8,600.00	17.78	228.61	8,455.74	-874.73	-961.25	-128.31	0.00	0.00	0.00
8,700.00	17.78	228.61	8,550.98	-895.71	-983.43	-131.90	0.00	0.00	0.00
8,800.00	17.78	228.61	8,646.19	-916.68	-1,005.62	-135.49	0.00	0.00	0.00
8,900.00	17.78	228.61	8,741.41	-937.65	-1,027.80	-139.08	0.00	0.00	0.00
9,000.00	17.78	228.61	8,836.64	-958.63	-1,049.99	-142.67	0.00	0.00	0.00

WV Department of Environmental Protection



Planning Report

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: McMasters Shields
 Well: McMasters N-11 HU (slot D)
 Wellbore: Original Hole
 Design: rev4

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well McMasters N-11 HU (slot D)
 GL @ 1206.00ft
 GL @ 1206.00ft
 Grid
 Minimum Curvature

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

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,100.00	17.78	226.61	8,931.86	-979.60	-1,072.18	-146.26	0.00	0.00	0.00	
9,200.00	17.78	226.61	9,027.09	-1,000.58	-1,094.36	-149.88	0.00	0.00	0.00	
9,300.00	17.78	226.61	9,122.31	-1,021.55	-1,116.55	-153.45	0.00	0.00	0.00	
9,400.00	17.78	226.61	9,217.54	-1,042.52	-1,139.74	-157.04	0.00	0.00	0.00	
9,500.00	17.78	226.61	9,312.76	-1,063.50	-1,160.92	-160.63	0.00	0.00	0.00	
9,600.00	17.78	226.61	9,407.99	-1,084.47	-1,183.11	-164.22	0.00	0.00	0.00	
9,700.00	17.78	226.61	9,503.22	-1,105.45	-1,205.30	-167.81	0.00	0.00	0.00	
9,800.00	17.78	226.61	9,598.44	-1,126.42	-1,227.48	-171.40	0.00	0.00	0.00	
9,900.00	17.78	226.61	9,693.67	-1,147.39	-1,249.67	-174.99	0.00	0.00	0.00	
10,000.00	17.78	226.61	9,788.89	-1,168.37	-1,271.85	-178.58	0.00	0.00	0.00	
10,100.00	17.78	226.61	9,884.12	-1,189.34	-1,294.04	-182.18	0.00	0.00	0.00	
10,200.00	17.78	226.61	9,979.34	-1,210.32	-1,316.23	-185.77	0.00	0.00	0.00	
10,300.00	17.78	226.61	10,074.57	-1,231.29	-1,338.41	-189.36	0.00	0.00	0.00	
10,400.00	17.78	226.61	10,169.79	-1,252.26	-1,360.60	-192.95	0.00	0.00	0.00	
10,461.60	17.78	226.61	10,228.45	-1,265.16	-1,374.27	-195.16	0.00	0.00	0.00	
Begin 6°/100° build/turn										
10,500.00	17.34	234.11	10,285.07	-1,272.57	-1,383.16	-195.78	6.00	-1.14	19.54	
10,550.00	17.20	244.22	10,312.82	-1,280.15	-1,395.86	-194.29	6.00	-0.27	20.21	
10,600.00	17.57	254.19	10,360.55	-1,285.42	-1,409.78	-190.21	6.00	0.74	19.95	
10,650.00	18.41	263.53	10,408.11	-1,288.37	-1,424.89	-183.55	6.00	1.68	18.67	
10,700.00	19.65	271.90	10,455.39	-1,288.98	-1,441.15	-174.34	6.00	2.51	16.74	
10,750.00	21.26	279.18	10,502.24	-1,287.25	-1,458.51	-162.60	6.00	3.18	14.57	
10,800.00	23.12	285.42	10,548.54	-1,283.20	-1,476.92	-148.36	6.00	3.72	12.48	
10,850.00	25.19	290.73	10,594.17	-1,276.82	-1,496.34	-131.65	6.00	4.14	10.62	
10,900.00	27.42	295.26	10,638.99	-1,268.14	-1,516.71	-112.53	6.00	4.47	9.05	
10,950.00	29.78	299.13	10,682.89	-1,257.18	-1,537.97	-91.05	6.00	4.72	7.75	
11,000.00	32.24	302.48	10,725.75	-1,243.97	-1,560.07	-67.26	6.00	4.91	6.69	
11,050.00	34.77	305.39	10,767.44	-1,228.55	-1,582.95	-41.23	6.00	5.07	5.83	
11,100.00	37.36	307.96	10,807.85	-1,210.96	-1,606.64	-13.04	6.00	5.19	5.12	
11,150.00	40.01	310.23	10,846.88	-1,191.24	-1,630.78	17.24	6.00	5.29	4.54	
11,200.00	42.69	312.26	10,884.42	-1,169.46	-1,655.60	49.54	6.00	5.37	4.07	
11,250.00	45.40	314.10	10,920.35	-1,145.66	-1,680.93	83.75	6.00	5.43	3.67	
11,300.00	48.15	315.77	10,954.60	-1,119.93	-1,706.71	119.78	6.00	5.48	3.34	
11,333.58	50.00	316.81	10,976.59	-1,101.59	-1,724.24	144.96	6.00	5.52	3.11	
Begin 8°/100° build/turn										
11,350.00	51.24	317.38	10,987.01	-1,092.29	-1,732.68	157.57	8.00	7.53	3.49	
11,400.00	55.02	319.01	11,017.01	-1,062.47	-1,759.53	197.40	8.00	7.56	3.26	
11,450.00	58.82	320.50	11,044.29	-1,030.49	-1,786.58	239.21	8.00	7.60	2.97	
11,500.00	62.54	321.87	11,068.74	-996.51	-1,813.90	262.78	8.00	7.63	2.74	
11,550.00	66.47	323.15	11,090.22	-960.69	-1,841.37	327.92	8.00	7.66	2.56	
11,600.00	70.31	324.35	11,108.63	-923.21	-1,868.85	374.39	8.00	7.68	2.41	
11,650.00	74.16	325.50	11,123.89	-884.24	-1,896.20	421.98	8.00	7.69	2.30	
11,700.00	78.01	326.61	11,135.91	-843.99	-1,923.29	470.45	8.00	7.71	2.21	
11,750.00	81.87	327.68	11,144.65	-802.64	-1,949.99	519.56	8.00	7.72	2.15	
11,800.00	85.73	328.74	11,150.05	-760.40	-1,976.17	569.08	8.00	7.72	2.11	
11,850.00	89.59	329.78	11,152.09	-717.47	-2,001.70	618.76	8.00	7.72	2.09	
11,868.34	91.00	330.16	11,152.00	-701.59	-2,010.88	636.96	8.00	7.72	2.08	
Begin 91.00° lateral										
11,900.00	91.00	330.16	11,151.44	-674.13	-2,026.63	668.41	0.00	0.00	0.00	
12,000.00	91.00	330.16	11,149.69	-567.40	-2,076.38	767.69	0.00	0.00	0.00	
12,100.00	91.00	330.16	11,147.94	-500.67	-2,126.12	866.97	0.00	0.00	0.00	
12,200.00	91.00	330.16	11,146.18	-413.94	-2,175.87	966.26	0.00	0.00	0.00	
12,300.00	91.00	330.16	11,144.43	-327.21	-2,225.62	1,065.54	0.00	0.00	0.00	



Planning Report

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: McMasters Shields
 Well: McMasters N-11 HU (slot D)
 Wellbore: Original Hole
 Design: rev4

Local Co-ordinate Reference: Well McMasters N-11 HU (slot D)
 TVD Reference: GL @ 1206.00ft
 MD Reference: GL @ 1206.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

RECEIVED
 Office of Oil and Gas
 AUG 19 2021

WV Department of
 Environmental Protection

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,400.00	91.00	330.16	11,142.58	-240.48	-2,275.36	1,164.82	0.00	0.00	0.00
12,500.00	91.00	330.16	11,140.92	-153.75	-2,325.11	1,264.10	0.00	0.00	0.00
12,600.00	91.00	330.16	11,139.17	-87.02	-2,374.86	1,363.38	0.00	0.00	0.00
12,700.00	91.00	330.16	11,137.42	19.71	-2,424.60	1,462.66	0.00	0.00	0.00
12,800.00	91.00	330.16	11,135.66	106.45	-2,474.35	1,561.95	0.00	0.00	0.00
12,900.00	91.00	330.16	11,133.91	193.18	-2,524.10	1,661.23	0.00	0.00	0.00
13,000.00	91.00	330.16	11,132.16	279.91	-2,573.84	1,760.51	0.00	0.00	0.00
13,100.00	91.00	330.16	11,130.41	366.64	-2,623.59	1,859.79	0.00	0.00	0.00
13,200.00	91.00	330.16	11,128.65	453.37	-2,673.34	1,959.07	0.00	0.00	0.00
13,300.00	91.00	330.16	11,126.90	540.10	-2,723.08	2,058.35	0.00	0.00	0.00
13,400.00	91.00	330.16	11,125.15	626.83	-2,772.83	2,157.63	0.00	0.00	0.00
13,500.00	91.00	330.16	11,123.39	713.56	-2,822.57	2,256.92	0.00	0.00	0.00
13,600.00	91.00	330.16	11,121.64	800.29	-2,872.32	2,356.20	0.00	0.00	0.00
13,700.00	91.00	330.16	11,119.89	887.02	-2,922.07	2,455.48	0.00	0.00	0.00
13,800.00	91.00	330.16	11,118.13	973.75	-2,971.81	2,554.76	0.00	0.00	0.00
13,900.00	91.00	330.16	11,116.38	1,060.48	-3,021.56	2,654.04	0.00	0.00	0.00
14,000.00	91.00	330.16	11,114.63	1,147.21	-3,071.31	2,753.32	0.00	0.00	0.00
14,100.00	91.00	330.16	11,112.87	1,233.94	-3,121.05	2,852.61	0.00	0.00	0.00
14,200.00	91.00	330.16	11,111.12	1,320.67	-3,170.80	2,951.89	0.00	0.00	0.00
14,300.00	91.00	330.16	11,109.37	1,407.41	-3,220.55	3,051.17	0.00	0.00	0.00
14,400.00	91.00	330.16	11,107.61	1,494.14	-3,270.29	3,150.45	0.00	0.00	0.00
14,500.00	91.00	330.16	11,105.86	1,580.87	-3,320.04	3,249.73	0.00	0.00	0.00
14,600.00	91.00	330.16	11,104.11	1,667.60	-3,369.79	3,349.01	0.00	0.00	0.00
14,700.00	91.00	330.16	11,102.36	1,754.33	-3,419.53	3,448.29	0.00	0.00	0.00
14,800.00	91.00	330.16	11,100.60	1,841.06	-3,469.28	3,547.58	0.00	0.00	0.00
14,900.00	91.00	330.16	11,098.85	1,927.79	-3,519.03	3,646.86	0.00	0.00	0.00
15,000.00	91.00	330.16	11,097.10	2,014.52	-3,568.77	3,746.14	0.00	0.00	0.00
15,100.00	91.00	330.16	11,095.34	2,101.25	-3,618.52	3,845.42	0.00	0.00	0.00
15,200.00	91.00	330.16	11,093.59	2,187.98	-3,668.27	3,944.70	0.00	0.00	0.00
15,300.00	91.00	330.16	11,091.84	2,274.71	-3,718.01	4,043.98	0.00	0.00	0.00
15,400.00	91.00	330.16	11,090.08	2,361.44	-3,767.76	4,143.27	0.00	0.00	0.00
15,500.00	91.00	330.16	11,088.33	2,448.17	-3,817.51	4,242.55	0.00	0.00	0.00
15,600.00	91.00	330.16	11,086.58	2,534.90	-3,867.25	4,341.83	0.00	0.00	0.00
15,700.00	91.00	330.16	11,084.82	2,621.63	-3,917.00	4,441.11	0.00	0.00	0.00
15,800.00	91.00	330.16	11,083.07	2,708.37	-3,966.75	4,540.39	0.00	0.00	0.00
15,900.00	91.00	330.16	11,081.32	2,795.10	-4,016.49	4,639.67	0.00	0.00	0.00
16,000.00	91.00	330.16	11,079.57	2,881.83	-4,066.24	4,738.95	0.00	0.00	0.00
16,100.00	91.00	330.16	11,077.81	2,968.56	-4,115.99	4,838.24	0.00	0.00	0.00
16,200.00	91.00	330.16	11,076.06	3,055.29	-4,165.73	4,937.52	0.00	0.00	0.00
16,300.00	91.00	330.16	11,074.31	3,142.02	-4,215.48	5,036.80	0.00	0.00	0.00
16,400.00	91.00	330.16	11,072.55	3,228.75	-4,265.23	5,136.08	0.00	0.00	0.00
16,500.00	91.00	330.16	11,070.80	3,315.48	-4,314.97	5,235.36	0.00	0.00	0.00
16,600.00	91.00	330.16	11,069.05	3,402.21	-4,364.72	5,334.64	0.00	0.00	0.00
16,700.00	91.00	330.16	11,067.29	3,488.94	-4,414.46	5,433.93	0.00	0.00	0.00
16,800.00	91.00	330.16	11,065.54	3,575.67	-4,464.21	5,533.21	0.00	0.00	0.00
16,900.00	91.00	330.16	11,063.79	3,662.40	-4,513.96	5,632.49	0.00	0.00	0.00
17,000.00	91.00	330.16	11,062.03	3,749.13	-4,563.70	5,731.77	0.00	0.00	0.00
17,100.00	91.00	330.16	11,060.28	3,835.86	-4,613.45	5,831.05	0.00	0.00	0.00
17,200.00	91.00	330.16	11,058.53	3,922.59	-4,663.20	5,930.33	0.00	0.00	0.00
17,300.00	91.00	330.16	11,056.77	4,009.33	-4,712.94	6,029.61	0.00	0.00	0.00
17,400.00	91.00	330.16	11,055.02	4,096.06	-4,762.69	6,128.90	0.00	0.00	0.00
17,500.00	91.00	330.16	11,053.27	4,182.79	-4,812.44	6,228.18	0.00	0.00	0.00
17,600.00	91.00	330.16	11,051.52	4,269.52	-4,862.18	6,327.46	0.00	0.00	0.00
17,700.00	91.00	330.16	11,049.76	4,356.25	-4,911.93	6,426.74	0.00	0.00	0.00



Planning Report

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: McMasters Shields
 Well: McMasters N-11 HU (slot D)
 Wellbore: Original Hole
 Design: rev4

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well McMasters N-11 HU (slot D)
 GL @ 1206.00ft
 GL @ 1206.00ft
 Grid
 Minimum Curvature

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

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
17,800.00	91.00	330.16	11,048.01	4,442.98	-4,951.68	6,526.02	0.00	0.00	0.00	
17,900.00	91.00	330.16	11,046.26	4,529.71	-5,011.42	6,625.30	0.00	0.00	0.00	
18,000.00	91.00	330.16	11,044.50	4,616.44	-5,061.17	6,724.58	0.00	0.00	0.00	
18,100.00	91.00	330.16	11,042.75	4,703.17	-5,110.92	6,823.87	0.00	0.00	0.00	
18,200.00	91.00	330.16	11,041.00	4,789.90	-5,160.66	6,923.15	0.00	0.00	0.00	
18,300.00	91.00	330.16	11,039.24	4,876.63	-5,210.41	7,022.43	0.00	0.00	0.00	
18,400.00	91.00	330.16	11,037.49	4,963.36	-5,260.16	7,121.71	0.00	0.00	0.00	
18,500.00	91.00	330.16	11,035.74	5,050.09	-5,309.90	7,220.99	0.00	0.00	0.00	
18,600.00	91.00	330.16	11,033.98	5,136.82	-5,359.65	7,320.27	0.00	0.00	0.00	
18,700.00	91.00	330.16	11,032.23	5,223.55	-5,409.40	7,419.56	0.00	0.00	0.00	
18,800.00	91.00	330.16	11,030.48	5,310.29	-5,459.14	7,518.84	0.00	0.00	0.00	
18,900.00	91.00	330.16	11,028.73	5,397.02	-5,508.89	7,618.12	0.00	0.00	0.00	
19,000.00	91.00	330.16	11,026.97	5,483.75	-5,558.64	7,717.40	0.00	0.00	0.00	
19,100.00	91.00	330.16	11,025.22	5,570.48	-5,608.38	7,816.68	0.00	0.00	0.00	
19,200.00	91.00	330.16	11,023.47	5,657.21	-5,658.13	7,915.96	0.00	0.00	0.00	
19,300.00	91.00	330.16	11,021.71	5,743.94	-5,707.88	8,015.24	0.00	0.00	0.00	
19,400.00	91.00	330.16	11,019.96	5,830.67	-5,757.62	8,114.53	0.00	0.00	0.00	
19,500.00	91.00	330.16	11,018.21	5,917.40	-5,807.37	8,213.81	0.00	0.00	0.00	
19,600.00	91.00	330.16	11,016.45	6,004.13	-5,857.11	8,313.09	0.00	0.00	0.00	
19,700.00	91.00	330.16	11,014.70	6,090.86	-5,906.86	8,412.37	0.00	0.00	0.00	
19,800.00	91.00	330.16	11,012.95	6,177.59	-5,956.61	8,511.65	0.00	0.00	0.00	
19,900.00	91.00	330.16	11,011.19	6,264.32	-6,006.35	8,610.93	0.00	0.00	0.00	
20,000.00	91.00	330.16	11,009.44	6,351.05	-6,056.10	8,710.22	0.00	0.00	0.00	
20,100.00	91.00	330.16	11,007.69	6,437.78	-6,105.85	8,809.50	0.00	0.00	0.00	
20,200.00	91.00	330.16	11,005.93	6,524.51	-6,155.59	8,908.78	0.00	0.00	0.00	
20,300.00	91.00	330.16	11,004.18	6,611.25	-6,205.34	9,008.06	0.00	0.00	0.00	
20,400.00	91.00	330.16	11,002.43	6,697.98	-6,255.09	9,107.34	0.00	0.00	0.00	
20,500.00	91.00	330.16	11,000.68	6,784.71	-6,304.83	9,206.62	0.00	0.00	0.00	
20,600.00	91.00	330.16	10,998.92	6,871.44	-6,354.58	9,305.90	0.00	0.00	0.00	
20,700.00	91.00	330.16	10,997.17	6,958.17	-6,404.33	9,405.19	0.00	0.00	0.00	
20,800.00	91.00	330.16	10,995.42	7,044.90	-6,454.07	9,504.47	0.00	0.00	0.00	
20,900.00	91.00	330.16	10,993.66	7,131.63	-6,503.82	9,603.75	0.00	0.00	0.00	
21,000.00	91.00	330.16	10,991.91	7,218.36	-6,553.57	9,703.03	0.00	0.00	0.00	
21,100.00	91.00	330.16	10,990.16	7,305.09	-6,603.31	9,802.31	0.00	0.00	0.00	
21,200.00	91.00	330.16	10,988.40	7,391.82	-6,653.06	9,901.59	0.00	0.00	0.00	
21,300.00	91.00	330.16	10,986.65	7,478.55	-6,702.81	10,000.88	0.00	0.00	0.00	
21,400.00	91.00	330.16	10,984.90	7,565.28	-6,752.55	10,100.16	0.00	0.00	0.00	
21,500.00	91.00	330.16	10,983.14	7,652.01	-6,802.30	10,199.44	0.00	0.00	0.00	
21,600.00	91.00	330.16	10,981.39	7,738.74	-6,852.05	10,298.72	0.00	0.00	0.00	
21,700.00	91.00	330.16	10,979.64	7,825.47	-6,901.79	10,398.00	0.00	0.00	0.00	
21,800.00	91.00	330.16	10,977.88	7,912.21	-6,951.54	10,497.28	0.00	0.00	0.00	
21,900.00	91.00	330.16	10,976.13	7,998.94	-7,001.29	10,596.56	0.00	0.00	0.00	
22,000.00	91.00	330.16	10,974.38	8,085.67	-7,051.03	10,695.85	0.00	0.00	0.00	
22,100.00	91.00	330.16	10,972.63	8,172.40	-7,100.78	10,795.13	0.00	0.00	0.00	
22,200.00	91.00	330.16	10,970.87	8,259.13	-7,150.53	10,894.41	0.00	0.00	0.00	
22,300.00	91.00	330.16	10,969.12	8,345.86	-7,200.27	10,993.69	0.00	0.00	0.00	
22,400.00	91.00	330.16	10,967.37	8,432.59	-7,250.02	11,092.97	0.00	0.00	0.00	
22,500.00	91.00	330.16	10,965.61	8,519.32	-7,299.76	11,192.25	0.00	0.00	0.00	
22,600.00	91.00	330.16	10,963.86	8,606.05	-7,349.51	11,291.54	0.00	0.00	0.00	
22,700.00	91.00	330.16	10,962.11	8,692.78	-7,399.26	11,390.82	0.00	0.00	0.00	
22,800.00	91.00	330.16	10,960.35	8,779.51	-7,449.00	11,490.10	0.00	0.00	0.00	
22,900.00	91.00	330.16	10,958.60	8,866.24	-7,498.75	11,589.38	0.00	0.00	0.00	
23,000.00	91.00	330.16	10,956.85	8,952.97	-7,548.50	11,688.66	0.00	0.00	0.00	
23,100.00	91.00	330.16	10,955.09	9,039.70	-7,598.24	11,787.94	0.00	0.00	0.00	



Planning Report

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: McMasters Shields
 Well: McMasters N-11 HU (slot D)
 Wellbore: Original Hole
 Design: rev4

Local Co-ordinate Reference: Well McMasters N-11 HU (slot D)
 TVD Reference: GL @ 1206.00ft
 MD Reference: GL @ 1206.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

RECEIVED
 Office of Oil and Gas
 AUG 19 2021

WV Department of
 Environmental Protection

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
23,200.00	91.00	330.16	10,953.34	9,126.43	-7,647.99	11,887.22	0.00	0.00	0.00
23,300.00	91.00	330.16	10,951.59	9,213.16	-7,697.74	11,986.51	0.00	0.00	0.00
23,400.00	91.00	330.16	10,949.84	9,299.90	-7,747.48	12,085.79	0.00	0.00	0.00
23,500.00	91.00	330.16	10,948.08	9,386.63	-7,797.23	12,185.07	0.00	0.00	0.00
23,600.00	91.00	330.16	10,946.33	9,473.36	-7,846.98	12,284.35	0.00	0.00	0.00
23,700.00	91.00	330.16	10,944.58	9,560.09	-7,896.72	12,383.63	0.00	0.00	0.00
23,800.00	91.00	330.16	10,942.82	9,646.82	-7,946.47	12,482.91	0.00	0.00	0.00
23,900.00	91.00	330.16	10,941.07	9,733.55	-7,996.22	12,582.20	0.00	0.00	0.00
24,000.00	91.00	330.16	10,939.32	9,820.28	-8,045.96	12,681.48	0.00	0.00	0.00
24,100.00	91.00	330.16	10,937.56	9,907.01	-8,095.71	12,780.76	0.00	0.00	0.00
24,200.00	91.00	330.16	10,935.81	9,993.74	-8,145.46	12,880.04	0.00	0.00	0.00
24,300.00	91.00	330.16	10,934.06	10,080.47	-8,195.20	12,979.32	0.00	0.00	0.00
24,400.00	91.00	330.16	10,932.30	10,167.20	-8,244.95	13,078.60	0.00	0.00	0.00
24,500.00	91.00	330.16	10,930.55	10,253.93	-8,294.70	13,177.88	0.00	0.00	0.00
24,600.00	91.00	330.16	10,928.80	10,340.66	-8,344.44	13,277.17	0.00	0.00	0.00
24,700.00	91.00	330.16	10,927.04	10,427.39	-8,394.19	13,376.45	0.00	0.00	0.00
24,800.00	91.00	330.16	10,925.29	10,514.12	-8,443.94	13,475.73	0.00	0.00	0.00
24,900.00	91.00	330.16	10,923.54	10,600.86	-8,493.68	13,575.01	0.00	0.00	0.00
25,000.00	91.00	330.16	10,921.79	10,687.59	-8,543.43	13,674.29	0.00	0.00	0.00
25,100.00	91.00	330.16	10,920.03	10,774.32	-8,593.18	13,773.57	0.00	0.00	0.00
25,200.00	91.00	330.16	10,918.28	10,861.05	-8,642.92	13,872.85	0.00	0.00	0.00
25,300.00	91.00	330.16	10,916.53	10,947.78	-8,692.67	13,972.14	0.00	0.00	0.00
25,400.00	91.00	330.16	10,914.77	11,034.51	-8,742.41	14,071.42	0.00	0.00	0.00
25,500.00	91.00	330.16	10,913.02	11,121.24	-8,792.16	14,170.70	0.00	0.00	0.00
25,600.00	91.00	330.16	10,911.27	11,207.97	-8,841.91	14,269.98	0.00	0.00	0.00
25,700.00	91.00	330.16	10,909.51	11,294.70	-8,891.65	14,369.26	0.00	0.00	0.00
25,800.00	91.00	330.16	10,907.76	11,381.43	-8,941.40	14,468.54	0.00	0.00	0.00
25,900.00	91.00	330.16	10,906.01	11,468.16	-8,991.15	14,567.83	0.00	0.00	0.00
26,000.00	91.00	330.16	10,904.25	11,554.89	-9,040.89	14,667.11	0.00	0.00	0.00
26,100.00	91.00	330.16	10,902.50	11,641.62	-9,090.64	14,766.39	0.00	0.00	0.00
26,200.00	91.00	330.16	10,900.75	11,728.35	-9,140.39	14,865.67	0.00	0.00	0.00
26,300.00	91.00	330.16	10,899.00	11,815.08	-9,190.13	14,964.95	0.00	0.00	0.00
26,400.00	91.00	330.16	10,897.24	11,901.82	-9,239.88	15,064.23	0.00	0.00	0.00
26,500.00	91.00	330.16	10,895.49	11,988.55	-9,289.63	15,163.51	0.00	0.00	0.00
26,600.00	91.00	330.16	10,893.74	12,075.28	-9,339.37	15,262.80	0.00	0.00	0.00
26,700.00	91.00	330.16	10,891.98	12,162.01	-9,389.12	15,362.08	0.00	0.00	0.00
26,800.00	91.00	330.16	10,890.23	12,248.74	-9,438.87	15,461.36	0.00	0.00	0.00
26,900.00	91.00	330.16	10,888.48	12,335.47	-9,488.61	15,560.64	0.00	0.00	0.00
27,000.00	91.00	330.16	10,886.72	12,422.20	-9,538.36	15,659.92	0.00	0.00	0.00
27,100.00	91.00	330.16	10,884.97	12,508.93	-9,588.11	15,759.20	0.00	0.00	0.00
27,200.00	91.00	330.16	10,883.22	12,595.66	-9,637.85	15,858.49	0.00	0.00	0.00
27,300.00	91.00	330.16	10,881.46	12,682.39	-9,687.60	15,957.77	0.00	0.00	0.00
27,400.00	91.00	330.16	10,879.71	12,769.12	-9,737.35	16,057.05	0.00	0.00	0.00
27,500.00	91.00	330.16	10,877.96	12,855.85	-9,787.09	16,156.33	0.00	0.00	0.00
27,600.00	91.00	330.16	10,876.20	12,942.58	-9,836.84	16,255.61	0.00	0.00	0.00
27,700.00	91.00	330.16	10,874.45	13,029.31	-9,886.59	16,354.89	0.00	0.00	0.00
27,800.00	91.00	330.16	10,872.70	13,116.04	-9,936.33	16,454.17	0.00	0.00	0.00
27,900.00	91.00	330.16	10,870.95	13,202.78	-9,986.08	16,553.46	0.00	0.00	0.00
28,000.00	91.00	330.16	10,869.19	13,289.51	-10,035.83	16,652.74	0.00	0.00	0.00
28,100.00	91.00	330.16	10,867.44	13,376.24	-10,085.57	16,752.02	0.00	0.00	0.00
28,200.00	91.00	330.16	10,865.69	13,462.97	-10,135.32	16,851.30	0.00	0.00	0.00
28,300.00	91.00	330.16	10,863.93	13,549.70	-10,185.06	16,950.58	0.00	0.00	0.00
28,400.00	91.00	330.16	10,862.18	13,636.43	-10,234.81	17,049.86	0.00	0.00	0.00
28,500.00	91.00	330.16	10,860.43	13,723.16	-10,284.56	17,149.15	0.00	0.00	0.00



Planning Report

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well McMasters N-11 HU (slot D)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1206.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1206.00ft
Site:	McMasters Shields	North Reference:	Grid
Well:	McMasters N-11 HU (slot D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev4		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
28,600.00	91.00	330.16	10,858.67	13,809.89	-10,334.30	17,246.43	0.00	0.00	0.00	
28,700.00	91.00	330.16	10,856.92	13,896.62	-10,384.05	17,347.71	0.00	0.00	0.00	
28,800.00	91.00	330.16	10,855.17	13,983.35	-10,433.80	17,446.99	0.00	0.00	0.00	
28,900.00	91.00	330.16	10,853.41	14,070.08	-10,483.54	17,546.27	0.00	0.00	0.00	
29,000.00	91.00	330.16	10,851.66	14,156.81	-10,533.29	17,645.55	0.00	0.00	0.00	
29,037.69	91.00	330.16	10,851.00	14,189.50	-10,552.04	17,682.97	0.00	0.00	0.00	
PBHL/TD 29037.69 MD 10851.00 TVD										
29,037.70	91.00	330.16	10,851.00	14,189.51	-10,552.04	17,682.98	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
McMasters N-11 HU PBI - hit/miss target - Shape - Point	0.00	0.00	10,851.00	14,189.51	-10,552.04	14,453,637.91	1,689,566.37	39.79913000	-80.82500900	
McMasters N-11 HU LP - plan hits target center - Point	0.00	0.00	11,152.00	-701.63	-2,010.85	14,438,746.80	1,696,107.54	39.75818500	-80.79472100	

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
29,037.70	10,851.00	20" Casing	20	24	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
1,500.00	1,500.00	0.00	0.00	KOP Begin 2°/100' build	
1,650.00	1,649.93	-1.34	-3.69	Begin 2°/100' build/turn	
1,733.80	1,733.56	-4.00	-8.20	Begin 4.25° tangent	
2,903.45	2,900.00	-57.37	-76.50	Begin 2°/100' build	
3,190.95	3,185.16	-79.32	-104.59	Begin 10.00° tangent	
3,815.28	3,800.00	-146.06	-190.02	Begin 2°/100' turn	
3,862.14	3,846.16	-151.36	-196.19	Begin 10.00° tangent	
6,658.47	6,600.00	-485.00	-548.99	Begin 2°/100' build	
7,047.31	6,977.18	-549.07	-616.76	Begin 17.78° tangent	
10,461.60	10,228.45	-1,265.18	-1,374.27	Begin 6°/100' build/turn	
11,333.58	10,976.59	-1,101.59	-1,724.24	Begin 8°/100' build/turn	
11,868.34	11,152.00	-701.59	-2,010.88	Begin 91.00° lateral	
29,037.69	10,851.00	14,189.50	-10,552.04	PBHL/TD 29037.69 MD 10851.00 TVD	

RECEIVED
Office of Oil and Gas

AUG 19 2021

WV Department of
Environmental Protection

Area of Review

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

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

Data Sources Reviewed:

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

Contacted Adam Picard 724-485-9331, apicard@dpslandservices.com, DPS GIS (06/22/2021) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it is the best publicly available. See attached map he provided.

Request maps for:

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

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

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

RECEIVED
Office of Oil and Gas
AUG 19 2021
WV Department of
Environmental Protection
Page 1 of 13

10/08/2021

Wells within 500' Buffer

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101533	Tug Hill Operating, LLC	9961' MD / 6509' TVD	Marcellus	unknown	No, this is a producing Marcellus well. This well is not deep enough to be within the expected fracture propagation from the planned Point Pleasant stimulation.	Producing Marcellus well on pad operated by Tug Hill Operating, LLC.
4705101534	Tug Hill Operating, LLC	9890' MD / 6514' TVD	Marcellus	unknown	No, this is a producing Marcellus well. This well is not deep enough to be within the expected fracture propagation from the planned Point Pleasant stimulation.	Producing Marcellus well on pad operated by Tug Hill Operating, LLC.
4705101535	Tug Hill Operating, LLC	9890' MD / 6519' TVD	Marcellus	unknown	No, this is a producing Marcellus well. This well is not deep enough to be within the expected fracture propagation from the planned Point Pleasant stimulation.	Producing Marcellus well on pad operated by Tug Hill Operating, LLC.
4705101536	Tug Hill Operating, LLC	10185' MD / 6526' TVD	Marcellus	unknown	No, this is a producing Marcellus well. This well is not deep enough to be within the expected fracture propagation from the planned Point Pleasant stimulation.	Producing Marcellus well on pad operated by Tug Hill Operating, LLC.

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101537	Tug Hill Operating, LLC	10560' MD / 6527' TVD	Marcellus	unknown	No, this is a producing Marcellus well. This well is not deep enough to be within the expected fracture propagation from the planned Point Pleasant stimulation.	Producing Marcellus well on pad operated by Tug Hill Operating, LLC.
4705101538	Tug Hill Operating, LLC	9541' MD / 6494' TVD	Marcellus	unknown	No, this is a producing Marcellus well. This well is not deep enough to be within the expected fracture propagation from the planned Point Pleasant stimulation.	Producing Marcellus well on pad operated by Tug Hill Operating, LLC.
4705101539	Tug Hill Operating, LLC	11480' MD / 6488' TVD	Marcellus	unknown	No, this is a producing Marcellus well. This well is not deep enough to be within the expected fracture propagation from the planned Point Pleasant stimulation.	Producing Marcellus well on pad operated by Tug Hill Operating, LLC.
4705101540	Tug Hill Operating, LLC	12101' MD / 6490' TVD	Marcellus	unknown	No, this is a producing Marcellus well. This well is not deep enough to be within the expected fracture propagation from the planned Point Pleasant stimulation.	Producing Marcellus well on pad operated by Tug Hill Operating, LLC.
4705101541	Tug Hill Operating, LLC	9612' MD / 6485' TVD	Marcellus	unknown	No, this is a producing Marcellus well. This well is not deep enough to be within the expected fracture propagation from the planned Point Pleasant stimulation.	Producing Marcellus well on pad operated by Tug Hill Operating, LLC.

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101542	Tug Hill Operating, LLC	11281' MD / 6487' TVD	Marcellus	unknown	No, this is a producing Marcellus well. This well is not deep enough to be within the expected fracture propagation from the planned Point Pleasant stimulation.	Producing Marcellus well on pad operated by Tug Hill Operating, LLC.
4705102316	Tug Hill Operating, LLC	11418' TVD (proposed)	Point Pleasant (proposed)	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A Tug Hill Operating, LLC permitted well on the pad that is not drilled or perforated.
4705102332	Tug Hill Operating, LLC	11441' TVD (proposed)	Point Pleasant (proposed)	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A Tug Hill Operating, LLC permitted well on the pad that is not drilled or perforated.
4705102333	Tug Hill Operating, LLC	11463' TVD (proposed)	Point Pleasant (proposed)	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A Tug Hill Operating, LLC permitted well on the pad that is not drilled or perforated.
4705102334	Tug Hill Operating, LLC	11484' TVD (proposed)	Point Pleasant (proposed)	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A Tug Hill Operating, LLC permitted well on the pad that is not drilled or perforated.

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705102337	Tug Hill Operating, LLC	11407' TVD (proposed)	Point Pleasant (proposed)	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A Tug Hill Operating, LLC permitted well on the pad that is not drilled or perforated.
4705102338	Tug Hill Operating, LLC	11427' TVD (proposed)	Point Pleasant (proposed)	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A Tug Hill Operating, LLC permitted well on the pad that is not drilled or perforated.
4705102339	Tug Hill Operating, LLC	11448' TVD (proposed)	Point Pleasant (proposed)	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A Tug Hill Operating, LLC permitted well on the pad that is not drilled or perforated.
4705102340	Tug Hill Operating, LLC	11471' TVD (proposed)	Point Pleasant (proposed)	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A Tug Hill Operating, LLC permitted well on the pad that is not drilled or perforated.
4705102341	Tug Hill Operating, LLC	11492' TVD (proposed)	Point Pleasant (proposed)	none	Yes, this is a proposed well in the Point Pleasant. Once completed proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore.	A Tug Hill Operating, LLC permitted well on the pad that is not drilled or perforated.

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705170807	unknown	unknown	unknown	unknown	Unknown but unlikely. This well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.	State records are incomplete.

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

WV Geological & Economic Survey

Well: County = 51 Permit = 01533

Report Time: Tuesday, June 22, 2021 2:34:19 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101533	Marshall	1533	Franklin	Powhatan Point	Clarrington	39.759827	-80.787302	518219.3	4401122.5

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101533	1 As Proposed	518296.7	4400354.3	-80.780533	39.752892

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101533	4/11/2013	Dvtd Orgnl Loc	Completed	Donald L Shields et al	1H		Shields-South	WV16-0070-001/WV16-0070-002/WV16-9005-000	Donald L Shields et al	Gastar Exploration USA, Inc.	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AI
4705101533	4/11/2013	4/2/2012	1331	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6509	9961	9961	2568	2496	115	172		

Comment: 4/11/2013 Additional Lease Numbers:WV16-0035-001/WV16-0035-002

WV Geological & Economic Survey

Well: County = 51 Permit = 01534

Report Time: Tuesday, June 22, 2021 2:35:45 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101534	Marshall	1534	Franklin	Powhatan Point	Clarrington	39.759822	-80.787301	518219.4	4401128.6

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101534	1 As Proposed	518392.7	4400511.1	-80.779458	39.754303

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101534	4/11/2013	Dvtd Orgnl Loc	Completed	Donald L Shields et al	2H		Shields-South	WV16-0070-001 thru 002/WV16-0035-001 thru 002	Donald L Shields et al	Gastar Exploration USA, Inc.	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AF
4705101534	4/11/2013	3/20/2012	1331	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6514	9890	9890	1560	2280	97	172		

Comment: 4/11/2013 Additional Lease Numbers:WV16-0009-001 thru 003

WV Geological & Economic Survey

Well: County = 51 Permit = 01535

Report Time: Tuesday, June 22, 2021 2:36:18 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101535	Marshall	1535	Franklin	Powhatan Point	Clarrington	39.759937	-80.787299	518219.5	4401134.7

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101535	1 As Proposed	518988.7	4400687.9	-80.778333	39.755714

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_P
4705101535	4/11/2013	Dvtd Orgnl Loc	Completed	Donald L Shields et al	3H		Shields-South	WV16-0035-001 thru 002/WV16-0009-001 thru 003	Donald L Shields et al	Gastar Exploration USA, Inc.	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_F
4705101535	4/11/2013	4/27/2012	1331	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6519	9890	9890	3360	2880	101	172		

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

WV Geological & Economic Survey:

Well: County = 51 Permit = 01536

Report Time: Tuesday, June 22, 2021 2:36:46 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101536	Marshall	1536	Franklin	Powhatan Point	Clarrington	39.759991	-80.787299	518219.5	4401140.8

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101536	1 As Proposed	519084.7	4400824.7	-80.777208	39.757124

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101536	4/11/2013	Dvld Orgrl Loc	Completed	Donald L Shields et al	4H		Shields-North	WV16-0035-001 thru 002/WV16-0009-001 thru 003	Donald L Shields et al	Gaster Exploration USA, Inc.	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_A
4705101536	4/11/2013	4/27/2012	1331	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6526	10185	10185		1896	2520	97	172		

WV Geological & Economic Survey:

Well: County = 51 Permit = 01537

Report Time: Tuesday, June 22, 2021 2:37:21 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101537	Marshall	1537	Franklin	Powhatan Point	Clarrington	39.760046	-80.787298	518219.6	4401146.9

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101537	1 As Proposed	519059.7	4401039	-80.777493	39.759056

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101537	4/11/2013	Dvld Orgrl Loc	Completed	Donald L Shields et al	5H		Shields-North	WV16-0035-001 thru 002/WV16-0009-001 thru 003	Donald L Shields et al	Gaster Exploration USA, Inc.	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_A
4705101537	4/11/2013	5/11/2012	1331	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6527	10560	10560		1296	2448	97	172		

Comment: 4/11/2013 Additional Lease Numbers: WV16-0028-001

WV Geological & Economic Survey:

Well: County = 51 Permit = 01538

Report Time: Tuesday, June 22, 2021 2:37:52 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101538	Marshall	1538	Franklin	Powhatan Point	Clarrington	39.760254	-80.787943	518184.3	4401169.8

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101538	1 As Proposed	517488.1	4401538.3	-80.785827	39.763588

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101538	5/31/2013	Dvld Orgrl Loc	Completed	Donald L Shields et al	6H		Shields-North	WV16-0035-001 thru 002/WV16-0009-001	Donald L Shields et al	Gaster Exploration USA, Inc.	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_A
4705101538	5/31/2013	5/28/2012	1331	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6494	9541	9541		838	1560	76	181		

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

WV Geological & Economic Survey

Well: County = 51 Permit = 01539

Report Time: Tuesday, June 22, 2021 2:38:21 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101539	Marshall	1539	Franklin	Powhatan Point	Clarington	39.789255	-80.788014	518158.2	4401169.9

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101539	1 As Proposed	517582.3	4401695	-80.794723	39.785007

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_E
4705101539	5/31/2013	Dvtd Orign Loc	Completed	Donald L Shields et al	7H		Shields-North	WV16-0035-001 thru 002/WV16-0028-001/WV16-0053-001	Donald L Shields et al	Gastar Exploration USA, Inc.	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_A
4705101539	5/31/2013	6/10/2012	1331	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6485	11480	11480	624	1200	32	181		

Comment: 5/31/2013 Additional Lease Numbers: WV16-0069-001

WV Geological & Economic Survey

Well: County = 51 Permit = 01540

Report Time: Tuesday, June 22, 2021 2:38:49 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101540	Marshall	1540	Franklin	Powhatan Point	Clarington	39.760256	-80.788985	518152.1	4401170

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101540	1 As Proposed	517681.9	4401851.1	-80.793556	39.786403

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_E
4705101540	5/31/2013	Dvtd Orign Loc	Completed	Donald L Shields et al	9H		Shields-North	WV16-0035-001 thru 002/WV16-0028-001/WV16-0053-001	Donald L Shields et al	Gastar Exploration USA, Inc.	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_A
4705101540	5/31/2013	6/23/2012	1331	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6490	12101	12101	504	1512	32	191		

WV Geological & Economic Survey

Well: County = 51 Permit = 01541

Report Time: Tuesday, June 22, 2021 2:39:20 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101541	Marshall	1541	Franklin	Powhatan Point	Clarington	39.760257	-80.788159	518143.2	4401170.1

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101541	5/31/2013	Dvtd Orign Loc	Completed	Shields	9H					Gastar Exploration USA, Inc.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_A
4705101541	5/31/2013	7/4/2012	1331	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6485	9612	9612	1320	1606	32	181		

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

WV Geological & Economic Survey

Well: County = 51 Permit = 01542

Report Time: Tuesday, June 22, 2021 2:39:55 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101542	Marshall	1542	Franklin	Powhatan Point	Clarrington	39.760258	-80.788239	518138.9	4401170.2

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101542	1 As Proposed	517319.9	4401213.5	-80.797799	39.760665

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM
4705101542	5/31/2013	Dvtd Orgnl Loc	Completed	Donald L Shields et al	10H		Shields-South	WV16-0035-001 thru 002/WV16-0072-000/WV16-0038-000	Donald L Shields et al	Gastar Exploration USA, Inc	6700	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT
4705101542	5/31/2013	12/19/2012	1331	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	8487	11281	11281	1272	1704	153	181		

Comment: 5/31/2013 Additional Lease Numbers:WV16-0070-001/WV16-0269-000

WV Geological & Economic Survey

Well: County = 51 Permit = 02316

Report Time: Tuesday, June 22, 2021 2:40:21 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705102316	Marshall	2316	Franklin	Powhatan Point	Clarrington	39.760068	-80.787551	518197.1	4401149

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705102316	1 As Proposed	516293.3	4403965.6	-80.809716	39.785482

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102316	-/-	Dvtd Orgnl Loc	Permitted	Robert L Shields et al			N-12HU	McMasters	Robert L Shields et al	Tug Hill Operating, LLC	11418	Pt Pleasant Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT
4705102316	-/-	-/-	1208	Ground Level																				

WV Geological & Economic Survey

Well: County = 51 Permit = 02332

Report Time: Tuesday, June 22, 2021 2:40:54 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705102332	Marshall	2332	Franklin	Powhatan Point	Clarrington	39.76	-80.787562	518197	4401141.7

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705102332	1 As Proposed	516621.8	4404158.6	-80.805875	39.787215

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102332	-/-	Dvtd Orgnl Loc	Permitted	Robert L Shields et al			N-13HU	McMasters	Robert L Shields et al	Tug Hill Operating, LLC	11441	Pt Pleasant Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TL_BEF	P_AFT
4705102332	-/-	-/-	1208	Ground Level																				

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

WV Geological & Economic Survey

Well: County = 51 Permit = 02333

Report Time: Tuesday, June 22, 2021 2:41:08 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102333	Marshall	2333	Franklin	Powhatan Point	Clarrington	39.760033	-80.787591	518197	4401145.4

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102333	1 As Proposed	516951.8	4404349.1	-80.802016	39.788925

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102333	-/-	Dvtd Orgnl Loc	Permitted	Robert L Shields et al	N-11HU	McMasters	Robert L Shields et al	Tug Hill Operating, LLC	11483	Pt Pleasant Fm			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT
4705102333	-/-	-/-	1208	Ground Level																					

WV Geological & Economic Survey

Well: County = 51 Permit = 02334

Report Time: Tuesday, June 22, 2021 2:41:23 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102334	Marshall	2334	Franklin	Powhatan Point	Clarrington	39.760132	-80.78756	518197.1	4401156.4

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102334	1 As Proposed	517359.7	4404404.8	-80.78725	39.788418

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102334	-/-	Dvtd Orgnl Loc	Permitted	Robert L Shields et al	N-15HU	McMasters	Robert L Shields et al	Tug Hill Operating, LLC	11484	Pt Pleasant Fm			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT
4705102334	-/-	-/-	1208	Ground Level																					

WV Geological & Economic Survey

Well: County = 51 Permit = 02337

Report Time: Tuesday, June 22, 2021 2:41:40 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102337	Marshall	2337	Franklin	Powhatan Point	Clarrington	39.760312	-80.787558	518197.3	4401176.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102337	1 As Proposed	519266.3	4398050.8	-80.775169	39.732127

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102337	-/-	Dvtd Orgnl Loc	Permitted	Robert L Shields et al	S-16HU	McMasters	R L Shields et al	Tug Hill Operating, LLC	11407	Pt Pleasant Fm			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_AFT
4705102337	-/-	-/-	1209	Ground Level																					

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

WV Geological & Economic Survey

Well: County = 51 Permit = 02338

Report Time: Tuesday, June 22, 2021 2:41:52 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102338	Marshall	2338	Franklin	Powhatan Point	Clarrington	39.760302	-80.787515	518200.9	4401175.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102338	1 As Proposed	519596.2	4388241.3	-80.771313	39.733836

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102338	-/-	Dvtd Orgnl Loc	Permitted	Robert L Shields et al	S-17HU	McMasters	R L Shields et al	Tug Hill Operating, LLC	11427	Pt Pleasant Fm			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_
4705102338	-/-	-/-	1208	Ground Level																					

WV Geological & Economic Survey

Well: County = 51 Permit = 02339

Report Time: Tuesday, June 22, 2021 2:42:05 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102339	Marshall	2339	Franklin	Powhatan Point	Clarrington	39.760302	-80.787472	518204.6	4401175.2

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102339	1 As Proposed	519390.1	4399359.7	-80.773686	39.743918

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102339	-/-	Dvtd Orgnl Loc	Permitted	Robert L Shields et al	S-18HU	McMasters	R L Shields et al	Tug Hill Operating, LLC	11448	Pt Pleasant Fm			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_
4705102339	-/-	-/-	1208	Ground Level																					

WV Geological & Economic Survey

Well: County = 51 Permit = 02340

Report Time: Tuesday, June 22, 2021 2:42:17 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102340	Marshall	2340	Franklin	Powhatan Point	Clarrington	39.760302	-80.78743	518208.3	4401175.2

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102340	1 As Proposed	519721.5	4399547.6	-80.788812	39.745603

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102340	-/-	Dvtd Orgnl Loc	Permitted	Robert L Shields et al	S-19HU	McMasters	R L Shields et al	Tug Hill Operating, LLC	11471	Pt Pleasant Fm			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_
4705102340	-/-	-/-	1208	Ground Level																					

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

WV Geological & Economic Survey:

Well: County = 51 Permit = 02341

Report Time: Tuesday, June 22, 2021 2:42:31 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102341	Marshall	2341	Franklin	Powhatan Point	Clarington	39.760301	-80.787387	518211.9	4401175.2

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102341	1 As Proposed	519921.6	4399961.4	-80.787464	39.749327

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705102341	-/-	Dvld Orgnl Loc	Permitted	Robert L Shields et al			S-20HU	McMasters	R.L Shields et al	Tug Hill Operating, LLC		11492	Pt Pleasant Fm

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_
4705102341	-/-	-/-	1208	Ground Level																					

WV Geological & Economic Survey:

Well: County = 51 Permit = 70807

Report Time: Tuesday, June 22, 2021 2:42:46 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170807	Marshall	70807	Franklin	Powhatan Point	Clarington	39.789856	-80.818555	515535.5	4404449.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170807	-/-	unknown	Prpty Map	John Haberhehl						----- unknown -----			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BE
4705170807	-/-	-/-						unclassified	unclassified	not available	unknown	unknown												

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

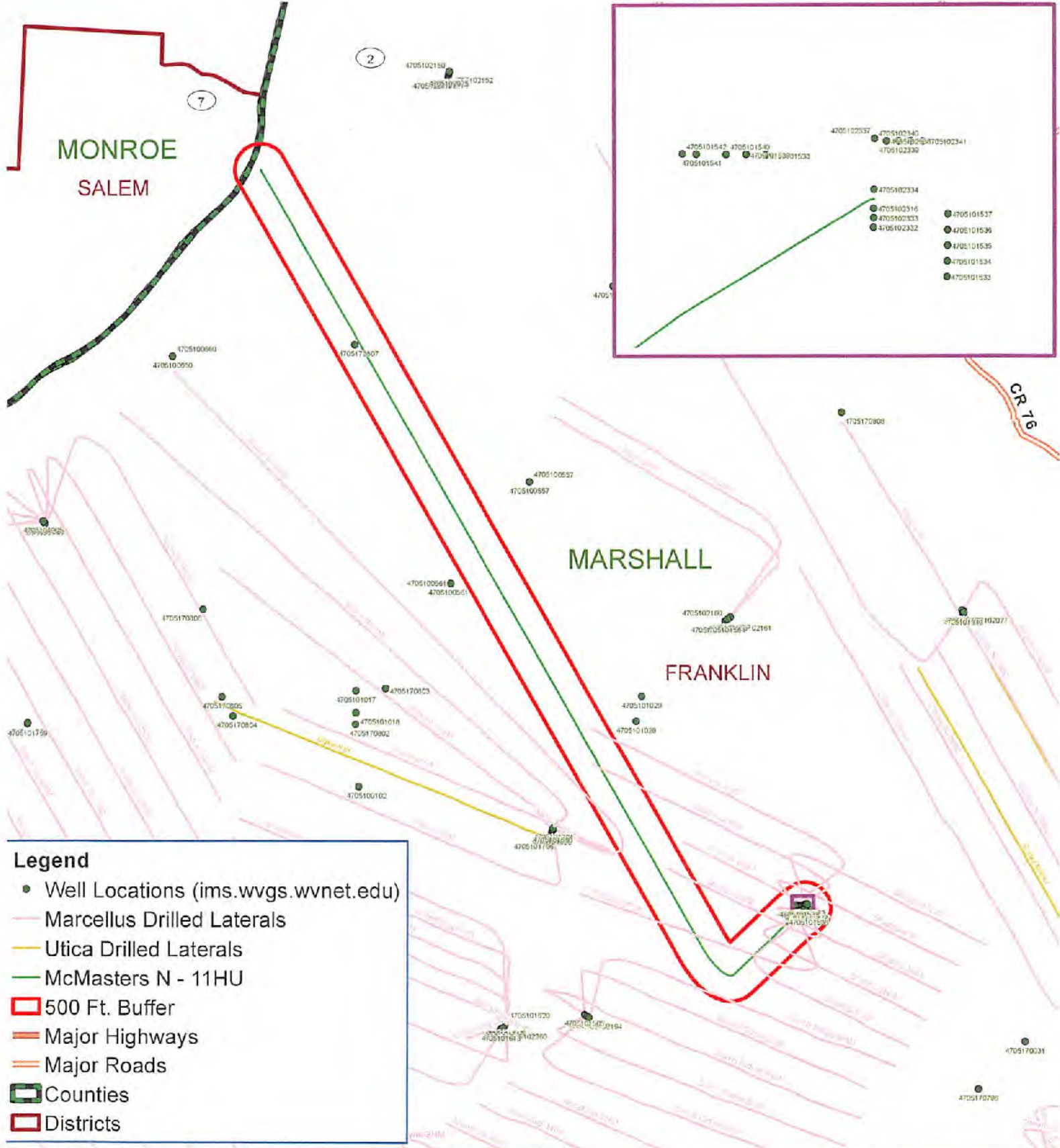
There is no Stratigraphy data for this well

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

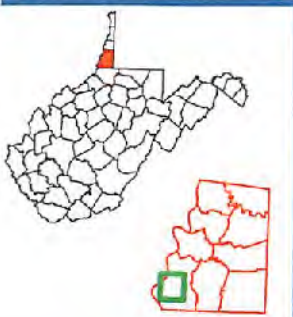
There is no Plugging data for this well

There is no Sample data for this well

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



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



McMasters N - 11HU
 Franklin District
 Marshall County, WV



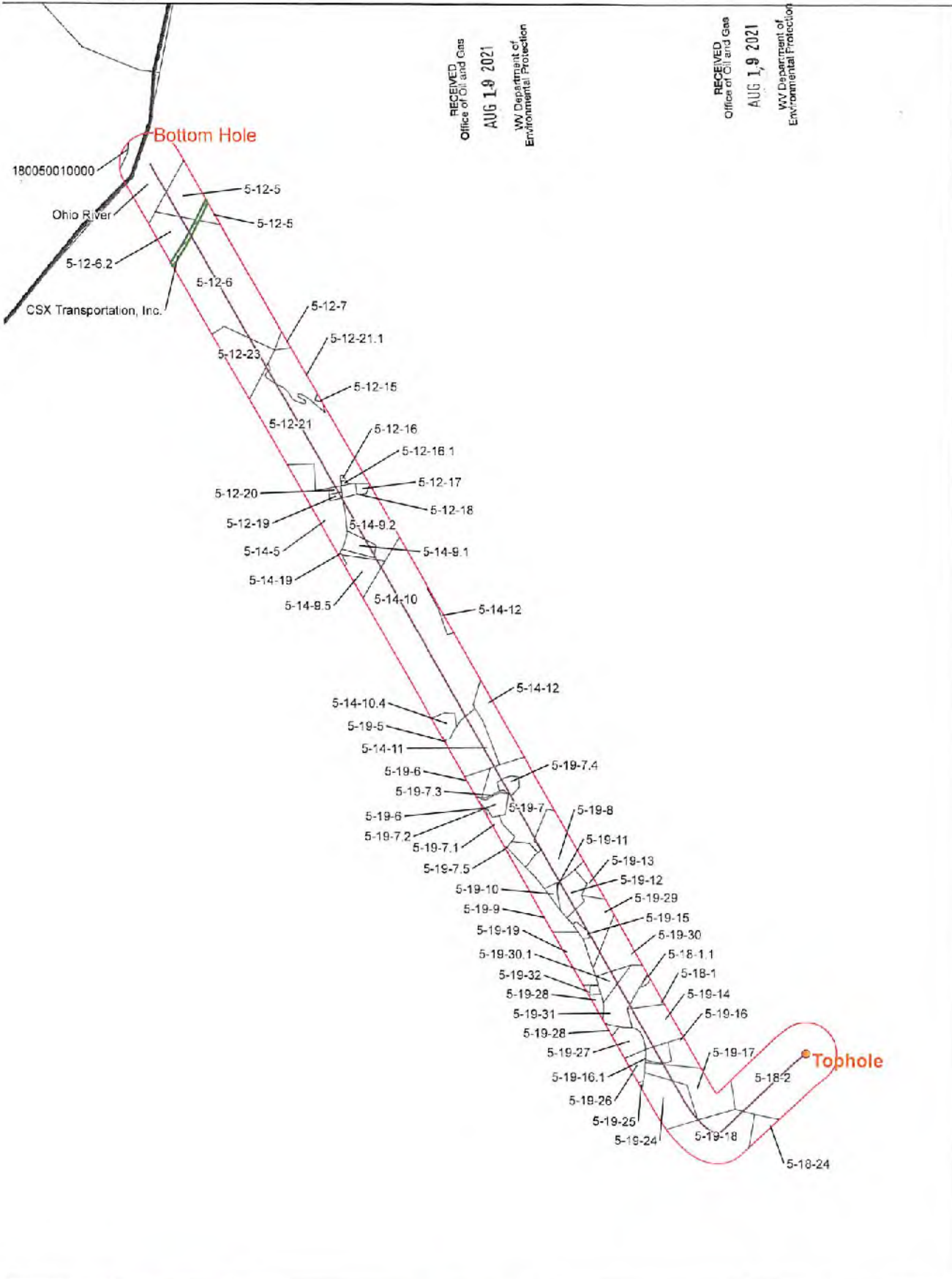
Notes:
 All locations are approximate and are for visualization purposes only.

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



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

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



Document ID: 180050010000
Revision: 1.0
Date: 08/16/2021
Scale: 1" = 40,000'
Units: Feet

CONFIDENTIAL



- Utica Well
- Force Pool
- 500' Buffer

McMasters N-11HU
Operators within 500 Feet of Well Borehole



10/08/2021

WELL	COUNTY	DISTRICT	PARCEL	OWNER	ADDRESS
McMasters N-11HU	Marshall	Franklin	5-12-5	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-12-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-6.2	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-12-7	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-15	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-12-16	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-12-16.1	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-12-17	TH EXPLORATION II, LLC * (see footnote)	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-17	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-17	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-12-18	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-18	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-18	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-12-19	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-19	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-19	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-12-20	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-12-20	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-21	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-21	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-21.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-12-23	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107

10/08/2021

McMasters N-11HU	Marshall	Franklin	5-12-23	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-5	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-9.1	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-14-9.1	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-9.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-9.1	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-14-9.2	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-9.2	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-9.2	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-14-9.5	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-14-9.5	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-9.5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-10	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-10.4	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-11	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-12	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-19	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-14-19	HG ENERGY II APPALACHIA LLC	5260 Dupont Road Parkersburg, WV 26101
McMasters N-11HU	Marshall	Franklin	5-18-1	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-18-1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-18-1.1	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107

10/08/2021

McMasters N-11HU	Marshall	Franklin	5-18-1.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-18-2	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-18-24	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-5	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-6	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-7	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-7.1	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-7.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-7.2	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-7.3	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-7.4	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-7.5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-8	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-9	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-9	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-10	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-11	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-12	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107

10/08/2021

McMasters N-11HU	Marshall	Franklin	5-19-13	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-13	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-14	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-15	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-16	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-16.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-17	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-18	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-19	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-24	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-25	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-26	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-27	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-28	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-29	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-30	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-30.1	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-31	TH EXPLORATION II, LLC *	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	5-19-32	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
McMasters N-11HU	Marshall	Franklin	RAILROAD	CSX TRANSPORTATION INC	500 Water Street Jacksonville, FL 32202

10/08/2021

McMasters N-11HU	Marshall	Franklin	OHIO RIVER	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
<p>* TH Exploration II, LLC is a wholly owned subsidiary of THQ Appalachia I, LLC. Tug Hill Operating, LLC provides oil and gas operations services to THQ Appalachia I, LLC under that certain Operating Services Agreement dated July 23, 2014. For further info please see the recorded affidavit submitted as part of the permit package.</p>					



TUG HILL
OPERATING

Bay Stiles 7-21-21

Well Site Safety Plan
Part A – Site Specific Data and Figures

Well Name: McMasters N-11HU

Pad Name: Shields

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,401,152.69

Easting: 518,197.09

**KEY CONTACT FOR WELL SITE SAFETY PLAN
DEVELOPMENT AND MAINTENANCE**

Jerry V. DeRosa, Director EH&S Affairs

(724) 338-2029 (office)

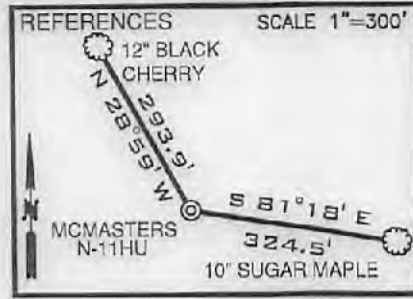
(412) 736-5767 (cellular)

24-HOUR EMERGENCY PHONE NUMBER

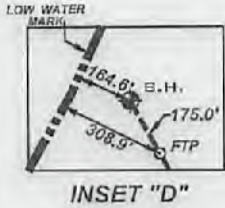
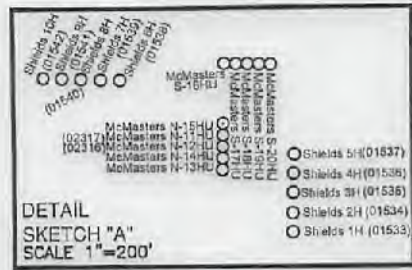
(800) 921-9745

RECEIVED
Office of Oil and Gas
AUG 19 2021
10/08/2021
Department of
Environmental Protection

MCMASTERS LEASE
WELL N-11HU
608.7765± ACRES

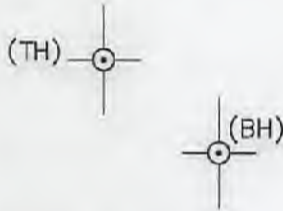


TOP HOLE LATITUDE: 39°47'30"
BOTTOM HOLE LATITUDE: 39°50'00"



(-) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

INSET "C" NTS

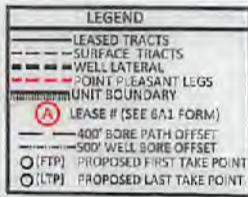


LINE	BEARING	DISTANCE
L1	N 71°00' W	1425.18'
L2	S 41°01' W	1285.18'
L3	S 52°58' W	230.81'
L4	S 47°35' W	1629.93'

SURFACE HOLE UTM. NAD83, ZONE 17 IN METERS
N) 4,401,152.69 E) 518,197.09
LANDING POINT 1 UTM. NAD83, ZONE 17 IN METERS
N) 4,400,938.84 E) 517,584.21
BOTTOM HOLE UTM. NAD83, ZONE 17 IN METERS
N) 4,405,477.65 E) 514,980.86

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 84°30' W	9.05'	26.28'	9.10'
C2	S 66°21' W	55.70'	85.89'	56.73'
C3	N 73°37' W	117.34'	218.76'	113.80'
C4	N 51°05' W	181.37'	703.53'	181.88'
C5	N 39°59' W	244.94'	1487.09'	245.22'
C6	N 32°14' W	306.73'	2519.86'	309.92'

- NOTES
- BORE PATH BASED ON GRID NORTH.
 - NO WATER WELLS WITHIN 130' 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 825' OF PAD CENTER WERE FOUND.
 - OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 2019. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
 - WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
 - ALL DEEP WELLS SHOWN ON THIS PLAT.
 - BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCCAMEY & CHILCOTE, P.C. FILE 0058304.0401147



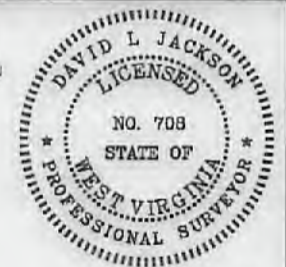
FILE NUMBER _____
DRAWING NUMBER: **MCMASTERS_N-11HU_REV4**
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: **SUBMETER MAPPING**
GRADE GPS

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

P.S. 708

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



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



DATE: FEBRUARY 12, 2020
REVISED: SEPTEMBER 28, 2021
OPERATORS WELL NO. MCMASTERS N-11HU
API WELL NO. 47-051-02317 MOD
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___
LOCATION ELEVATION 1207.50' WATERSHED (HUC 10) FISH CREEK (HUC-10)
DISTRICT FRANKLIN COUNTY MARSHALL
QUADRANGLE POWHATAN POINT 7.5' LEASE NUMBER _____ SEE WW-6A1 FORM
SURFACE OWNER ROBERT L. SHIELDS, ET AL ACREAGE 104.11
OIL & GAS ROYALTY OWNER ROBERT L. SHIELDS, ET AL LEASE ACREAGE 104.11
PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___
PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE (SPECIFY) _____
TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,371' TMD: 29,038'
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN
CT CORPORATION
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5098 WASHINGTON St. W
FORT WORTH, TX 76107 CHARLESTON, WV 25313-1561

10/08/2021

COUNTY NAME
PERMIT

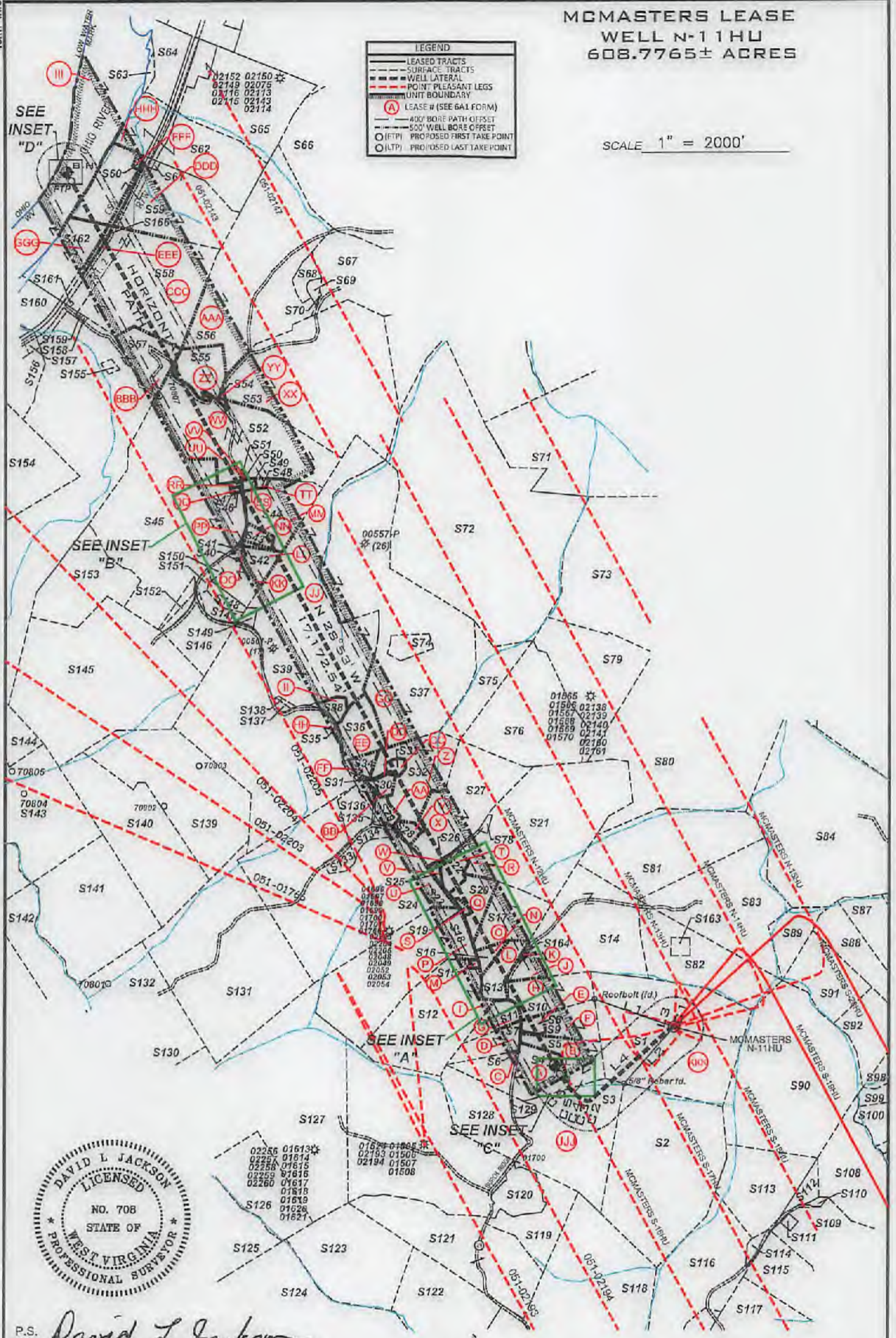
form wwg

MCMASTERS LEASE WELL N-11HU 608.7765± ACRES

LEGEND

- LEASE TRACTS
- - - SURFACE TRACTS
- - - WELL LATERAL
- - - POINT PLEASANT LEGS
- - - UNIT BOUNDARY
- (A) LEASE # (SEE GAL FORM)
- ADDY BORE PATH OFFSET
- 500' WELL BORE OFFSET
- (FTP) PROPOSED FIRST TAKE POINT
- (LTP) PROPOSED LAST TAKE POINT

SCALE 1" = 2000'



P.S. 708 *David L Jackson*

10/08/2021



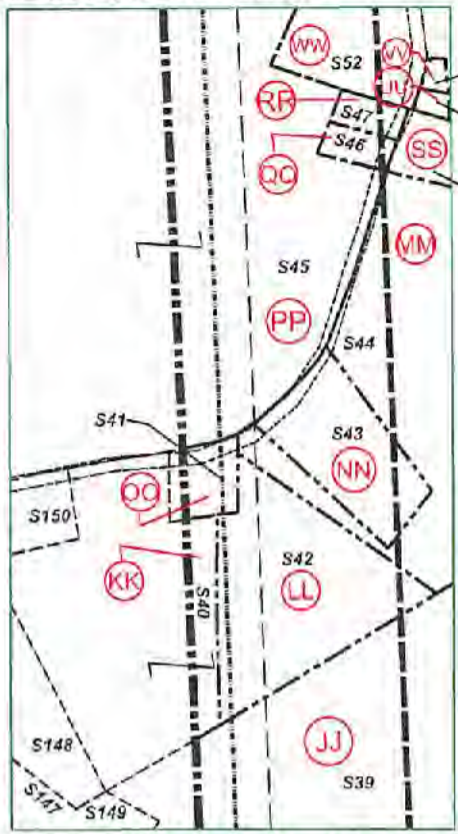
TUG HILL OPERATING

OPERATOR'S
WELL #: MCMASTERS N-11HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02317 MOD

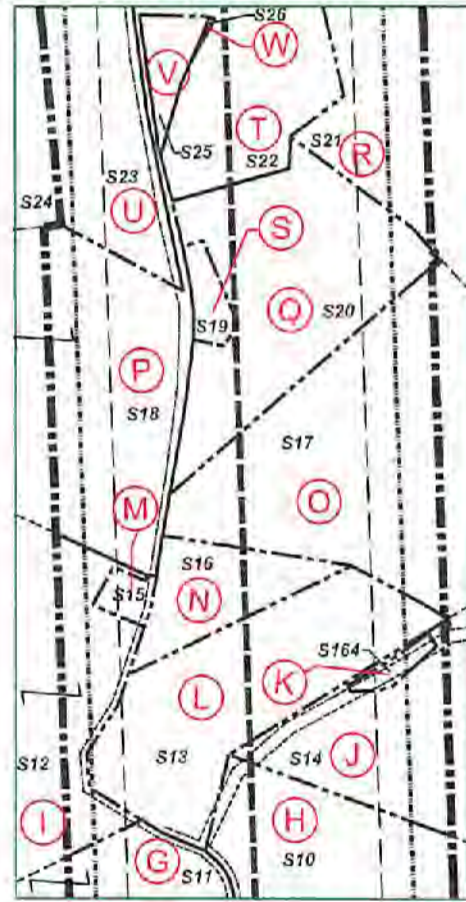
WELL PLAT
PAGE 2 OF 4
DATE: 02/12/2020
REVISED: 09/28/2021

form WVC

PG 3 OF 4 MCMASTERS LEASE
WELL N-11HU
608.7765± ACRES



INSET
"B"



INSET
"A"



P.S. 708 *David L Jackson*

Number	TAX MAP - PARCEL	ADJOINER OWNER	ACRES
S1	KKK 05-18-02	Robert L. Shields, Et Al	104.11
S2	05-18-24	Duane Brunn	102.0
S3	JJJ 05-19-18	Mark E. Yoho, Et Ux	55,948
S4	A 05-19-24	Mark E. Yoho	15.438
S5	B 05-19-17	Mark A. Yoho	15,263
S6	C 05-19-25	David E. Yoho & Mark E. Yoho	9.976
S7	D 05-19-26	Roger J. & Beth E. James	9.977
S8	E 05-19-16.1	Robert L. & Rebecca A. Shields	2.307
S9	F 05-19-16	Robert L. Shields & Donald Shields	11.612
S10	H 05-19-14	James & Sherry Beeble	18,356
S11	G 05-19-27	David E. Yoho & Mark E. Yoho	7.041
S12	I 05-19-28	David E. Yoho & Mark E. Yoho	56,899
S13	L 05-19-31	Charles F. & Diana L. Haynes	8,779
S14	J 05-18-01	Diana Henry Haynes & Carol C. Henry	62,908
S15	M 05-19-32	Jasper N. Burch, Et Al-Trustees	0.397
S16	N 05-19-30.1	Eric R.W. & Ashley A. Huggins	2,911
S17	O 05-19-30	Ernie & Tammy Anderson	19,037
S18	P 05-19-19	Russell Blake, Et Ux	66.4
S19	S 05-19-15	Carly Herman	0.72
S20	Q 05-19-29	Ernie L. & Tammy L. Anderson	10,961
S21	R 05-19-13	Rona Lee Rice & Charles Franklin McCardle	94,925
S22	T 05-19-12	Ernie L. Anderson, Et Ux	5.33
S23	U 05-19-09	Penny Elaine Ashcraft	10.44
S24	05-19-20	Wilbert H. Bungard, Et Ux	114,989
S25	V 05-19-10	Ernie L. Anderson, Et Ux	0,8125
S26	W 05-19-11	Ernie L. Anderson, Et Ux	0.08
S27	X 05-19-08	CNX Gas Company LLC	40.0
S28	Y 05-19-7.5	Adam T. & Jesse L. Anderson	2.64
S29	AA 05-19-7.1	Robert L. Shields, Et Ux	3,399
S30	BB 05-19-7.2	Olan Rulan	2,783
S31	DD 05-19-7.3	Olan V. Rulan	0.341
S32	Z 05-19-07	Olan V. Rulan, Et Ux	32,4801
S33	CC 05-19-7.4	Olan V. Rulan, Et Ux	1.787
S34	FF 05-19-06	Belinda Kay Meadows, Rebecca Ann Shields & Olan V. Rulan	5,1099
S35	HH 05-19-05	Margirene Keefe	126.03
S36	EE 05-14-11	Dale R. Gallaher, Et Al	12.0
S37	GG 05-14-12	Dale R. Gallaher, Et Al	135.10
S38	II 05-14-10.4	Adam R. & Jesse L. Robinson	3,343
S39	JJ 05-14-10	Wanda P. Rine, Life	107,372
S40	KK 05-14-09	Walter W. Streight Jr., Et Ux	9,311
S41	OO 05-14-19	Brian A. & Charlotte Mull	0.92
S42	LL 05-14-9.5	Maria T. Flores	6,024
S43	NN 05-14-9.1	Maria T. Flores	2,882
S44	MM 05-14-9.2	Maria T. Flores	25.0
S45	PP 05-14-05	Donna K. & Leroy Anderson	110.5
S46	QQ 05-12-19	Joni Lyn Leon	0.457
S47	RR 05-12-20	Joni Lyn Leon	0.457
S48	TT 05-12-17	Joni Lyn Leon	0.752
S49	SS 05-12-18	Joni Lyn Leon	1,018
S50	UU 05-12-16.1	Gary E. Gibson, Et Al	0.146
S51	VV 05-12-16	Gary E. Gibson, Et Al	0.104
S52	WW 05-12-21	Edward L. Gioson-Life	73,436
S53	XX 05-12-14	Linda Hamilton, Et Al	117,495
S54	YY 05-12-15	Woodland Hill Church of God TRS	0,375
S55	ZZ 05-12-21.1	Robert W. Jr. & Wendy L. Riggerbach	14,222
S56	AAA 05-12-07	Robert WM Riggerbach, Et Ux	104,231
S57	BBB 05-12-23	CNX Land Resources Inc.	236.1
S58	CCC 05-12-06	CNX Land Resources Inc.	70.81
S59	DDD 05-12-05	CNX Land Resources Inc.	61,883
S60	FFF 05-12-04	CNX Land Resources Inc.	0.93
S61	05-12-5.1	CNX Land Resources Inc.	0.52
S62	HHH 05-12-03	CNX Land Resources Inc.	62.30
S63	05-12-01	United States of America	1.68
S64	05-12-2.1	Consolidation Coal Company/ Murray Energy	22.0
S65	05-12-02	CNX Land Resources Inc.	60.68
S66	05-12-08	Anita Ray Miller-Life	100,35
S67	05-12-13	Linda Hamilton, Et Al	41,887
S68	05-12-7.2	Raymond K. Miller	4.66
S69	05-12-7.1	Raymond K. Miller	1,609
S70	05-12-13.1	Raymond K. Miller	0,113
S71	05-11-15	Lionel L. Persinger, Et Ux	93.0
S72	05-14-13	Ralph D. & Sally Jane Hoyt	222,18
S73	05-15-01	Marcus Sharp & Angela R. Schlabach	121.0
S74	05-14-12.1	Henry Wilson Plunkert Jr.	5.0
S75	05-14-14	Robert L. Shields, Et Al	29,005
S76	05-14-15	Robert L. Shields, Et Al	53.0
S78	05-19-13.1	Donald Shields	0.80
S79	05-15-15	Robert L. Shields, Et Al	49.0
S80	05-15-12	John David Petrock & Thomas Andrew Petrock	150,23
S81	05-15-11	Diana Henry Haynes & Carol Henry	65.59
S82	05-18-03	Olan V. & Patricia E. Rulan	43,677
S83	05-18-04	Olan & Patricia Rulan	65.89
S84	05-15-10	Mark Stanley Ruckman	153,75
S85	05-18-11.1	Edward Lee Burge, Jr.	18.0
S86	05-18-15	Edward Lee Burge, Jr.	2,495
S87	05-18-15.4	Edward Lee Burge, Jr.	22,34
S88	05-18-15.3	Charles Yeater	26,44
S89	05-18-05	Terry Meloit	8.14
S90	05-18-23	XCL Midstream Operating LLC	110.0
S91	05-18-06	Charles Yeater	26.0
S92	05-18-07	Charles Yeater	24,22

10/08/2021



TUG HILL
OPERATING

OPERATOR'S
WELL #: MCMASTERS N-11HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02317 Mod

WELL PLAT
PAGE 3 OF 4
DATE: 02/12/2020
REVISED: 09/28/2021

PG 4 OF 4 MCMASTERS LEASE
WELL N-11HU
608.7765± ACRES

Table with columns: Number, TAX MAP + PARCEL, ADJOINER OWNER, ACRES. Lists various land parcels and their owners, including Darrall & Teresa Boley, David V. Anderson, etc.

Table with columns: Lease ID, Tag, Parcel, Frantor, Lessor, Etc., Deed Book/Page. Lists lease details for various parcels, including lease IDs like 10**4285 and 10**4297.

* Co-tenancy utilization - At least 7 mineral owners in tract. At least 75% of the royalty owners have executed a lease.



P.S. 708

David L. Jackson

10/08/2021



TUG HILL
OPERATING

OPERATOR'S
WELL #: McMasters N11-HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02317 W&D

WELL PLAT
PAGE 4 OF 4
DATE: 02/12/2020
REVISED: 09/28/2021

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

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

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

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

*See attached pages

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

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

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

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

RECEIVED
Office of Oil and Gas
AUG 19 2021

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. Morris *Amy Morris*
 Its: Permitting Specialist - Appalachia Region

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

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*14295	A	5-19-24	MARK E. YOHO AND MARY YOHO, HUSBAND AND WIFE	TRIEENERGY, INC.	1/8*	655 546	19/623 TriEnergy Inc to AB Resources LLC	666/40 AB Resources LLC to Chief Exploration & Development LLC	21/148 TriEnergy Inc and AB Resources LLC to TriEnergy Holdings LLC	21/520 Chief Exploration & Development LLC and Radier 2000 Limited Partnership to Enerplus Resources USA	720/214 TriEnergy Holdings LLC to AB Resources LLC	24/39 AB Resources LLC, Chief Expl & Devel LLC, Radier 2000 Ltd Partnership and Enerplus Resources USA to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14295	B	5-19-17	MARK E. YOHO AND MARY YOHO, HUSBAND AND WIFE	TRIEENERGY, INC.	1/8*	655 546	19/623 TriEnergy Inc to AB Resources LLC	666/40 AB Resources LLC to Chief Exploration & Development LLC	21/148 TriEnergy Inc and AB Resources LLC to TriEnergy Holdings LLC	21/520 Chief Exploration & Development LLC and Radier 2000 Limited Partnership to Enerplus Resources USA	720/214 TriEnergy Holdings LLC to AB Resources LLC	24/39 AB Resources LLC, Chief Expl & Devel LLC, Radier 2000 Ltd Partnership and Enerplus Resources USA to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*16736	E	5-19-16.1	ROBERT L SHIELDS AND REBECCA A SHIELDS	THI EXPLORATION LLC	1/8*	942 29	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14116	F	5-19-16	DONALD SHIELDS	GASTAR EXPLORATION USA INC	1/8*	669 367	NA	NA	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14117	F	5-19-16	ROBERT L SHIELDS AND REBECCA A SHIELDS	GASTAR EXPLORATION USA INC	1/8*	669 360	NA	NA	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14127	H	5-19-14	JAMES & SHERRY BEEGLE ET AL	GASTAR EXPLORATION USA INC	1/8*	699 218	NA	NA	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14142	J	5-18-1	BENIAMIN FRANKLIN HENRY	GASTAR EXPLORATION USA INC	1/8*	718 498	NA	NA	NA	NA	NA	735/263 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14143	J	5-18-1	LOIS BARRETT	GASTAR EXPLORATION USA INC	1/8*	758 435	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14144	J	5-18-1	RHONDA BARRETT	GASTAR EXPLORATION USA INC	1/8*	760 366	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14145	J	5-18-1	JAMES DONALD BARRETT (DECEASED)	GASTAR EXPLORATION USA INC	1/8*	760 372	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14146	J	5-18-1	JO ANNE BARRETT	GASTAR EXPLORATION USA INC	1/8*	760 375	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14147	J	5-18-1	INEZ DORNON	GASTAR EXPLORATION USA INC	1/8*	760 378	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14148	J	5-18-1	HAZEL L RITCHIE	GASTAR EXPLORATION USA INC	1/8*	760 381	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14149	J	5-18-1	MINNIE PFALZGRAF	GASTAR EXPLORATION USA INC	1/8*	760 369	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14150	J	5-18-1	ARLENE MCCORT	GASTAR EXPLORATION USA INC	1/8*	762 448	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14151	J	5-18-1	RICHARD D LEASURE	GASTAR EXPLORATION USA INC	1/8*	762 451	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14152	J	5-18-1	REBECCA LINN	GASTAR EXPLORATION USA INC	1/8*	762 98	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14153	J	5-18-1	RICHARD LINN	GASTAR EXPLORATION USA INC	1/8*	762 95	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14154	J	5-18-1	JANICE BROWN	GASTAR EXPLORATION USA INC	1/8*	762 92	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14155	J	5-18-1	GUY MCCORT	GASTAR EXPLORATION USA INC	1/8*	765 74	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*14156	J	5-18-1	JOE JOHNSON	GASTAR EXPLORATION USA INC	1/8*	765 80	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14157	J	5-18-1	HARLAN BARRETT	GASTAR EXPLORATION USA INC	1/8*	765 77	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14158	J	5-18-1	JAMES HOLLAND	GASTAR EXPLORATION USA INC	1/8*	765 421	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14159	J	5-18-1	ROSS BARRETT	GASTAR EXPLORATION USA INC	1/8*	765 424	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14160	J	5-18-1	KATHY BECHTLE	GASTAR EXPLORATION USA INC	1/8*	765 436	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14161	J	5-18-1	JANICE DODD	GASTAR EXPLORATION USA INC	1/8*	765 427	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14162	J	5-18-1	ALLEN L YEATER	GASTAR EXPLORATION USA INC	1/8*	768 555	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14163	J	5-18-1	MARGARET WILSON FITZSIMMONS	GASTAR EXPLORATION USA INC	1/8*	768 567	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14164	J	5-18-1	BARBARA YEATER PERSINGER	GASTAR EXPLORATION USA INC	1/8*	768 557	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14165	J	5-18-1	RACHEL A YEATER	GASTAR EXPLORATION USA INC	1/8*	768 559	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14166	J	5-18-1	TERI LEE YEATER PARRISH	GASTAR EXPLORATION USA INC	1/8*	768 563	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14167	J	5-18-1	KAREN YEATER JONES	GASTAR EXPLORATION USA INC	1/8*	768 565	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14168	J	5-18-1	JUDITH HANNAHS	GASTAR EXPLORATION USA INC	1/8*	770 468	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14169	J	5-18-1	LENA G BLOHM	GASTAR EXPLORATION USA INC	1/8*	770 471	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14170	J	5-18-1	JAMES C KLING	GASTAR EXPLORATION USA INC	1/8*	772 405	NA	NA	NA	NA	NA	27/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14171	J	5-18-1	MICHAEL GALE AIF JOSEPHINE GALE	GASTAR EXPLORATION USA INC	1/8*	775 23	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14172	J	5-18-1	JOHN R & LINDA WILSON	GASTAR EXPLORATION USA INC	1/8*	775 25	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14173	J	5-18-1	BARBARA L YEATER	GASTAR EXPLORATION USA INC	1/8*	775 27	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14174	J	5-18-1	CHARLES E YEATER JR	GASTAR EXPLORATION USA INC	1/8*	775 29	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14175	J	5-18-1	JANIE LYNN SWINGLE	GASTAR EXPLORATION USA INC	1/8*	775 19	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment		
10*14176	J	5-18-1	CONRAD S YEATER	GASTAR EXPLORATION USA INC	1/8+	775 368	NA	NA	NA	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14177	J	5-18-1	CAROLYN LOWE WELLER	GASTAR EXPLORATION USA INC	1/8+	775 366	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14178	J	5-18-1	LEANETTE LONG	GASTAR EXPLORATION USA INC	1/8+	775 363	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14179	J	5-18-1	VERA SHIRLENE WORKMAN	GASTAR EXPLORATION USA INC	1/8+	775 361	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14180	J	5-18-1	DIANA S GRAFTON	GASTAR EXPLORATION USA INC	1/8+	776 303	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14181	J	5-18-1	DONALD BROOKS WESLEY	GASTAR EXPLORATION USA INC	1/8+	776 305	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14182	J	5-18-1	RICK WEEKLY	GASTAR EXPLORATION USA INC	1/8+	776 307	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14183	J	5-18-1	NANCY J FOTI	GASTAR EXPLORATION USA INC	1/8+	776 299	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14184	J	5-18-1	HESTER LORETTA DUGAN	GASTAR EXPLORATION USA INC	1/8+	776 301	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14185	J	5-18-1	NICOLE WEEKLY	GASTAR EXPLORATION USA INC	1/8+	776 309	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14186	J	5-18-1	WILLIAM GLENN YEATER	GASTAR EXPLORATION USA INC	1/8+	776 311	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14187	J	5-18-1	GERALD E YEATER	GASTAR EXPLORATION USA INC	1/8+	776 323	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14188	J	5-18-1	WILMA M MILLER	GASTAR EXPLORATION USA INC	1/8+	776 321	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14189	J	5-18-1	BILLIE JO BETHEL	GASTAR EXPLORATION USA INC	1/8+	776 319	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14190	J	5-18-1	ELIZABETH LOUISE YEATER MORAN	GASTAR EXPLORATION USA INC	1/8+	776 317	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14191	J	5-18-1	LARRY W. YEATER	GASTAR EXPLORATION USA INC	1/8+	776 315	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14192	J	5-18-1	MYRA HEWITT	GASTAR EXPLORATION USA INC	1/8+	777 581	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14193	J	5-18-1	SONDRA R KING	GASTAR EXPLORATION USA INC	1/8+	777 579	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14194	J	5-18-1	SANDRA REID CUMPSTON	GASTAR EXPLORATION USA INC	1/8+	777 574	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14195	J	5-18-1	FREDERICK MAXWELL YEATER	GASTAR EXPLORATION USA INC	1/8+	777 583	NA	NA	NA	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*14196	J	5-18-1	ROSEMARY AGNES YEATER LUNEMANN	GASTAR EXPLORATION USA INC	1/8*	777 587	NA	NA	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14197	J	5-18-1	PHYLLIS YEATER GREGOSKY	GASTAR EXPLORATION USA INC	1/8*	777 585	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14198	J	5-18-1	MARY J YEATER EARNSHAW	GASTAR EXPLORATION USA INC	1/8*	777 590	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14199	J	5-18-1	MARY MARGARET WELLMAN BURLEY	GASTAR EXPLORATION USA INC	1/8*	779 488	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14200	J	5-18-1	RANDALL D MORRIS	GASTAR EXPLORATION USA INC	1/8*	779 490	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14201	J	5-18-1	WILLIAM J VESI TRUST AGMT LARRY W YEATER TRUSTEE	GASTAR EXPLORATION USA INC	1/8*	786 490	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14202	J	5-18-1	MAY H RUCKMAN	GASTAR EXPLORATION USA INC	1/8*	779 486	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14203	J	5-18-1	LUNDA KAY MORRIS WILSON	GASTAR EXPLORATION USA INC	1/8*	781 541	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14204	J	5-18-1	JEANETTE SOUTH	GASTAR EXPLORATION USA INC	1/8*	781 537	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14205	J	5-18-1	ANN LOUISE YEATER MARTIN	GASTAR EXPLORATION USA INC	1/8*	781 533	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14206	J	5-18-1	COLLEEN MCCLAIN MOORE	GASTAR EXPLORATION USA INC	1/8*	781 535	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14207	J	5-18-1	FREDRIC & BETTY RICHTER	GASTAR EXPLORATION USA INC	1/8*	781 612	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14208	J	5-18-1	NANCY D TRUOX	GASTAR EXPLORATION USA INC	1/8*	782 202	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14209	J	5-18-1	MARY JANE BUNGARD	GASTAR EXPLORATION USA INC	1/8*	782 210	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14210	J	5-18-1	JANET E PERSONS	GASTAR EXPLORATION USA INC	1/8*	782 204	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14211	J	5-18-1	STEPHEN L YEATER	GASTAR EXPLORATION USA INC	1/8*	782 206	NA	NA	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14212	J	5-18-1	MARTHA ANN GAMBLE & DAN MIGLIORINI	GASTAR EXPLORATION USA INC	1/8*	782 609	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14213	J	5-18-1	SHIRLEY E GOUR	GASTAR EXPLORATION USA INC	1/8*	782 611	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14214	J	5-18-1	SIDNEY F YOHO JR	GASTAR EXPLORATION USA INC	1/8*	782 605	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14215	J	5-18-1	SCOTT K & KATHIE J RICHTER	GASTAR EXPLORATION USA INC	1/8*	782 607	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment		
10*14216	J	5-18-1	DOUGLAS I GAMBLE	GASTAR EXPLORATION USA INC	1/8+	783 493	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14217	J	5-18-1	DONNA S AND DONALD S KIRCH	GASTAR EXPLORATION USA INC	1/8+	783 497	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14218	J	5-18-1	MICKEY L PORTER	GASTAR EXPLORATION USA INC	1/8+	783 506	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14219	J	5-18-1	SUSAN J BROWN	GASTAR EXPLORATION USA INC	1/8+	783 504	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14220	J	5-18-1	JANIS L & ROY T MILLER	GASTAR EXPLORATION USA INC	1/8+	783 502	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14221	J	5-18-1	DEANNA R LAMBERT	GASTAR EXPLORATION USA INC	1/8+	783 500	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14222	J	5-18-1	ORVILLE V & MADONNA R BLANTON	GASTAR EXPLORATION USA INC	1/8+	783 512	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14223	J	5-18-1	SARAH E HOLT	GASTAR EXPLORATION USA INC	1/8+	783 510	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14224	J	5-18-1	SAMUEL E ZUGARO	GASTAR EXPLORATION USA INC	1/8+	784 193	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14225	J	5-18-1	THOMAS FRANCIS YOHO	GASTAR EXPLORATION USA INC	1/8+	784 195	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14226	J	5-18-1	MONICA ANN RENIN	GASTAR EXPLORATION USA INC	1/8+	784 197	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14227	J	5-18-1	HUBERT D MORRIS	GASTAR EXPLORATION USA INC	1/8+	784 199	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14228	J	5-18-1	KALFUS T DOUGHMAN	GASTAR EXPLORATION USA INC	1/8+	786 392	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14229	J	5-18-1	JEFFREY H WILSON & PRISCILLA S WILSON	GASTAR EXPLORATION USA INC	1/8+	786 375	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14230	J	5-18-1	JOSEPH P & BARBARA A WILSON	GASTAR EXPLORATION USA INC	1/8+	786 377	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14231	J	5-18-1	YVONNE MARIE SMITH	GASTAR EXPLORATION USA INC	1/8+	786 379	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14232	J	5-18-1	SANDRA L KELLY	GASTAR EXPLORATION USA INC	1/8+	786 400	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14233	J	5-18-1	THOMAS E PORTER	GASTAR EXPLORATION USA INC	1/8+	786 381	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14234	J	5-18-1	WILLIAM D ADAMS	GASTAR EXPLORATION USA INC	1/8+	786 373	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14235	J	5-18-1	JOHN C WILSON	GASTAR EXPLORATION USA INC	1/8+	786 386	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14236	J	5-18-1	RODNEY C LOWE	GASTAR EXPLORATION USA INC	1/8+	786 367	NA	NA	NA	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment		
10*14237	J	5-18-1	KELLY KERN	GASTAR EXPLORATION USA INC	1/8*	787 566	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14238	J	5-18-1	LYNN C LAMBERTSEN	GASTAR EXPLORATION USA INC	1/8*	789 283	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14239	J	5-18-1	JAMES S WILSON & ANN D WILSON	GASTAR EXPLORATION USA INC	1/8*	789 281	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14240	J	5-18-1	SHARON L YEATER	GASTAR EXPLORATION USA INC	1/8*	789 287	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14241	J	5-18-1	CAROL RUDY LANCH	GASTAR EXPLORATION USA INC	1/8*	789 305	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14242	J	5-18-1	PATTI J WILSON	GASTAR EXPLORATION USA INC	1/8*	789 581	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14243	J	5-18-1	JANET HILPERT	GASTAR EXPLORATION USA INC	1/8*	789 579	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14244	J	5-18-1	ANN M MARTINO SIMONE	GASTAR EXPLORATION USA INC	1/8*	790 580	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14245	J	5-18-1	ODETTE YEATER	GASTAR EXPLORATION USA INC	1/8*	790 503	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14246	J	5-18-1	SANDRA M WINSLOW	GASTAR EXPLORATION USA INC	1/8*	790 517	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14247	J	5-18-1	RICKEY ALLEN YEATER	GASTAR EXPLORATION USA INC	1/8*	790 513	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14248	J	5-18-1	TERRY W YEATER	GASTAR EXPLORATION USA INC	1/8*	790 515	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14249	J	5-18-1	CAROL VAN SCYOC	GASTAR EXPLORATION USA INC	1/8*	790 546	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14250	J	5-18-1	DONALD REX QUIGLEY	GASTAR EXPLORATION USA INC	1/8*	790 533	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14251	J	5-18-1	ELLEN IONA GORBY HEATH	GASTAR EXPLORATION USA INC	1/8*	792 108	NA	NA	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14252	J	5-18-1	THELMA VIRGINIA WHIPKEY YEATER	GASTAR EXPLORATION USA INC	1/8*	794 519	NA	NA	NA	NA	NA	806/1 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14253	J	5-18-1	PAGE D HUNT (DECEASED)	GASTAR EXPLORATION USA INC	1/8*	795 152	NA	NA	NA	NA	NA	806/1 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14254	J	5-18-1	PATRICIA A GULUTZ	GASTAR EXPLORATION USA INC	1/8*	796 72	NA	NA	NA	NA	NA	806/1 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14255	J	5-18-1	RUSSELL BARRETT	GASTAR EXPLORATION USA INC	1/8*	797 193	NA	NA	NA	NA	NA	806/1 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14256	J	5-18-1	MICHAEL JOHNSON	GASTAR EXPLORATION USA INC	1/8*	799 55	NA	NA	NA	NA	NA	806/1 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment		
10*14257	J	5-18-1	KATHRYN L MILLER	GASTAR EXPLORATION USA INC	1/8*	799 534	NA	NA	NA	NA	NA	NA	806/71 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14258	J	5-18-1	MARGUERITE HARBISON	GASTAR EXPLORATION USA INC	1/8*	799 532	NA	NA	NA	NA	NA	NA	806/71 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14259	J	5-18-1	GEORGE MARTINO JR	GASTAR EXPLORATION USA INC	1/8*	803 146	NA	NA	NA	NA	NA	NA	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	31/184 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14260	J	5-18-1	JOHN K OTTO	GASTAR EXPLORATION USA INC	1/8*	803 160	NA	NA	NA	NA	NA	NA	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	31/184 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14261	J	5-18-1	JEAN MARIE SHEPARD	GASTAR EXPLORATION USA INC	1/8*	804 249	NA	NA	NA	NA	NA	NA	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	31/184 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14262	J	5-18-1	MICHAEL B SHEPARD	GASTAR EXPLORATION USA INC	1/8*	804 251	NA	NA	NA	NA	NA	NA	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	31/184 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14263	J	5-18-1	LAURIE ANN SHEPARD	GASTAR EXPLORATION USA INC	1/8*	804 243	NA	NA	NA	NA	NA	NA	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	31/184 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14264	J	5-18-1	WILLIAM LEWIS OTTO	GASTAR EXPLORATION USA INC	1/8*	809 533	NA	NA	NA	NA	NA	NA	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	31/184 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14265	J	5-18-1	EDWARD F & KAREN SIMS	GASTAR EXPLORATION USA INC	1/8*	816 12	NA	NA	NA	NA	NA	NA	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	31/184 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14266	J	5-18-1	GREGORY STEINHART	GASTAR EXPLORATION USA INC	1/8*	818 564	NA	NA	NA	NA	NA	NA	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	31/184 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14267	J	5-18-1	NANCY WILKOFF SHEBISH	GASTAR EXPLORATION INC	1/8*	833 523	NA	NA	NA	NA	NA	NA	32/428 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14268	J	5-18-1	JACQUELINE M CASILLAS-DUXE	GASTAR EXPLORATION INC	1/8*	839 520	NA	NA	NA	NA	NA	NA	NA	33/308 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14269	J	5-18-1	SHARON D SMITH	GASTAR EXPLORATION INC	1/8*	840 160	NA	NA	NA	NA	NA	NA	NA	33/308 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14270	J	5-18-1	ANNA M BARRETT (DECEASED)	GASTAR EXPLORATION USA INC	1/8*	734 457	NA	NA	NA	NA	NA	NA	26/183 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14271	J	5-18-1	RICHARD THOMAS BARRETT	GASTAR EXPLORATION USA INC	1/8*	745 582	NA	NA	NA	NA	NA	NA	26/639 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14272	J	5-18-1	ROBERT CLARK ASPLEY	GASTAR EXPLORATION INC	1/8*	844 85	NA	NA	NA	NA	NA	NA	NA	33/308 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14273	J	5-18-1	MARY ANNE YEATER MACHAMER	GASTAR EXPLORATION INC	1/8*	852 258	NA	NA	NA	NA	NA	NA	NA	34/302 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14274	J	5-18-1	LAURA L YEATER HILL	GASTAR EXPLORATION INC	1/8*	852 245	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14275	J	5-18-1	CAROL RAE YEATER	GASTAR EXPLORATION INC	1/8*	852 247	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14276	J	5-18-1	REBECCA MCPEEK NORRIS	GASTAR EXPLORATION INC	1/8*	854 595	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14277	J	5-18-1	KATHLEEN L YEATER	GASTAR EXPLORATION INC	1/8*	854 593	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14278	J	5-18-1	DAVID GALE	GASTAR EXPLORATION INC	1/8*	854 591	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14279	J	5-18-1	WILLIAM BERNARD YEATER	GASTAR EXPLORATION INC	1/8*	854 589	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14280	J	5-18-1	PAUL EDWARD YEATER	GASTAR EXPLORATION INC	1/8*	854 587	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14281	J	5-18-1	DAWN MCPEEK WREZINSKI	GASTAR EXPLORATION INC	1/8*	860 426	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14282	J	5-18-1	CHERYL VAN PELT	GASTAR EXPLORATION INC	1/8*	860 428	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14283	J	5-18-1	MARY JO BARRETT	GASTAR EXPLORATION INC	1/8*	862 438	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14284	J	5-18-1	JULIE BRIGGS	GASTAR EXPLORATION INC	1/8*	862 435	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14285	J	5-18-1	EARL C BARRETT JR	GASTAR EXPLORATION INC	1/8*	862 432	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14286	J	5-18-1	EMMA LEE NEWHOUSE	GASTAR EXPLORATION INC	1/8*	864 315	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14287	J	5-18-1	LAWRENCE AUGUSTIN MCPEEK	GASTAR EXPLORATION INC	1/8*	864 317	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14288	J	5-18-1	REBECCA LYNN LASH	GASTAR EXPLORATION INC	1/8*	864 319	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14289	J	5-18-1	MARYANN RACHEL VANCE	GASTAR EXPLORATION INC	1/8*	864 321	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
✓ 10*14938	L	5-19-31	CHARLES F AND DIANA L HAYNES	TRIENERGY HOLDINGS, LLC	1/8+	711 306	NA	NA	24/430 TriEnergy Holdings LLC to NPAR	24/466 NPAR to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	25/1 & 25/105 Chief Exploration & Development LLC, Radler 2000 Limited Partnership and Enerplus Resources USA Corp to Chevron USA Inc	756/332 NPAR to Chevron USA Inc	32/355 Chevron USA Inc to Gastar Exploration Inc and Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
✓ 10*14579	N	5-19-30.1	ERNE L ANDERSON & TAMMEY L ANDERSON	CHESAPEAKE APPALACHIA LLC	1/8+	681 507	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
✓ 10*14579	O	5-19-30	ERNE L ANDERSON & TAMMEY L ANDERSON	CHESAPEAKE APPALACHIA LLC	1/8+	681 507	NA	NA	NA	NA	22/200 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
✓ 10*14579	Q	5-19-29	ERNE L ANDERSON & TAMMEY L ANDERSON	CHESAPEAKE APPALACHIA LLC	1/8+	681 507	NA	NA	NA	NA	22/200 Chesapeake Appalachia LLC to Statoil Onshore Properties Inc	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
✓ 10*26901	S	5-19-15	CARLY HERRAN	TH EXPLORATION LLC	1/8+	1040 527	NA	NA	NA	NA	NA	NA	NA	NA	NA
✓ 10*14580	T	5-19-12	ERNE L ANDERSON & TAMMEY L ANDERSON	CHESAPEAKE APPALACHIA LLC	1/8+	681 515	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
✓ 10*14571	X	5-19-8	MATTHEW S & BRENDA S ANDERSON	GASTAR EXPLORATION USA INC	1/8+	840 165	NA	NA	NA	NA	NA	33/308 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
✓ 10*14423	Z	5-19-7	OLAN V & PATRICIA E RUTAN	GASTAR EXPLORATION USA INC	1/8+	727 1	NA	NA	NA	NA	NA	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
✓ 10*14423	CC	5-19-7.4	OLAN V & PATRICIA E RUTAN	GASTAR EXPLORATION USA INC	1/8+	727 1	NA	NA	NA	NA	NA	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
✓ 10*14928	EE	5-14-11	JOSEPH D. PARRIOTT & NELLIE B. PARRIOTT, HUSBAND AND WIFE	TRIENERGY, INC.	1/8+	660 517	19/623 TriEnergy Inc to AB Resources LLC	666/40 AB Resources LLC to Chief Exploration & Development LLC	21/148 TriEnergy Inc to TriEnergy Holdings LLC	25/1 & 25/105 Chief Exploration & Development, Radler 2000 Limited Partnership and Enerplus Resources USA Corp to Chevron USA Inc	24/319 AB Resources LLC to Chief Exploration & Development and Radler 2000 Limited Partnership	756/397 AB Resources LLC to Chevron USA Inc	32/355 Chevron USA Inc to Gastar Exploration Inc and Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
✓ 10*14470	JJ	5-14-10	ELLIS V & WANDA P RINE	GASTAR EXPLORATION USA INC	1/8+	725 141	NA	NA	NA	NA	NA	735/263 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
✓ 10*14619	LL	5-14-9.5	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 414	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14620	LL	5-14-9.5	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 416	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14621	LL	5-14-9.5	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 415	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14622	LL	5-14-9.5	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	713 606	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14623	LL	5-14-9.5	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717 149	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14624	LL	5-14-9.5	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	725 559	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14625	LL	5-14-9.5	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8+	715 616	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14626	LL	5-14-9.5	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8+	715 622	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*14627	LL	5-14-9.5	BRIAN & LENA POND	CHESAPEAKE APPALACHIA LLC	1/8*	717 51	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14628	LL	5-14-9.5	TEKYN L MILLER AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	715 514	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14629	LL	5-14-9.5	GERALD R MILLER AND LEE ANNE MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	717 1	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14630	LL	5-14-9.5	BARBARA BURLEY AND DAVID BURLEY	CHESAPEAKE APPALACHIA LLC	1/8*	716 637	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14631	LL	5-14-9.5	LISA ANN MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	715 520	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14902	LL	5-14-9.5	BENNY MILLER	GASTAR EXPLORATION USA INC	1/8*	836 98	NA	NA	NA	NA	NA	32/428 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14903	LL	5-14-9.5	SUE PRUITT	GASTAR EXPLORATION USA INC	1/8*	836 100	NA	NA	NA	NA	NA	32/428 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14904	LL	5-14-9.5	LEROY MILLER	GASTAR EXPLORATION USA INC	1/8*	846 398	NA	NA	NA	NA	NA	34/300 Gastar Exploration Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14905	LL	5-14-9.5	JAMES K MILLER	GASTAR EXPLORATION USA INC	1/8*	854 610	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14906	LL	5-14-9.5	MARY LOU MILLER-HORTON	GASTAR EXPLORATION USA INC	1/8*	862 417	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*17547	LL	5-14-9.5	JAMES CONTRERAS AND CATHERINE CONTRERAS	TH EXPLORATION LLC	1/8*	942 400	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17548	LL	5-14-9.5	RICHARD ARTHUR VAN GROL AND JEANNE MARIE VAN GROL	TH EXPLORATION LLC	1/8*	942 398	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18202	LL	5-14-9.5	TERRENCE V POWDERLY SR	TH EXPLORATION LLC	1/8*	929 85	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18209	LL	5-14-9.5	CORINNE E VERNA AND JONATHAN C VERNA SR	TH EXPLORATION LLC	1/8*	929 82	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18210	LL	5-14-9.5	DAVID F POWDERLY JR AND NANCY A POWDERLY	TH EXPLORATION LLC	1/8*	929 87	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18211	LL	5-14-9.5	REBECCA LYNN KEER AND ERIC JAMES KEER	TH EXPLORATION LLC	1/8*	929 90	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18212	LL	5-14-9.5	THOMAS C DAVIS AND MARY ELLEN DAVIS	TH EXPLORATION LLC	1/8*	929 92	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18213	LL	5-14-9.5	THOMAS A POWDERLY	TH EXPLORATION LLC	1/8*	929 94	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18214	LL	5-14-9.5	ANNE M AND JOHN LEACH	TH EXPLORATION LLC	1/8*	929 96	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18215	LL	5-14-9.5	MARGARET J WHITFORD AND LANCE W WHITFORD	TH EXPLORATION LLC	1/8*	929 103	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18218	LL	5-14-9.5	ERIN E SCHOLL	TH EXPLORATION LLC	1/8*	929 106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18806	LL	5-14-9.5	E SHEILA PAVLOVICH	TH EXPLORATION LLC	1/8*	929 576	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21223	LL	5-14-9.5	EUGENE C GRIEB AND SHIRLEY K GRIEB JOOI A SHAW POA	TH EXPLORATION LLC	1/8*	961 468	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21924	LL	5-14-9.5	BEVERLY A MILLER	TH EXPLORATION LLC	1/8*	953 533	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21926	LL	5-14-9.5	VIOLA JANE BREON AND JAMES RONALD BREON	TH EXPLORATION LLC	1/8*	953 260	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21930	LL	5-14-9.5	JAMES A GRENOBLE AND MARY JANE GRENOBLE	TH EXPLORATION LLC	1/8*	953 263	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21938	LL	5-14-9.5	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION LLC	1/8*	960 91	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22442	LL	5-14-9.5	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION LLC	1/8*	966 106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22449	LL	5-14-9.5	MARGARET CLICKNER	TH EXPLORATION LLC	1/8*	963 644	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22511	LL	5-14-9.5	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION LLC	1/8*	966 104	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22645	LL	5-14-9.5	STANLEY EUGENE STOWE	TH EXPLORATION LLC	1/8*	968 204	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22744	LL	5-14-9.5	BRIDGET A POWDERLY	TH EXPLORATION LLC	1/8*	968 206	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23896	LL	5-14-9.5	MOLLY JO MORROW MCMAHON AND JOHN D MCMAHON	TH EXPLORATION LLC	1/8*	1017 489	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	LL	5-14-9.5	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION LLC	1/8*	1020 195	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24673	LL	5-14-9.5	NYSARC INC COMMUNITY TRUST FBO MICHAEL POWDERLY	TH EXPLORATION LLC	1/8*	1025 287	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26440	LL	5-14-9.5	MARIA T FLORES	TH EXPLORATION LLC	1/8*	1035 161	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26995	LL	5-14-9.5	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8*	1041 56	NA	NA	NA	NA	NA	NA	NA	NA	NA
007551013	LL	5-14-9.5	EUGENIA A KERR	NOBLE ENERGY INC	1/8*	873 120	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551002	LL	5-14-9.5	DAVID LEE EVANS JR AND NOVELLA EVANS	NOBLE ENERGY INC	1/8*	864 180	NA	NA	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551003	LL	5-14-9.5	MURIEL ANNE MILLER AND ALAN POWELL	NOBLE ENERGY INC	1/8*	860 541	NA	NA	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551004	LL	5-14-9.5	KATHLEEN A SULLIVAN AND THOMAS SULLIVAN	NOBLE ENERGY INC	1/8*	870 364	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551005	LL	5-14-9.5	FRANCIS FISCHER AND JACQUELINE FISCHER	NOBLE ENERGY INC	1/8*	870 366	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment		
0076551007	LL	5-14-9.5	RODNEY F PETERSON	NOBLE ENERGY INC	1/8+	870 380	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551007	LL	5-14-9.5	DENNIS FISCHER AND SHARRON A FISCHER	NOBLE ENERGY INC	1/8+	870 358	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551008	LL	5-14-9.5	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8+	873 81	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551009	LL	5-14-9.5	HARRIET C HERMAN AND JOSEPH H WILKINSON	NOBLE ENERGY INC	1/8+	873 122	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551010	LL	5-14-9.5	JAMES E HERMAN	NOBLE ENERGY INC	1/8+	873 130	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551011	LL	5-14-9.5	EDWARD P POWDERLY AND MARILYN POWDERLY	NOBLE ENERGY INC	1/8+	873 85	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551012	LL	5-14-9.5	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	873 83	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551014	LL	5-14-9.5	MARY F WEILAND	NOBLE ENERGY INC	1/8+	873 126	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551015	LL	5-14-9.5	JANE H BARNSTEINER AND JOANNE M DISCH	NOBLE ENERGY INC	1/8+	873 132	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551017	LL	5-14-9.5	JAMES T SCHOLL	NOBLE ENERGY INC	1/8+	878 365	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551017	LL	5-14-9.5	ANNE GALBALLY AND JAMES F GALBALLY	NOBLE ENERGY INC	1/8+	878 373	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551020	LL	5-14-9.5	BRIDGET A POWDERLY	NOBLE ENERGY INC	1/8+	881 26	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551021	LL	5-14-9.5	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	881 32	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768080	LL	5-14-9.5	ANTHONY T POWDERLY AND BARBARA M POWDERLY	NOBLE ENERGY INC	1/8+	878 363	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768091	LL	5-14-9.5	HARRIET C VENTURA AND ROCCO VENTURA	NOBLE ENERGY INC	1/8+	894 541	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768113	LL	5-14-9.5	KEVIN M POWDERLY	NOBLE ENERGY INC	1/8+	890 515	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768114	LL	5-14-9.5	MARY S SCHOLL	NOBLE ENERGY INC	1/8+	890 572	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768115	LL	5-14-9.5	BRIAN P POWDERLY AND ANITA POWDERLY	NOBLE ENERGY INC	1/8+	890 566	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768116	LL	5-14-9.5	SUSANNE S QUARTERMAN	NOBLE ENERGY INC	1/8+	890 606	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
10*14619	MM	5-14-9.2	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 434	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Alitum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Alitum Marcellus I LLC to TH Exploration II LLC
10*14620	MM	5-14-9.2	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 436	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc merged with and into Alitum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Alitum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*14621	MM	5-14-9.2	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	715 415	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14622	MM	5-14-9.2	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	713 606	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14623	MM	5-14-9.2	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	717 149	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14624	MM	5-14-9.2	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	725 559	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14625	MM	5-14-9.2	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8*	715 616	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14626	MM	5-14-9.2	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8*	715 627	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14627	MM	5-14-9.2	BRIAN & LENA POND	CHESAPEAKE APPALACHIA LLC	1/8*	717 51	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14628	MM	5-14-9.2	TEKYN L MILLER AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	715 514	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14629	MM	5-14-9.2	GERALD R MILLER AND LEE ANNE MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	717 1	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14630	MM	5-14-9.2	BARBARA BURLEY AND DAVID BURLEY	CHESAPEAKE APPALACHIA LLC	1/8*	716 637	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14631	MM	5-14-9.2	USA ANN MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	715 520	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14902	MM	5-14-9.2	BENNY MILLER	GASTAR EXPLORATION USA INC	1/8*	836 98	NA	NA	NA	NA	NA	32/428 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14903	MM	5-14-9.2	SUE PRIHIT	GASTAR EXPLORATION USA INC	1/8*	836 100	NA	NA	NA	NA	NA	32/428 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14904	MM	5-14-9.2	LEROY MILLER	GASTAR EXPLORATION USA INC	1/8*	846 398	NA	NA	NA	NA	NA	NA	34/302 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14905	MM	5-14-9.2	JAMES K MILLER	GASTAR EXPLORATION USA INC	1/8*	854 610	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14906	MM	5-14-9.2	MARY LOU MILLER-HORTON	GASTAR EXPLORATION USA INC	1/8*	862 417	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*17547	MM	5-14-9.2	JAMES CONTRERAS AND CATHERINE CONTRERAS	TH EXPLORATION LLC	1/8*	947 400	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17548	MM	5-14-9.2	RICHARD ARTHUR VAN GROU AND JEANNE MARIE VAN GROU	TH EXPLORATION LLC	1/8*	947 398	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18202	MM	5-14-9.2	TERRENCE V POWDERLY SR	TH EXPLORATION LLC	1/8*	929 85	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18209	MM	5-14-9.2	CORDINE E VERNA AND JONATHAN C VERNA SR	TH EXPLORATION LLC	1/8*	929 82	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18210	MM	5-14-9.2	DAVID F POWDERLY JR AND NANCY A POWDERLY	TH EXPLORATION LLC	1/8*	929 87	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18211	MM	5-14-9.2	REBECCA LYNN KIER AND ERIC JAMES KIER	TH EXPLORATION LLC	1/8*	929 90	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18212	MM	5-14-9.2	THOMAS C DAVIS AND MARY ELLEN DAVIS	TH EXPLORATION LLC	1/8*	929 92	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18213	MM	5-14-9.2	THOMAS A POWDERLY	TH EXPLORATION LLC	1/8*	929 94	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18214	MM	5-14-9.2	ANNE M AND JOHN LEACH	TH EXPLORATION LLC	1/8*	929 96	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18215	MM	5-14-9.2	MARGARET J WHITFORD AND LANCE W WHITFORD	TH EXPLORATION LLC	1/8*	929 103	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18218	MM	5-14-9.2	ERIN E SCHOLL	TH EXPLORATION LLC	1/8*	929 106	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18306	MM	5-14-9.2	E SHEILA PANJLOVICH	TH EXPLORATION LLC	1/8*	929 576	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21223	MM	5-14-9.2	EUGENE C GRIEB AND SHIRLEY K GRIEB JODI A SHAW POA	TH EXPLORATION LLC	1/8*	961 468	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21924	MM	5-14-9.2	BEVERLY A MILLER	TH EXPLORATION LLC	1/8*	953 533	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21926	MM	5-14-9.2	VIOLA JANE BREON AND JAMES RONALD BREON	TH EXPLORATION LLC	1/8*	953 260	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21930	MM	5-14-9.2	JAMES A GRENOBLE AND MARY JANE GRENOBLE	TH EXPLORATION LLC	1/8*	953 263	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21938	MM	5-14-9.2	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION LLC	1/8*	960 91	NA	NA	NA	NA	NA	NA	NA	NA	NA

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Dead Book/Pg	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment		
10*22442	MM	5-14-9.2	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION LLC	1/8+	966	106	NA	NA	NA	NA	NA	NA	NA	NA		
10*22449	MM	5-14-9.2	MARGARET CLUCKER	TH EXPLORATION LLC	1/8+	963	644	NA	NA	NA	NA	NA	NA	NA	NA		
10*22511	MM	5-14-9.2	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION LLC	1/8+	966	104	NA	NA	NA	NA	NA	NA	NA	NA		
10*22645	MM	5-14-9.2	STANLEY EUGENE STOWE	TH EXPLORATION LLC	1/8+	968	204	NA	NA	NA	NA	NA	NA	NA	NA		
10*22744	MM	5-14-9.2	BRIDGET A POWDERLY	TH EXPLORATION LLC	1/8+	968	206	NA	NA	NA	NA	NA	NA	NA	NA		
10*23896	MM	5-14-9.2	MOLLY JO MORROW MCMAHON AND JOHN D MCMAHON	TH EXPLORATION LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA		
10*23969	MM	5-14-9.2	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA		
10*24673	MM	5-14-9.2	NYSARC INC COMMUNITY TRUST I FBO MICHAEL POWDERLY	TH EXPLORATION LLC	1/8+	1025	287	NA	NA	NA	NA	NA	NA	NA	NA		
10*26440	MM	5-14-9.2	MARIA T FLORES	TH EXPLORATION LLC	1/8+	1035	161	NA	NA	NA	NA	NA	NA	NA	NA		
10*26995	MM	5-14-9.2	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1041	56	NA	NA	NA	NA	NA	NA	NA	NA		
Q076551013	MM	5-14-9.2	EUGENIA A KERR	NOBLE ENERGY INC	1/8+	873	120	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551002	MM	5-14-9.2	DAVID LFE EVANS JR AND NOVELLA EVANS	NOBLE ENERGY INC	1/8+	864	180	NA	NA	NA	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551003	MM	5-14-9.2	MURIEL ANNE MILLER AND ALAN POWELL	NOBLE ENERGY INC	1/8+	860	541	NA	NA	NA	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551004	MM	5-14-9.2	KATHLEEN A SULLIVAN AND THOMAS SULLIVAN	NOBLE ENERGY INC	1/8+	870	364	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551005	MM	5-14-9.2	FRANCIS FISCHER AND JACQUELINE FISCHER	NOBLE ENERGY INC	1/8+	870	366	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551007	MM	5-14-9.2	RODNEY F PETERSON	NOBLE ENERGY INC	1/8+	870	380	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551007	MM	5-14-9.2	DENNIS FISCHER AND SHARRON A FISCHER	NOBLE ENERGY INC	1/8+	870	358	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551008	MM	5-14-9.2	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8+	873	81	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551009	MM	5-14-9.2	HARRIET C HERMAN AND JOSEPH H WILKINSON	NOBLE ENERGY INC	1/8+	873	122	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551010	MM	5-14-9.2	JAMES E HERMAN	NOBLE ENERGY INC	1/8+	873	130	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551011	MM	5-14-9.2	EDWARD P POWDERLY AND MARILYN POWDERLY	NOBLE ENERGY INC	1/8+	873	85	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551012	MM	5-14-9.2	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	873	83	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551014	MM	5-14-9.2	MARY F WEILAND	NOBLE ENERGY INC	1/8+	873	126	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551015	MM	5-14-9.2	JANE H BARNSTEINER AND JOHANN M DISCH	NOBLE ENERGY INC	1/8+	873	132	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551017	MM	5-14-9.2	JAMES T SCHOLL	NOBLE ENERGY INC	1/8+	878	365	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551017	MM	5-14-9.2	ANNE GALBALLY AND JAMES F GALBALLY	NOBLE ENERGY INC	1/8+	878	373	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551020	MM	5-14-9.2	BRIDGET A POWDERLY	NOBLE ENERGY INC	1/8+	881	26	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551021	MM	5-14-9.2	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	881	32	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768080	MM	5-14-9.2	ANTHONY T POWDERLY AND BARBARA M POWDERLY	NOBLE ENERGY INC	1/8+	878	363	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
Q083768091	MM	5-14-9.2	HARRIET C. VENTURA AND ROCCO VENTURA	NOBLE ENERGY INC	1/8+	894 541	NA	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company 37/169 CNX Gas Company LLC to Noble Energy Inc 39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768113	MM	5-14-9.2	KEVIN M POWDERLY	NOBLE ENERGY INC	1/8+	890 515	NA	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company 37/169 CNX Gas Company LLC to Noble Energy Inc 39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768114	MM	5-14-9.2	MARY S SCHOLL	NOBLE ENERGY INC	1/8+	890 572	NA	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company 37/169 CNX Gas Company LLC to Noble Energy Inc 39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768115	MM	5-14-9.2	BRIAN P POWDERLY AND ANITA POWDERLY	NOBLE ENERGY INC	1/8+	890 566	NA	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company 37/169 CNX Gas Company LLC to Noble Energy Inc 39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768116	MM	5-14-9.2	SUSANNE S QUARTERMAN	NOBLE ENERGY INC	1/8+	890 606	NA	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company 37/169 CNX Gas Company LLC to Noble Energy Inc 39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
10*14619	NN	5-14-9.1	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 414	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14620	NN	5-14-9.1	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 416	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14621	NN	5-14-9.1	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 415	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14622	NN	5-14-9.1	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	713 606	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14623	NN	5-14-9.1	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717 149	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14624	NN	5-14-9.1	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	725 599	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14625	NN	5-14-9.1	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8+	715 616	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14626	NN	5-14-9.1	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8+	715 622	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14627	NN	5-14-9.1	BRIAN & LENA POND	CHESAPEAKE APPALACHIA LLC	1/8+	717 51	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14628	NN	5-14-9.1	TEXNY L MILLER AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 514	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14629	NN	5-14-9.1	GERALD R MILLER AND LEE ANNE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717 1	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14630	NN	5-14-9.1	BARBARA BURLEY AND DAVID BURLEY	CHESAPEAKE APPALACHIA LLC	1/8+	716 637	NA	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC 21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc 36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Trg	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*14631	NN	5-14-9.1	USA ANN MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 520	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14902	NN	5-14-9.1	BENNY MILLER	GASTAR EXPLORATION USA INC	1/8+	836 98	NA	NA	NA	NA	NA	NA	32/428 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14903	NN	5-14-9.1	SUE PRUITT	GASTAR EXPLORATION USA INC	1/8+	836 100	NA	NA	NA	NA	NA	NA	32/428 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14904	NN	5-14-9.1	LEROY MILLER	GASTAR EXPLORATION USA INC	1/8+	846 398	NA	NA	NA	NA	NA	NA	NA	34/302 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14905	NN	5-14-9.1	JAMES K MILLER	GASTAR EXPLORATION USA INC	1/8+	854 610	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14906	NN	5-14-9.1	MARY LOU MILLER-NORTON	GASTAR EXPLORATION USA INC	1/8+	862 417	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*17547	NN	5-14-9.1	JAMES CONTRERAS AND CATHERINE CONTRERAS	TH EXPLORATION LLC	1/8+	942 400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17548	NN	5-14-9.1	RICHARD ARTHUR VAN GROU AND JEANNE MARIE VAN GROU	TH EXPLORATION LLC	1/8+	942 398	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18202	NN	5-14-9.1	TERRENCE V POWDERLY SR	TH EXPLORATION LLC	1/8+	929 85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18209	NN	5-14-9.1	CORINNE E VERNA AND JONATHAN C VERNA SR	TH EXPLORATION LLC	1/8+	929 82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18210	NN	5-14-9.1	DAVID F POWDERLY JR AND NANCY A POWDERLY	TH EXPLORATION LLC	1/8+	929 87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18211	NN	5-14-9.1	REBECCA LYNN KIER AND ERIC JAMES KIER	TH EXPLORATION LLC	1/8+	929 90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18212	NN	5-14-9.1	THOMAS C DAVIS AND MARY ELLEN DAVIS	TH EXPLORATION LLC	1/8+	929 92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18213	NN	5-14-9.1	THOMAS A POWDERLY	TH EXPLORATION LLC	1/8+	929 94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18214	NN	5-14-9.1	ANNE M AND JOHN LEACH	TH EXPLORATION LLC	1/8+	929 96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18215	NN	5-14-9.1	MARGARET I WHITFORD AND LANCE W WHITFORD	TH EXPLORATION LLC	1/8+	929 103	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18218	NN	5-14-9.1	ERIN E SCHOLL	TH EXPLORATION LLC	1/8+	929 106	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18806	NN	5-14-9.1	E SHEILA PAVLOVICH	TH EXPLORATION LLC	1/8+	929 576	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21223	NN	5-14-9.1	EUGENE C GRIEB AND SHIRLEY K GRIEB JODI A SHAW POA	TH EXPLORATION LLC	1/8+	961 468	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21924	NN	5-14-9.1	BEVERLY A MILLER	TH EXPLORATION LLC	1/8+	953 533	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21925	NN	5-14-9.1	WOLLA JANE BRON AND JAMES RONALD BREGON	TH EXPLORATION LLC	1/8+	953 260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21930	NN	5-14-9.1	JAMES A GRENOBLE AND MARY JANE GRENOBLE	TH EXPLORATION LLC	1/8+	953 263	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21938	NN	5-14-9.1	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION LLC	1/8+	960 91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22442	NN	5-14-9.1	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION LLC	1/8+	966 106	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22449	NN	5-14-9.1	MARGARET CLICKNER	TH EXPLORATION LLC	1/8+	963 644	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22511	NN	5-14-9.1	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION LLC	1/8+	966 104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22645	NN	5-14-9.1	STANLEY EUGENE STOWE	TH EXPLORATION LLC	1/8+	968 204	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22744	NN	5-14-9.1	BRIDGET A POWDERLY	TH EXPLORATION LLC	1/8+	968 206	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23896	NN	5-14-9.1	HOLLY JO MORGAN MCCAMMON AND JOHN D MCCAMMON	TH EXPLORATION LLC	1/8+	1017 489	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	NN	5-14-9.1	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION LLC	1/8+	1020 195	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24673	NN	5-14-9.1	NYSARC INC COMMUNITY TRUST I FBO MICHAEL POWDERLY	TH EXPLORATION LLC	1/8+	1025 287	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26440	NN	5-14-9.1	MARIA T FLORES	TH EXPLORATION LLC	1/8+	1035 161	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26995	NN	5-14-9.1	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1041 56	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
007551013	NN	5-14-9.1	EUGENIA A KERR	NOBLE ENERGY INC	1/8+	873 120	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551002	NN	5-14-9.1	DAVID LEE EVANS JR AND NOVELLA EVANS	NOBLE ENERGY INC	1/8+	864 180	NA	NA	NA	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551003	NN	5-14-9.1	MURIEL ANNE MILLER AND ALAN POWELL	NOBLE ENERGY INC	1/8+	860 541	NA	NA	NA	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551004	NN	5-14-9.1	KATHLEEN A SULLIVAN AND THOMAS SULLIVAN	NOBLE ENERGY INC	1/8+	870 364	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551005	NN	5-14-9.1	FRANCIS FISCHER AND JACQUELINE FISCHER	NOBLE ENERGY INC	1/8+	870 366	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551007	NN	5-14-9.1	RODNEY F PETERSON	NOBLE ENERGY INC	1/8+	870 380	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551007	NN	5-14-9.1	DENNIS FISCHER AND SHARRON A FISCHER	NOBLE ENERGY INC	1/8+	870 358	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551003	NN	5-14-9.1	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8+	873 81	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551009	NN	5-14-9.1	HARRIET C HERMAN AND JOSEPH H WILKINSON	NOBLE ENERGY INC	1/8+	873 122	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551010	NN	5-14-9.1	JAMES E HERMAN	NOBLE ENERGY INC	1/8+	873 130	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment		
0076551011	NN	5-14-9.1	EDWARD P POWDERLY AND MARILYN POWDERLY	NOBLE ENERGY INC	1/8+	873 85	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551012	NN	5-14-9.1	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	873 83	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551014	NN	5-14-9.1	MARY F WEIAND	NOBLE ENERGY INC	1/8+	873 126	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551015	NN	5-14-9.1	JANE H BARNSTEINER AND JOANNE M DISCH	NOBLE ENERGY INC	1/8+	873 132	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551017	NN	5-14-9.1	JAMES T SCHOLL	NOBLE ENERGY INC	1/8+	878 365	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551017	NN	5-14-9.1	ANNE GALBALLY AND JAMES F GALBALLY	NOBLE ENERGY INC	1/8+	878 373	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551020	NN	5-14-9.1	BRIDGET A POWDERLY	NOBLE ENERGY INC	1/8+	881 26	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0076551021	NN	5-14-9.1	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	881 32	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768090	NN	5-14-9.1	ANTHONY T POWDERLY AND BARBARA M POWDERLY	NOBLE ENERGY INC	1/8+	878 363	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768091	NN	5-14-9.1	HARRIET C VENTURA AND ROCCO VENTURA	NOBLE ENERGY INC	1/8+	894 541	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768113	NN	5-14-9.1	KEVIN M POWDERLY	NOBLE ENERGY INC	1/8+	890 515	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768114	NN	5-14-9.1	MARY S SCHOLL	NOBLE ENERGY INC	1/8+	890 572	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768115	NN	5-14-9.1	BRIAN P POWDERLY AND ANITA POWDERLY	NOBLE ENERGY INC	1/8+	890 566	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
0083768116	NN	5-14-9.1	SUSANNE S QUARTERMAN	NOBLE ENERGY INC	1/8+	890 606	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
10*14568	PP	5-14-5	LEROY ANDERSON AND DONNA KAY ANDERSON	GASTAR EXPLORATION USA INC	1/8+	772 69	NA	NA	NA	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14619	PP	5-14-5	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 414	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14620	PP	5-14-5	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14621	PP	5-14-5	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715 415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14622	PP	5-14-5	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	713 606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment		
10*14623	PP	5-14-5	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	717 149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14624	PP	5-14-5	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	725 559	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14625	PP	5-14-5	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8*	715 616	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14626	PP	5-14-5	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8*	715 622	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14627	PP	5-14-5	BRIAN & LENA POND	CHESAPEAKE APPALACHIA LLC	1/8*	717 51	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14628	PP	5-14-5	TEXNY L MILLER AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	715 514	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14629	PP	5-14-5	GERALD R MILLER AND LEE ANNE MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	717 1	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14630	PP	5-14-5	BARBARA BURLEY AND DAVID BURLEY	CHESAPEAKE APPALACHIA LLC	1/8*	716 637	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14631	PP	5-14-5	LISA ANN MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	715 520	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gastar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14902	PP	5-14-5	BENNY MILLER	GASTAR EXPLORATION USA INC	1/8*	836 98	NA	NA	NA	NA	NA	NA	32/428 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14903	PP	5-14-5	SUE PRUITT	GASTAR EXPLORATION USA INC	1/8*	836 100	NA	NA	NA	NA	NA	NA	32/428 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gastar Exploration USA Inc merged with and into Gastar Exploration Inc	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14904	PP	5-14-5	LEROY MILLER	GASTAR EXPLORATION USA INC	1/8*	846 398	NA	NA	NA	NA	NA	NA	NA	34/302 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14905	PP	5-14-5	JAMES K MILLER	GASTAR EXPLORATION USA INC	1/8*	854 610	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14906	PP	5-14-5	MARY LOU MILLER-HORTON	GASTAR EXPLORATION USA INC	1/8*	862 417	NA	NA	NA	NA	NA	NA	NA	35/119 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*17547	PP	5-14-5	JAMES CONTRERAS AND CATHERINE CONTRERAS	TH EXPLORATION LLC	1/8*	942 400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17548	PP	5-14-5	RICHARD ARTHUR VAN GROU AND JEANNE MARIE VAN GROU	TH EXPLORATION LLC	1/8*	942 398	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18202	PP	5-14-5	TERRENCE V POWDERLY SR	TH EXPLORATION LLC	1/8*	929 85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18209	PP	5-14-5	CORINNE E VERNA AND JONATHAN C VERNA SR	TH EXPLORATION LLC	1/8*	929 82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18210	PP	5-14-5	DAVID F POWDERLY JR AND NANCY A POWDERLY	TH EXPLORATION LLC	1/8*	929 87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18211	PP	5-14-5	REBECCA LYNN KIER AND ERIC JAMES KIER	TH EXPLORATION LLC	1/8*	929 90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18212	PP	5-14-5	THOMAS C DAVIS AND MARY ELLEN DAVIS	TH EXPLORATION LLC	1/8*	929 92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18213	PP	5-14-5	THOMAS A POWDERLY	TH EXPLORATION LLC	1/8*	929 94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18214	PP	5-14-5	ANNE M AND JOHN LEACH	TH EXPLORATION LLC	1/8*	929 96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18215	PP	5-14-5	MARGARET J WHITFORD AND LANCE W WHITFORD	TH EXPLORATION LLC	1/8*	929 103	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18218	PP	5-14-5	ERIN E SCHOLL	TH EXPLORATION LLC	1/8*	929 106	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18806	PP	5-14-5	E SHEILA PAVLOVICH	TH EXPLORATION LLC	1/8*	929 576	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21223	PP	5-14-5	EUGENE C GRIEB AND SHIRLEY K GRIEB JODI A SHAW POA	TH EXPLORATION LLC	1/8*	961 468	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21924	PP	5-14-5	BEVERLY A MILLER	TH EXPLORATION LLC	1/8*	953 533	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21926	PP	5-14-5	VIOLA JANE BREON AND JAMES RONALD BREON	TH EXPLORATION LLC	1/8*	953 260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21930	PP	5-14-5	JAMES A GRENOBLE AND MARY JANE GRENOBLE	TH EXPLORATION LLC	1/8*	953 263	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21938	PP	5-14-5	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION LLC	1/8*	960 91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22442	PP	5-14-5	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION LLC	1/8*	966 106	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22449	PP	5-14-5	MARGARET CLUCKNER	TH EXPLORATION LLC	1/8*	963 644	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22511	PP	5-14-5	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION LLC	1/8*	966 104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22645	PP	5-14-5	STANLEY EUGENE STOWE	TH EXPLORATION LLC	1/8*	968 204	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22744	PP	5-14-5	BRIDGET A POWDERLY	TH EXPLORATION LLC	1/8*	968 206	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22896	PP	5-14-5	MOLLY JO MORROW MCMAHON AND JOHN D MCMAHON	TH EXPLORATION LLC	1/8*	1017 459	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Lease ID	Trg	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Dead Book/	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*23909	PP	5-14-5	MARK A JOHNSON ET AL JONATHAN F TURAK, SPECIAL COMMISSIONER	TH EXPLORATION LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	
10*24673	PP	5-14-5	MYSARC INC COMMUNITY TRUST I FBO MICHAEL POWDERLY	TH EXPLORATION LLC	1/8+	1025	287	NA	NA	NA	NA	NA	NA	NA	NA	
10*26995	PP	5-14-5	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1041	56	NA	NA	NA	NA	NA	NA	NA	NA	
10*14619	QQ	5-12-19	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	414	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14620	QQ	5-12-19	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	416	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14621	QQ	5-12-19	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	415	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14622	QQ	5-12-19	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	713	606	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14623	QQ	5-12-19	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	149	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14624	QQ	5-12-19	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	725	559	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14625	QQ	5-12-19	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8+	715	616	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14626	QQ	5-12-19	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8+	715	622	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14627	QQ	5-12-19	BRIAN & LENA POND	CHESAPEAKE APPALACHIA LLC	1/8+	717	51	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14628	QQ	5-12-19	TEKYN L MILLER AND GEORGIA A MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	514	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14629	QQ	5-12-19	GERALD R MILLER AND LEE ANNE MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	717	1	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14630	QQ	5-12-19	BARBARA BURLEY AND DAVID BURLEY	CHESAPEAKE APPALACHIA LLC	1/8+	716	637	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14631	QQ	5-12-19	USA ANN MILLER	CHESAPEAKE APPALACHIA LLC	1/8+	715	520	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gatar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14902	QQ	5-12-19	BENNY MILLER	GASTAR EXPLORATION USA INC	1/8+	836	98	NA	NA	NA	NA	NA	32/428 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14903	QQ	5-12-19	SUE PRUITT	GASTAR EXPLORATION USA INC	1/8+	836	100	NA	NA	NA	NA	NA	32/428 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14904	QQ	5-12-19	LEROY MILLER	GASTAR EXPLORATION USA INC	1/8+	846	398	NA	NA	NA	NA	NA	34/302 Gatar Exploration Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14905	QQ	5-12-19	JAMES K MILLER	GASTAR EXPLORATION USA INC	1/8+	854	610	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	21/41 Merger - Gatar Exploration USA Inc merged with and into Gatar Exploration Inc	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Dead Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*14906	QQ	5-12-19	MARY LOU MILLER-HORTON	GASTAR EXPLORATION USA INC	1/8+	862	417	NA	NA	NA	NA	NA	NA	NA	35/119 Gatar Exploration Inc to Atinum Marcellus I LLC	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*17547	QQ	5-12-19	IAMES CONTRERAS AND CATHERINE CONTRERAS	TH EXPLORATION LLC	1/8+	942	400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17548	QQ	5-12-19	RICHARD ARTHUR VAN GROU AND JEANNE MARIE VAN GROU	TH EXPLORATION LLC	1/8+	942	398	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18202	QQ	5-12-19	TERRENCE V POWDERLY SR	TH EXPLORATION LLC	1/8+	929	85	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18209	QQ	5-12-19	CORINNE E VERNA AND JONATHAN C VERNA SR	TH EXPLORATION LLC	1/8+	929	82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18210	QQ	5-12-19	DAVID F POWDERLY JR AND NANCY A POWDERLY	TH EXPLORATION LLC	1/8+	929	87	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18211	QQ	5-12-19	REBECCA LYNN KIER AND ERIC JAMES KIER	TH EXPLORATION LLC	1/8+	929	90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18212	QQ	5-12-19	THOMAS C DAVIS AND MARY ELLEN DAVIS	TH EXPLORATION LLC	1/8+	929	92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18213	QQ	5-12-19	THOMAS A POWDERLY	TH EXPLORATION LLC	1/8+	929	94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18214	QQ	5-12-19	ANNE M AND JOHN LEACH	TH EXPLORATION LLC	1/8+	929	96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18215	QQ	5-12-19	MARGARET J WHITFORD AND LANCE W WHITFORD	TH EXPLORATION LLC	1/8+	929	103	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18218	QQ	5-12-19	ERIN E SCHOLL	TH EXPLORATION LLC	1/8+	929	106	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18806	QQ	5-12-19	E SHEILA PAVLOVICH	TH EXPLORATION LLC	1/8+	929	576	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21223	QQ	5-12-19	EUGENE C GRIEB AND SHIRLEY K GRIEB JODI A SHAW POA	TH EXPLORATION LLC	1/8+	961	468	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21924	QQ	5-12-19	BEVERLY A MILLER	TH EXPLORATION LLC	1/8+	953	533	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21926	QQ	5-12-19	WOLA IANE BREON AND JAMES RONALD BREON	TH EXPLORATION LLC	1/8+	953	260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21930	QQ	5-12-19	JAMES A GRENOBLE AND MARY IANE GRENOBLE	TH EXPLORATION LLC	1/8+	953	263	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21938	QQ	5-12-19	SEAN M GRENOBLE AND CHERYL A GRENOBLE	TH EXPLORATION LLC	1/8+	960	91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22442	QQ	5-12-19	SANDRA J HARMON AND WALTER D HARMON	TH EXPLORATION LLC	1/8+	966	106	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22449	QQ	5-12-19	MARGARET CLICKNER	TH EXPLORATION LLC	1/8+	963	644	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22511	QQ	5-12-19	SHERLEY R STOWE & KAREN M STOWE	TH EXPLORATION LLC	1/8+	966	104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22645	QQ	5-12-19	STANLEY EUGENE STOWE	TH EXPLORATION LLC	1/8+	968	704	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22744	QQ	5-12-19	BRIDGET A POWDERLY	TH EXPLORATION LLC	1/8+	968	206	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23996	QQ	5-12-19	NOELY JO MORROW MCMANON AND JOHN D MCMANON	TH EXPLORATION LLC	1/8+	1017	489	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23969	QQ	5-12-19	MARK A JOHNSON ET AL JONATHAN E TURAK, SPECIAL COMMISSIONER	TH EXPLORATION LLC	1/8+	1020	195	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*24673	QQ	5-12-19	NYSARC INC COMMUNITY TRUST I FBO MICHAEL POWDERLY	TH EXPLORATION LLC	1/8+	1025	287	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26995	QQ	5-12-19	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1041	56	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*29088	QQ	5-12-19	JONI LYNN LEON AND JOHN LEON	TH EXPLORATION LLC	1/8+	1084	393	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Q076551013	QQ	5-12-19	EUGENIA A KERR	NOBLE ENERGY INC	1/8+	873	120	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551002	QQ	5-12-19	DAVID LEE EVANS JR AND NOVELLA EVANS	NOBLE ENERGY INC	1/8+	864	180	NA	NA	NA	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551003	QQ	5-12-19	MURIEL ANNE MILLER AND ALAN POWELL	NOBLE ENERGY INC	1/8+	860	541	NA	NA	NA	NA	NA	NA	35/172 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551004	QQ	5-12-19	KATHLEEN A SULLIVAN AND THOMAS SULLIVAN	NOBLE ENERGY INC	1/8+	870	364	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551005	QQ	5-12-19	FRANCIS FISCHER AND JACQUELINE FISCHER	NOBLE ENERGY INC	1/8+	870	366	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551007	QQ	5-12-19	ROONEY F PETERSON	NOBLE ENERGY INC	1/8+	870	380	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551007	QQ	5-12-19	DENNIS FISCHER AND SHARRON A FISCHER	NOBLE ENERGY INC	1/8+	870	358	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551008	QQ	5-12-19	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8+	873	81	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551009	QQ	5-12-19	HARRIET C HERMAN AND JOSEPH H WILKINSON	NOBLE ENERGY INC	1/8+	873	122	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551010	QQ	5-12-19	JAMES E HERMAN	NOBLE ENERGY INC	1/8+	873	130	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551011	QQ	5-12-19	EDWARD P POWDERLY AND MARILYN POWDERLY	NOBLE ENERGY INC	1/8+	873	85	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551012	QQ	5-12-19	NORA K POWDERLY	NOBLE ENERGY INC	1/8+	873	83	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551014	QQ	5-12-19	MARY F WEILAND	NOBLE ENERGY INC	1/8+	873	126	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551015	QQ	5-12-19	JANE H BARNSTEINER AND JOANNE M DISCH	NOBLE ENERGY INC	1/8+	873	132	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC

Lease ID	Tsg	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment		
Q076551017	QQ	5-12-19	JAMES T SCHOLL	NOBLE ENERGY INC	1/8*	878	365	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551017	QQ	5-12-19	ANNE GALBALLY AND JAMES F GALBALLY	NOBLE ENERGY INC	1/8*	878	373	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551020	QQ	5-12-19	BRIDGET A POWDERLY	NOBLE ENERGY INC	1/8*	881	26	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q076551021	QQ	5-12-19	NORA K POWDERLY	NOBLE ENERGY INC	1/8*	881	37	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768080	QQ	5-12-19	ANTHONY T POWDERLY AND BARBARA M POWDERLY	NOBLE ENERGY INC	1/8*	878	363	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768091	QQ	5-12-19	HARRIET C VENTURA AND ROCCO VENTURA	NOBLE ENERGY INC	1/8*	894	541	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768113	QQ	5-12-19	KEVIN M POWDERLY	NOBLE ENERGY INC	1/8*	890	515	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768114	QQ	5-12-19	MARY S SCHOLL	NOBLE ENERGY INC	1/8*	890	572	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768115	QQ	5-12-19	BRIAN P POWDERLY AND ANITA POWDERLY	NOBLE ENERGY INC	1/8*	890	566	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
Q083768116	QQ	5-12-19	SUSANNE S QUARTERMAN	NOBLE ENERGY INC	1/8*	890	606	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC
10*14619	RR	5-12-20	SHIRLEY R MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	715	414	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gstar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gstar Exploration USA Inc merged with and into Gstar Exploration Inc	36/9 Gstar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14620	RR	5-12-20	ANITA RAE MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	715	416	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gstar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gstar Exploration USA Inc merged with and into Gstar Exploration Inc	36/9 Gstar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14621	RR	5-12-20	WILLIAM DALE MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	715	415	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gstar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gstar Exploration USA Inc merged with and into Gstar Exploration Inc	36/9 Gstar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14622	RR	5-12-20	KELLY D MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	713	606	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gstar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gstar Exploration USA Inc merged with and into Gstar Exploration Inc	36/9 Gstar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14623	RR	5-12-20	DUANE D MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	717	149	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gstar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gstar Exploration USA Inc merged with and into Gstar Exploration Inc	36/9 Gstar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14624	RR	5-12-20	DOUGLAS E MILLER	CHESAPEAKE APPALACHIA LLC	1/8*	725	559	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gstar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gstar Exploration USA Inc merged with and into Gstar Exploration Inc	36/9 Gstar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14625	RR	5-12-20	JACQUELYN J JOHNSON AND SAMMY R JOHNSON	CHESAPEAKE APPALACHIA LLC	1/8*	715	616	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gstar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gstar Exploration USA Inc merged with and into Gstar Exploration Inc	36/9 Gstar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14626	RR	5-12-20	STEVEN POND	CHESAPEAKE APPALACHIA LLC	1/8*	715	622	NA	NA	NA	NA	NA	NA	27/321 Chesapeake Appalachia LLC and Statoil Onshore Properties Inc to Gstar Exploration USA Inc and Atinum Marcellus I LLC	21/41 Merger - Gstar Exploration USA Inc merged with and into Gstar Exploration Inc	36/9 Gstar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment				
Q076551005	RR	5-12-20	FRANCIS FISCHER AND JACQUELINE FISCHER	NOBLE ENERGY INC	1/8*	870	366	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551007	RR	5-12-20	RODNEY F PETERSON	NOBLE ENERGY INC	1/8*	870	380	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551007	RR	5-12-20	DENNIS FISCHER AND SHARRON A FISCHER	NOBLE ENERGY INC	1/8*	870	358	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551008	RR	5-12-20	EILEEN T POWDERLY	NOBLE ENERGY INC	1/8*	873	81	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551009	RR	5-12-20	HARRIET C HERMAN AND JOSEPH H WILKINSON	NOBLE ENERGY INC	1/8*	873	122	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551010	RR	5-12-20	JAMES E HERMAN	NOBLE ENERGY INC	1/8*	873	130	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551011	RR	5-12-20	EDWARD P POWDERLY AND MARILYN POWDERLY	NOBLE ENERGY INC	1/8*	873	85	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551012	RR	5-12-20	NORA K POWDERLY	NOBLE ENERGY INC	1/8*	873	83	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551014	RR	5-12-20	MARY F WEILAND	NOBLE ENERGY INC	1/8*	873	126	NA	NA	NA	NA	NA	NA	35/313 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551015	RR	5-12-20	JANE H BARNSTEINER AND JOANNE M DISCH	NOBLE ENERGY INC	1/8*	873	132	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551017	RR	5-12-20	JAMES T SCHOLL	NOBLE ENERGY INC	1/8*	878	365	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551017	RR	5-12-20	ANNE GALBALLY AND JAMES F GALBALLY	NOBLE ENERGY INC	1/8*	878	373	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551020	RR	5-12-20	BRIDGET A POWDERLY	NOBLE ENERGY INC	1/8*	881	26	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q076551021	RR	5-12-20	NORA K POWDERLY	NOBLE ENERGY INC	1/8*	881	32	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q083768080	RR	5-12-20	ANTHONY T POWDERLY AND BARBARA M POWDERLY	NOBLE ENERGY INC	1/8*	878	363	NA	NA	NA	NA	NA	NA	36/395 Noble Energy Inc to CNX Gas Company LLC	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q083768091	RR	5-12-20	HARRIET C VENTURA AND ROCCO VENTURA	NOBLE ENERGY INC	1/8*	894	541	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q083768113	RR	5-12-20	KEVIN M POWDERLY	NOBLE ENERGY INC	1/8*	890	515	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q083768114	RR	5-12-20	MARY S SCHOLL	NOBLE ENERGY INC	1/8*	890	572	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q083768115	RR	5-12-20	BRIAN P POWDERLY AND ANITA POWDERLY	NOBLE ENERGY INC	1/8*	890	566	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
Q083768116	RR	5-12-20	SUSANNE S QUARTERMAN	NOBLE ENERGY INC	1/8*	890	606	NA	NA	NA	NA	NA	NA	36/409 Noble Energy Inc to CNX Gas Company	37/169 CNX Gas Company LLC to Noble Energy Inc	39/1 Noble Energy Inc to HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
10*24492	WW	5-12-21	EDWARD L GIBSON AND VIOLET L GIBSON ETAL	AMERICAN PETROLEUM PARTNERS LLC	1/8*	920	112	NA	NA	NA	NA	NA	NA	NA	NA	NA	42-549 American Petroleum Partners Operating LLC and TH Exploration LLC	NA
10*29270	ZZ	5-12-21.1	ROBERT W & WENDY L RIGGENBACH	TH EXPLORATION LLC	1/8*	1090	139	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14699	BBB	5-12-23	CNX GAS COMPANY LLC CONSOL MINING COMPANY & CNX RCPC LLC	GASTAR EXPLORATION INC AND ATINUM	1/8*	833	514	NA	NA	NA	NA	NA	NA	NA	NA	NA	48/67 Gastar Exploration Inc to TH Exploration II LLC	NA
10*26711	BBB	5-12-23	CNX GAS COMPANY LLC	TH EXPLORATION, LLC	1/8*	1039	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
624146	CCC	5-12-6	OHIO POWER COMPANY	PITTSBURGH CONSOLIDATION COAL COMPANY	1/8+	321 319	NA	NA	745/117 CNX Land Resources Inc to CNX Gas Company	752/66 CNX Gas Company LLC to Noble Energy Inc	905/94 CNX Gas Company LLC to Noble Energy Inc	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
541117	DDD	5-12-5	COLUMBIAN CHEMICALS COMPANY	CNX LAND RESOURCES INC	1/8+	691 363	NA	NA	745/117 CNX Land Resources Inc to CNX Gas Company	752/66 CNX Gas Company LLC to Noble Energy Inc	909/94 CNX Gas Company LLC to Noble Energy Inc	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
624146	GGG	5-12-6.2	OHIO POWER COMPANY	CONSOLIDATION COAL COMPANY	1/8+	321 319	NA	NA	745/117 CNX Land Resources Inc to CNX Gas Company	752/66 CNX Gas Company LLC to Noble Energy Inc	909/94 CNX Gas Company LLC to Noble Energy Inc	931/43 Noble Energy Inc to HG Energy II Appalachia LLC	988/286 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	988/351 Memorandum of Operating Agreement between TH Exploration LLC and HG Energy II Appalachia LLC	
10*39091	III	OHIO RIVER	STATE OF WEST VIRGINIA DEPARTMENT OF COMMERCE, DIVISION OF NATURAL RESOURCES	TH EXPLORATION, LLC	1/8+	1119 357	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14235	III	5-19-18	MARK F YOHO AND MARY YOHO	TREENERGY INC	1/8+	655 545	NA	NA	19/023 TriEnergy Inc to AB Resources LLC	21/148 TriEnergy Inc to TriEnergy Holdings LLC	24/39 AB Resources LLC, Chief Exploration & Development LLC, Redler JDD Limited Partnership & Enerplus Resources (USA) Corp to Gostar Exploration USA & Atinum Marcellus LLC	21/41 Merger - Gostar Exploration USA Inc merged with and into Gostar Exploration Inc	36/9 Gostar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14116	KKK	5-18-2	DONALD SHIELDS	GASTAR EXPLORATION USA INC	1/8+	669 367	NA	NA	NA	NA	23/353 Gostar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gostar Exploration USA Inc merged with and into Gostar Exploration Inc	36/9 Gostar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14117	KKK	5-18-2	ROBERT L SHIELDS AND REBECCA A SHIELDS	G*STAR EXPLORATION USA INC	1/8+	669 360	NA	NA	NA	NA	23/353 Gostar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Merger - Gostar Exploration USA Inc merged with and into Gostar Exploration Inc	36/9 Gostar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	

* Co-tenancy situation - At least 2 mineral owners in tract. At least 75% of the royalty owners have executed a lease on the tract. The interests of the remaining co-tenants were acquired pursuant to the Co-tenancy Modernization and Majority Protection Act.



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-414-1239

Randall M. Albert, Chairman
dep.wv.gov

August 31, 2021

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

9489 0090 0027 6349 8921 80

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC – McMasters N-11HU

Dear Sir or Ma'am:

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

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

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

Sincerely,

Susan Rose
Administrator

encl:

10/08/2021



September 14, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:
9489 0090 0027 6349 8921 80.


Item Details

Status:	Delivered, Front Desk/Reception/Mail Room
Status Date / Time:	September 7, 2021, 2:44 pm
Location:	FORT WORTH, TX 76107
Postal Product:	First-Class Mail®
Extra Services:	Certified Mail™ Return Receipt Electronic

Shipment Details

Weight:	4lb, 5.4oz
----------------	------------

Recipient Signature

Signature of Recipient:	
Address of Recipient:	JB Rt-711 Covid-19 1320 S University 76107

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

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

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

10/08/2021



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-414-1239

Randall M. Albert, Chairman
dep.wv.gov

August 31, 2021

TH Exploration II, LLC
1320 S University Dr Ste 500
Fort Worth TX 76107

9489 0090 0027 6349 8921 97

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC – McMasters N-11U

Dear Sir or Ma'am:

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

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

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

Sincerely,

A handwritten signature in cursive script that reads 'Susan Rose'.

Susan Rose
Administrator

encl:

10/08/2021



September 14, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:
9489 0090 0027 6349 8921 97.


Item Details

Status:	Delivered, Front Desk/Reception/Mail Room
Status Date / Time:	September 7, 2021, 2:44 pm
Location:	FORT WORTH, TX 76107
Postal Product:	First-Class Mail®
Extra Services:	Certified Mail™ Return Receipt Electronic

Shipment Details

Weight:	4lb, 5.9oz
----------------	------------

Recipient Signature

Signature of Recipient:	
Address of Recipient:	JB Rt 711 Covid-19 1320 S University 76107

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

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

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

10/08/2021



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-414-1239

Randall M. Albert, Chairman
dep.wv.gov

August 31, 2021

HG Energy II Appalachia, LLC
5260 Dupont Rd
Parkersburg WV 26101

9489 0090 0027 6349 8922 03

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC – McMasters N-11U

Dear Sir or Ma'am:

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

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

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

Sincerely,

Susan Rose
Administrator

encl:

10/08/2021



September 14, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:
9489 0090 0027 6349 8922 03.

Item Details

Status:	Delivered, Front Desk/Reception/Mail Room
Status Date / Time:	September 3, 2021, 10:46 am
Location:	PARKERSBURG, WV 26101
Postal Product:	First-Class Mail®
Extra Services:	Certified Mail™ Return Receipt Electronic

Shipment Details

Weight:	4lb, 5.8oz
----------------	------------

Recipient Signature

Signature of Recipient:

A Baker
MB, New 4019

Address of Recipient:

Sales Department

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

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

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

10/08/2021



west virginia department of environmental protection

Oil and Gas Conservation Commission
601 57th Street SE, Charleston, WV 25304
304-414-1239

Randall M. Albert, Chairman
dep.wv.gov

August 31, 2021

CSX Transportation Inc.
500 Water Street J-180
Jacksonville FL 32202

9489 0090 0027 6349 8922 10

RE: Intentional Deviation of New Deep Well
Tug Hill Operating, LLC – McMasters N-11U

Dear Sir or Ma'am:

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

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

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

Sincerely,

A handwritten signature in cursive script that reads "Susan Rose".

Susan Rose
Administrator

encl:

10/08/2021



September 14, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:
9489 0090 0027 6349 8922 10.

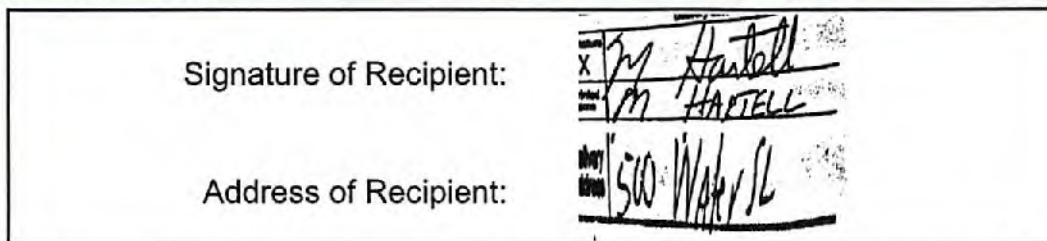
Item Details

Status:	Delivered
Status Date / Time:	September 9, 2021, 7:55 am
Location:	JACKSONVILLE, FL 32206
Postal Product:	First-Class Mail®
Extra Services:	Certified Mail™ Return Receipt Electronic

Shipment Details

Weight:	4lb, 5.2oz
----------------	------------

Recipient Signature



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

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

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

10/08/2021

STATE OF WEST VIRGINIA §
 §
COUNTY OF MARSHALL §

ASSIGNMENT, BILL OF SALE AND CONVEYANCE

THIS ASSIGNMENT, BILL OF SALE AND CONVEYANCE (this "*Assignment*"), dated effective as of 7:00 A.M., local time, where the respective Assets are located, on July 1, 2020 (the "*Effective Time*"), is between **Atinum Marcellus I, LLC**, a Delaware limited liability company ("*Assignor*"), whose mailing address is One Riverway, Suite 710, Houston, TX 77056-1988, and **TH Exploration II, LLC**, a Texas limited liability company, whose mailing address is 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 ("*Assignee*"). Assignor and Assignee are each, individually, referred to herein as a "*Party*" and, collectively, as the "*Parties*."

Capitalized terms used but not defined herein shall have the respective meanings set forth in that certain Asset Purchase Agreement dated as of November 13, 2020, by and among Assignor and Assignee (the "*Purchase Agreement*").

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

For Ten Dollars (\$10.00) and other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged), Assignor does hereby forever GRANT, BARGAIN, SELL, CONVEY, ASSIGN, TRANSFER, SET OVER AND DELIVER unto Assignee, and Assignee does hereby acquire, the undivided interests in the Leases (as defined below) set forth on Exhibit A-1, and all other of Assignor's right, title and interest in and to the interests and properties described in subsections (a) through (k) of this Section 1 (without duplication) (such right, title and interest, less and except the Excluded Assets, collectively, the "*Assets*");

(a) The oil and gas leases, mineral leases and Royalties located in the Covered Counties (which Covered Counties include, for the avoidance of doubt, the county in which this Assignment is filed of record), including those described on Exhibit A-1 together with any and all other right, title and interest in and to the leasehold estates created thereby, subject to the terms, conditions, covenants and obligations set forth in such leases or other instrument creating such rights or interests or on Exhibit A-1 (such leases, Royalties, and mineral interests, collectively, the "*Leases*"), together with any related interest in the lands covered by the Leases or lands unitized, pooled, communitized or consolidated therewith (the "*Lands*");

(b) All of the oil and/or gas wells identified on Exhibit A-2 hereto (the "*Wells*"), and any other oil, gas, or other wells located on any of the Leases or the Lands, in each case, whether producing, non-producing, shut-in, temporarily or permanently abandoned or otherwise;

(c) All rights, titles and interests arising under any unitization, pooling and/or communitization agreements, declarations or designations for drilling, spacing and/or production units related to any of the Leases, Wells or Lands, including the units described on Exhibit A-4;

RECEIVED
Office of Oil and Gas
AUG 19 2021
WV Department of
Environmental Protection
10/08/2021

MEMORANDUM OF OPERATING AGREEMENT AND FINANCING STATEMENT

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

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

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

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

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

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

10/08/2021