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west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Wednesday, February 8, 2023  
WELL WORK PERMIT  
Horizontal 6A / New Drill

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


Re: Permit approval for MCMASTERS S-20 HU  
47-051-02489-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin  
Chief



Operator's Well Number: MCMASTERS S-20 HU  
Farm Name: ROBERT L SHIELDS ET AL  
U.S. WELL NUMBER: 47-051-02489-00-00  
Horizontal 6A New Drill  
Date Issued: 2-8-2023

# PERMIT CONDITIONS

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

## CONDITIONS

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

02/10/2023



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west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

January 23, 2023

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

RE: Application for Deep Well Permit – API #47-051-02489

COMPANY: Tug Hill Operating, LLC

FARM: Robert L. Shields, et al

McMasters S-20HU

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.

Sincerely,

A handwritten signature in blue ink that reads 'Susan Rose'.

Susan Rose  
Administrator

\*\*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 U-7H 47-051-01766; McMasters N-11HU 47-051-02317; 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 47-051-02487; McMasters S-19HU 47-051-02488; Simms U-4H 47-051-01742; Hillrock S-15HU 47-051-02263; Hillrock S-13HU 47-051-02273; Hillrock S-12HU 47-051-02272; Hillrock S-14HU 47-051-02262; Simms U-5H 47-051-01731; Bryan N-14HU 47-051-02031; Bryan N-12HU 47-051-02029; Bryan N-13HU 47-051-02030; Woodford 10HU 47-051-02152



**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 S-20HU Well Pad Name: Shields

3) Farm Name/Surface Owner: Robert L. Shields, 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 11,195' - 11,312', thickness of 117' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,462'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 18,308'

11) Proposed Horizontal Leg Length: 6,063.54'

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

13) Method to Determine Fresh Water Depths: Based on the depth of Pittsburgh Coal seam, per WVGES mapping contours

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: \_\_\_\_\_

18)

**CASING AND TUBING PROGRAM**

<b>TYPE</b>	<b>Size (in)</b>	<b>New or Used</b>	<b>Grade</b>	<b>Weight per ft. (lb/ft)</b>	<b>FOOTAGE: For Drilling (ft)</b>	<b>INTERVALS: Left in Well (ft)</b>	<b>CEMENT: Fill-up (Cu. Ft.)/CTS</b>
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#	2,650'	2,650'	1,870ft^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,550'	10,550'	3,436ft^3(CTS)
Production	5 1/2"	NEW	P110	23#	18,308'	18,308'	4,373ft^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#			
Liners							

<b>TYPE</b>	<b>Size (in)</b>	<b>Wellbore Diameter (in)</b>	<b>Wall Thickness (in)</b>	<b>Burst Pressure (psi)</b>	<b>Anticipated Max. Internal Pressure (psi)</b>	<b>Cement Type</b>	<b>Cement Yield (cu. ft./k)</b>
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water/Coal	20"	26"	.5	2,410	1,928	SEE #24	1.2
Intermediate 1	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate 2	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			

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#	2,650'	2,650'	1,870ft^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,550'	10,550'	3,436ft^3(CTS)
Production	5 1/2"	NEW	P110	23#	18,308'	18,308'	4,373ft^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#			
Liners							

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TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	WV - Environmental Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water/Coal	20"	26"	.5	2,410	1,928	SEE #24	1.2
Intermediate 1	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate 2	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			

*Steve L. Grooms*  
STRADDER GROOMS  
12-1-2022

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(10,826'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

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

Well to be completed with approximately 15,155,000 lb. proppant and 234,307 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

\*Note: Attach additional sheets as needed.

4705102439

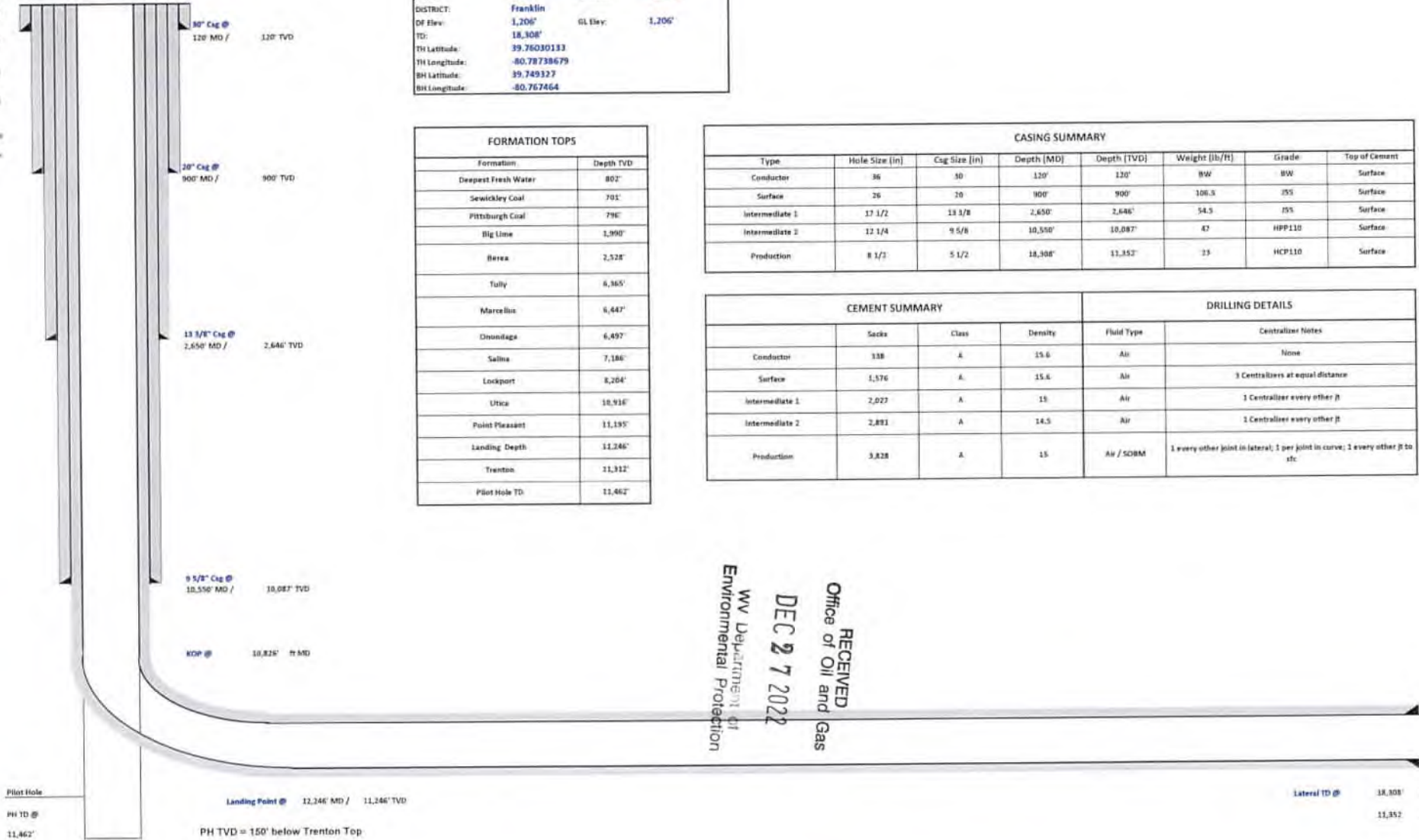


WELL NAME: McMasters S-20HU  
 STATE: WV COUNTY: Marshall  
 DISTRICT: Franklin  
 OF Elev: 1,206' GL Elev: 1,206'  
 TD: 18,308'  
 TH Latitude: 39.76030133  
 TH Longitude: -80.78738679  
 BH Latitude: 39.749327  
 BH Longitude: -80.767464

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	802'
Sewickley Coal	701'
Pittsburgh Coal	796'
Big Lime	1,990'
Berea	2,528'
Tully	4,365'
Marcellus	6,442'
Onondaga	6,497'
Salina	7,186'
Lockport	8,204'
Utica	10,916'
Point Pleasant	11,195'
Landing Depth	11,246'
Trenton	11,312'
Pilot Hole TD	11,462'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	8W	8W	Surface
Surface	26	20	900'	900'	106.3	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,650'	2,646'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,550'	10,087'	47	HPP110	Surface
Production	8 1/2	5 1/2	18,308'	11,352'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	138	A	15.6	Air	None
Surface	1,576	A	15.4	Air	3 Centralizers at equal distance
Intermediate 1	2,027	A	15	Air	1 Centralizer every other ft
Intermediate 2	2,891	A	14.5	Air	1 Centralizer every other ft
Production	5,828	A	15	Air / SOBMM	1 every other joint in lateral; 1 per joint in curve; 1 every other ft to etc.



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*Steve Gano*  
 STRADER GONEX  
 12-1-2022





**Tug Hill Operating, LLC Casing and Cement Program  
McMasters S-20HU**

**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"	2,650'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,550'	CTS
Production	5 1/2"	HCP110	8 1/2"	18,308'	CTS

**Cement**

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

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

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

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

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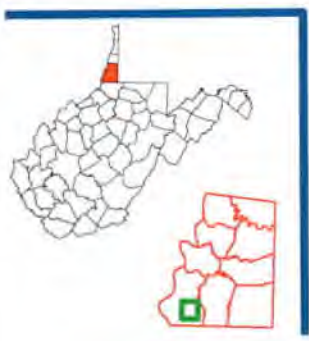
MARSHALL  
Department of  
Environmental Protection

CR 76

FRANKLIN

**Legend**

- Well Locations (ims.wvgs.wvnet.edu)
- McMasters S - 20HU
- Major Highways
- Major Roads
- 500 Ft. Buffer
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- ▭ Counties
- ▭ Districts



# McMasters S - 20HU Franklin District Marshall County, WV



Map Created June 1, 2020

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

### Area of Review

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

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

#### Data Sources Reviewed:

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

Contacted Devin Ducoeur 724-705-0444, [dducoeur@dpslandservices.com](mailto:dducoeur@dpslandservices.com) DPS GIS (06/02/2020) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

#### Request maps for:

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

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

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



Permit well - McMasters 5-2DHU

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
4705170031	Tri-State Oil & Gas	7805' TVD	Unknown	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	State records are incomplete.
4705101533	Tug Hill Operating, LLC	6509' TVD, 9961' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101534	Tug Hill Operating, LLC	6519' TVD, 9890' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101535	Tug Hill Operating, LLC	6519' TVD, 9890' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101536	Tug Hill Operating, LLC	6526' TVD, 10185' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101537	Tug Hill Operating, LLC	6527' TVD, 10560' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101538	Tug Hill Operating, LLC	6494' TVD, 9541' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101539	Tug Hill Operating, LLC	6488' TVD, 11480' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101540	Tug Hill Operating, LLC	6490' TVD, 12101' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101541	Tug Hill Operating, LLC	6485' TVD, 9612' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.
4705101542	Tug Hill Operating, LLC	6487' TVD, 11281' MD	Marcellus	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Proper casing and cement should further prevent migration of fluids from new wellbore to existing wellbore.	Producing Marcellus horizontal well.

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West County # 11 Permit # 7021

Table 1 - All Production Data for the Well
Table 2 - All Production Data for the Well
Table 3 - All Production Data for the Well
Table 4 - All Production Data for the Well
Table 5 - All Production Data for the Well
Table 6 - All Production Data for the Well
Table 7 - All Production Data for the Well
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West County # 11 Permit # 7122

Table 1 - All Production Data for the Well
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West County # 11 Permit # 7123

Table 1 - All Production Data for the Well
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West County # 11 Permit # 7124

Table 1 - All Production Data for the Well
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Table 3 - All Production Data for the Well
Table 4 - All Production Data for the Well
Table 5 - All Production Data for the Well
Table 6 - All Production Data for the Well
Table 7 - All Production Data for the Well
Table 8 - All Production Data for the Well
Table 9 - All Production Data for the Well
Table 10 - All Production Data for the Well

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WV County - 81 Period - 8100

Table 1: Production and Disposition of Oil and Gas

Well	Prod	Dispo	...
1	100	100	...
2	200	200	...
3	300	300	...
4	400	400	...
5	500	500	...
6	600	600	...
7	700	700	...
8	800	800	...
9	900	900	...
10	1000	1000	...
11	1100	1100	...
12	1200	1200	...
13	1300	1300	...
14	1400	1400	...
15	1500	1500	...
16	1600	1600	...
17	1700	1700	...
18	1800	1800	...
19	1900	1900	...
20	2000	2000	...
21	2100	2100	...
22	2200	2200	...
23	2300	2300	...
24	2400	2400	...
25	2500	2500	...
26	2600	2600	...
27	2700	2700	...
28	2800	2800	...
29	2900	2900	...
30	3000	3000	...
31	3100	3100	...
32	3200	3200	...
33	3300	3300	...
34	3400	3400	...
35	3500	3500	...
36	3600	3600	...
37	3700	3700	...
38	3800	3800	...
39	3900	3900	...
40	4000	4000	...
41	4100	4100	...
42	4200	4200	...
43	4300	4300	...
44	4400	4400	...
45	4500	4500	...
46	4600	4600	...
47	4700	4700	...
48	4800	4800	...
49	4900	4900	...
50	5000	5000	...
51	5100	5100	...
52	5200	5200	...
53	5300	5300	...
54	5400	5400	...
55	5500	5500	...
56	5600	5600	...
57	5700	5700	...
58	5800	5800	...
59	5900	5900	...
60	6000	6000	...
61	6100	6100	...
62	6200	6200	...
63	6300	6300	...
64	6400	6400	...
65	6500	6500	...
66	6600	6600	...
67	6700	6700	...
68	6800	6800	...
69	6900	6900	...
70	7000	7000	...
71	7100	7100	...
72	7200	7200	...
73	7300	7300	...
74	7400	7400	...
75	7500	7500	...
76	7600	7600	...
77	7700	7700	...
78	7800	7800	...
79	7900	7900	...
80	8000	8000	...
81	8100	8100	...

There is no change in the well.

There is no change in the well.

There is no change in the well.

WV County - 81 Period - 8101

Table 1: Production and Disposition of Oil and Gas

Well	Prod	Dispo	...
1	100	100	...
2	200	200	...
3	300	300	...
4	400	400	...
5	500	500	...
6	600	600	...
7	700	700	...
8	800	800	...
9	900	900	...
10	1000	1000	...
11	1100	1100	...
12	1200	1200	...
13	1300	1300	...
14	1400	1400	...
15	1500	1500	...
16	1600	1600	...
17	1700	1700	...
18	1800	1800	...
19	1900	1900	...
20	2000	2000	...
21	2100	2100	...
22	2200	2200	...
23	2300	2300	...
24	2400	2400	...
25	2500	2500	...
26	2600	2600	...
27	2700	2700	...
28	2800	2800	...
29	2900	2900	...
30	3000	3000	...
31	3100	3100	...
32	3200	3200	...
33	3300	3300	...
34	3400	3400	...
35	3500	3500	...
36	3600	3600	...
37	3700	3700	...
38	3800	3800	...
39	3900	3900	...
40	4000	4000	...
41	4100	4100	...
42	4200	4200	...
43	4300	4300	...
44	4400	4400	...
45	4500	4500	...
46	4600	4600	...
47	4700	4700	...
48	4800	4800	...
49	4900	4900	...
50	5000	5000	...
51	5100	5100	...
52	5200	5200	...
53	5300	5300	...
54	5400	5400	...
55	5500	5500	...
56	5600	5600	...
57	5700	5700	...
58	5800	5800	...
59	5900	5900	...
60	6000	6000	...
61	6100	6100	...
62	6200	6200	...
63	6300	6300	...
64	6400	6400	...
65	6500	6500	...
66	6600	6600	...
67	6700	6700	...
68	6800	6800	...
69	6900	6900	...
70	7000	7000	...
71	7100	7100	...
72	7200	7200	...
73	7300	7300	...
74	7400	7400	...
75	7500	7500	...
76	7600	7600	...
77	7700	7700	...
78	7800	7800	...
79	7900	7900	...
80	8000	8000	...
81	8100	8100	...

There is no change in the well.

There is no change in the well.

There is no change in the well.

WV County - 81 Period - 8102

Table 1: Production and Disposition of Oil and Gas

Well	Prod	Dispo	...
1	100	100	...
2	200	200	...
3	300	300	...
4	400	400	...
5	500	500	...
6	600	600	...
7	700	700	...
8	800	800	...
9	900	900	...
10	1000	1000	...
11	1100	1100	...
12	1200	1200	...
13	1300	1300	...
14	1400	1400	...
15	1500	1500	...
16	1600	1600	...
17	1700	1700	...
18	1800	1800	...
19	1900	1900	...
20	2000	2000	...
21	2100	2100	...
22	2200	2200	...
23	2300	2300	...
24	2400	2400	...
25	2500	2500	...
26	2600	2600	...
27	2700	2700	...
28	2800	2800	...
29	2900	2900	...
30	3000	3000	...
31	3100	3100	...
32	3200	3200	...
33	3300	3300	...
34	3400	3400	...
35	3500	3500	...
36	3600	3600	...
37	3700	3700	...
38	3800	3800	...
39	3900	3900	...
40	4000	4000	...
41	4100	4100	...
42	4200	4200	...
43	4300	4300	...
44	4400	4400	...
45	4500	4500	...
46	4600	4600	...
47	4700	4700	...
48	4800	4800	...
49	4900	4900	...
50	5000	5000	...
51	5100	5100	...
52	5200	5200	...
53	5300	5300	...
54	5400	5400	...
55	5500	5500	...
56	5600	5600	...
57	5700	5700	...
58	5800	5800	...
59	5900	5900	...
60	6000	6000	...
61	6100	6100	...
62	6200	6200	...
63	6300	6300	...
64	6400	6400	...
65	6500	6500	...
66	6600	6600	...
67	6700	6700	...
68	6800	6800	...
69	6900	6900	...
70	7000	7000	...
71	7100	7100	...
72	7200	7200	...
73	7300	7300	...
74	7400	7400	...
75	7500	7500	...
76	7600	7600	...
77	7700	7700	...
78	7800	7800	...
79	7900	7900	...
80	8000	8000	...
81	8100	8100	...

There is no change in the well.

There is no change in the well.

There is no change in the well.

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Well: **McMasters S-20 HU (slot J)**  
 Site: **McMasters Shields**  
 Project: **Marshall County, West Virginia**  
 Design: **rev2**  
 Rig:

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2	1300.00	0.00	0.000	1300.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2"/100' build
3	1550.00	5.00	46.890	1549.68	7.45	7.96	2.00	46.890	2.18	Begin 5.00° tangent
4	3005.85	5.00	46.890	3000.00	94.16	100.59	0.00	0.000	27.51	Begin 2"/100' build
5	3255.85	10.00	46.890	3247.78	116.46	124.41	2.00	0.000	34.03	Begin 10.00° tangent
6	6659.79	10.00	46.890	6500.00	520.41	555.92	0.00	0.000	152.05	Begin 2"/100' build
7	7562.20	28.05	46.889	7449.60	720.61	769.78	2.00	-0.002	210.54	Begin 28.05° tangent
8	10825.90	28.05	46.889	10329.98	1769.40	1890.11	0.00	0.000	516.95	Begin 6"/100' build/turn
9	11716.16	50.00	132.318	11062.83	1676.01	2327.17	6.00	108.018	927.40	Begin 89.00° lateral
10	12245.50	89.00	150.453	11246.00	1291.61	2621.04	8.00	27.532	1389.55	Begin 89.00° lateral
11	18307.92	89.00	150.453	11352.00	-3982.13	5609.25	0.00	0.000	6879.03	PBHL/TD 18307.92 MD/11352.00 TVD

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



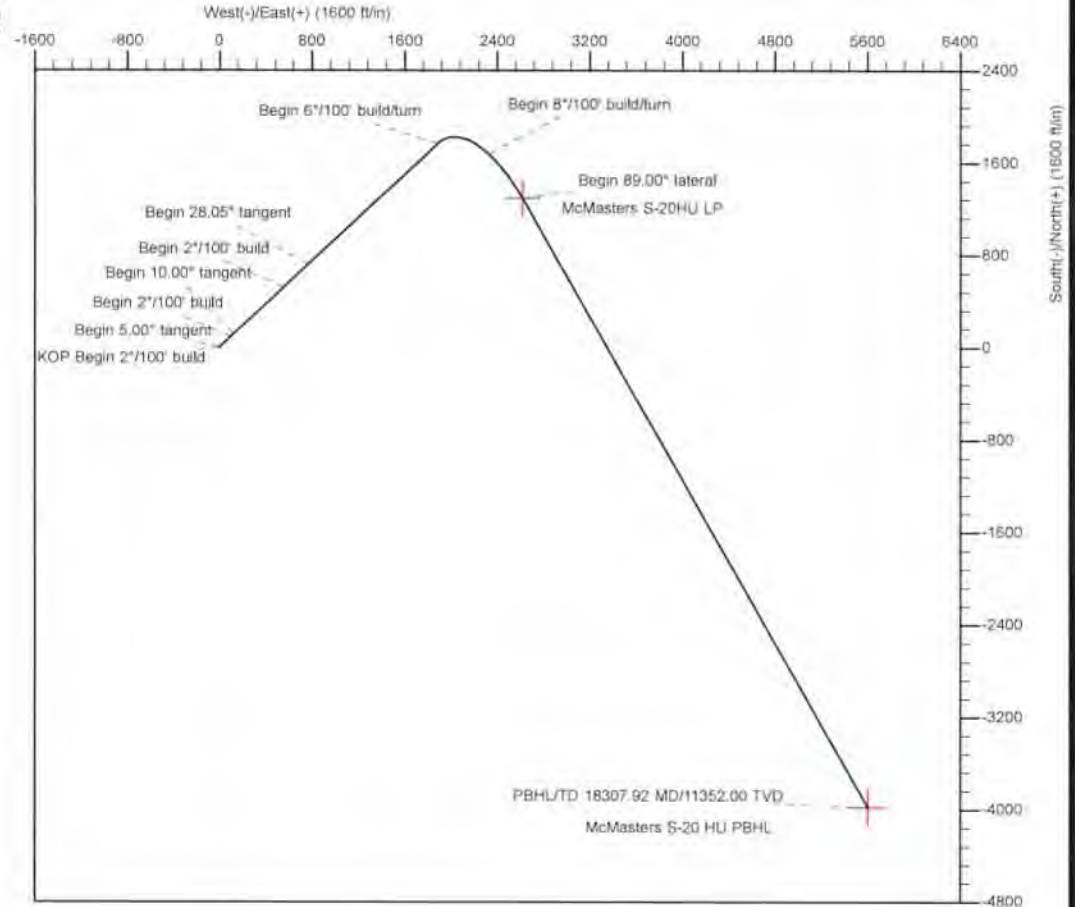
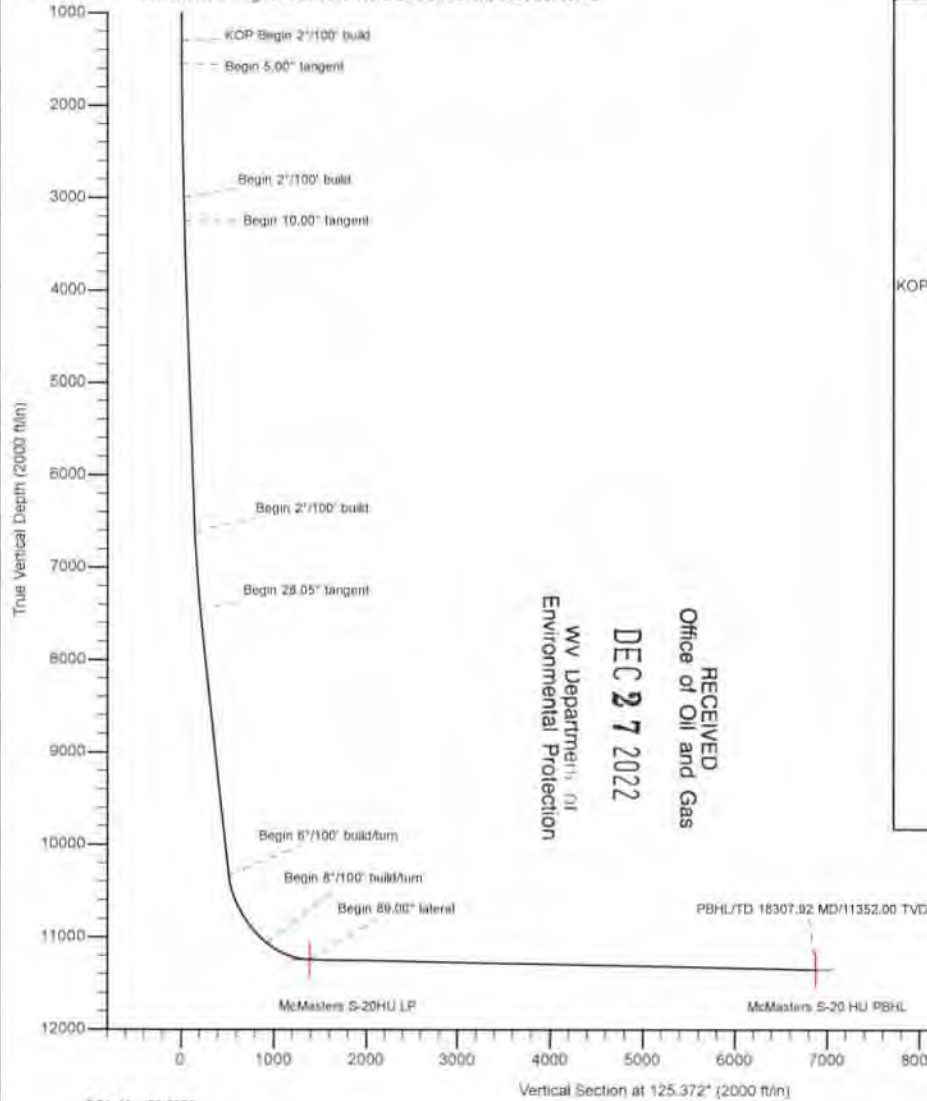
Azimuths to Grid North  
 True North: -0.14°  
 Magnetic North: -8.84°

Magnetic Field  
 Strength: 51883.5nT  
 Dip Angle: 66.74°  
 Date: 12/9/2019  
 Model: IGRF2015

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

Northing: 14439522.22 Easting: 1700166.89 Latitude: 39.76030133 Longitude: -80.78738679

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.843°



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Planning Report - Geographic

<b>Database:</b>	DB_Aug1919_v14	<b>Local Co-ordinate Reference:</b>	Well McMasters S-20 HU (slot J)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 1206.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 1206.00ft
<b>Site:</b>	McMasters Shields	<b>North Reference:</b>	Grid
<b>Well:</b>	McMasters S-20 HU (slot J)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev2		

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

<b>Site</b>	McMasters Shields				
<b>Site Position:</b>		<b>Northing:</b>	14,439,441.76 usft	<b>Latitude:</b>	39.76008050
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,700,145.18 usft	<b>Longitude:</b>	-80.78746471
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.136 "

<b>Well</b>	McMasters S-20 HU (slot J)					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,439,522.22 usft	<b>Latitude:</b>	39.76030133
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	1,700,166.89 usft	<b>Longitude:</b>	-80.78738679
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	1,206.00 ft

<b>Wellbore</b>	Original Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	12/9/2019	-8.707	66.739	51,883.54549582

<b>Design</b>	rev2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	125.372

<b>Plan Survey Tool Program</b>	<b>Date</b>	5/28/2020		
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	18,307.93 rev2 (Original Hole)	MWD MWD - Standard	

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Planning Report - Geographic

<b>Database:</b>	DB_Aug1919_v14	<b>Local Co-ordinate Reference:</b>	Well McMasters S-20 HU (slot J)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 1206.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 1206.00ft
<b>Site:</b>	McMasters Shields	<b>North Reference:</b>	Grid
<b>Well:</b>	McMasters S-20 HU (slot J)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev2		

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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.000		
1,300.00	0.00	0.000	1,300.00	0.00	0.00	0.00	0.00	0.00	0.000		
1,550.00	5.00	46.890	1,549.68	7.45	7.96	2.00	2.00	0.00	46.890		
3,005.86	5.00	46.890	3,000.00	94.16	100.59	0.00	0.00	0.00	0.000		
3,255.86	10.00	46.890	3,247.78	116.46	124.41	2.00	2.00	0.00	0.000		
6,659.79	10.00	46.890	6,600.00	520.41	555.92	0.00	0.00	0.00	0.000		
7,562.20	28.05	46.889	7,449.60	720.61	769.78	2.00	2.00	0.00	-0.002		
10,825.90	28.05	46.889	10,329.98	1,769.40	1,890.11	0.00	0.00	0.00	0.000		
11,716.16	50.00	132.318	11,062.83	1,676.01	2,327.17	6.00	2.47	9.60	108.018		
12,245.50	89.00	150.463	11,246.00	1,291.61	2,621.05	8.00	7.37	3.43	27.532		
18,307.93	89.00	150.463	11,352.00	-3,982.13	5,609.25	0.00	0.00	0.00	0.000	McMasters S-20 HU F	

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Planning Report - Geographic

DEC 27 2022

WV Department of  
Environmental Protection

Database: DB\_Aug1919\_v14  
Company: Tug Hill Operating LLC  
Project: Marshall County, West Virginia  
Site: McMasters Shields  
Well: McMasters S-20 HU (slot J)  
Wellbore: Original Hole  
Design: rev2

Local Co-ordinate Reference: Well McMasters S-20 HU (slot J)  
TVD Reference: GL @ 1206.00ft  
MD Reference: GL @ 1206.00ft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.000	0.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
100.00	0.00	0.000	100.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
200.00	0.00	0.000	200.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
300.00	0.00	0.000	300.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
400.00	0.00	0.000	400.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
500.00	0.00	0.000	500.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
600.00	0.00	0.000	600.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
700.00	0.00	0.000	700.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
800.00	0.00	0.000	800.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
900.00	0.00	0.000	900.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
1,000.00	0.00	0.000	1,000.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
1,100.00	0.00	0.000	1,100.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
1,200.00	0.00	0.000	1,200.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
1,300.00	0.00	0.000	1,300.00	0.00	0.00	14,439,522.22	1,700,166.89	39.76030133	-80.78738679
<b>KOP Begin 2°/100' build</b>									
1,400.00	2.00	46.890	1,399.96	1.19	1.27	14,439,523.41	1,700,168.17	39.76030460	-80.78738225
1,500.00	4.00	46.890	1,499.84	4.77	5.09	14,439,526.99	1,700,171.99	39.76031440	-80.78738662
1,550.00	5.00	46.890	1,549.68	7.45	7.96	14,439,529.67	1,700,174.85	39.76032174	-80.78735841
<b>Begin 6.00° tangent</b>									
1,600.00	5.00	46.890	1,599.49	10.43	11.14	14,439,532.65	1,700,178.03	39.76032990	-80.78734706
1,700.00	5.00	46.890	1,699.11	16.38	17.50	14,439,538.60	1,700,184.39	39.76034621	-80.78732437
1,800.00	5.00	46.890	1,798.73	22.34	23.67	14,439,544.56	1,700,190.76	39.76036253	-80.78730168
1,900.00	5.00	46.890	1,898.35	28.30	30.23	14,439,550.52	1,700,197.12	39.76037885	-80.78727899
2,000.00	5.00	46.890	1,997.97	34.25	36.59	14,439,556.47	1,700,203.48	39.76039516	-80.78725630
2,100.00	5.00	46.890	2,097.59	40.21	42.95	14,439,562.43	1,700,209.84	39.76041148	-80.78723361
2,200.00	5.00	46.890	2,197.21	46.17	49.32	14,439,568.38	1,700,216.21	39.76042779	-80.78721092
2,300.00	5.00	46.890	2,296.83	52.12	55.68	14,439,574.34	1,700,222.57	39.76044411	-80.78718823
2,400.00	5.00	46.890	2,396.45	58.08	62.04	14,439,580.30	1,700,228.93	39.76046043	-80.78716553
2,500.00	5.00	46.890	2,496.07	64.03	68.40	14,439,586.25	1,700,235.30	39.76047674	-80.78714284
2,600.00	5.00	46.890	2,595.69	69.99	74.77	14,439,592.21	1,700,241.66	39.76049306	-80.78712015
2,700.00	5.00	46.890	2,695.31	75.95	81.13	14,439,598.17	1,700,248.02	39.76050937	-80.78709746
2,800.00	5.00	46.890	2,794.93	81.90	87.49	14,439,604.12	1,700,254.38	39.76052569	-80.78707477
2,900.00	5.00	46.890	2,894.55	87.86	93.86	14,439,610.08	1,700,260.75	39.76054201	-80.78705208
3,000.00	5.00	46.890	2,994.17	93.82	100.22	14,439,616.03	1,700,267.11	39.76055832	-80.78702939
3,005.86	5.00	46.890	3,000.00	94.16	100.59	14,439,616.38	1,700,267.48	39.76055928	-80.78702806
<b>Begin 2°/100' build</b>									
3,100.00	6.88	46.890	3,093.63	100.62	107.70	14,439,623.04	1,700,274.60	39.76057752	-80.78700269
3,200.00	8.88	46.890	3,192.68	110.20	117.72	14,439,632.42	1,700,284.61	39.76060319	-80.78696698
3,255.86	10.00	46.890	3,247.78	116.46	124.41	14,439,638.68	1,700,291.30	39.76062035	-80.78694313
<b>Begin 10.00° tangent</b>									
3,300.00	10.00	46.890	3,291.25	121.70	130.00	14,439,643.92	1,700,296.89	39.76063470	-80.78692317
3,400.00	10.00	46.890	3,389.74	133.56	142.68	14,439,655.78	1,700,309.57	39.76066720	-80.78687796
3,500.00	10.00	46.890	3,488.22	145.43	155.36	14,439,667.65	1,700,322.25	39.76069971	-80.78683275
3,600.00	10.00	46.890	3,586.70	157.30	168.03	14,439,679.52	1,700,334.92	39.76073222	-80.78678754
3,700.00	10.00	46.890	3,685.18	169.16	180.71	14,439,691.38	1,700,347.60	39.76076473	-80.78674233
3,800.00	10.00	46.890	3,783.66	181.03	193.39	14,439,703.25	1,700,360.28	39.76079723	-80.78669712
3,900.00	10.00	46.890	3,882.14	192.90	206.06	14,439,715.12	1,700,372.96	39.76082974	-80.78665191
4,000.00	10.00	46.890	3,980.62	204.77	218.74	14,439,726.99	1,700,385.63	39.76086225	-80.78660670
4,100.00	10.00	46.890	4,079.10	216.63	231.42	14,439,738.85	1,700,398.31	39.76089476	-80.78656149
4,200.00	10.00	46.890	4,177.58	228.50	244.10	14,439,750.72	1,700,410.99	39.76092726	-80.78651628
4,300.00	10.00	46.890	4,276.06	240.37	256.77	14,439,762.59	1,700,423.66	39.76095977	-80.78647107
4,400.00	10.00	46.890	4,374.54	252.23	269.45	14,439,774.45	1,700,436.34	39.76099228	-80.78642586
4,500.00	10.00	46.890	4,473.02	264.10	282.13	14,439,786.32	1,700,449.02	39.76102479	-80.78638065
4,600.00	10.00	46.890	4,571.50	275.97	294.80	14,439,798.19	1,700,461.69	39.76105729	-80.78633544



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DEC 27 2022  
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Planning Report - Geographic

WV Department of Environmental Protection

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well McMasters S-20 HU (slot J)
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 S-20 HU (slot J)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,700.00	10.00	46.890	4,669.99	287.84	307.48	14,439,810.05	1,700,474.37	39.76108980	-80.78629023
4,800.00	10.00	46.890	4,768.47	299.70	320.16	14,439,821.92	1,700,487.05	39.76112231	-80.78624502
4,900.00	10.00	46.890	4,866.95	311.57	332.83	14,439,833.79	1,700,499.73	39.76115482	-80.78619981
5,000.00	10.00	46.890	4,965.43	323.44	345.51	14,439,845.66	1,700,512.40	39.76118732	-80.78615460
5,100.00	10.00	46.890	5,063.91	335.30	358.19	14,439,857.52	1,700,525.08	39.76121983	-80.78610939
5,200.00	10.00	46.890	5,162.39	347.17	370.87	14,439,869.39	1,700,537.76	39.76125234	-80.78606417
5,300.00	10.00	46.890	5,260.87	359.04	383.54	14,439,881.26	1,700,550.43	39.76128485	-80.78601896
5,400.00	10.00	46.890	5,359.35	370.91	396.22	14,439,893.12	1,700,563.11	39.76131735	-80.78597375
5,500.00	10.00	46.890	5,457.83	382.77	408.90	14,439,904.99	1,700,575.79	39.76134986	-80.78592854
5,600.00	10.00	46.890	5,556.31	394.64	421.57	14,439,916.86	1,700,588.46	39.76138237	-80.78588333
5,700.00	10.00	46.890	5,654.79	406.51	434.25	14,439,928.73	1,700,601.14	39.76141488	-80.78583812
5,800.00	10.00	46.890	5,753.27	418.37	446.93	14,439,940.59	1,700,613.82	39.76144738	-80.78579291
5,900.00	10.00	46.890	5,851.76	430.24	459.61	14,439,952.46	1,700,626.50	39.76147989	-80.78574770
6,000.00	10.00	46.890	5,950.24	442.11	472.28	14,439,964.33	1,700,639.17	39.76151240	-80.78570249
6,100.00	10.00	46.890	6,048.72	453.98	484.96	14,439,976.19	1,700,651.85	39.76154490	-80.78565728
6,200.00	10.00	46.890	6,147.20	465.84	497.64	14,439,988.06	1,700,664.53	39.76157741	-80.78561207
6,300.00	10.00	46.890	6,245.68	477.71	510.31	14,439,999.93	1,700,677.20	39.76160992	-80.78556685
6,400.00	10.00	46.890	6,344.16	489.58	522.99	14,440,011.80	1,700,689.88	39.76164243	-80.78552164
6,500.00	10.00	46.890	6,442.64	501.44	535.67	14,440,023.66	1,700,702.56	39.76167493	-80.78547643
6,600.00	10.00	46.890	6,541.12	513.31	548.34	14,440,035.53	1,700,715.24	39.76170744	-80.78543122
6,659.79	10.00	46.890	6,600.00	520.41	555.92	14,440,042.63	1,700,722.81	39.76172688	-80.78540419
<b>Begin 2°/100' build</b>									
6,700.00	10.80	46.890	6,639.55	525.37	561.22	14,440,047.59	1,700,728.12	39.76174047	-80.78538529
6,800.00	12.80	46.890	6,737.43	539.35	576.16	14,440,061.57	1,700,743.05	39.76177876	-80.78533203
6,900.00	14.80	46.889	6,834.54	555.65	593.58	14,440,077.87	1,700,760.47	39.76182343	-80.78526991
7,000.00	16.80	46.889	6,930.75	574.27	613.48	14,440,096.48	1,700,780.35	39.76187441	-80.78519900
7,100.00	18.80	46.889	7,025.96	595.16	635.78	14,440,117.38	1,700,802.67	39.76193165	-80.78511940
7,200.00	20.80	46.889	7,120.04	618.31	660.51	14,440,140.53	1,700,827.40	39.76199507	-80.78503119
7,300.00	22.80	46.889	7,212.88	643.70	687.63	14,440,165.92	1,700,854.52	39.76206460	-80.78493449
7,400.00	24.80	46.889	7,304.37	671.28	717.09	14,440,193.50	1,700,883.98	39.76214015	-80.78482941
7,500.00	26.80	46.889	7,394.39	701.03	748.87	14,440,223.25	1,700,915.76	39.76222164	-80.78471608
7,562.20	28.05	46.889	7,449.60	720.61	769.78	14,440,242.82	1,700,936.67	39.76227527	-80.78464149
<b>Begin 28.05° tangent</b>									
7,600.00	28.05	46.889	7,462.96	732.75	782.76	14,440,254.97	1,700,949.65	39.76230854	-80.78459521
7,700.00	28.05	46.889	7,571.22	764.89	817.08	14,440,287.11	1,700,983.97	39.76239657	-80.78447279
7,800.00	28.05	46.889	7,659.47	797.02	851.41	14,440,319.24	1,701,018.30	39.76248460	-80.78435036
7,900.00	28.05	46.889	7,747.73	829.16	885.74	14,440,351.38	1,701,052.63	39.76257262	-80.78422793
8,000.00	28.05	46.889	7,835.98	861.29	920.06	14,440,383.51	1,701,086.95	39.76266065	-80.78410551
8,100.00	28.05	46.889	7,924.24	893.43	954.39	14,440,415.65	1,701,121.28	39.76274867	-80.78398308
8,200.00	28.05	46.889	8,012.49	925.58	988.72	14,440,447.78	1,701,155.61	39.76283670	-80.78386065
8,300.00	28.05	46.889	8,100.75	957.70	1,023.05	14,440,479.92	1,701,189.93	39.76292472	-80.78373823
8,400.00	28.05	46.889	8,189.00	989.84	1,057.37	14,440,512.05	1,701,224.26	39.76301274	-80.78361580
8,500.00	28.05	46.889	8,277.26	1,021.97	1,091.70	14,440,544.19	1,701,258.59	39.76310077	-80.78349337
8,600.00	28.05	46.889	8,365.51	1,054.11	1,126.03	14,440,576.32	1,701,292.92	39.76318879	-80.78337094
8,700.00	28.05	46.889	8,453.77	1,086.24	1,160.35	14,440,608.46	1,701,327.24	39.76327682	-80.78324851
8,800.00	28.05	46.889	8,542.02	1,118.38	1,194.68	14,440,640.59	1,701,361.57	39.76336484	-80.78312609
8,900.00	28.05	46.889	8,630.28	1,150.51	1,229.01	14,440,672.73	1,701,395.90	39.76345287	-80.78300366
9,000.00	28.05	46.889	8,718.54	1,182.65	1,263.33	14,440,704.86	1,701,430.22	39.76354089	-80.78288123
9,100.00	28.05	46.889	8,806.79	1,214.78	1,297.66	14,440,737.00	1,701,464.55	39.76362891	-80.78275880
9,200.00	28.05	46.889	8,895.05	1,246.92	1,331.99	14,440,769.13	1,701,498.88	39.76371694	-80.78263637
9,300.00	28.05	46.889	8,983.30	1,279.05	1,366.31	14,440,801.27	1,701,533.20	39.76380496	-80.78251394
9,400.00	28.05	46.889	9,071.56	1,311.19	1,400.64	14,440,833.40	1,701,567.53	39.76389299	-80.78239151
9,500.00	28.05	46.889	9,159.81	1,343.32	1,434.97	14,440,865.54	1,701,601.86	39.76398101	-80.78226907
9,600.00	28.05	46.889	9,248.07	1,375.46	1,469.30	14,440,897.67	1,701,636.18	39.76406903	-80.78214664



02/10/2023



# 4705102439 Planning Report - Geographic

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DEC 27 2022

<b>Database:</b>	DB_Aug1919_v14	<b>Local Co-ordinate Reference:</b>	Well McMasters S-20 HU (slot J)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 1206.00
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 1206.00ft
<b>Site:</b>	McMasters Shields	<b>North Reference:</b>	Grid
<b>Well:</b>	McMasters S-20 HU (slot J)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,700.00	28.05	46.889	9,336.32	1,407.59	1,503.62	14,440,929.81	1,701,670.51	39.76415705	-80.78202421
9,800.00	28.05	46.889	9,424.58	1,439.73	1,537.95	14,440,961.94	1,701,704.84	39.76424508	-80.78190178
9,900.00	28.05	46.889	9,512.83	1,471.86	1,572.28	14,440,994.06	1,701,739.16	39.76433310	-80.78177935
10,000.00	28.05	46.889	9,601.09	1,504.00	1,606.60	14,441,026.21	1,701,773.49	39.76442112	-80.78165691
10,100.00	28.05	46.889	9,689.34	1,536.13	1,640.93	14,441,058.35	1,701,807.82	39.76450914	-80.78153448
10,200.00	28.05	46.889	9,777.60	1,568.27	1,675.26	14,441,090.48	1,701,842.15	39.76459717	-80.78141205
10,300.00	28.05	46.889	9,865.85	1,600.40	1,709.58	14,441,122.62	1,701,876.47	39.76468519	-80.78128961
10,400.00	28.05	46.889	9,954.11	1,632.54	1,743.91	14,441,154.76	1,701,910.80	39.76477321	-80.78116718
10,500.00	28.05	46.889	10,042.36	1,664.67	1,778.24	14,441,186.89	1,701,945.13	39.76486123	-80.78104475
10,600.00	28.05	46.889	10,130.62	1,696.81	1,812.56	14,441,219.03	1,701,979.45	39.76494925	-80.78092231
10,700.00	28.05	46.889	10,218.87	1,728.94	1,846.89	14,441,251.16	1,702,013.78	39.76503727	-80.78079988
10,800.00	28.05	46.889	10,307.13	1,761.08	1,881.22	14,441,283.30	1,702,048.11	39.76512530	-80.78067744
10,825.90	28.05	46.889	10,329.98	1,769.40	1,890.11	14,441,291.62	1,702,057.00	39.76514809	-80.78064574
<b>Begin 6"/100' build/tum</b>									
10,900.00	26.98	56.241	10,395.74	1,790.66	1,916.82	14,441,312.88	1,702,083.70	39.76520629	-80.78055051
11,000.00	26.58	69.552	10,485.09	1,811.10	1,956.67	14,441,333.32	1,702,123.58	39.76526216	-80.78040849
11,100.00	27.42	82.680	10,574.27	1,821.87	2,000.52	14,441,344.08	1,702,167.41	39.76529143	-80.78025237
11,200.00	29.40	94.591	10,662.29	1,822.85	2,047.87	14,441,345.08	1,702,214.76	39.76529380	-80.78006387
11,300.00	32.30	104.856	10,748.20	1,814.02	2,098.20	14,441,336.24	1,702,265.09	39.76526923	-80.77990482
11,400.00	35.90	113.436	10,831.04	1,795.50	2,150.97	14,441,317.71	1,702,317.86	39.76521800	-80.77971720
11,500.00	40.01	120.559	10,909.91	1,767.47	2,205.60	14,441,289.68	1,702,372.49	39.76514065	-80.77952305
11,600.00	44.48	126.516	10,983.96	1,730.25	2,261.48	14,441,252.46	1,702,428.37	39.76503906	-80.77932451
11,700.00	49.21	131.570	11,052.36	1,684.24	2,318.01	14,441,206.45	1,702,484.90	39.76491132	-80.77912374
11,716.16	50.00	132.318	11,062.83	1,676.01	2,327.17	14,441,198.23	1,702,494.06	39.76488868	-80.77909123
<b>Begin 8"/100' build/tum</b>									
11,800.00	56.01	136.051	11,113.27	1,629.32	2,375.09	14,441,151.53	1,702,541.98	39.76476010	-80.77892112
11,900.00	63.30	139.866	11,163.77	1,565.21	2,432.75	14,441,087.43	1,702,599.63	39.76458386	-80.77871650
12,000.00	70.69	143.217	11,202.83	1,493.15	2,489.89	14,441,015.37	1,702,656.77	39.76438538	-80.77851380
12,100.00	78.12	146.276	11,229.70	1,414.54	2,545.40	14,440,936.75	1,702,712.28	39.76416910	-80.77831696
12,200.00	85.59	149.171	11,243.85	1,330.90	2,598.20	14,440,853.11	1,702,765.08	39.76393904	-80.77812980
12,245.50	89.00	150.463	11,246.00	1,291.61	2,621.05	14,440,813.83	1,702,787.93	39.76383100	-80.77804885
<b>Begin 89.00° lateral</b>									
12,300.00	89.00	150.463	11,246.95	1,244.21	2,647.91	14,440,766.42	1,702,814.79	39.76370063	-80.77795368
12,400.00	89.00	150.463	11,248.70	1,157.21	2,697.20	14,440,679.43	1,702,864.08	39.76346139	-80.77777905
12,500.00	89.00	150.463	11,250.45	1,070.22	2,746.49	14,440,592.44	1,702,913.37	39.76322215	-80.77760441
12,600.00	89.00	150.463	11,252.20	983.23	2,795.78	14,440,505.45	1,702,962.66	39.76298292	-80.77742978
12,700.00	89.00	150.463	11,253.95	896.24	2,845.07	14,440,418.46	1,703,011.95	39.76274368	-80.77725515
12,800.00	89.00	150.463	11,255.69	809.25	2,894.36	14,440,331.47	1,703,061.25	39.76250444	-80.77708053
12,900.00	89.00	150.463	11,257.44	722.26	2,943.65	14,440,244.48	1,703,110.54	39.76226520	-80.77690590
13,000.00	89.00	150.463	11,259.19	635.27	2,992.94	14,440,157.49	1,703,159.83	39.76202597	-80.77673127
13,100.00	89.00	150.463	11,260.94	548.28	3,042.23	14,440,070.50	1,703,209.12	39.76178673	-80.77655665
13,200.00	89.00	150.463	11,262.69	461.29	3,091.52	14,439,983.51	1,703,258.41	39.76154749	-80.77638203
13,300.00	89.00	150.463	11,264.44	374.30	3,140.81	14,439,896.52	1,703,307.70	39.76130825	-80.77620740
13,400.00	89.00	150.463	11,266.19	287.31	3,190.10	14,439,809.53	1,703,356.99	39.76106901	-80.77603278
13,500.00	89.00	150.463	11,267.93	200.32	3,239.39	14,439,722.54	1,703,406.28	39.76082977	-80.77585816
13,600.00	89.00	150.463	11,269.68	113.33	3,288.68	14,439,635.55	1,703,455.57	39.76059053	-80.77568354
13,700.00	89.00	150.463	11,271.43	26.34	3,337.97	14,439,548.55	1,703,504.86	39.76035129	-80.77550893
13,800.00	89.00	150.463	11,273.18	-60.66	3,387.27	14,439,461.56	1,703,554.15	39.76011205	-80.77533431
13,900.00	89.00	150.463	11,274.93	-147.65	3,436.56	14,439,374.57	1,703,603.44	39.75987281	-80.77515970
14,000.00	89.00	150.463	11,276.68	-234.64	3,485.85	14,439,287.58	1,703,652.73	39.75963357	-80.77498508
14,100.00	89.00	150.463	11,278.43	-321.63	3,535.14	14,439,200.59	1,703,702.02	39.75939433	-80.77481047
14,200.00	89.00	150.463	11,280.17	-408.62	3,584.43	14,439,113.60	1,703,751.31	39.75915509	-80.77463586
14,300.00	89.00	150.463	11,281.92	-495.61	3,633.72	14,439,026.61	1,703,800.60	39.75891585	-80.77446125
14,400.00	89.00	150.463	11,283.67	-582.60	3,683.01	14,438,939.62	1,703,849.89	39.75867660	-80.77428664



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Planning Report - Geographic

DEC 27 2022

Database: DB\_Aug1919\_v14  
Company: Tug Hill Operating LLC  
Project: Marshall County, West Virginia  
Site: McMasters Shields  
Well: McMasters S-20 HU (slot J)  
Wellbore: Original Hole  
Design: rev2

Local Co-ordinate Reference: Well McMasters S-20 HU (slot J)  
TVD Reference: GL @ 1206.00ft  
MD Reference: GL @ 1206.00ft  
North Reference: Gnd  
Survey Calculation Method: Minimum Curvature

WV Department of Environmental Protection

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,500.00	89.00	150.463	11,285.42	-669.59	3,732.30	14,438,852.63	1,703,899.18	39.75843736	-80.77411203
14,600.00	89.00	150.463	11,287.17	-756.58	3,781.59	14,438,765.64	1,703,948.47	39.75819812	-80.77393743
14,700.00	89.00	150.463	11,288.92	-843.57	3,830.88	14,438,678.65	1,703,997.76	39.75795888	-80.77376282
14,800.00	89.00	150.463	11,290.66	-930.56	3,880.17	14,438,591.66	1,704,047.05	39.75771963	-80.77358822
14,900.00	89.00	150.463	11,292.41	-1,017.55	3,929.46	14,438,504.67	1,704,096.34	39.75748039	-80.77341361
15,000.00	89.00	150.463	11,294.16	-1,104.54	3,978.75	14,438,417.68	1,704,145.64	39.75724115	-80.77323901
15,100.00	89.00	150.463	11,295.91	-1,191.53	4,028.04	14,438,330.69	1,704,194.93	39.75700190	-80.77306441
15,200.00	89.00	150.463	11,297.66	-1,278.53	4,077.33	14,438,243.70	1,704,244.22	39.75676266	-80.77288981
15,300.00	89.00	150.463	11,299.41	-1,365.52	4,126.62	14,438,156.71	1,704,293.51	39.75652342	-80.77271521
15,400.00	89.00	150.463	11,301.16	-1,452.51	4,175.91	14,438,069.72	1,704,342.80	39.75628417	-80.77254062
15,500.00	89.00	150.463	11,302.90	-1,539.50	4,225.20	14,437,982.73	1,704,392.09	39.75604493	-80.77236602
15,600.00	89.00	150.463	11,304.65	-1,626.49	4,274.50	14,437,895.73	1,704,441.38	39.75580568	-80.77219143
15,700.00	89.00	150.463	11,306.40	-1,713.48	4,323.79	14,437,808.74	1,704,490.67	39.75556644	-80.77201683
15,800.00	89.00	150.463	11,308.15	-1,800.47	4,373.08	14,437,721.75	1,704,539.96	39.75532719	-80.77184224
15,900.00	89.00	150.463	11,309.90	-1,887.46	4,422.37	14,437,634.76	1,704,589.25	39.75508794	-80.77166765
16,000.00	89.00	150.463	11,311.65	-1,974.45	4,471.66	14,437,547.77	1,704,638.54	39.75484870	-80.77149306
16,100.00	89.00	150.463	11,313.39	-2,061.44	4,520.95	14,437,460.78	1,704,687.83	39.75460945	-80.77131847
16,200.00	89.00	150.463	11,315.14	-2,148.43	4,570.24	14,437,373.79	1,704,737.12	39.75437021	-80.77114389
16,300.00	89.00	150.463	11,316.89	-2,235.42	4,619.53	14,437,286.80	1,704,786.41	39.75413096	-80.77096930
16,400.00	89.00	150.463	11,318.64	-2,322.41	4,668.82	14,437,199.81	1,704,835.70	39.75389171	-80.77079472
16,500.00	89.00	150.463	11,320.39	-2,409.40	4,718.11	14,437,112.82	1,704,884.99	39.75365246	-80.77062013
16,600.00	89.00	150.463	11,322.14	-2,496.40	4,767.40	14,437,025.83	1,704,934.28	39.75341322	-80.77044555
16,700.00	89.00	150.463	11,323.89	-2,583.39	4,816.69	14,436,938.84	1,704,983.57	39.75317397	-80.77027097
16,800.00	89.00	150.463	11,325.63	-2,670.38	4,865.98	14,436,851.85	1,705,032.86	39.75293472	-80.77009638
16,900.00	89.00	150.463	11,327.38	-2,757.37	4,915.27	14,436,764.86	1,705,082.15	39.75269547	-80.76992181
17,000.00	89.00	150.463	11,329.13	-2,844.36	4,964.56	14,436,677.87	1,705,131.44	39.75245622	-80.76974723
17,100.00	89.00	150.463	11,330.88	-2,931.35	5,013.85	14,436,590.88	1,705,180.74	39.75221697	-80.76957266
17,200.00	89.00	150.463	11,332.63	-3,018.34	5,063.14	14,436,503.89	1,705,230.03	39.75197772	-80.76939808
17,300.00	89.00	150.463	11,334.38	-3,105.33	5,112.43	14,436,416.90	1,705,279.32	39.75173847	-80.76922351
17,400.00	89.00	150.463	11,336.13	-3,192.32	5,161.73	14,436,329.91	1,705,328.61	39.75149922	-80.76904893
17,500.00	89.00	150.463	11,337.87	-3,279.31	5,211.02	14,436,242.91	1,705,377.90	39.75125997	-80.76887436
17,600.00	89.00	150.463	11,339.62	-3,366.30	5,260.31	14,436,155.92	1,705,427.19	39.75102072	-80.76869979
17,700.00	89.00	150.463	11,341.37	-3,453.29	5,309.60	14,436,068.93	1,705,476.48	39.75078147	-80.76852522
17,800.00	89.00	150.463	11,343.12	-3,540.28	5,358.89	14,435,981.94	1,705,525.77	39.75054222	-80.76835066
17,900.00	89.00	150.463	11,344.87	-3,627.27	5,408.18	14,435,894.95	1,705,575.06	39.75030297	-80.76817609
18,000.00	89.00	150.463	11,346.62	-3,714.27	5,457.47	14,435,807.96	1,705,624.35	39.75006372	-80.76800152
18,100.00	89.00	150.463	11,348.36	-3,801.26	5,506.76	14,435,720.97	1,705,673.64	39.74982447	-80.76782696
18,200.00	89.00	150.463	11,350.11	-3,888.25	5,556.05	14,435,633.98	1,705,722.93	39.74958521	-80.76765240
18,300.00	89.00	150.463	11,351.86	-3,975.24	5,605.34	14,435,546.99	1,705,772.22	39.74934596	-80.76747783
18,307.93	89.00	150.463	11,352.00	-3,982.13	5,609.25	14,435,540.10	1,705,776.13	39.74932700	-80.76746400

PBHL/TD 18307.92 MD/11352.00 TVD

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
McMasters S-20HU LP - hit/miss target - Shape	0.00	0.000	11,246.00	1,291.61	2,621.00	14,440,813.83	1,702,787.89	39.76383100	-80.77804900
- plan misses target center by 0.04ft at 12245.48ft MD (11246.00 TVD, 1291.63 N, 2621.03 E)									
- Point									
McMasters S-20 HU PBI - plan hits target center - Point	0.00	0.000	11,352.00	-3,982.13	5,609.25	14,435,540.10	1,705,776.13	39.74932700	-80.76746400





4705102439  
 Planning Report - Geographic

RECEIVED  
 Office of Oil and Gas  
02/10/2023  
 DEC 27 2022

WV Department of  
 Environmental Protection

<b>Database:</b> DB_Aug1919_v14	<b>Local Co-ordinate Reference:</b> Well McMasters S-20 HU (slot J)
<b>Company:</b> Tug Hill Operating LLC	<b>TVD Reference:</b> GL @ 1206.00ft
<b>Project:</b> Marshall County, West Virginia	<b>MD Reference:</b> GL @ 1206.00ft
<b>Site:</b> McMasters Shields	<b>North Reference:</b> Grid
<b>Well:</b> McMasters S-20 HU (slot J)	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Wellbore:</b> Original Hole	
<b>Design:</b> rev2	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,300.00	1,300.00	0.00	0.00	KOP Begin 2°/100' build
1,550.00	1,549.68	7.45	7.96	Begin 5.00° tangent
3,005.86	3,000.00	94.16	100.59	Begin 2°/100' build
3,255.86	3,247.78	116.46	124.41	Begin 10.00° tangent
6,659.79	6,600.00	520.41	555.92	Begin 2°/100' build
7,562.20	7,449.60	720.61	769.78	Begin 28.05° tangent
10,825.90	10,329.98	1,769.40	1,890.11	Begin 6°/100' build/turn
11,716.16	11,062.83	1,676.01	2,327.17	Begin 8°/100' build/turn
12,245.50	11,246.00	1,291.61	2,621.05	Begin 89.00° lateral
18,307.93	11,352.00	-3,982.13	5,609.25	PBHL/TD 18307.92 MD/11352.00 TVD

WW-9  
(4/16)

4705102439 02/10/2023

API Number 47 - 051 -  
Operator's Well No. McMasters S-20HU

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

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FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

DEC 27 2022

Operator Name Tug Hill Operating, LLC OP Code 49451085 WV Department of Environmental Protection  
Watershed (HUC 10) Fish Creek Quadrangle Powhatan Point 7.5

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: AST Tanks with proper containment will be used for staging fresh water for frac and flow back water

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? AST Tanks will be used with under containment

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number UIC 2459, UIC 965, UIC 359, UIC 2D0732540, UIC 2D0732523 )
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

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

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

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

Additives to be used in drilling medium? Barite for weight

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

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

-Landfill or offsite name/permit number? Wayne County Sanitary Landfill (SWF-1021 / WV0109185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP EOP1385426)

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

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

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

Company Official Signature Jim Pancake  
Company Official (Typed Name) Jim Pancake  
Company Official Title VP Geosciences

Subscribed and sworn before me this 25th day of December, 2022

Susanne Deliere Notary Public

My commission expires 1/15/2025

Commonwealth of Pennsylvania - Notary Seal  
Susanne Deliere, Notary Public  
Washington County  
My commission expires January 15, 2025  
Commission number 1392332  
Member, Pennsylvania Association of Notaries

DEC 27 2022 02/10/2023

Form WW-9

4705102439

WV Department of Environmental Protection  
Masters S-20HU  
Operator's Well No.

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 17.76 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

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

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Strader Gaurk STRADER GAURK 12-7-2022

Comments:

Title: WVDEP Oil and Gas Inspector Date: \_\_\_\_\_

Field Reviewed? ( ) Yes ( ) No



WW-9

**PROPOSED McMASTERS S-20HU**

SUPPLEMENT PG 1

DIANA HENRY HAYNES & CAROL C. HENRY  
05-18-1  
62.908 Ac.

OLAN V. & PATRICIA E. RUTAN  
05-18-3  
43.677 Ac.

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Office of Oil and

DEC 27 2022

WV Department of Environmental Protection



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

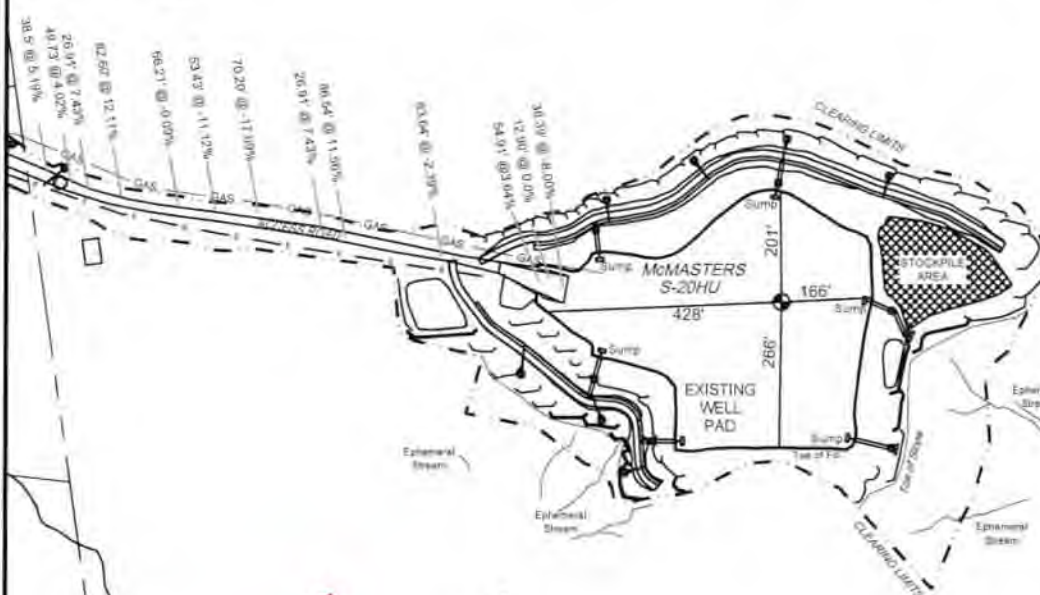
INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.

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

TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

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

ALL TREES 8-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.



ROBERT L. SHIELDS ET AL  
05-18-2  
104.11 Ac.

DUANE BRUNN  
05-18-24  
102 Ac.

**LEGEND**

Note:

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



**Jackson Surveying Inc.**  
2415 E. Main St. #112  
Charlottesville, VA 22901  
Phone: 541-825-5281

**TOPO SECTION:**

POWHATAN POINT T5

COUNTY	DISTRICT
MARSHALL	FRANKLIN
DRAWN BY	JOC
JOC	694510251

**OPERATOR:**

**PREPARED FOR:**  
TUG HILL OPERATING, LLC  
286 SOUTHFRONTE BLVD  
SUITE 300  
CANDLERBURG, VA 25311

DATE	SCALE
6-1-2022	NONE



**TUG HILL OPERATING**

WW-9

**PROPOSED McMASTERS  
S-20HU**

SUPPLEMENT PG 1

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

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

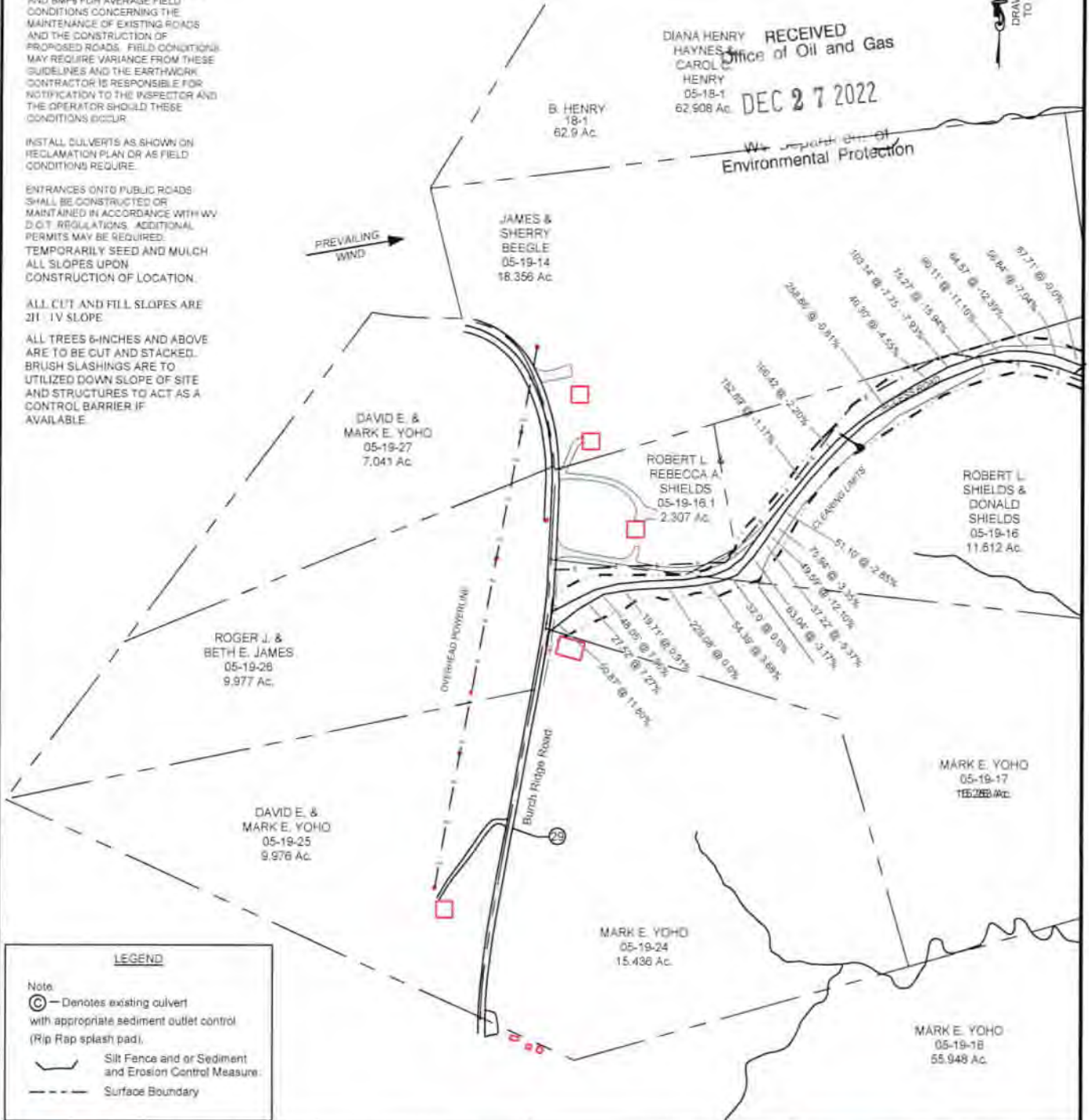
ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV DOT REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED. TEMPORARILY SEED AND MULCH ALL SLOPES UPON CONSTRUCTION OF LOCATION.

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

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

DIANA HENRY  
HAYNES  
CAROL C  
HENRY  
05-18-1  
62,908 Ac.  
RECEIVED  
Office of Oil and Gas  
DEC 27 2022

DRAWING NOT TO SCALE



**LEGEND**

Note

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

**Jackson Surveying Inc.**  
2413 E. Pine St. #112  
Charlottesville, VA 22901  
Phone: 541-423-5551

TOPO SECTION:	
POWHATAN POINT 15'	
COUNTY	DISTRICT
MARSHALL	FRANKLIN
DRAWN BY	JOB NO.
J.D.C.	494510651

OPERATOR:	
<b>PREPARED FOR:</b>	
TUG HILL OPERATING, LLC 139 SOUTHPOINTE BLVD SUITE 204 CANONSBURG, PA 15311	
DATE	SCALE
6-4-2020	NONE

**TUG HILL  
OPERATING**



02/10/2023

4705102439



**TUG HILL**  
**OPERATING**

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Office of Oil and Gas

DEC 27 2022

WV Department of  
Environmental Protection

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

**Well Name: McMasters S-20HU**

**Pad Name: Shields**

**County: Marshall**

UTM (meters), NAD83, Zone 17

Northing: 4,401,175.17

Easting: 518,211.91

**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**

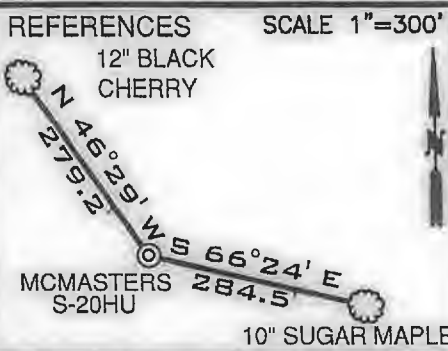
**(800) 921-9745**

*JV DeRosa*  
12/1/2022



MCMASTERS S-20HU  
UTICA UNIT - 553.1085± ACRES  
TUG HILL OPERATING

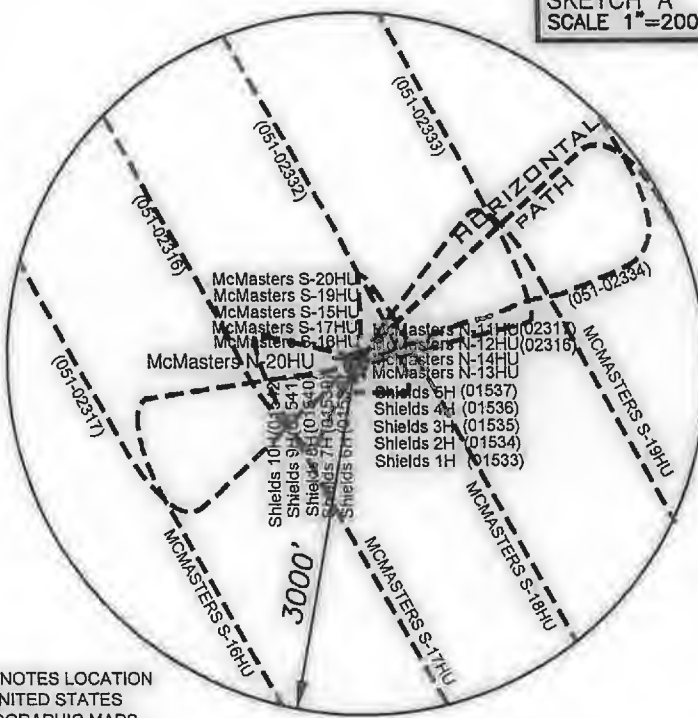
TOP HOLE LATITUDE: 39°47'30"  
BOTTOM HOLE LATITUDE: 39°45'00"



LINE	BEARING	DISTANCE
L1	N 74°22' W	1451.07'
L2	S 40°35' W	1372.98'
L3	N 47°51' E	2,589.94'

**LEGEND**

- LEASE TRACTS
- SURFACE TRACTS
- WELL LATERAL
- POINT PLEASANT LEGS
- UNIT BOUNDARY
- LEASE # (SEE 6A1 FORM)
- 400' BORE PATH OFFSET
- 500' WELL BORE OFFSET
- (FTP) PROPOSED FIRST TAKE POINT
- (LTP) PROPOSED LAST TAKE POINT

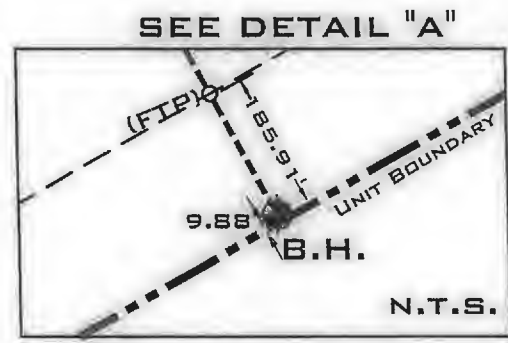


02/10/2023

**SURFACE HOLE**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,401,175.17  
E) 518,211.90

**LANDING POINT 1**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,401,568.86  
E) 519,010.80

**BOTTOM HOLE**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,399,961.42  
E) 519,921.60



- NOTES**
- BORE PATH BASED ON GRID NORTH.
  - NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
  - OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 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

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 62°12' E	100.44'	197.73'	101.55'
C2	S 87°17' E	120.17'	237.45'	121.49'
C3	S 65°36' E	117.09'	430.51'	117.46'
C4	S 52°32' E	139.92'	732.82'	140.13'
C5	S 41°59' E	210.63'	1192.62'	210.90'
C6	S 32°50' E	287.05'	1849.88'	287.34'

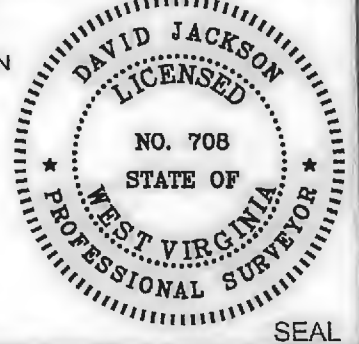
FILE NUMBER \_\_\_\_\_  
DRAWING NUMBER: MCMASTERS\_S-20HU\_REV2  
SCALE 1" = 2000'  
MINIMUM DEGREE OF ACCURACY 1/200  
PROVEN SOURCE OF ELEVATION SUBMETER MAPPING  
GRADE GPS

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

*David L Jackson*



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



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

DATE: JANUARY 06, 2023  
OPERATORS WELL NO. MCMASTERS S-20HU  
API WELL NO. \_\_\_\_\_

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP X SHALLOW \_\_\_  
STATE 47 COUNTY 051 PERMIT 02489

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 PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_  
ESTIMATED DEPTH TVD: 11,462' TMD: 18,308'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN, CT CORP  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5098 WASHINGTON STREET WEST, SUITE 407 CHARLESTON, WV 25313-1561

form ww6

(TH) 11,447'

(BH) BOTTOM HOLE LONGITUDE: 80°45'00"  
(TH) TOP HOLE LONGITUDE: 80°45'00"

(BH) 264'

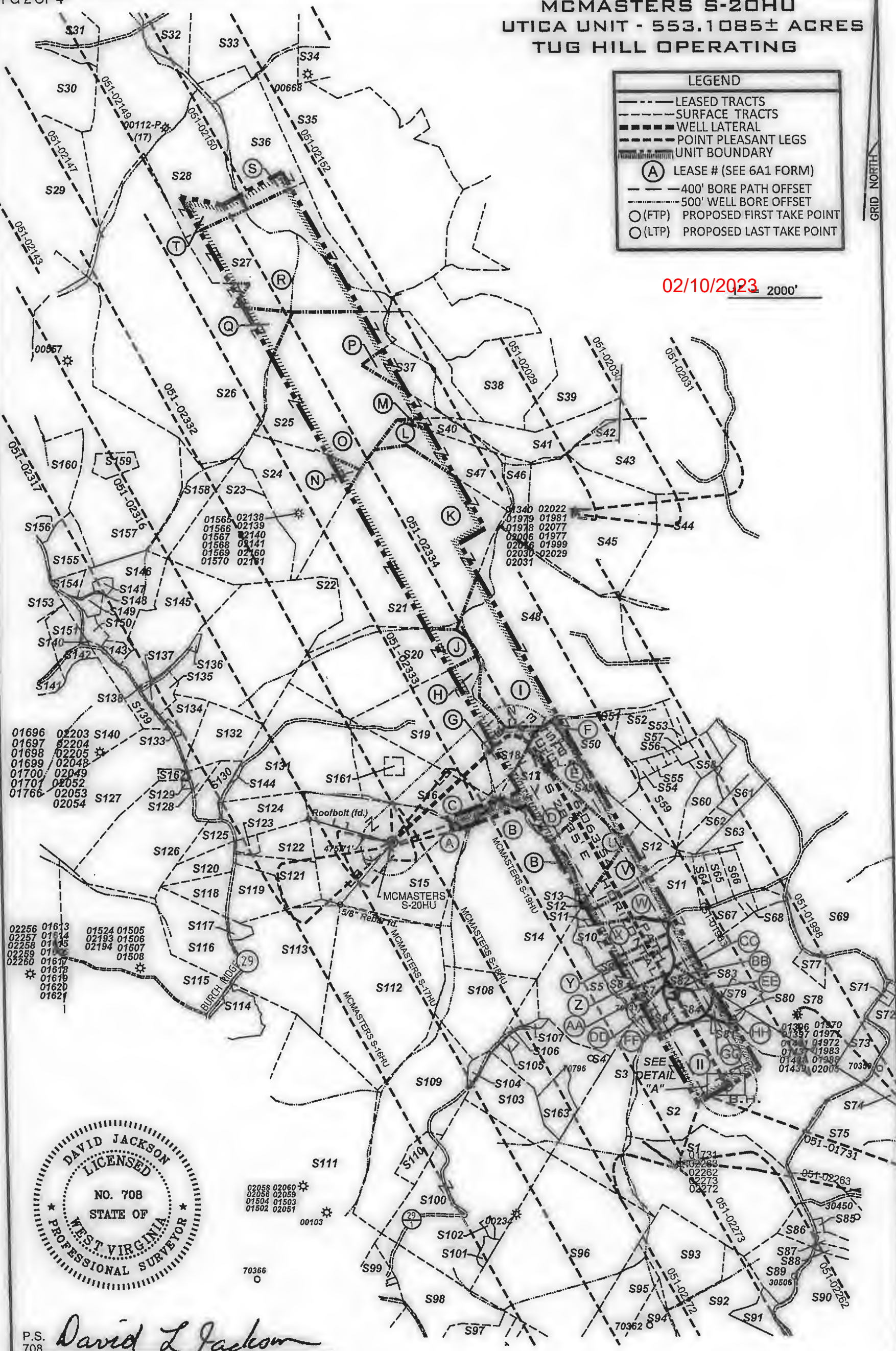


# MCMASTERS S-20HU UTICA UNIT - 553.1085± ACRES TUG HILL OPERATING

**LEGEND**

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

02/10/2023 2000'



P.S. 708 *David L Jackson*



## TUG HILL OPERATING

OPERATOR'S  
WELL #: MCMASTERS S-20HU  
DISTRICT: Franklin  
COUNTY: Marshall  
STATE: WV  
API #: 47-051-02481

WELL PLAT  
PAGE 2 OF 4  
DATE: 12/21/2022



**MCMASTERS S-20HU  
UTICA UNIT - 553.1085± ACRES  
TUG HILL OPERATING**

Parcels within Unit Boundary				
Tag	Number	Tax Map - Parcel	Surface Owner	Acres
A	515	05-18-02	ROBERT L. SHIELDS & DONALD SHIELDS	104.11
B	514	05-18-23	XCL MIDSTREAM OPERATING, LLC	110.0
C	516	05-18-03	OLAN V. & PATRICIA E. RUTAN	43.677
D	517	05-18-06	ADAM & JESSE L. ROBINSON	26.0
E	549	05-18-15.3	ADAM & JESSE L. ROBINSON	26.44
F	550	05-18-15.4	DAVID R. ANDERSON	22.34
G	518	05-18-05	TERRY MELOTT	8.14
H	519	05-18-04	OLAN V. & PATRICIA E. RUTAN	65.89
I	548	05-15-10	MARK STANLEY RUCKMAN	153.75
J	520	05-15-11	DIANA HENRY HAYNES & CAROL HENRY	65.29
K	521	05-15-12	JOHN DAVID PETROCK & THOMAS ANDREW PETROCK	150.23
L	547	05-15-14	JOHN DAVID PETROCK & THOMAS ANDREW PETROCK	25.0
M	540	05-15-02	JOHN DAVID PETROCK & THOMAS ANDREW PETROCK	5.0
N	524	05-15-15	ROBERT L. SHIELDS & DONALD SHIELDS	49.0
O	525	05-15-01	MARCUS SHARP	121.0
P	537	05-15-03	MARK S. & LINDA K. RUCKMAN	36.10
Q	526	05-14-03	RALPH D. & SALLY JANE HOYT	222.16
R	527	05-11-15	LIONEL L. PERSINGER, ET UX	93.0
S	536	05-12-11	WESLEY R. BRYAN & WESLEY R. BRYAN II	52.478
T	528	05-12-12.1	LIONEL L. PERSINGER, ET UX	148.09
U	513	05-18-07	ADAM & JESSE L. ROBINSON	24.22
V	512	05-18-16	ADAM & JESSE L. ROBINSON	17.768
W	511	05-18-13	SOUTHERN COUNTRY FARMS, INC.	11.054
X	510	05-18-59	SOUTHERN COUNTRY FARMS, INC.	15.79
Y	39	05-18-30	MARY & DANIEL ROBINSON	5.46
Z	38	05-18-13.10	CARL BERG	10.88
AA	57	05-18-29	CARL G. BERG	5.319
BB	582	05-18-13.8	LORI D. CARPENTER	5.545
CC	578	05-17-10	JAMES A. CORLEY, ET AL	92.61
DD	56	05-18-31	JACOB RASTALL	6.54
EE	583	05-18-32.1	LORI D. CARPENTER	5.545
FF	584	05-18-32	JACOB RASTALL	5.335
GG	581	05-17-12	JAMES A. & JILL C. CORLEY	3.35
HH	580	05-17-12.1	WILLIAMS OHIO VALLEY MIDSTREAM, LLC	1.67
II	52	05-17-11	KENNETH N. CORLEY, ET UX	120.0

Adjoining Parcels Ownership Table			
Number	Tax Map - Parcel	Surface Owner	Acres
51	05-23-07	TERRY E. SIMMS, ET UX	123.09
53	05-23-06	JAMES A. CHANNING, ET AL	48.0
54	05-18-21	CURTIS E. & MICHELLE J. HALL	32.569
55	05-18-20	WAYNE E. CHANNING, ET AL	44.47
522	05-19-13	RONA LEE RICE & CHARLES FRANKLIN MCCARDLE	94.925
523	05-14-15	ROBERT L. SHIELDS & DONALD SHIELDS	104.11
529	05-12-14	LINDA HAMILTON, ET AL	117.495
530	05-12-13	LINDA HAMILTON, ET AL	41.887
531	05-12-08	ANITA RAY MILLER-LIFE	100.35
532	05-12-12	LIONEL L. PERSINGER, ET UX	45.0
533	05-11-21	KAREN REED, ET AL	112.67
534	05-11-17	KEVIN CORLEY, ET UX	36.13
535	05-11-14	HIRAMS ESTATE FAMILY, LTD, LLP	158.054
538	05-15-05	MARK S. & LINDA K. RUCKMAN	35.0
539	05-15-06	MARK S. & LINDA K. RUCKMAN	42.5
541	05-15-6.1	MARK S. & LINDA K. RUCKMAN	39.40
542	05-15-07	XCL MIDSTREAM OPERATING, LLC	4.5
543	05-15-08	XCL MIDSTREAM OPERATING, LLC	77.11
544	05-16-23.5	MARSHALL COUNTY COAL RESOURCES, INC	15.09
545	05-15-09	CNX LAND RESOURCES, INC	81.98
546	05-15-13	CNX LAND RESOURCES, INC	11.0
551	05-18-15	NANCY MARIE ANDERSON & DAVID VESPER ANDERSON	2.495
552	05-18-11.1	NANCY MARIE ANDERSON & DAVID VESPER ANDERSON	18.0
553	05-18-11.2	EDWARD LEE BURGE JR.	2.0
554	05-18-10.1	DAVID V. ANDERSON, ET UX	1.65
555	05-18-10.2	DAVID ANDERSON, ET UX	1.377
556	05-18-10	DAVID & NANCY ANDERSON	0.907
557	05-18-12	JOSEPH E. SR. & MELANIE S. BECK	2.270
558	05-18-15.1	JASON BLAIR	5.948
559	05-18-15.5	DARRELL BOLEY	23.547
560	05-18-13.3	ROBERT G. CLOSTERMAN	9.813
561	05-18-14	MICHAEL FINCHAM & KEZIA WINTERS	6.386
562	05-18-17	MICHAEL FINCHAM & KEZIA WINTERS	6.555
563	05-18-13.1	CORY A. HOLT	9.248
564	05-18-34	JODI A. & GARY A. HALL	5.002
565	05-18-13.13	GLENN E. & SANDRA K. WHISLER	5.59
566	05-18-13.6	GLENN EUGENE WHISLER, ET UX	5.384
567	05-18-33	SANDRA & GLENN WHISLER	5.343
568	05-18-48	GLENN E. & SANDRA K. WHISLER	2.11
569	05-17-10.3	JAMES A. & JILL C. CORLEY	37.39
570	05-17-09	LLOYD RICHARD OLIVER, ET UX	61.6
571	05-17-9.1	JERI J. WHITE	1.0
572	05-17-9.2	JERI J. WHITE	7.136
573	05-17-9.3	JAMES A. CORLEY, ET UX	12.478
574	05-17-9.4	VICKI L. BOWEN HRS. JEREMY S. BOWEN -LIFE	60.3
575	05-17-11.1	RANDY W. FRANCIS, ET UX	67.0
576	05-24-01	LINDA L. HENDRICKSON	175.0
577	05-17-10.1	JAMES A. & JILL C. CORLEY	4.51
579	05-17-10.5	WILLIAMS OHIO VALLEY MIDSTREAM, LLC	4.24
585	05-23-7.1	RANDY W. & JESSICA L. FRANCIS	0.549
586	05-23-7.2	FLORELLA LOU WEIGAND	6.354
587	05-24-5.1	JAMES D. WATKINS, ET UX	4.60
588	05-24-5.2	JAMES D. WATKINS, ET UX	3.351
589	05-24-5.5	SONNY & LINDA TAGG	17.194
590	05-24-05	ROBERT C. FRANCIS, ET UX-LIFE	145.78
591	05-24-3.1	T.H. EXPLORATION II, LLC	5.50
592	05-24-5.4	THOMAS V. TUTTLE, ET UX	38.224
593	05-23-8.1	WILLIAM & VIRGINIA ROUPE	34.0
594	05-23-9.3	LINDA D. GREATHOUSE	17.5
595	05-23-08	CARL DAVID & SUZANNE L. GUSEMAN	29.5
596	05-23-05	DANIEL D. RHYAND	118.5
597	05-23-16	ROY FRIEND YOHO SR.	18.03
598	05-23-18	PROCTOR RIDGE, LLC	35.38
599	05-23-18.1	MARK A. YOHO	7.8
5100	05-23-04	PROCTOR RIDGE, LLC	100.7
5101	05-23-4.1	XCL MIDSTREAM OPERATING, LLC	2.16
5102	05-23-4.2	XCL MIDSTREAM OPERATING, LLC	1.17
5103	05-23-03	PROCTOR RIDGE, LLC	50.0
5104	05-23-2.1	WILLIAM L. & JANICE M. WAYNE	2.364
5105	05-18-21.2	DAVID P. LASSAN - LIFE	1.0
5106	05-18-21.1	JASON PALERMO & WENDY MOORE	5.47
5107	05-18-21.3	XCL MIDSTREAM OPERATING, LLC	0.811
5108	05-18-22	JASON PALERMO & WENDY MOORE	30.345
5109	05-23-02	DANIEL J. & DANIELLE D. LILLEY	70
5110	05-23-2.2	JESSICA N. & ANDREW L. JONES	7.636

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P.S. 708 *David L Jackson*



**TUG HILL  
OPERATING**

OPERATOR'S  
WELL #: MCMASTERS S-20HU  
DISTRICT: Franklin  
COUNTY: Marshall  
STATE: WV  
API #: 47-051-02467

WELL PLAT  
PAGE 3 OF 4  
DATE: 12/21/2022



**MCMASTERS S-20HU  
UTICA UNIT - 553.1085± ACRES  
TUG HILL OPERATING**

Adjoining Parcels Ownership Table			
Number	Tax Map - Parcel	Surface Owner	Acres
S111	05-23-01	PATRICIA ACCETTOLO, ET AL	146.66
S112	05-18-24	DUANE BRUNN	102.0
S113	05-19-18	MARK E. YOHO, ET UX	55.948
S114	05-22-5.1	WILLIAMS OHIO VALLEY MIDSTREAM, LLC	12.875
S115	05-22-05	CNX RCPC, LLC	134.425
S116	05-19-18.2	PAUL V. & CAROL NEELY	32.672
S117	05-19-18.1	MARK E. YOHO, ET UX	2.57
S118	05-19-25	DAVID E. YOHO & MARK E. YOHO	9.976
S119	05-19-24	DAVID E. YOHO	15.436
S120	05-19-28	ROGER J. & BETH E. JAMES	9.977
S121	05-19-17	MARK A. YOHO	15.263
S122	05-19-16	ROBERT L. SHIELDS & DONALD SHIELDS	11.612
S123	05-19-16.1	ROBERT L. SHIELDS, REBECCA A. SHIELDS & ROBERTA CAMPBELL	2.307
S124	05-19-14	JAMES & SHERRY BEEGLE	18.356
S125	05-19-27	DAVID E. YOHO	7.041
S126	05-19-28	DAVID E. YOHO	56.899
S127	05-19-19	RUSSELL & MARY BLAKE	66.4
S128	05-19-30.1	ERIC R.W. & ASHLEY A. HUGGINS	3.911
S129	05-19-32	JASPER N. BURCH, ET AL - TRUSTEES	0.397
S130	05-19-31	CHARLES F. & DIANA L. HAYNES	8.779
S131	05-18-01	DIANA HENRY HAYNES & CAROL C. HENRY	62.908
S132	05-19-30	ERNIE & TAMMY ANDERSON	19.037
S133	05-19-15	CARLY HERRAN	0.72
S134	05-19-29	ERNIE L. & TAMMY L. ANDERSON	10.961
S135	05-19-12	ERNIE L. ANDERSON, ET UX	5.33
S136	05-14-13.1	DONALD SHIELDS	0.8
S137	05-19-11	ERNIE L. ANDERSON, ET UX	0.08
S138	05-19-10	ERNIE L. ANDERSON, ET UX	0.8125
S139	05-19-09	PENNY ELAINE ASHCRAFT	10.44
S140	05-19-20	WILBERT H. BUNGARD, ET UX	114.989
S141	05-19-20.3	SIDNEY HARMON	3.715
S142	05-19-20.1	JOHN J. EBERT-LIFE	3.848
S143	05-19-7.5	ADAM T. & JESSE L. ROBINSON	2.64
S144	05-18-1.1	CHARLES F. & DIANA L. HAYNES	0.392
S145	05-19-08	CNX RCPC, LLC	40.0
S146	05-14-07	OLAN V. RUTAN, ET UX	32.4801
S147	05-19-7.4	OLAN V. RUTAN, ET UX	1.787
S148	05-19-7.3	OLAN V. RUTAN, ET UX	0.341
S149	05-19-7.2	OLAN RUTAN	2.783
S150	05-19-7.1	ROBERT L. SHIELDS, ET UX	3.399
S151	05-19-20.2	CASANDRA L. HARMON	7.448
S153	05-19-05	MARGIRENE KEEFE	126.03
S154	05-19-06	BELINDA KAY MEADOWS, REBECCA ANN SHIELDS & OLAN V. RUTAN	5.1099
S155	05-14-11	DALE R. GALLAHER & HARRY E. GALLAHER	12.0
S156	05-14-10.4	ADAM T. & JESSE L. ROBINSON	3.343
S157	05-14-12	DALE R. GALLAHER & HARRY E. GALLAHER	135.10
S158	05-14-14	ROBERT L. SHIELDS & DONALD SHIELDS	29.05
S159	05-14-12.1	HENRY WILSON PLUNKERT JR.	5.0
S160	05-14-10	WANDA P. RINE-LIFE	107.372
S161	05-18-3.1	NIKKI L. & JONATHAN STEVENS	2.223

Lease ID	TMF	Tag	Grantor, Lessor, Etc.	Prod Book / Page
10*1411E	5-18-2	A	DONALD SHIELDS, ET AL	665 551
10*14030	5-18-23	B	LOIS V YOHO, ET AL	668 636
10*14109	5-18-3	C	MARSHA M RUTAN, ET AL	940 431
10*17454	5-18-6	D	MARGARET A BONNETT, ET AL	940 429
10*17222	5-18-15.3	E	JAMES W AND DOLLIE M FOSTER	961 413
10*22432	5-18-15.4	F	EDWARD LEE BURGE SR	704 26
10*19140	5-18-5	G	TERREL L MELDITT	813 111
10*19032	5-18-4	H	JAN I ARNOLD MARSHA A ARNOLD, ET AL	741 75
10*19339	5-15-10	I	MARK STANLEY RUCKMAN	746 5
10*19018	5-15-11	J	BENJAMIN FRANKLIN HENRY FREDRICK ALLEN HENRY	741 58
10*19337	5-15-12	K	JACK PETROCK MATTIE PETROCK	741 58
10*19337	5-15-14	L	JACK PETROCK MATTIE PETROCK	798 551
10*19309	5-15-2	M	KAREN I DENNY, ET AL	869 367
10*14116	5-15-15	N	DONALD SHIELDS, ET AL	865 487
10*14042	5-15-1	O	RALPH R TAYLOR, ET AL	806 39
10*19030	5-15-3	P	KATHLEEN R CUSTEAD, ET AL	866 35
10*14067	5-14-13	Q	REVA FRANZE	819 316
10*14911	5-11-15	R	FORREST MILLER, ET AL	665 554
10*19009	5-12-11	S	LAMDYNE BAKER, ET AL	976 617
10*15918	5-13-11.1	T	LIONEL L AND MARY LEE PERSINGER	756 85
10*14503	5-18-7	U	IMA LEE YOHO	756 85
10*14503	5-18-16	V	IMA LEE YOHO	666 489
10*14099	5-18-11	W	SOUTHERN COUNTRY FARMS INC, ET AL	666 489
10*14099	5-18-29	X	SOUTHERN COUNTRY FARMS INC, ET AL	666 489
10*14099	5-18-30	Y	SOUTHERN COUNTRY FARMS INC, ET AL	666 489
10*14099	5-18-13.10	Z	SOUTHERN COUNTRY FARMS INC, ET AL	666 489
10*17431	5-18-29	AA	SOUTHERN COUNTRY FARMS INC	938 448
10*17456	5-18-23.8	BB	LORI D CARPENTER	941 223
10*14095	5-17-10	CC	JAMES A AND JILL C CORLEY, ET AL	666 545
10*17780	5-18-31	DD	KENNETH E RASTALL, ET AL	932 434
10*17456	5-18-32.1	EE	LORI D CARPENTER	941 223
10*17780	5-18-32	FF	KENNETH E RASTALL, ET AL	932 434
10*14134	5-17-13	GG	JAMES A AND JILL C CORLEY	706 130
10*14134	5-17-12.1	HH	JAMES A AND JILL C CORLEY	706 130
10*14138	5-17-11	II	SHARON MDCAP	697 152

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**TUG HILL  
OPERATING**

OPERATOR'S  
WELL #: MCMASTERS S-20HU  
DISTRICT: Franklin  
COUNTY: Marshall  
STATE: WV  
API #: 47-051-

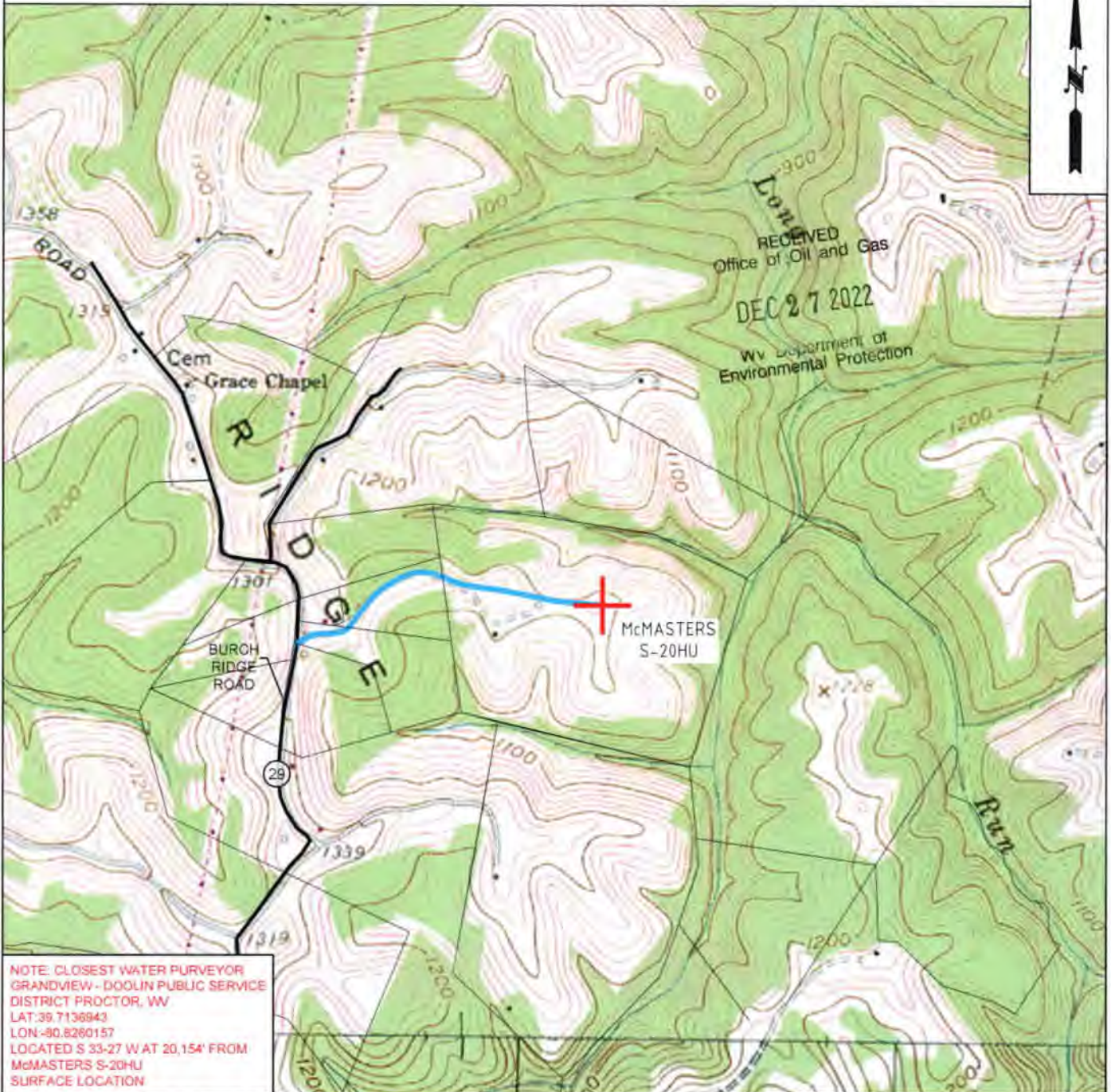
WELL PLAT  
PAGE 4 OF 4  
DATE: 12/21/2022



WW-9

# PROPOSED McMASTERS S-20HU

SUPPLEMENT PG 2



NOTE: CLOSEST WATER PURVEYOR  
GRANDVIEW - DOOLIN PUBLIC SERVICE  
DISTRICT PROCTOR, WV  
LAT: 39.7136943  
LON: -90.8260157  
LOCATED S 33-27 W AT 20,154' FROM  
McMASTERS S-20HU  
SURFACE LOCATION



<b>OPERATOR</b>	494510851	<b>TOPO SECTION</b>	<b>LEASE NAME</b>
TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		POWHATAN POINT 7.5'	McMASTERS
<b>SCALE:</b>		<b>DATE:</b>	
1" = 2000'		DATE: 6-4-2020	





**Operator's Offset within 500'  
McMasters S - 20HU**

4 7 0 5 1 0 2 4 3 9

County	District	TMP	Owner	Address
Marshall	District	5-15-10	TH EXPLORATION II, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-15-10	TH EXPLORATION II, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-17-10	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-17-10	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-17-11	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-17-12	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-17-12	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-2	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-3	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-3	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-4	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-5	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-6	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-7	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-7	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-13	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-13	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-13.8	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107

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County	District	TMP	Owner	Address
Marshall	District	5-18-13.10	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-13.10	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-15.3	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-16	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-16	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-23	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-29	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-30	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-30	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-31	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-32	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-32.1	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-59	TH EXPLORATION II, LLC*	1320 S. University Drive Suite 500 Fort Worth, TX 76107
Marshall	District	5-18-59	TH EXPLORATION, LLC	1320 S. University Drive Suite 500 Fort Worth, TX 76107

\* 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.

02/10/2023



TUG HILL 4705102439

December 21, 2022

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

RECEIVED  
Office of Oil and Gas  
DEC 27 2022  
WV Department of  
Environmental Protection

RE: McMasters S-20HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

Tug Hill Operating, LLC is authorized through, either lease or other agreement, to unitize and pool all lands falling within the boundaries of the proposed voluntary unit included with this submission.

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

Sincerely,

**Amy L. Morris**  
Permitting Specialist – Appalachia Region  
Tug Hill Operating



**COPY**

CERTIFICATE OF CONSENT AND EASEMENT

The undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being the owner of the surface of that certain lot, tract or parcel of land located in Franklin District, Marshall County, State of West Virginia, shown on the attached plat or survey, hereby consents and grants an easement, pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Conservation Commission, to TH Exploration, LLC, its successors or assigns, for the drilling and operation of a deep well for the production of oil or gas at the location shown on the attached plat or survey.

Executed this 20<sup>th</sup> day of November, 2019.

Marshall County  
Jen Pest, Clerk  
Instrument 1463767  
01/29/2020 @ 10:38:15 AM  
RIGHT OF WAY W/O CONSIDERATION  
Book 1072 @ Page 252  
Pages Recorded 2  
Recording Cost \$ 11.00

Robert L. Shields  
Robert L. Shields  
Rebecca A. Shields  
Rebecca A. Shields

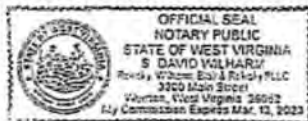
STATE OF WEST VIRGINIA

SS:

COUNTY OF MARSHALL

On this, the 20<sup>th</sup> day of November, 2019, before me, a notary public, the undersigned officer, personally appeared Robert L. Shields and Rebecca A. Shields known to me (or satisfactorily proven) to be the person(s) who's name is subscribed to the within instrument, and acknowledged that he/she/they executed the same for proposed therein contained.

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



My Commission Expires: 3/12/2023  
Signature/Notary Public: David Wilborn  
Name/Notary Public (print): David Wilborn

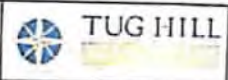
This instrument prepared by:  
WV Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street  
Charleston, WV 25304

4838-2618-8605v2

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02/10/2023

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1 inch: 436 feet

- Limit of Disturbance - Access Road
- Limit of Disturbance - Pad

C 125 250 500  
 Feet  
 N  

 This plat was prepared by the Surveyor General of West Virginia, and is subject to the provisions of the West Virginia Code, Chapter 22, Article 1, and Chapter 22, Article 2. It is hereby certified that the same conform to the provisions of the said Code.

**"Plat"**  
 SHIELDS ROBERT L ET AL  
 Marshall, WV

Date: 11/20/19  
 Name: *Robert L Shields*  
 Name: *Robert L Shields*



Date: 10/24/2019  
 POC: GAD 1392 UTR1 Date: 12/1/2019

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**COPY**

CERTIFICATE OF CONSENT AND EASEMENT

The undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being the owner of the surface of that certain lot, tract or parcel of land located in Franklin District, Marshall County, State of West Virginia, shown on the attached plat or survey, hereby consents and grants an easement, pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Conservation Commission, to TH Exploration, LLC, its successors or assigns, for the drilling and operation of a deep well for the production of oil or gas at the location shown on the attached plat or survey.

Executed this 20<sup>th</sup> <sup>November</sup> day of October, 2019.

Donald Shields  
Donald Shields

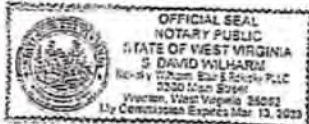
Marshall County  
Jan Pest, Clerk  
Instrument 1463768  
01/29/2020 @ 10:38:16 AM  
RIGHT OF WAY W/O CONSIDERATION  
Book 1072 @ Page 254  
Pages Recorded 2  
Recording Cost \$ 11.00

STATE OF WEST VIRGINIA  
COUNTY OF MARSHALL

SS:

On this, the 20<sup>th</sup> <sup>November</sup> day of October, 2019, before me, a notary public, the undersigned officer, personally appeared Donald Shields known to me (or satisfactorily proven) to be the person(s) who's name is subscribed to the within instrument, and acknowledged that he/she/they executed the same for proposed therein contained.

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



My Commission Expires: 3/12/2023  
Signature/Notary Public: S David Wilburn  
Name/Notary Public (print): S David Wilburn

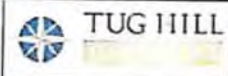
This instrument prepared by:  
WV Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street  
Charleston, WV 25304

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1 inch: 435 feet

- Limit of Disturbance - Access Road
- Limit of Disturbance - Pad

0 125 250 500  
Foot

N

THIS PLAN IS A PRELIMINARY PLAN AND IS NOT TO BE USED FOR CONSTRUCTION OR AS A BASIS FOR ANY OTHER ACTION. THE PLAN IS SUBJECT TO CHANGE WITHOUT NOTICE. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE ENGINEER'S LIABILITY IS LIMITED TO THE PROFESSIONAL SERVICES PROVIDED HEREIN.

"Plat"  
SHIELDS ROBERT L ET AL  
Marshall, WV

Date: Nov 20 2019  
Name: Donald J. Will  
Name:



Doc: 11/20/19  
PCE: 11/20/19 with Draw 11/19/19



WW-6A1  
(5/13)

Operator's Well No. McMasters S-20HU

**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

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

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

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

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

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

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*14116	5-18-2	A	DONALD SHIELDS	GASTAR EXPLORATION USA INC	1/8+	669	367	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	23/353 Gastar Exploration USA 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*14117	5-18-2	A	ROBERT L SHIELDS AND REBECCA A SHIELDS	GASTAR EXPLORATION USA INC	1/8+	669	360	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	23/353 Gastar Exploration USA 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*14109	5-18-3	C	MARTHA M RUTAN	GASTAR EXPLORATION USA INC	1/8+	668	636	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	23/353 Gastar Exploration USA 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*14143	5-18-3	C	LOIS BARRETT	GASTAR EXPLORATION USA INC	1/8+	758	435	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14144	5-18-3	C	RHONDA BARRETT	GASTAR EXPLORATION USA INC	1/8+	760	366	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14145	5-18-3	C	JAMES DONALD BARRETT (DECEASED)	GASTAR EXPLORATION USA INC	1/8+	760	372	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14146	5-18-3	C	JO ANNE BARRETT	GASTAR EXPLORATION USA INC	1/8+	760	375	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14147	5-18-3	C	INEZ DORNON	GASTAR EXPLORATION USA INC	1/8+	760	378	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14148	5-18-3	C	HAZEL L RITCHIE	GASTAR EXPLORATION USA INC	1/8+	760	381	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14149	5-18-3	C	MINNIE PFALZGRAF	GASTAR EXPLORATION USA INC	1/8+	760	369	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14150	5-18-3	C	ARLENE MCCORT	GASTAR EXPLORATION USA INC	1/8+	762	448	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14151	5-18-3	C	RICHARD D LEASURE	GASTAR EXPLORATION USA INC	1/8+	762	451	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14152	5-18-3	C	REBECCA LINN	GASTAR EXPLORATION USA INC	1/8+	762	98	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14153	5-18-3	C	RICHARD LINN	GASTAR EXPLORATION USA INC	1/8+	762	95	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14154	5-18-3	C	JANICE BROWN	GASTAR EXPLORATION USA INC	1/8+	762	92	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14155	5-18-3	C	GUY MCCORT	GASTAR EXPLORATION USA INC	1/8+	765	74	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14156	5-18-3	C	JODIE JOHNSON	GASTAR EXPLORATION USA INC	1/8+	765	80	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14157	5-18-3	C	HARLAN BARRETT	GASTAR EXPLORATION USA INC	1/8+	765	77	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14158	5-18-3	C	JAMES HOLLAND	GASTAR EXPLORATION USA INC	1/8+	765	421	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14159	5-18-3	C	ROSS BARRETT	GASTAR EXPLORATION USA INC	1/8+	765	424	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14160	5-18-3	C	KATHY BECHTLE	GASTAR EXPLORATION USA INC	1/8+	765	436	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14161	5-18-3	C	JANICE DODD	GASTAR EXPLORATION USA INC	1/8+	765	427	NA	NA	NA	27/639 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14162	5-18-3	C	ALLEN L YEATER	GASTAR EXPLORATION USA INC	1/8+	768	555	NA	NA	NA	27/639 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14163	5-18-3	C	MARGARET WILSON FITZSIMMONS	GASTAR EXPLORATION USA INC	1/8+	768	567	NA	NA	NA	27/639 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14164	5-18-3	C	BARBARA YEATER PERSINGER	GASTAR EXPLORATION USA INC	1/8+	768	557	NA	NA	NA	27/639 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14165	5-18-3	C	RACHEL A YEATER	GASTAR EXPLORATION USA INC	1/8+	768	559	NA	NA	NA	27/639 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14166	5-18-3	C	TERI LEE YEATER PARRISH	GASTAR EXPLORATION USA INC	1/8+	768	563	NA	NA	NA	27/639 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14167	5-18-3	C	KAREN YEATER JONES	GASTAR EXPLORATION USA INC	1/8+	768	565	NA	NA	NA	27/639 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14168	5-18-3	C	JUDITH HANNAHS	GASTAR EXPLORATION USA INC	1/8+	770	468	NA	NA	NA	27/639 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14169	5-18-3	C	LENA G BLOHM	GASTAR EXPLORATION USA INC	1/8+	770	471	NA	NA	NA	27/639 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14170	5-18-3	C	JAMES C KLINE	GASTAR EXPLORATION USA INC	1/8+	772	405	NA	NA	NA	27/639 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14171	5-18-3	C	MICHAEL GALE AIF JOSEPHINE GALE	GASTAR EXPLORATION USA INC	1/8+	775	23	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14172	5-18-3	C	JOHN R & LINDA WILSON	GASTAR EXPLORATION USA INC	1/8+	775	25	NA	NA	NA	28/499 Gaster Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gaster Exploration USA Inc and Gaster Exploration Inc merger	36/9 Gaster Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14173	5-18-3	C	BARBARA L YEATER	GASTAR EXPLORATION USA INC	1/8+	775	27	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14174	5-18-3	C	CHARLES E YEATER JR	GASTAR EXPLORATION USA INC	1/8+	775	29	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14175	5-18-3	C	JANE LYNN SWINGLE	GASTAR EXPLORATION USA INC	1/8+	775	19	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14176	5-18-3	C	CONRAD S YEATER	GASTAR EXPLORATION USA INC	1/8+	775	368	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14177	5-18-3	C	CAROLYN LOWE WELER	GASTAR EXPLORATION USA INC	1/8+	775	366	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14178	5-18-3	C	LEANETTE LONG	GASTAR EXPLORATION USA INC	1/8+	775	363	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14179	5-18-3	C	VERA SHIRLENE WORKMAN	GASTAR EXPLORATION USA INC	1/8+	775	361	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14180	5-18-3	C	DIANA S GRAFTON	GASTAR EXPLORATION USA INC	1/8+	776	303	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14181	5-18-3	C	DONALD BROOKS WESLEY	GASTAR EXPLORATION USA INC	1/8+	776	305	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14182	5-18-3	C	RICK WEEKLY	GASTAR EXPLORATION USA INC	1/8+	776	307	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14183	5-18-3	C	NANCY J FOTI	GASTAR EXPLORATION USA INC	1/8+	776	299	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14184	5-18-3	C	HESTER LORETTA DUGAN DIETRA L DUGAN POA	GASTAR EXPLORATION USA INC	1/8+	776	301	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14185	5-18-3	C	NICOLE WEEKLY	GASTAR EXPLORATION USA INC	1/8+	776	309	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14186	5-18-3	C	WILLIAM GLENN YEATER	GASTAR EXPLORATION USA INC	1/8+	776	311	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14187	5-18-3	C	GERALD E YEATER	GASTAR EXPLORATION USA INC	1/8+	776	323	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14188	5-18-3	C	WILMA M MILLER	GASTAR EXPLORATION USA INC	1/8+	776	321	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14189	5-18-3	C	BILLIE JO BETHEL	GASTAR EXPLORATION USA INC	1/8+	776	319	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14190	5-18-3	C	ELIZABETH LOUISE YEATER MORAN	GASTAR EXPLORATION USA INC	1/8+	776	317	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14191	5-18-3	C	LARRY W. YEATER	GASTAR EXPLORATION USA INC	1/8+	776	315	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14192	5-18-3	C	MYRA HEWITT	GASTAR EXPLORATION USA INC	1/8+	777	581	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14193	5-18-3	C	SONDRA R KING	GASTAR EXPLORATION USA INC	1/8+	777	579	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14194	5-18-3	C	SANDRA REID CUMPSTON	GASTAR EXPLORATION USA INC	1/8+	777	574	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14195	5-18-3	C	FREDERICK MAXWELL YEATER	GASTAR EXPLORATION USA INC	1/8+	777	583	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14196	5-18-3	C	ROSEMARY AGNES YEATER LUNEMANN	GASTAR EXPLORATION USA INC	1/8+	777	587	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14197	5-18-3	C	PHYLLIS YEATER GREGOSKY	GASTAR EXPLORATION USA INC	1/8+	777	585	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14198	5-18-3	C	MARY J YEATER EARNSHAW	GASTAR EXPLORATION USA INC	1/8+	777	590	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14199	5-18-3	C	MARY MARGARET WELLMAN BURLEY	GASTAR EXPLORATION USA INC	1/8+	779	488	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14200	5-18-3	C	RANDALL D MORRIS	GASTAR EXPLORATION USA INC	1/8+	779	490	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14201	5-18-3	C	WILLIAM J VEST TRUST AGMT LARRY W YEATER TRUSTEE	GASTAR EXPLORATION USA INC	1/8+	786	490	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14202	5-18-3	C	MAY H RUCKMAN	GASTAR EXPLORATION USA INC	1/8+	779	486	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14203	5-18-3	C	LINDA KAY MORRIS WILSON	GASTAR EXPLORATION USA INC	1/8+	781	541	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14204	5-18-3	C	JEANETTE SOUTH	GASTAR EXPLORATION USA INC	1/8+	781	537	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14205	5-18-3	C	ANN LOUISE YEATER MARTIN	GASTAR EXPLORATION USA INC	1/8+	781	533	NA	NA	NA	28/499 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14206	5-18-3	C	COLLEEN MCCLAIN MOORE	GASTAR EXPLORATION USA INC	1/8+	781	535	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14207	5-18-3	C	FREDRIC & BETTY RICHTER	GASTAR EXPLORATION USA INC	1/8+	781	612	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14208	5-18-3	C	NANCY D TRUEX	GASTAR EXPLORATION USA INC	1/8+	782	202	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14209	5-18-3	C	MARY JANE BUNGARD	GASTAR EXPLORATION USA INC	1/8+	782	210	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14210	5-18-3	C	JANET E PERSONS	GASTAR EXPLORATION USA INC	1/8+	782	204	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14211	5-18-3	C	STEPHEN L YEATER	GASTAR EXPLORATION USA INC	1/8+	782	206	NA	NA	NA	28/499 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14212	5-18-3	C	MARTHA ANN GAMBLE & DAN MIGLIORINI	GASTAR EXPLORATION USA INC	1/8+	782	609	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14213	5-18-3	C	SHIRLEY E GBUR	GASTAR EXPLORATION USA INC	1/8+	782	611	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14214	5-18-3	C	SIDNEY F YOHO JR	GASTAR EXPLORATION USA INC	1/8+	782	605	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14215	5-18-3	C	SCOTT K & KATHIE J RICHTER	GASTAR EXPLORATION USA INC	1/8+	782	607	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14216	5-18-3	C	DOUGLAS I GAMBLE	GASTAR EXPLORATION USA INC	1/8+	783	493	NA	NA	NA	29/157 Gatar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gatar Exploration USA Inc and Gatar Exploration Inc merger	36/9 Gatar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14217	5-18-3	C	DONNA S AND DONALD S KIRCH	GASTAR EXPLORATION USA INC	1/8+	783	497	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14218	5-18-3	C	MICKEY L PORTER	GASTAR EXPLORATION USA INC	1/8+	783	506	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14219	5-18-3	C	SUSAN J BROWN	GASTAR EXPLORATION USA INC	1/8+	783	504	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14220	5-18-3	C	JANIS L & ROY T MILLER	GASTAR EXPLORATION USA INC	1/8+	783	502	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14221	5-18-3	C	DEANNA R LAMBERT	GASTAR EXPLORATION USA INC	1/8+	783	500	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14222	5-18-3	C	ORVILLE V & MADONNA R BLANTON	GASTAR EXPLORATION USA INC	1/8+	783	512	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14223	5-18-3	C	SARAH E HOLT	GASTAR EXPLORATION USA INC	1/8+	783	510	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14224	5-18-3	C	SAMUEL E ZUGARO	GASTAR EXPLORATION USA INC	1/8+	784	193	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14225	5-18-3	C	THOMAS FRANCIS YOHO	GASTAR EXPLORATION USA INC	1/8+	784	195	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14226	5-18-3	C	MONICA ANN RENN	GASTAR EXPLORATION USA INC	1/8+	784	197	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14227	5-18-3	C	HUBERT D MORRIS	GASTAR EXPLORATION USA INC	1/8+	784	199	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14228	5-18-3	C	KALFUS T DOUGHMAN	GASTAR EXPLORATION USA INC	1/8+	786	392	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14229	5-18-3	C	JEFFREY H WILSON & PRISCILLA S WILSON	GASTAR EXPLORATION USA INC	1/8+	786	375	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14230	5-18-3	C	JOSEPH P & BARBARA A WILSON	GASTAR EXPLORATION USA INC	1/8+	786	377	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14231	5-18-3	C	YVONNE MARIE SMITH	GASTAR EXPLORATION USA INC	1/8+	786	379	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14232	5-18-3	C	SANDRA L KELLY	GASTAR EXPLORATION USA INC	1/8+	786	400	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14233	5-18-3	C	THOMAS E PORTER	GASTAR EXPLORATION USA INC	1/8+	786	381	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14234	5-18-3	C	WILLIAM D ADAMS	GASTAR EXPLORATION USA INC	1/8+	786	373	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14235	5-18-3	C	JOHN C WILSON	GASTAR EXPLORATION USA INC	1/8+	786	386	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14236	5-18-3	C	RODNEY C LOWE	GASTAR EXPLORATION USA INC	1/8+	786	367	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14237	5-18-3	C	KELLY KERN	GASTAR EXPLORATION USA INC	1/8+	787	566	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14238	5-18-3	C	LYNN C LAMBERTSEN	GASTAR EXPLORATION USA INC	1/8+	789	283	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14239	5-18-3	C	JAMES S WILSON & ANN D WILSON	GASTAR EXPLORATION USA INC	1/8+	789	281	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14240	5-18-3	C	SHARON L YEATER	GASTAR EXPLORATION USA INC	1/8+	789	287	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14241	5-18-3	C	CAROL JUDY LANCH	GASTAR EXPLORATION USA INC	1/8+	789	305	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14242	5-18-3	C	PATTI J WILSON	GASTAR EXPLORATION USA INC	1/8+	789	581	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14243	5-18-3	C	JANET HILPERT	GASTAR EXPLORATION USA INC	1/8+	789	579	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14244	5-18-3	C	ANN M MARTINO SIMONE	GASTAR EXPLORATION USA INC	1/8+	790	580	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14245	5-18-3	C	ODETTE YEATER	GASTAR EXPLORATION USA INC	1/8+	790	503	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14246	5-18-3	C	SANDRA M WINSLOW	GASTAR EXPLORATION USA INC	1/8+	790	517	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14247	5-18-3	C	RICKEY ALLEN YEATER	GASTAR EXPLORATION USA INC	1/8+	790	513	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14248	5-18-3	C	TERRY W YEATER	GASTAR EXPLORATION USA INC	1/8+	790	515	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14249	5-18-3	C	CAROL VAN SCYOC	GASTAR EXPLORATION USA INC	1/8+	790	546	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14250	5-18-3	C	DONALD REX QUIGLEY	GASTAR EXPLORATION USA INC	1/8+	790	533	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14251	5-18-3	C	ELLEN IONA GORBY HEATH	GASTAR EXPLORATION USA INC	1/8+	792	108	NA	NA	NA	29/157 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14252	5-18-3	C	THELMA VIRGINIA WHIPKEY YEATER	GASTAR EXPLORATION USA INC	1/8+	794	519	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14253	5-18-3	C	PAGE D HUNT (DECEASED)	GASTAR EXPLORATION USA INC	1/8+	795	152	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14254	5-18-3	C	PATRICIA A GULUTZ	GASTAR EXPLORATION USA INC	1/8+	796	72	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14255	5-18-3	C	RUSSELL BARRETT	GASTAR EXPLORATION USA INC	1/8+	797	193	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14256	5-18-3	C	MICHAEL JOHNSON	GASTAR EXPLORATION USA INC	1/8+	799	55	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14257	5-18-3	C	KATHRYN L. MILLER	GASTAR EXPLORATION USA INC	1/8+	799	534	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14258	5-18-3	C	MARGUERITE HARBISON	GASTAR EXPLORATION USA INC	1/8+	799	532	NA	NA	NA	806/1 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14259	5-18-3	C	GEORGE MARTINO JR	GASTAR EXPLORATION USA INC	1/8+	803	146	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14260	5-18-3	C	JOHN K OTTO	GASTAR EXPLORATION USA INC	1/8+	803	160	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC

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10*14261	5-18-3	C	JEAN MARIE SHEPARD	GASTAR EXPLORATION USA INC	1/8+	804	249	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14262	5-18-3	C	MICHAEL B SHEPARD JENNIFER BRECKENRIDGE PERSONAL REP	GASTAR EXPLORATION USA INC	1/8+	804	251	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14263	5-18-3	C	LAURIE ANN SHEPARD	GASTAR EXPLORATION USA INC	1/8+	804	243	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14264	5-18-3	C	WILLIAM LEWIS OTTO	GASTAR EXPLORATION USA INC	1/8+	809	533	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14265	5-18-3	C	EDWARD F & KAREN SIMS	GASTAR EXPLORATION USA INC	1/8+	816	12	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14266	5-18-3	C	GREGORY STEINHART	GASTAR EXPLORATION USA INC	1/8+	818	564	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	31/184 Gastar Exploration Inc to Atinum Marcellus I LLC	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14267	5-18-3	C	NANCY WILKOFF SHEBISH	GASTAR EXPLORATION INC	1/8+	833	523	NA	NA	NA	NA	32/428 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*14268	5-18-3	C	JACQUELINE M CASILLAS-DUKE	GASTAR EXPLORATION INC	1/8+	839	530	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*14269	5-18-3	C	SHARON D SMITH	GASTAR EXPLORATION INC	1/8+	840	160	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*14270	5-18-3	C	ANNA M BARRETT (DECEASED)	GASTAR EXPLORATION USA INC	1/8+	734	457	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*14271	5-18-3	C	RICHARD THOMAS BARRETT	GASTAR EXPLORATION USA INC	1/8+	745	582	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	

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10*14272	5-18-3	C	ROBERT CLARK ASPLEY	GASTAR EXPLORATION INC	1/8+	844	85	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*14273	5-18-3	C	MARY ANNE YEATER MACHAMER	GASTAR EXPLORATION INC	1/8+	852	258	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	5-18-3	C	LAURA L YEATER HILL	GASTAR EXPLORATION INC	1/8+	852	245	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	5-18-3	C	CAROL RAE YEATER	GASTAR EXPLORATION INC	1/8+	852	247	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	5-18-3	C	REBECCA MCPEEK NORRIS	GASTAR EXPLORATION INC	1/8+	854	595	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	5-18-3	C	KATHLEEN L YEATER	GASTAR EXPLORATION INC	1/8+	854	593	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	5-18-3	C	DAVID GALE	GASTAR EXPLORATION INC	1/8+	854	591	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	5-18-3	C	WILLIAM BERNARD YEATER	GASTAR EXPLORATION INC	1/8+	854	589	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	5-18-3	C	PAUL EDWARD YEATER	GASTAR EXPLORATION INC	1/8+	854	587	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	5-18-3	C	DAWN MCPEEK WREZINSKI	GASTAR EXPLORATION INC	1/8+	860	426	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	5-18-3	C	CHERYL VAN PELT	GASTAR EXPLORATION INC	1/8+	860	428	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

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10*14283	5-18-3	C	MARY JO BARRETT	GASTAR EXPLORATION INC	1/8+	862	438	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*14284	5-18-3	C	JULIE BRIGGS	GASTAR EXPLORATION INC	1/8+	862	435	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*14285	5-18-3	C	EARL C BARRETT JR	GASTAR EXPLORATION INC	1/8+	862	432	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*14286	5-18-3	C	EMMA LEE NEWHOUSE	GASTAR EXPLORATION INC	1/8+	864	315	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*14287	5-18-3	C	LAWRENCE AUGUSTIN MCPEEK	GASTAR EXPLORATION INC	1/8+	864	317	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*14288	5-18-3	C	REBECCA LYNN LASH	GASTAR EXPLORATION INC	1/8+	864	319	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*14289	5-18-3	C	MARYANN RACHEL VANCE	GASTAR EXPLORATION INC	1/8+	864	321	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*14290	5-18-3	C	MELISSA ELAINE SCHROTH	GASTAR EXPLORATION INC	1/8+	872	213	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*14291	5-18-3	C	MARK DAVID HUNT	GASTAR EXPLORATION INC	1/8+	872	215	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*14292	5-18-3	C	JOHN BARRETT	GASTAR EXPLORATION INC	1/8+	875	603	NA	NA	NA	NA	35/144 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*14293	5-18-3	C	LEONARD O HABERBOSCH	GASTAR EXPLORATION INC	1/8+	878	647	NA	NA	NA	NA	35/144 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

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Well No.	Acres	Operator	Owner	TH Exploration LLC	1/8+	908	585	NA	NA	NA	NA	35/575 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*14294	5-18-3	C	MARY ELLEN EVANS	GASTAR EXPLORATION LLC	1/8+	908	585	NA	NA	NA	NA	NA	NA	NA
10*15697	5-18-3	C	JILL A STANLEY AND WILLIAM D STANLEY	TH EXPLORATION LLC	1/8+	908	587	NA	NA	NA	NA	NA	NA	NA
10*16059	5-18-3	C	CAROL SUE BLACKWELL AND TERRY LEE BLACKWELL	TH EXPLORATION LLC	1/8+	908	591	NA	NA	NA	NA	NA	NA	NA
10*16060	5-18-3	C	JOSEPH LEROY KITTLE AND BARBARA G KITTLE	TH EXPLORATION LLC	1/8+	908	593	NA	NA	NA	NA	NA	NA	NA
10*16061	5-18-3	C	GAIL L YEATER AND JUDITH A YEATER	TH EXPLORATION LLC	1/8+	908	595	NA	NA	NA	NA	NA	NA	NA
10*16062	5-18-3	C	TERRY WAYNE KITTLE AND DEBORAH S KITTLE	TH EXPLORATION LLC	1/8+	908	597	NA	NA	NA	NA	NA	NA	NA
10*16063	5-18-3	C	EDWARD D YEATER	TH EXPLORATION LLC	1/8+	908	599	NA	NA	NA	NA	NA	NA	NA
10*16064	5-18-3	C	GENE O JOHNSON AND KATHIE L JOHNSON	TH EXPLORATION LLC	1/8+	908	601	NA	NA	NA	NA	NA	NA	NA
10*16065	5-18-3	C	CHARLES ARTHUR ANDERSON AND CORRINE ANDERSON	TH EXPLORATION LLC	1/8+	908	639	NA	NA	NA	NA	NA	NA	NA
10*16067	5-18-3	C	HOWARD DWIGHT JOHNSON	TH EXPLORATION LLC	1/8+	908	641	NA	NA	NA	NA	NA	NA	NA
10*16162	5-18-3	C	MACKIE R ROBERTS AND CHERYL A ROBERTS	TH EXPLORATION LLC	1/8+	908	643	NA	NA	NA	NA	NA	NA	NA
10*16163	5-18-3	C	CHRISTINA CAIN	TH EXPLORATION LLC	1/8+	908	645	NA	NA	NA	NA	NA	NA	NA
10*16164	5-18-3	C	JENNIFER YEATER BRECKENRIDGE	TH EXPLORATION LLC	1/8+	908	647	NA	NA	NA	NA	NA	NA	NA
10*16196	5-18-3	C	MARILYN S EDWARDS AND JAMES M EDWARDS	TH EXPLORATION LLC	1/8+	908	649	NA	NA	NA	NA	NA	NA	NA
10*16197	5-18-3	C	REBECCA ANN HALEY AND RUSSELL L HALEY	TH EXPLORATION LLC	1/8+	909	1	NA	NA	NA	NA	NA	NA	NA
10*16198	5-18-3	C	TERRIE L LAUSIN	TH EXPLORATION LLC	1/8+	909	3	NA	NA	NA	NA	NA	NA	NA
10*16248	5-18-3	C	DAVID ELLIS LOWE AND SHARON K LOWE	TH EXPLORATION LLC	1/8+	909	5	NA	NA	NA	NA	NA	NA	NA
10*16249	5-18-3	C	SANDRA CAROL KOONTZ	TH EXPLORATION LLC	1/8+	909	7	NA	NA	NA	NA	NA	NA	NA
10*16250	5-18-3	C	MICHAEL E LAUSIN AND SHARON G LAUSIN	TH EXPLORATION LLC	1/8+	909	55	NA	NA	NA	NA	NA	NA	NA
10*16252	5-18-3	C	GEORGE W YEATER II	TH EXPLORATION LLC	1/8+	909	57	NA	NA	NA	NA	NA	NA	NA
10*16253	5-18-3	C	KYLAND MICHAEL EVANS	TH EXPLORATION LLC	1/8+	925	235	NA	NA	NA	NA	NA	NA	NA
10*16254	5-18-3	C	DAVID JOHNSON AND TAMMY JOHNSON	TH EXPLORATION LLC	1/8+	925	235	NA	NA	NA	NA	NA	NA	NA
10*16255	5-18-3	C	MAX D YEATER	TH EXPLORATION LLC	1/8+	909	59	NA	NA	NA	NA	NA	NA	NA
10*16300	5-18-3	C	TIMOTHY WAYNE ANDERSON AND SUSAN A ANDERSON	TH EXPLORATION LLC	1/8+	909	61	NA	NA	NA	NA	NA	NA	NA
10*16302	5-18-3	C	LYNN M HELINSKI AND THOMAS A HELINSKI	TH EXPLORATION LLC	1/8+	925	243	NA	NA	NA	NA	NA	NA	NA
10*16303	5-18-3	C	PATRICK T WELLS AND DEBORAH S WELLS	TH EXPLORATION LLC	1/8+	925	237	NA	NA	NA	NA	NA	NA	NA
10*16401	5-18-3	C	TIMOTHY RUSSELL HINKLE AND SHANNON L HINKLE	TH EXPLORATION LLC	1/8+	908	589	NA	NA	NA	NA	NA	NA	NA
10*16433	5-18-3	C	LAUREL I AND PAUL J DUBECK, JR	TH EXPLORATION LLC	1/8+	945	241	NA	NA	NA	NA	NA	NA	NA
10*16434	5-18-3	C	TERRY V STONE	TH EXPLORATION LLC	1/8+	925	239	NA	NA	NA	NA	NA	NA	NA
10*16452	5-18-3	C	BEATRICE JOAN YEATER KNIGHT	TH EXPLORATION LLC	1/8+	925	247	NA	NA	NA	NA	NA	NA	NA
10*16453	5-18-3	C	THE ESTATE OF JOHN E YEATER, DECD AND SHARON L YEATER, INDIV. & AS EXECUTRIX	TH EXPLORATION LLC	1/8+	925	245	NA	NA	NA	NA	NA	NA	NA
10*16455	5-18-3	C	CARLENE KAY CUNNINGHAM AND JAMES HOWARD CUNNINGHAM	TH EXPLORATION LLC	1/8+	925	271	NA	NA	NA	NA	NA	NA	NA
10*16456	5-18-3	C	EMILY K RULONG AND WILLIAM F RULONG SR	TH EXPLORATION LLC	1/8+	925	249	NA	NA	NA	NA	NA	NA	NA
10*16457	5-18-3	C	LISA ANN MARQUART AND GREGORY F MARQUART	TH EXPLORATION LLC	1/8+	925	331	NA	NA	NA	NA	NA	NA	NA
10*16458	5-18-3	C	NANCY JANE HOLLOWAY AND CHESTER K HOLLOWAY	TH EXPLORATION LLC	1/8+	909	64	NA	NA	NA	NA	NA	NA	NA
10*16492	5-18-3	C	ELIZABETH JANE SNYDER AND HARRY B SNYDER	TH EXPLORATION LLC	1/8+	925	273	NA	NA	NA	NA	NA	NA	NA
10*16493	5-18-3	C	JAMES JEFFREY YEATER AND DONNA L YEATER	TH EXPLORATION LLC	1/8+	925	275	NA	NA	NA	NA	NA	NA	NA
10*16494	5-18-3	C	SUSAN Y INCLAN AND JOSEPH C INCLAN	TH EXPLORATION LLC	1/8+	925	277	NA	NA	NA	NA	NA	NA	NA
10*16495	5-18-3	C	JAMES W AND NANCY C SHEPARD	TH EXPLORATION LLC	1/8+	925	279	NA	NA	NA	NA	NA	NA	NA
10*16496	5-18-3	C	GERALD B JONES	TH EXPLORATION LLC	1/8+	925	281	NA	NA	NA	NA	NA	NA	NA
10*16497	5-18-3	C	MARY B JONES	TH EXPLORATION LLC	1/8+	925	289	NA	NA	NA	NA	NA	NA	NA
10*16498	5-18-3	C	SHELLEY YEATER	TH EXPLORATION LLC	1/8+	925	283	NA	NA	NA	NA	NA	NA	NA
10*16499	5-18-3	C	SCOTT C HARRIS AND CAROLYN R HARRIS	TH EXPLORATION LLC	1/8+	925	287	NA	NA	NA	NA	NA	NA	NA
10*16500	5-18-3	C	JOHN KLINE C/O CINDY KLINE CORBETT	TH EXPLORATION LLC	1/8+	925	285	NA	NA	NA	NA	NA	NA	NA
10*16521	5-18-3	C	FREDA F QUIGLEY	TH EXPLORATION LLC	1/8+	925	251	NA	NA	NA	NA	NA	NA	NA
10*16547	5-18-3	C	ANGELA D HARTON	TH EXPLORATION LLC	1/8+	925	231	NA	NA	NA	NA	NA	NA	NA
10*16564	5-18-3	C	JEFFREY A LAUSIN AND KATHLEEN R LAUSIN	TH EXPLORATION LLC	1/8+	909	66	NA	NA	NA	NA	NA	NA	NA
10*16654	5-18-3	C	BRETT J LAUSIN SR	TH EXPLORATION LLC	1/8+	925	253	NA	NA	NA	NA	NA	NA	NA
10*16660	5-18-3	C	RUTH ANN YEATER	TH EXPLORATION LLC	1/8+	925	297	NA	NA	NA	NA	NA	NA	NA
10*16702	5-18-3	C	HAROLD P AND DONNA SUE RICHMOND	TH EXPLORATION LLC	1/8+	925	333	NA	NA	NA	NA	NA	NA	NA
10*16703	5-18-3	C	YOHNA J MCPEEK	TH EXPLORATION LLC	1/8+	925	255	NA	NA	NA	NA	NA	NA	NA
10*16704	5-18-3	C	COREENA A JOHNSON AND BRADLEY L JOHNSON	TH EXPLORATION LLC	1/8+	925	257	NA	NA	NA	NA	NA	NA	NA
10*16705	5-18-3	C	LINDA SUE FRAIL AND TODD E FRAIL	TH EXPLORATION LLC	1/8+	925	259	NA	NA	NA	NA	NA	NA	NA

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10*16717	5-18-3	C	JAMES L REID AND SHERRY L REID	TH EXPLORATION LLC	1/8+	925	265	NA	NA	NA	NA	NA	NA	NA
10*16723	5-18-3	C	KATHY N HAWKINS ALBRIGHT AND GEOFFREY A ALBRIGHT	TH EXPLORATION LLC	1/8+	925	263	NA	NA	NA	NA	NA	NA	NA
10*16724	5-18-3	C	ROBERT W MOCK	TH EXPLORATION LLC	1/8+	925	291	NA	NA	NA	NA	NA	NA	NA
10*16725	5-18-3	C	RICHARD J LEASURE	TH EXPLORATION LLC	1/8+	925	261	NA	NA	NA	NA	NA	NA	NA
10*16727	5-18-3	C	JOHN C FRAME	TH EXPLORATION LLC	1/8+	925	269	NA	NA	NA	NA	NA	NA	NA
10*16773	5-18-3	C	CASEY L COUCH AND MARIAN BLAIR COUCH	TH EXPLORATION LLC	1/8+	925	267	NA	NA	NA	NA	NA	NA	NA
10*16774	5-18-3	C	KIM L HAWKINS	TH EXPLORATION LLC	1/8+	925	293	NA	NA	NA	NA	NA	NA	NA
10*16775	5-18-3	C	WILLIAM CHARLES AND VANITA G ATWELL	TH EXPLORATION LLC	1/8+	925	303	NA	NA	NA	NA	NA	NA	NA
10*16776	5-18-3	C	MARTHA C GRIMES	TH EXPLORATION LLC	1/8+	925	295	NA	NA	NA	NA	NA	NA	NA
10*16816	5-18-3	C	BETH ANN AND CHRISTOPHER D ZINKEN	TH EXPLORATION LLC	1/8+	925	299	NA	NA	NA	NA	NA	NA	NA
10*16901	5-18-3	C	BRIAN LEE STONE	TH EXPLORATION LLC	1/8+	925	301	NA	NA	NA	NA	NA	NA	NA
10*17225	5-18-3	C	RUTH ARLENE AND WILLIAM A WYER	TH EXPLORATION LLC	1/8+	925	305	NA	NA	NA	NA	NA	NA	NA
10*17337	5-18-3	C	ANNETTE M JOHNSON AND ARTHUR Q JOHNSON	TH EXPLORATION LLC	1/8+	925	307	NA	NA	NA	NA	NA	NA	NA
10*17411	5-18-3	C	IRENE HOLLAND AND JOHN HOLLAND	TH EXPLORATION LLC	1/8+	927	151	NA	NA	NA	NA	NA	NA	NA
10*17460	5-18-3	C	THOMAS V HAUCK	TH EXPLORATION LLC	1/8+	925	310	NA	NA	NA	NA	NA	NA	NA
10*17819	5-18-3	C	GEORGE T GALE JR AND CAROLE A GALE	TH EXPLORATION LLC	1/8+	925	335	NA	NA	NA	NA	NA	NA	NA
10*18631	5-18-3	C	LINDA K STARR AND GEORGE E STARR	TH EXPLORATION LLC	1/8+	927	153	NA	NA	NA	NA	NA	NA	NA
10*18632	5-18-3	C	RICHARD HOLLAND	TH EXPLORATION LLC	1/8+	927	155	NA	NA	NA	NA	NA	NA	NA
10*18633	5-18-3	C	BREYLYNN LEE SPAIN	TH EXPLORATION LLC	1/8+	927	96	NA	NA	NA	NA	NA	NA	NA
10*27684	5-18-3	C	WVSTO UNCLAIMED PROPERTY	TH EXPLORATION LLC	1/8+	1060	233	NA	NA	NA	NA	NA	NA	NA
10*27959	5-18-3	C	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063	594	NA	NA	NA	NA	NA	NA	NA
10*28158	5-18-3	C	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1068	140	NA	NA	NA	NA	NA	NA	NA
10*39822	5-18-3	C	DAVID E MITCHELL AND AMY L MITCHELL	TH EXPLORATION LLC	1/8+	927	94	NA	NA	NA	NA	NA	NA	NA
10*39823	5-18-3	C	SHELLY L SMITH AND JOSHUA W SMITH	TH EXPLORATION LLC	1/8+	927	157	NA	NA	NA	NA	NA	NA	NA
10*17454	5-18-6	D	MARGARET A BONNETT	TH EXPLORATION LLC	1/8+	940	431	NA	NA	NA	NA	NA	NA	NA
10*17492	5-18-6	D	DIANA L WELLMAN	TH EXPLORATION LLC	1/8+	940	434	NA	NA	NA	NA	NA	NA	NA
10*26995	5-18-6	D	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1041	56	NA	NA	NA	NA	NA	NA	NA
10*17222	5-18-15.3	E	JAMES W AND DOLLIE M FOSTER	TH EXPLORATION LLC	1/8+	940	429	NA	NA	NA	NA	NA	NA	NA
10*19140	5-18-5	G	TERREL L MELOTT	TRIENERGY HOLDINGS LLC	1/8+	704	26	NA	24/180 TriEnergy Holdings LLC to NPAR LLC	24/466 NPAR LLC and AB Resources LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	25/105 Chief Exploration & Development LLC, Radler 2000 Ltd Partnership & Enerplus Resources USA Corp to Chevron USA Inc	756/332 NPAR LLC to Chevron USA Inc	28/356 TriEnergy Holdings LLC and TriEnergy Inc to Chevron USA Inc	40/127 Chevron USA Inc to TH Exploration LLC
10*19032	5-18-4	H	JAN I ARNOLD MARSHA A ARNOLD	CHEVRON USA INC	1/8+	813	111	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC	
10*19033	5-18-4	H	MARTHA J TAMBLYN	CHEVRON USA INC	1/8+	811	637	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC	
10*19042	5-18-4	H	JOHN MATTHEW ARNOLD AILEEN GAY ARNOLD	CHEVRON USA INC	1/8+	814	346	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC	
10*19044	5-18-4	H	CYNTHIA GAYLOR	CHEVRON USA INC	1/8+	814	367	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC	
10*19051	5-18-4	H	JEFFREY L ARNOLD	CHEVRON USA INC	1/8+	813	600	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC	
10*19053	5-18-4	H	JAMES LLOYD ARNOLD DARCY L ARNOLD	CHEVRON USA INC	1/8+	815	140	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC	
10*19058	5-18-4	H	REBECCA E KINKOPF	CHEVRON USA INC	1/8+	818	1	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC	

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10*19065	5-18-4	H	STEVEN LLOYD ARNOLD AND DONNA RAE ARNOLD	CHEVRON USA INC	1/8+	817	467	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC	
10*19078	5-18-4	H	SCOTT LANE ARNOLD LAURA J ARNOLD	CHEVRON USA INC	1/8+	829	437	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC	
10*19100	5-18-4	H	GARY GLENN CRAEMER	CHEVRON USA INC	1/8+	837	344	NA	NA	NA	NA	NA	NA	40/127 Chevron USA Inc to TH Exploration LLC	
10*19106	5-18-4	H	A. J. CHASE AND BETSY R. CHASE, HUSBAND AND WIFE	AB RESOURCES LLC	1/8+	692	447	NA	NA	NA	24/382 AB Resources LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	24/490 AB Resources LLC and NPAR LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	25/105 Chief Exploration & Development LLC, Chief Oil & Gas LLC, Radler 2000 Limited Partnership, Enerplus Resources USA Corp to Chevron USA Inc	40/127 Chevron USA Inc to TH Exploration LLC	
10*19110	5-18-4	H	DONNA SMITH CHASE	AB RESOURCES LLC	1/8+	692	451	NA	NA	NA	24/382 AB Resources LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	24/490 AB Resources LLC and NPAR LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	25/105 Chief Exploration & Development LLC, Chief Oil & Gas LLC, Radler 2000 Limited Partnership, Enerplus Resources USA Corp to Chevron USA Inc	40/127 Chevron USA Inc to TH Exploration LLC	
10*19111	5-18-4	H	MARJORIE L. CHASE	AB RESOURCES LLC	1/8+	692	453	NA	NA	NA	24/382 AB Resources LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	24/490 AB Resources LLC and NPAR LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership	25/105 Chief Exploration & Development LLC, Chief Oil & Gas LLC, Radler 2000 Limited Partnership, Enerplus Resources USA Corp to Chevron USA Inc	40/127 Chevron USA Inc to TH Exploration LLC	
10*24308	5-18-4	H	BARBARA ELLIS AND JEFFREY ELLIS	TH EXPLORATION LLC	1/8+	1017	449	NA	NA	NA	NA	NA	NA	NA	
10*24311	5-18-4	H	KATE CRAEMER ALDEN AND NOEL ALDEN	TH EXPLORATION LLC	1/8+	1019	485	NA	NA	NA	NA	NA	NA	NA	
10*24312	5-18-4	H	JILL CRAEMER	TH EXPLORATION LLC	1/8+	1017	448	NA	NA	NA	NA	NA	NA	NA	
10*14503	5-18-7	U	IMA LEE YOHO	GASTAR EXPLORATION USA INC	1/8+	756	85	NA	NA	NA	16/134 Gastar Exploration USA Inc and Atinum Marcellus I LLC operating agreement	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	40/552 TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14503	5-18-16	V	IMA LEE YOHO	GASTAR EXPLORATION USA INC	1/8+	756	85	NA	NA	NA	16/134 Gastar Exploration USA Inc and Atinum Marcellus I LLC operating agreement	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	40/552 TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*14099	5-18-13	W	SOUTHERN COUNTRY FARMS INC	GASTAR EXPLORATION USA INC	1/8+	666	489	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC	
10*17986	5-18-13	W	ALFRED EARL EMERY AND KAREN SUE EMERY	TH EXPLORATION LLC	1/8+	925	421	NA	NA	NA	NA	NA	NA	NA	

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10*17987	5-18-13	W	DELORES C OTT	TH EXPLORATION LLC	1/8+	925	424	NA	NA	NA	NA	NA	NA	NA
10*17988	5-18-13	W	TWILA C COFFIELD	TH EXPLORATION LLC	1/8+	925	426	NA	NA	NA	NA	NA	NA	NA
10*18035	5-18-13	W	FRANCIS DWAIN OTT AND ANITA R OTT	TH EXPLORATION LLC	1/8+	927	98	NA	NA	NA	NA	NA	NA	NA
10*18037	5-18-13	W	LINDA K OTT	TH EXPLORATION LLC	1/8+	927	119	NA	NA	NA	NA	NA	NA	NA
10*18173	5-18-13	W	DONALD S BOBOVNIK AND DOLORES J BOBOVNIK	TH EXPLORATION LLC	1/8+	927	645	NA	NA	NA	NA	NA	NA	NA
10*18178	5-18-13	W	REBECCA A HAGERTY	TH EXPLORATION LLC	1/8+	928	1	NA	NA	NA	NA	NA	NA	NA
10*18330	5-18-13	W	COLLEEN HAGERTY	TH EXPLORATION LLC	1/8+	929	564	NA	NA	NA	NA	NA	NA	NA
10*18331	5-18-13	W	RENEE HAGERTY	TH EXPLORATION LLC	1/8+	929	566	NA	NA	NA	NA	NA	NA	NA
10*18332	5-18-13	W	MEGAN HAGERTY	TH EXPLORATION LLC	1/8+	929	578	NA	NA	NA	NA	NA	NA	NA
10*18436	5-18-13	W	ROBYN HAGERTY	TH EXPLORATION LLC	1/8+	933	77	NA	NA	NA	NA	NA	NA	NA
10*18898	5-18-13	W	COLBY ANN FLOUHOUSE HOMER	TH EXPLORATION LLC	1/8+	940	427	NA	NA	NA	NA	NA	NA	NA
10*18898	5-18-13	W	COLBY ANN FLOUHOUSE HOMER	TH EXPLORATION LLC	1/8+	940	427	NA	NA	NA	NA	NA	NA	NA
10*18997	5-18-13	W	SHIRLEY ANN DRAKE	TH EXPLORATION LLC	1/8+	940	143	NA	NA	NA	NA	NA	NA	NA
10*19653	5-18-13	W	ROBERT DAVID BARNES AND RHONDA BARNES	TH EXPLORATION LLC	1/8+	944	103	NA	NA	NA	NA	NA	NA	NA
10*19654	5-18-13	W	RONALD L MAYER AND DEBRA A MAYER	TH EXPLORATION LLC	1/8+	944	128	NA	NA	NA	NA	NA	NA	NA
10*19659	5-18-13	W	STUART WHITE AND BETTY WHITE	TH EXPLORATION LLC	1/8+	944	124	NA	NA	NA	NA	NA	NA	NA
10*19660	5-18-13	W	MARY CATHERINE THOMS OTT	TH EXPLORATION LLC	1/8+	944	126	NA	NA	NA	NA	NA	NA	NA
10*19734	5-18-13	W	DOROTHY HLINKA DUKE	TH EXPLORATION LLC	1/8+	944	474	NA	NA	NA	NA	NA	NA	NA
10*19735	5-18-13	W	PATRICK HAGERTY AND DALANE HAGERTY	TH EXPLORATION LLC	1/8+	944	471	NA	NA	NA	NA	NA	NA	NA
10*19848	5-18-13	W	LINDA CARNEY	TH EXPLORATION LLC	1/8+	944	476	NA	NA	NA	NA	NA	NA	NA
10*19956	5-18-13	W	CAROL OWENS	TH EXPLORATION LLC	1/8+	947	577	NA	NA	NA	NA	NA	NA	NA
10*19957	5-18-13	W	KEITH JAY FISCHER AND DAWN M FISCHER	TH EXPLORATION LLC	1/8+	947	579	NA	NA	NA	NA	NA	NA	NA
10*19958	5-18-13	W	MARION DAVID OTT & JANICE L OTT	TH EXPLORATION LLC	1/8+	947	581	NA	NA	NA	NA	NA	NA	NA
10*19959	5-18-13	W	CHRISTY MURPHY AND FRANK MURPHY	TH EXPLORATION LLC	1/8+	947	583	NA	NA	NA	NA	NA	NA	NA
10*19960	5-18-13	W	GREGORY A LEMONS	TH EXPLORATION LLC	1/8+	947	585	NA	NA	NA	NA	NA	NA	NA
10*21004	5-18-13	W	ALVERETTA M SHIMP	TH EXPLORATION LLC	1/8+	951	570	NA	NA	NA	NA	NA	NA	NA
10*21005	5-18-13	W	ROBERT GORDON AND TWYLA GORDON	TH EXPLORATION LLC	1/8+	951	574	NA	NA	NA	NA	NA	NA	NA
10*21075	5-18-13	W	JAMES GARCAR AND MELISSA GARCAR	TH EXPLORATION LLC	1/8+	951	563	NA	NA	NA	NA	NA	NA	NA
10*21077	5-18-13	W	PATRICIA A GARCAR	TH EXPLORATION LLC	1/8+	951	568	NA	NA	NA	NA	NA	NA	NA
10*21080	5-18-13	W	TERRI JEAN BROCK AND STEVEN E BROCK SR	TH EXPLORATION LLC	1/8+	951	565	NA	NA	NA	NA	NA	NA	NA
10*21081	5-18-13	W	CINDY GREEN AND LARRY GREEN	TH EXPLORATION LLC	1/8+	951	572	NA	NA	NA	NA	NA	NA	NA
10*21123	5-18-13	W	LORETTA BARKER	TH EXPLORATION LLC	1/8+	952	207	NA	NA	NA	NA	NA	NA	NA
10*21124	5-18-13	W	RITA WINEMAN	TH EXPLORATION LLC	1/8+	952	209	NA	NA	NA	NA	NA	NA	NA
10*21125	5-18-13	W	BRUCE HUNTER AND VICKI HUNTER	TH EXPLORATION LLC	1/8+	952	211	NA	NA	NA	NA	NA	NA	NA
10*21126	5-18-13	W	ROBERT R DARROW	TH EXPLORATION LLC	1/8+	952	213	NA	NA	NA	NA	NA	NA	NA
10*21127	5-18-13	W	RAYMOND R MILLER AND LOIS A MILLER	TH EXPLORATION LLC	1/8+	952	215	NA	NA	NA	NA	NA	NA	NA
10*21240	5-18-13	W	RICHARD RICH AND KAREN RICH	TH EXPLORATION LLC	1/8+	952	638	NA	NA	NA	NA	NA	NA	NA
10*21319	5-18-13	W	SARA FULTON	TH EXPLORATION LLC	1/8+	953	315	NA	NA	NA	NA	NA	NA	NA
10*21372	5-18-13	W	SHELLI LYNN WHEELER & ANTHONY R WHEELER	TH EXPLORATION LLC	1/8+	957	195	NA	NA	NA	NA	NA	NA	NA
10*21373	5-18-13	W	BONNIE LOU GRUBER	TH EXPLORATION LLC	1/8+	954	318	NA	NA	NA	NA	NA	NA	NA
10*21423	5-18-13	W	ORIE N YOUNG AND BERNIE A YOUNG	TH EXPLORATION LLC	1/8+	957	189	NA	NA	NA	NA	NA	NA	NA
10*21424	5-18-13	W	JOANN HAGERTY	TH EXPLORATION LLC	1/8+	957	191	NA	NA	NA	NA	NA	NA	NA
10*21426	5-18-13	W	CRYSTAL M HOOKER AND JAMES HOOKER	TH EXPLORATION LLC	1/8+	957	198	NA	NA	NA	NA	NA	NA	NA
10*21427	5-18-13	W	GARY F OBLOY AND DENISE I OBLOY	TH EXPLORATION LLC	1/8+	957	193	NA	NA	NA	NA	NA	NA	NA
10*21454	5-18-13	W	KIMBERLY COX	TH EXPLORATION LLC	1/8+	953	536	NA	NA	NA	NA	NA	NA	NA
10*21657	5-18-13	W	RONALD J SALKOVICK II & SANDRA SALKOVICK	TH EXPLORATION LLC	1/8+	958	373	NA	NA	NA	NA	NA	NA	NA
10*21661	5-18-13	W	VICKY STRAUSS AND DENNIS A STRAUSS	TH EXPLORATION LLC	1/8+	958	405	NA	NA	NA	NA	NA	NA	NA
10*21663	5-18-13	W	FRANK E COMINOTTI AND MARILYN COMINOTTI	TH EXPLORATION LLC	1/8+	958	409	NA	NA	NA	NA	NA	NA	NA
10*21664	5-18-13	W	JOHN OBLOY AND JANET L OBLOY	TH EXPLORATION LLC	1/8+	958	440	NA	NA	NA	NA	NA	NA	NA
10*21665	5-18-13	W	JAMES NEAL EMERY AND RENEE R EMERY	TH EXPLORATION LLC	1/8+	958	442	NA	NA	NA	NA	NA	NA	NA
10*21666	5-18-13	W	JOHN ARLES EMERY	TH EXPLORATION LLC	1/8+	958	364	NA	NA	NA	NA	NA	NA	NA
10*21667	5-18-13	W	CLARENCE RANDALL EMERY AND PAULA JEAN EMERY	TH EXPLORATION LLC	1/8+	958	366	NA	NA	NA	NA	NA	NA	NA
10*21668	5-18-13	W	DAVID DEAN DRAKE AND VICKI LYNN DRAKE	TH EXPLORATION LLC	1/8+	968	198	NA	NA	NA	NA	NA	NA	NA
10*21669	5-18-13	W	KATHLEEN ROBERTSON	TH EXPLORATION LLC	1/8+	958	370	NA	NA	NA	NA	NA	NA	NA
10*21824	5-18-13	W	MARY LOU HLINKA AND RICHARD G HLINKA SR	TH EXPLORATION LLC	1/8+	960	208	NA	NA	NA	NA	NA	NA	NA
10*21833	5-18-13	W	MARQUITA CLYBURN	TH EXPLORATION LLC	1/8+	960	202	NA	NA	NA	NA	NA	NA	NA
10*21945	5-18-13	W	CHARLES DOUGLAS LANE	TH EXPLORATION LLC	1/8+	960	103	NA	NA	NA	NA	NA	NA	NA
10*21946	5-18-13	W	RICHARD E MILLER	TH EXPLORATION LLC	1/8+	960	64	NA	NA	NA	NA	NA	NA	NA
10*21985	5-18-13	W	CHRISTOPHER CLARK AND REBEKAH CLARK	TH EXPLORATION LLC	1/8+	960	62	NA	NA	NA	NA	NA	NA	NA

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10*21994	5-18-13	W	MELISSA L DARROW	TH EXPLORATION LLC	1/8+	954	328	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22024	5-18-13	W	BRIAN FISH AND COURTNEY FISH	TH EXPLORATION LLC	1/8+	954	326	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22028	5-18-13	W	STEPHEN C EMERY AND CATHY J EMERY	TH EXPLORATION LLC	1/8+	954	320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22095	5-18-13	W	TODD LEARN AND KENDA LEARN	TH EXPLORATION LLC	1/8+	954	324	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22162	5-18-13	W	DEBRA L LYSSEKI AND GERALD A LYSSEKI	TH EXPLORATION LLC	1/8+	954	322	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22272	5-18-13	W	LARRY LONCHAR AND MOLLIE LONCHAR	TH EXPLORATION LLC	1/8+	961	324	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22275	5-18-13	W	JERRY LONCHAR AND TINA LONCHAR	TH EXPLORATION LLC	1/8+	961	326	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22431	5-18-13	W	REGINA KAY LEVINE & KENNETH WRIGHT AIF REGINA KAY LEVINE	TH EXPLORATION LLC	1/8+	961	415	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22435	5-18-13	W	TESSEAN FAMILY REVOCABLE LIVING TRUST	TH EXPLORATION LLC	1/8+	962	190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22499	5-18-13	W	JAMES O DRAKE AND DONNA K DRAKE	TH EXPLORATION LLC	1/8+	965	475	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22506	5-18-13	W	OKEY GILBERT AND ELLA GILBERT	TH EXPLORATION LLC	1/8+	965	479	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22507	5-18-13	W	JAMES LEMONS AND NANCY LEMONS	TH EXPLORATION LLC	1/8+	965	477	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22508	5-18-13	W	THOMAS LEMONS AND PATTY LEMONS	TH EXPLORATION LLC	1/8+	965	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22598	5-18-13	W	KEN MALGAY AND MARCIA MALGAY	TH EXPLORATION LLC	1/8+	965	57	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22642	5-18-13	W	SHIRLEY LEMONS	TH EXPLORATION LLC	1/8+	965	473	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22812	5-18-13	W	JOSEPH F GOBLOWSKY	TH EXPLORATION LLC	1/8+	968	428	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*22860	5-18-13	W	WILLIAM KOTSON AND DEBRA KOTSON	TH EXPLORATION LLC	1/8+	971	637	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23160	5-18-13	W	BETTY J ANDERSON	TH EXPLORATION LLC	1/8+	965	53	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23221	5-18-13	W	GENERAL RECEIVER OF MARSHALL COUNTY ATTN: BERNIE TWIGG	TH EXPLORATION LLC	1/8+	988	146	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23365	5-18-13	W	GENERAL RECEIVER OF MARSHALL COUNTY ATTN: BERNIE TWIGG	TH EXPLORATION LLC	1/8+	976	609	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*23505	5-18-13	W	RENEE KELLAR	TH EXPLORATION LLC	1/8+	971	633	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26898	5-18-13	W	DWG OIL & GAS ACQUISITIONS LLC	TH EXPLORATION LLC	1/8+	1041	141	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26899	5-18-13	W	GASTON FAMILY INVESTMENTS LLC	TH EXPLORATION LLC	1/8+	1041	139	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*26996	5-18-13	W	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1046	142	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*14099	5-18-59	X	SOUTHERN COUNTRY FARMS INC	GASTAR EXPLORATION USA INC	1/8+	666	489	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and 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*17431	5-18-59	X	SOUTHERN COUNTRY FARMS INC	TH EXPLORATION LLC	1/8+	938	448	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17986	5-18-59	X	ALFRED EARL EMERY AND KAREN SUE EMERY	TH EXPLORATION LLC	1/8+	925	421	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17987	5-18-59	X	DELORES C OTT	TH EXPLORATION LLC	1/8+	925	424	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*17988	5-18-59	X	TWILA C COFFIELD	TH EXPLORATION LLC	1/8+	925	426	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18035	5-18-59	X	FRANCIS DWAIN OTT AND ANITA R OTT	TH EXPLORATION LLC	1/8+	927	98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18037	5-18-59	X	LINDA K OTT	TH EXPLORATION LLC	1/8+	927	119	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18173	5-18-59	X	DONALD S BOBOVNIK AND DOLORES J BOBOVNIK	TH EXPLORATION LLC	1/8+	927	645	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18178	5-18-59	X	REBECCA A HAGERTY	TH EXPLORATION LLC	1/8+	928	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18330	5-18-59	X	COLLEEN HAGERTY	TH EXPLORATION LLC	1/8+	929	564	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18331	5-18-59	X	RENEE HAGERTY	TH EXPLORATION LLC	1/8+	929	566	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18332	5-18-59	X	MEGAN HAGERTY	TH EXPLORATION LLC	1/8+	929	578	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18436	5-18-59	X	ROBYN HAGERTY	TH EXPLORATION LLC	1/8+	933	77	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18898	5-18-59	X	COLBY ANN FLOUHOUSE HOMER	TH EXPLORATION LLC	1/8+	940	427	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*18997	5-18-59	X	SHIRLEY ANN DRAKE	TH EXPLORATION LLC	1/8+	940	143	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19653	5-18-59	X	ROBERT DAVID BARNES AND RHONDA BARNES	TH EXPLORATION LLC	1/8+	944	103	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19654	5-18-59	X	RONALD L MAYER AND DEBRA A MAYER	TH EXPLORATION LLC	1/8+	944	128	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19659	5-18-59	X	STUART WHITE AND BETTY WHITE	TH EXPLORATION LLC	1/8+	944	124	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19660	5-18-59	X	MARY CATHERINE THOMS OTT	TH EXPLORATION LLC	1/8+	944	126	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19734	5-18-59	X	DOROTHY HLINKA DUKE	TH EXPLORATION LLC	1/8+	944	474	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19735	5-18-59	X	PATRICK HAGERTY AND DALANE HAGERTY	TH EXPLORATION LLC	1/8+	944	471	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19848	5-18-59	X	LINDA CARNEY	TH EXPLORATION LLC	1/8+	944	476	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19956	5-18-59	X	CAROL OWENS	TH EXPLORATION LLC	1/8+	947	577	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19957	5-18-59	X	KEITH JAY FISCHER AND DAWN M FISCHER	TH EXPLORATION LLC	1/8+	947	579	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19958	5-18-59	X	MARION DAVID OTT & JANICE L OTT	TH EXPLORATION LLC	1/8+	947	581	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19959	5-18-59	X	CHRISTY MURPHY AND FRANK MURPHY	TH EXPLORATION LLC	1/8+	947	583	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*19960	5-18-59	X	GREGORY A LEMONS	TH EXPLORATION LLC	1/8+	947	585	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10*21004	5-18-59	X	ALVERETTA M SHIMP	TH EXPLORATION LLC	1/8+	951	570	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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10*21005	5-18-59	X	ROBERT GORDON AND TWYLA GORDON	TH EXPLORATION LLC	1/8+	951	574	NA	NA	NA	NA	NA	NA	NA
10*21075	5-18-59	X	JAMES GARCAR AND MELISSA GARCAR	TH EXPLORATION LLC	1/8+	951	563	NA	NA	NA	NA	NA	NA	NA
10*21077	5-18-59	X	PATRICIA A GARCAR	TH EXPLORATION LLC	1/8+	951	568	NA	NA	NA	NA	NA	NA	NA
10*21080	5-18-59	X	TERRI JEAN BROCK AND STEVEN E BROCK SR	TH EXPLORATION LLC	1/8+	951	565	NA	NA	NA	NA	NA	NA	NA
10*21081	5-18-59	X	CINDY GREEN AND LARRY GREEN	TH EXPLORATION LLC	1/8+	951	572	NA	NA	NA	NA	NA	NA	NA
10*21123	5-18-59	X	LORETTA BARKER	TH EXPLORATION LLC	1/8+	952	207	NA	NA	NA	NA	NA	NA	NA
10*21124	5-18-59	X	RITA WINEMAN	TH EXPLORATION LLC	1/8+	952	209	NA	NA	NA	NA	NA	NA	NA
10*21125	5-18-59	X	BRUCE HUNTER AND VICKI HUNTER	TH EXPLORATION LLC	1/8+	952	211	NA	NA	NA	NA	NA	NA	NA
10*21126	5-18-59	X	ROBERT R DARROW	TH EXPLORATION LLC	1/8+	952	213	NA	NA	NA	NA	NA	NA	NA
10*21127	5-18-59	X	RAYMOND R MILLER AND LOIS A MILLER	TH EXPLORATION LLC	1/8+	952	215	NA	NA	NA	NA	NA	NA	NA
10*21240	5-18-59	X	RICHARD RICH AND KAREN RICH	TH EXPLORATION LLC	1/8+	952	638	NA	NA	NA	NA	NA	NA	NA
10*21319	5-18-59	X	SARA FULTON	TH EXPLORATION LLC	1/8+	953	315	NA	NA	NA	NA	NA	NA	NA
10*21372	5-18-59	X	SHELLI LYNN WHEELER & ANTHONY R WHEELER	TH EXPLORATION LLC	1/8+	957	195	NA	NA	NA	NA	NA	NA	NA
10*21373	5-18-59	X	BONNIE LOU GRUBER	TH EXPLORATION LLC	1/8+	954	318	NA	NA	NA	NA	NA	NA	NA
10*21423	5-18-59	X	ORIE N YOUNG AND BERNIE A YOUNG	TH EXPLORATION LLC	1/8+	957	189	NA	NA	NA	NA	NA	NA	NA
10*21424	5-18-59	X	JOANN HAGERTY	TH EXPLORATION LLC	1/8+	957	191	NA	NA	NA	NA	NA	NA	NA
10*21426	5-18-59	X	CRYSTAL M HOOKER AND JAMES HOOKER	TH EXPLORATION LLC	1/8+	957	198	NA	NA	NA	NA	NA	NA	NA
10*21427	5-18-59	X	GARY F OBLOY AND DENISE I OBLOY	TH EXPLORATION LLC	1/8+	957	193	NA	NA	NA	NA	NA	NA	NA
10*21454	5-18-59	X	KIMBERLY COX	TH EXPLORATION LLC	1/8+	953	536	NA	NA	NA	NA	NA	NA	NA
10*21657	5-18-59	X	RONALD J SALKOVICK II & SANDRA SALKOVICK	TH EXPLORATION LLC	1/8+	958	373	NA	NA	NA	NA	NA	NA	NA
10*21661	5-18-59	X	VICKY STRAUSS AND DENNIS A STRAUSS	TH EXPLORATION LLC	1/8+	958	405	NA	NA	NA	NA	NA	NA	NA
10*21663	5-18-59	X	FRANK E COMINOTTI AND MARILYN COMINOTTI	TH EXPLORATION LLC	1/8+	958	409	NA	NA	NA	NA	NA	NA	NA
10*21664	5-18-59	X	JOHN OBLOY AND JANET L OBLOY	TH EXPLORATION LLC	1/8+	958	440	NA	NA	NA	NA	NA	NA	NA
10*21665	5-18-59	X	JAMES NEAL EMERY AND RENEE R EMERY	TH EXPLORATION LLC	1/8+	958	442	NA	NA	NA	NA	NA	NA	NA
10*21666	5-18-59	X	JOHN ARLES EMERY	TH EXPLORATION LLC	1/8+	958	364	NA	NA	NA	NA	NA	NA	NA
10*21667	5-18-59	X	CLARENCE RANDALL EMERY AND PAULA JEAN EMERY	TH EXPLORATION LLC	1/8+	958	366	NA	NA	NA	NA	NA	NA	NA
10*21668	5-18-59	X	DAVID DEAN DRAKE AND VICKI LYNN DRAKE	TH EXPLORATION LLC	1/8+	958	198	NA	NA	NA	NA	NA	NA	NA
10*21669	5-18-59	X	KATHLEEN ROBERTSON	TH EXPLORATION LLC	1/8+	958	370	NA	NA	NA	NA	NA	NA	NA
10*21824	5-18-59	X	MARY LOU HLINKA AND RICHARD G HLINKA SR	TH EXPLORATION LLC	1/8+	960	208	NA	NA	NA	NA	NA	NA	NA
10*21833	5-18-59	X	MARQUITA CLYBURN	TH EXPLORATION LLC	1/8+	960	202	NA	NA	NA	NA	NA	NA	NA
10*21945	5-18-59	X	CHARLES DOUGLAS LANE	TH EXPLORATION LLC	1/8+	960	103	NA	NA	NA	NA	NA	NA	NA
10*21946	5-18-59	X	RICHARD E MILLER	TH EXPLORATION LLC	1/8+	960	64	NA	NA	NA	NA	NA	NA	NA
10*21985	5-18-59	X	CHRISTOPHER CLARK AND REBEKAH CLARK	TH EXPLORATION LLC	1/8+	960	62	NA	NA	NA	NA	NA	NA	NA
10*21994	5-18-59	X	MELISSA L DARROW	TH EXPLORATION LLC	1/8+	954	328	NA	NA	NA	NA	NA	NA	NA
10*22024	5-18-59	X	BRIAN FISH AND COURTNEY FISH	TH EXPLORATION LLC	1/8+	954	326	NA	NA	NA	NA	NA	NA	NA
10*22028	5-18-59	X	STEPHEN C EMERY AND CATHY J EMERY	TH EXPLORATION LLC	1/8+	954	320	NA	NA	NA	NA	NA	NA	NA
10*22095	5-18-59	X	TODD LEARN AND KENDA LEARN	TH EXPLORATION LLC	1/8+	954	324	NA	NA	NA	NA	NA	NA	NA
10*22162	5-18-59	X	DEBRA L LYESKI AND GERALD A LYESKI	TH EXPLORATION LLC	1/8+	954	322	NA	NA	NA	NA	NA	NA	NA
10*22272	5-18-59	X	LARRY LONCHAR AND MOLLIE LONCHAR	TH EXPLORATION LLC	1/8+	961	324	NA	NA	NA	NA	NA	NA	NA
10*22275	5-18-59	X	JERRY LONCHAR AND TINA LONCHAR	TH EXPLORATION LLC	1/8+	961	326	NA	NA	NA	NA	NA	NA	NA
10*22431	5-18-59	X	REGINA KAY LEVINE & KENNETH WRIGHT AIF REGINA KAY LEVINE	TH EXPLORATION LLC	1/8+	961	415	NA	NA	NA	NA	NA	NA	NA
10*22435	5-18-59	X	TESSEAN FAMILY REVOCABLE LIVING TRUST	TH EXPLORATION LLC	1/8+	962	190	NA	NA	NA	NA	NA	NA	NA
10*22499	5-18-59	X	JAMES D DRAKE AND DONNA K DRAKE	TH EXPLORATION LLC	1/8+	965	475	NA	NA	NA	NA	NA	NA	NA
10*22506	5-18-59	X	OKEY GILBERT AND ELLA GILBERT	TH EXPLORATION LLC	1/8+	965	479	NA	NA	NA	NA	NA	NA	NA
10*22507	5-18-59	X	JAMES LEMONS AND NANCY LEMONS	TH EXPLORATION LLC	1/8+	965	477	NA	NA	NA	NA	NA	NA	NA
10*22508	5-18-59	X	THOMAS LEMONS AND PATTY LEMONS	TH EXPLORATION LLC	1/8+	965	55	NA	NA	NA	NA	NA	NA	NA
10*22598	5-18-59	X	KEN MALGAY AND MARCIA MALGAY	TH EXPLORATION LLC	1/8+	965	57	NA	NA	NA	NA	NA	NA	NA
10*22642	5-18-59	X	SHIRLEY LEMONS	TH EXPLORATION LLC	1/8+	965	473	NA	NA	NA	NA	NA	NA	NA
10*22812	5-18-59	X	JOSEPH F GOBLOWSKY	TH EXPLORATION LLC	1/8+	968	428	NA	NA	NA	NA	NA	NA	NA
10*22860	5-18-59	X	WILLIAM KOTSON AND DEBRA KOTSON	TH EXPLORATION LLC	1/8+	971	637	NA	NA	NA	NA	NA	NA	NA
10*23160	5-18-59	X	BETTY J ANDERSON	TH EXPLORATION LLC	1/8+	965	53	NA	NA	NA	NA	NA	NA	NA
10*23221	5-18-59	X	GENERAL RECEIVER OF MARSHALL COUNTY ATTN: BERNIE TWIGG	TH EXPLORATION LLC	1/8+	988	146	NA	NA	NA	NA	NA	NA	NA
10*23365	5-18-59	X	GENERAL RECEIVER OF MARSHALL COUNTY ATTN: BERNIE TWIGG	TH EXPLORATION LLC	1/8+	976	609	NA	NA	NA	NA	NA	NA	NA
10*23505	5-18-59	X	RENEE KELLAR	TH EXPLORATION LLC	1/8+	971	633	NA	NA	NA	NA	NA	NA	NA
10*26898	5-18-59	X	DWG OIL & GAS ACQUISITIONS LLC	TH EXPLORATION LLC	1/8+	1041	141	NA	NA	NA	NA	NA	NA	NA
10*26899	5-18-59	X	GASTON FAMILY INVESTMENTS LLC	TH EXPLORATION LLC	1/8+	1041	139	NA	NA	NA	NA	NA	NA	NA

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10*26996	5-18-59	X	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1046	142	NA	NA	NA	NA	NA	NA	
10*14099	5-18-30	Y	SOUTHERN COUNTRY FARMS INC	GASTAR EXPLORATION USA INC	1/8+	666	489	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*17431	5-18-30	Y	SOUTHERN COUNTRY FARMS INC	TH EXPLORATION LLC	1/8+	938	448	NA	NA	NA	NA	NA	NA	
10*18898	5-18-30	Y	COLBY ANN FLOUHOUSE HOMER	TH EXPLORATION LLC	1/8+	940	427	NA	NA	NA	NA	NA	NA	
10*14099	5-18-13.10	Z	SOUTHERN COUNTRY FARMS INC	GASTAR EXPLORATION USA INC	1/8+	666	489	NA	NA	NA	23/353 Gastar Exploration USA Inc to Atinum Marcellus I LLC	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	36/9 Gastar Exploration Inc to TH Exploration II LLC	48/67 Atinum Marcellus I LLC to TH Exploration II LLC
10*17431	5-18-13.10	Z	SOUTHERN COUNTRY FARMS INC	TH EXPLORATION LLC	1/8+	938	448	NA	NA	NA	NA	NA	NA	
10*18898	5-18-13.10	Z	COLBY ANN FLOUHOUSE HOMER	TH EXPLORATION LLC	1/8+	940	427	NA	NA	NA	NA	NA	NA	
10*17431	5-18-29	AA	SOUTHERN COUNTRY FARMS INC	TH EXPLORATION LLC	1/8+	938	448	NA	NA	NA	NA	NA	NA	
10*17456	5-18-13.8	BB	LORI D CARPENTER	TH EXPLORATION LLC	1/8+	941	223	NA	NA	NA	NA	NA	NA	
10*17456	5-18-32.1	EE	LORI D CARPENTER	TH EXPLORATION LLC	1/8+	941	223	NA	NA	NA	NA	NA	NA	
10*17780	5-18-32	FF	KENNETH E RASTALL	TH EXPLORATION LLC	1/8+	932	434	NA	NA	NA	NA	NA	NA	
10*17829	5-18-32	FF	PAMELA S VANHESE AND JAMES W VANHESE	TH EXPLORATION LLC	1/8+	943	532	NA	NA	NA	NA	NA	NA	
10*14126	5-17-11	II	SHARON MIDCAP	GASTAR EXPLORATION USA INC	1/8+	697	152	NA	NA	NA	21/41 Gastar Exploration USA Inc and Gastar Exploration Inc merger	23/353 Gastar Exploration USA 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

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TH EXPLORATION LLC  
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FORT WORTH TX 76107

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**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;

MICHAEL MORAN  
BRIGHTON RESOURCES  
5851 ELLSWORTH AVENUE, #1  
PITTSBURGH PA 15232-1707

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STATE OF WEST VIRGINIA §  
§  
COUNTY OF MARSHALL §

Marshall County  
Jan Pest, Clerk  
Instrument 1428356  
08/16/2017 @ 12:08:49 PM  
ASSIGNMENTS  
Book 40 @ Page 127  
Pages Recorded 25  
Recording Cost \$ 33.00

**ASSIGNMENT AND CONVEYANCE**

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 1 day of August, 2017 (the "Effective Date"), by and between CHEVRON U.S.A. INC. (hereinafter "Assignor") and TH EXPLORATION, LLC (hereinafter "Assignee") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated the 1st day of August, 2017 (the "Acreage Trade Agreement"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

**WITNESSETH:**

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

**WHEREAS**, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to the Leases as described below, subject to certain overriding royalty interests and less and except certain exclusions.

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

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

A. The Chevron ORRI previously conveyed to Assignor and as described in that certain Memorandum of Assignment of Oil and Gas Lease Interests dated November 6, 2012 by and between Cornell Holdings Incorporated and Chevron U.S.A. Inc., which is recorded at Book 0028, Page 0239 in the Office of the County Clerk of Marshall County, West Virginia, and

B. As to each of the Leases and all oil, gas, and associated hydrocarbons produced, saved and sold thereunder, an overriding royalty interest equal to the difference between 82% and the

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02/10/2023



December 21, 2022

WV Department of Environmental Protection  
Office of Oil & Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Attention: Charles T. Brewer

RE: McMasters S-20HU

Subject: Road Crossing Letter

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Dear Taylor:

Tug Hill Operating, LLC will not be drilling, extracting or producing any minerals under any WV County or State Routes in the area reflected on the McMasters S-20HU well plat.

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

Sincerely,

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

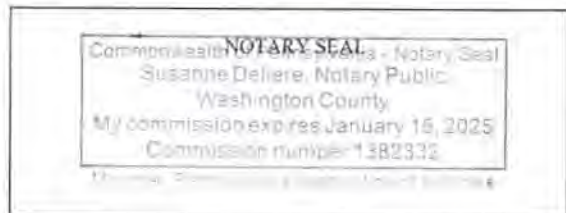
Amy L. Morris  
Permitting Specialist – Appalachia Region



**Certification of Notice is hereby given:**

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

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



Subscribed and sworn before me this 21<sup>st</sup> day of December 2022  
Susanne Deliere Notary Public  
 My Commission Expires 1/15/2025

**Oil and Gas Privacy Notice:**

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

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

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

**Date of Notice:** 12/20/2022 **Date Permit Application Filed:** 12/21/2022

Notice of:

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

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WV Department of  
Environmental Protection

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

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

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

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

SURFACE OWNER(s)

Name: Donald Shields (Pad and Access Road)  
Address: 231 Lonesome Ln.  
Proctor, WV 26055

Name: Robert and Rebecca Shields (Pad and Access Road)  
Address: 2756 Burch Ridge Road  
Proctor, WV 26055

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

Name: Mark A. Yoho  
Address: 6701 Burch Ridge Road  
Proctor, WV 26055

Name: Mark E. Yoho  
Address: 3998 Burch Ridge Road  
Proctor, WV 26055

SURFACE OWNER(s) (Impoundments or Pits)

Name: n/a  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: CONSOL Energy  
Address: 1000 Consol Drive  
Canonsburg, PA 15317

COAL OPERATOR

Name: CONSOL Energy  
Address: 1000 Consol Drive  
Canonsburg, PA 15317

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

Name: Nikki L. & Jonathan Stevens  
Address: 757 Weeping Willow Lane  
Proctor, WV 26055

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: n/a  
Address: \_\_\_\_\_

\*Please attach additional forms if necessary

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**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

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**Well Location Restrictions**

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

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

**Water Well Testing:**

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

**Water Testing Laboratories:**

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

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

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

**Written Comment:**

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

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

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



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

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

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

**Comment Requirements**

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

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

**Permit Denial or Condition**

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

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

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

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



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API NO. 47-051 - 02/10/2023

OPERATOR WELL NO. McMasters S-20HU

Well Pad Name: Shields

WW-6A  
(8-13)

**Notice is hereby given by:**

Well Operator: Tug Hill Operating, LLC

Telephone: 724-749-8388

Email: amorris@tug-hilop.com *amy morris*

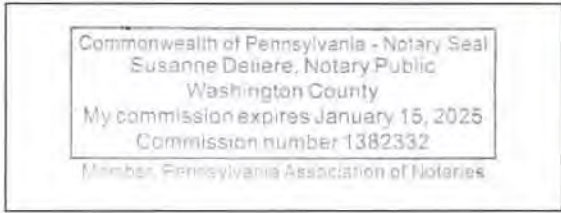
Address: 380 Southpointe Boulevard, Plaza II, Suite 200

Canonsburg, PA 15317

Facsimile:

**Oil and Gas Privacy Notice:**

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



Subscribed and sworn before me this 14<sup>th</sup> day of December, 2022

Susanne Deliere Notary Public

My Commission Expires 1/15/2025

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WW-6A

Supplement Pg. 1A

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

**WATER WELL REPORT**

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WV Department of  
Environmental Protection

Well: MCMASTERS S-20HU  
District: Franklin  
County: Marshall  
State: WV

There appears to be One ( 1 ) possible water source within 2,000 feet of the above referenced well location.

Topo Spot # 1 (House/Cabin) TM 5-18-3.1 Nikki L. & Jonathan Stevens 757 Weeping Willow Ln. Proctor, WV 26055 304-771-0630 © 740-255-3620 © 336-239-2605 ©		

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**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF INTENT TO DRILL**

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

**Notice Time Requirement:** Notice shall be provided at least **TEN (10)** days prior to filing a permit application.

**Date of Notice:** 11/14/2022 **Date Permit Application Filed:** 11/28/2022

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

- HAND DELIVERY
- CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

RECEIVED  
Office of Oil and Gas  
DEC 27 2022  
WV Department of Environmental Protection

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

Name: Donald Shields  
Address: 231 Lonesome Ln.  
Proctor, WV 26055

Name: Robert and Rebecca Shields  
Address: 2756 Burch Ridge Road  
Proctor, WV 26055

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>518,211.90</u>
County:	<u>Marshall</u>		Northing:	<u>4,401,175.17</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Burch Ridge Road (County Route 29)</u>	
Quadrangle:	<u>Powhatan Point 7.5'</u>	Generally used farm name:	<u>Robert L. Shields, Et Al</u>	
Watershed:	<u>Lower Fish Creek</u>			

**This Notice Shall Include:**

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: Tug Hill Operating, LLC  
Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317  
Telephone: 724-749-8388  
Email: amorris@tug-hill.com  
Facsimile: \_\_\_\_\_

Authorized Representative: Darren Brown  
Address: 509B Washington Street W, Suite 407  
Charleston, WV 25313-1561  
Telephone: 877-467-3525  
Email: ci-statecommunications@wolterskluwer.com  
Facsimile: \_\_\_\_\_

**Oil and Gas Privacy Notice:**

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

4705102439  
02/10/2023

WW-6A4 Additional Parties to Notice

Mark A. Yoho  
6701 Burch Ridge Road  
Proctor, WV 26055

Mark E. Yoho  
3998 Burch Ridge Road  
Proctor, WV 26055

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

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

**Date of Notice:** 12/20/2022      **Date Permit Application Filed:** 12/21/2022

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

- CERTIFIED MAIL       HAND
- RETURN RECEIPT REQUESTED      DELIVERY

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

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

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

Name: Donald Shields  
Address: 231 Lonesome Ln.  
Proctor, WV 26055

Name: Robert and Rebecca Shields  
Address: 2756 Burch Ridge Road  
Proctor, WV 26055

RECEIVED  
Office of Oil and Gas

DEC 27 2022

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83 Easting:	<u>518,211.90</u>
County:	<u>Marshall</u>	UTM NAD 83 Northing:	<u>4,401,175.17</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Burch Ridge Road (CR 29)</u>
Quadrangle:	<u>Powhatan Point 7.5'</u>	Generally used farm name:	<u>Robert L. Shields, et al</u>
Watershed:	<u>Fish Creek (HUC 10)</u>		

**This Notice Shall Include:**

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

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

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

**Oil and Gas Privacy Notice:**

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

02/10/2023

4705102439

**ADDITIONAL PARTIES TO NOTICE**

**McMasters Pad  
WW-6A5**

Additional Surface Owner:

Mark A. Yoho  
6701 Burch Ridge Road  
Proctor, WV 26055

Mark E. Yoho  
3998 Burch Ridge Road  
Proctor, WV 26055

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DEC 27 2022  
WV Department of  
Environmental Protection

4705 02/10/2023 2439



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

D. Alan Reed, P.E.  
State Highway Engineer

Jimmy Wriston, P. E.  
Secretary of Transportation  
Commissioner of Highways

December 7, 2022

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

RECEIVED  
Office of Oil and Gas

DEC 27 2022

WV Department of  
Environmental Protection

Subject: DOH Permit for the Shields Pad, Marshall County  
McMasters S-20HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2011-0693 which has been issued to Tug Hill Operating for access to the State Road for a well site located off Marshall County Route 29 SLS MP 3.91.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

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

Cc: Amy Morris  
Tug Hill Operating  
CH, OM, D-6  
File





# TUG HILL

## PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

### Shields Well Pad

PRODUCT NAME:	CHEMICAL DESCRIPTION:	PRODUCT USE:	HAZARDOUS COMPONENT:
GBW-20C	Hemicellulase Breaker	Breaker - Water	None
ALPHA 1427		Biocide <div style="text-align: center;">           RECEIVED            Office of Oil and Gas            DEC 27 2022            WV Department of            Environmental Protection         </div>	Glutaraldehyde – CAS#000111-30-8 Quaternary ammonium chloride CAS# 007173-51-5 Alky dimethyl benzyl ammonium Chloride (C12-16) – CAS#068424-85-1 Ethanol – CAS# 000064-17-5 Water – CAS# 007732-18-5
FRAC SAND	Silica Sand (various Mesh sizes)	Proppant	Crystalline silica (quartz) CAS# 14808-60-7
S-8C, Sand	Silica Sand (100 mesh)	Sand	Silica – CAS# 14808-60-7
GW-3LDF		Gellant - Water	Petroleum Distillate Blend – Proprietary, (Not Associated with Diesel Fuel) Guar gum – CAS# 009000-30-0
FRW-18		Friction Reducer	Hydrotreated light distillate CAS# 064742-47-8
Scaletrol		Scale Inhibitor	Ethylene glycol – CAS# 000107-21-1 Diethylene glycol – CAS# 000111-46-6

OPERATOR: Tug Hill Operating, LLC WELL NO: McMasters S-20HU

PAD NAME: Shields

REVIEWED BY: Amy L. Morris SIGNATURE: *Amy L. Morris*

**WELL RESTRICTIONS CHECKLIST**

**HORIZONTAL 6A WELL**

RECEIVED  
Office of Oil and Gas  
DEC 27 2022  
WV Department of  
Environmental Protection

**Well Restrictions**

- At Least 100 Feet from Pad and LOD (including any E&S Control Feature) to any Perennial Stream, Lake, Pond, Reservoir or Wetland; OR
  - DEP Waiver and Permit Conditions
- At Least 300 Feet from Pad and LOD (including any E&S Control Feature) to any Naturally Producing Trout Stream; OR
  - DEP Waiver and Permit Conditions
- At Least 1000 Feet from Pad and LOD (including any E&S Control Feature) to any Groundwater Intake or Public Water Supply; OR
  - DEP Waiver and Permit Conditions
- At Least 250 Feet from an Existing Water Well or Developed Spring to Well Being Drilled; OR
  - Surface Owner Waiver and Recorded with County Clerk, OR
  - DEP Variance and Permit Conditions
- At Least 625 Feet from an Occupied Dwelling Structure to Center of the Pad; OR
  - Surface Owner Waiver and Recorded with County Clerk, OR
  - DEP Variance and Permit Conditions
- At Least 625 Feet from Agricultural Buildings Larger than 2500 Square Feet to the Center of the Pad; OR
  - Surface Owner Waiver and Recorded with County Clerk, OR
  - DEP Variance and Permit Conditions



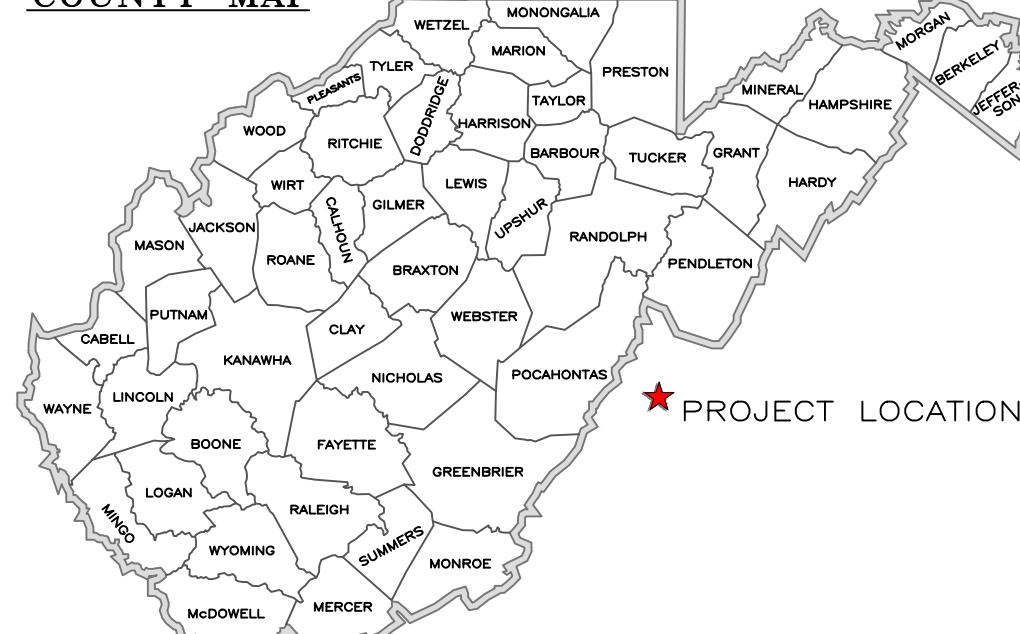
# Shields Well Site

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

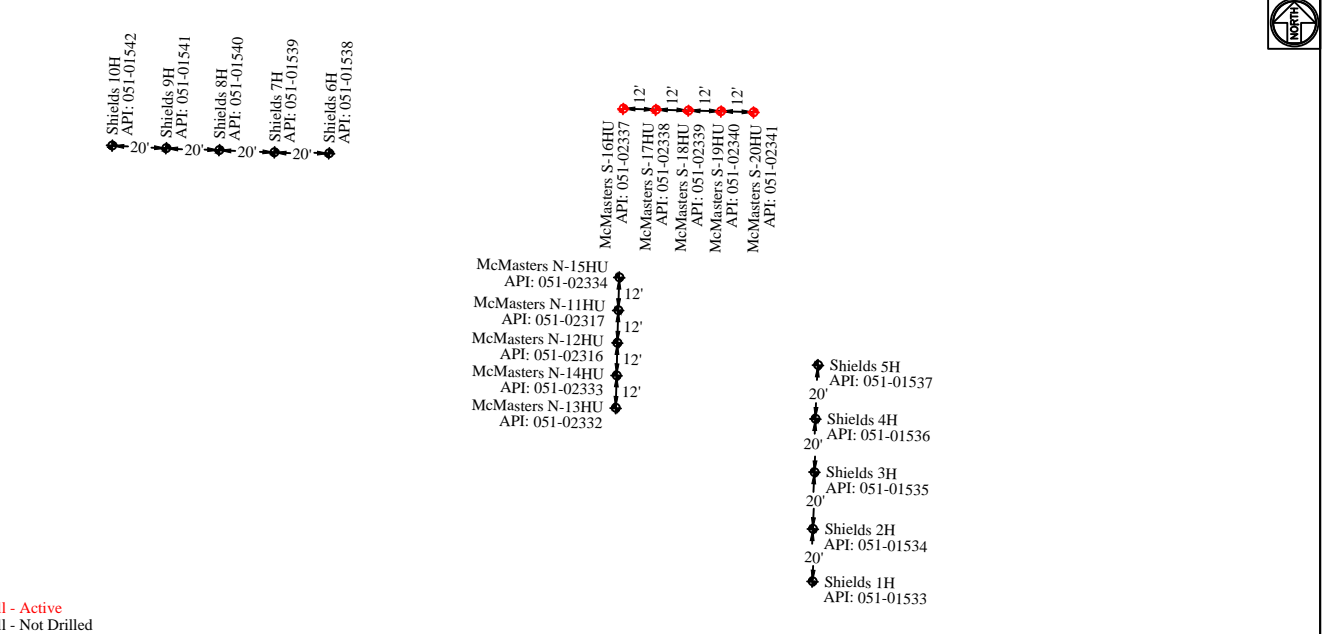
### Tug Hill Operating Marshall County Franklin District Latitude 39.76017192° Longitude -80.78759031° Lower Fish Creek Watershed

**Pertinent Site Information**  
**Shields Well Site**  
 Emergency Number: 304-845-1920  
 Franklin District, Marshall County, WV  
 Watershed: Lower Fish Creek Watershed  
 Tug Hill Contact Number: 1-817-632-3400

#### WEST VIRGINIA COUNTY MAP



Site Entrance	Center of Well Pad
WV-N NAD 83 N: 461301.16 WV-N NAD 83 E: 1603936.06 WV-N NAD 27 N: 461265.09 WV-N NAD 27 E: 1635373.75 Lat. NAD 83: 39.75928382 Lon. NAD 83: -80.79683310 Lat. NAD 27: 39.75920697 Lon. NAD 27: -80.79701944 UTM 17 NAD 83 N: 4401060.37 UTM 17 NAD 83 E: 517403.01	WV-N NAD 83 N: 461587.24 WV-N NAD 83 E: 1606538.84 WV-N NAD 27 N: 461551.11 WV-N NAD 27 E: 1637976.47 Lat. NAD 83: 39.76017192 Lon. NAD 83: -80.78759031 Lat. NAD 27: 39.76009494 Lon. NAD 27: -80.78777110 UTM 17 NAD 83 N: 4401160.77 UTM 17 NAD 83 E: 518194.51 Pad Elev.: 1207.50'



Shields 1H	Shields 2H	Shields 3H	Shields 4H	Shields 5H
WV-N NAD 83 N: 461460.56 WV-N NAD 83 E: 1606618.31 WV-N NAD 27 N: 461424.43 WV-N NAD 27 E: 1638055.95 Lat. NAD 83: 39.7598273 Lon. NAD 83: -80.7873012 Lat. NAD 27: 39.7597503 Lon. NAD 27: -80.7874880 UTM 17 NAD 83 (m) N: 4401122.58 UTM 17 NAD 83 (m) E: 518219.36	WV-N NAD 83 N: 461480.50 WV-N NAD 83 E: 1606618.56 WV-N NAD 27 N: 461444.37 WV-N NAD 27 E: 1638056.20 Lat. NAD 83: 39.7598273 Lon. NAD 83: -80.7873012 Lat. NAD 27: 39.7598051 Lon. NAD 27: -80.7874881 UTM 17 NAD 83 (m) N: 4401128.66 UTM 17 NAD 83 (m) E: 518219.34	WV-N NAD 83 N: 461501.10 WV-N NAD 83 E: 1606619.10 WV-N NAD 27 N: 461444.37 WV-N NAD 27 E: 1638056.74 Lat. NAD 83: 39.7599386 Lon. NAD 83: -80.7873004 Lat. NAD 27: 39.7598616 Lon. NAD 27: -80.7874872 UTM 17 NAD 83 (m) N: 4401134.93 UTM 17 NAD 83 (m) E: 518219.40	WV-N NAD 83 N: 461520.89 WV-N NAD 83 E: 1606619.61 WV-N NAD 27 N: 461484.76 WV-N NAD 27 E: 1638057.64 Lat. NAD 83: 39.7599390 Lon. NAD 83: -80.7872996 Lat. NAD 27: 39.7599160 Lon. NAD 27: -80.7874864 UTM 17 NAD 83 (m) N: 4401140.97 UTM 17 NAD 83 (m) E: 518219.45	WV-N NAD 83 N: 461540.18 WV-N NAD 83 E: 1606620.00 WV-N NAD 27 N: 461504.05 WV-N NAD 27 E: 1638057.64 Lat. NAD 83: 39.7600459 Lon. NAD 83: -80.7872992 Lat. NAD 27: 39.7599689 Lon. NAD 27: -80.7874860 UTM 17 NAD 83 (m) N: 4401146.85 UTM 17 NAD 83 (m) E: 518219.48

**Project Contacts**

**Tug Hill Operating**  
 Jonathan White - Regulatory Analyst  
 724-485-2000 Off. 304-689-7676 Cell

**Survey and Engineer**  
 Kenneth Kelly  
 304-338-6985 Off.

Geoff Radler - V.P. Production  
 817-632-5200 Off.

John P. See  
 304-442-0220 Off.

**Tug Hill Operating, LLC**  
 380 Southpointe Blvd  
 Southpointe Plaza H, Suite 200  
 Canonsburg, PA 15317

Zachary Summerfield  
 304-338-6987 Off.

**Environmental:**  
 Wetland Delineations as provided by Allstar Ecology dated December 6, 2019

**Topographic Information:**  
 The topographic information shown herein is based on aerial photography by Blue Mountain Aerial Mapping, Burton, WV

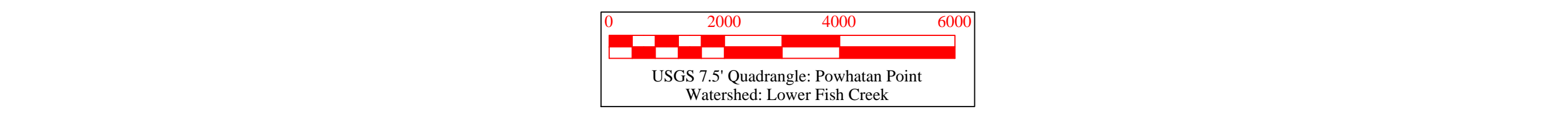
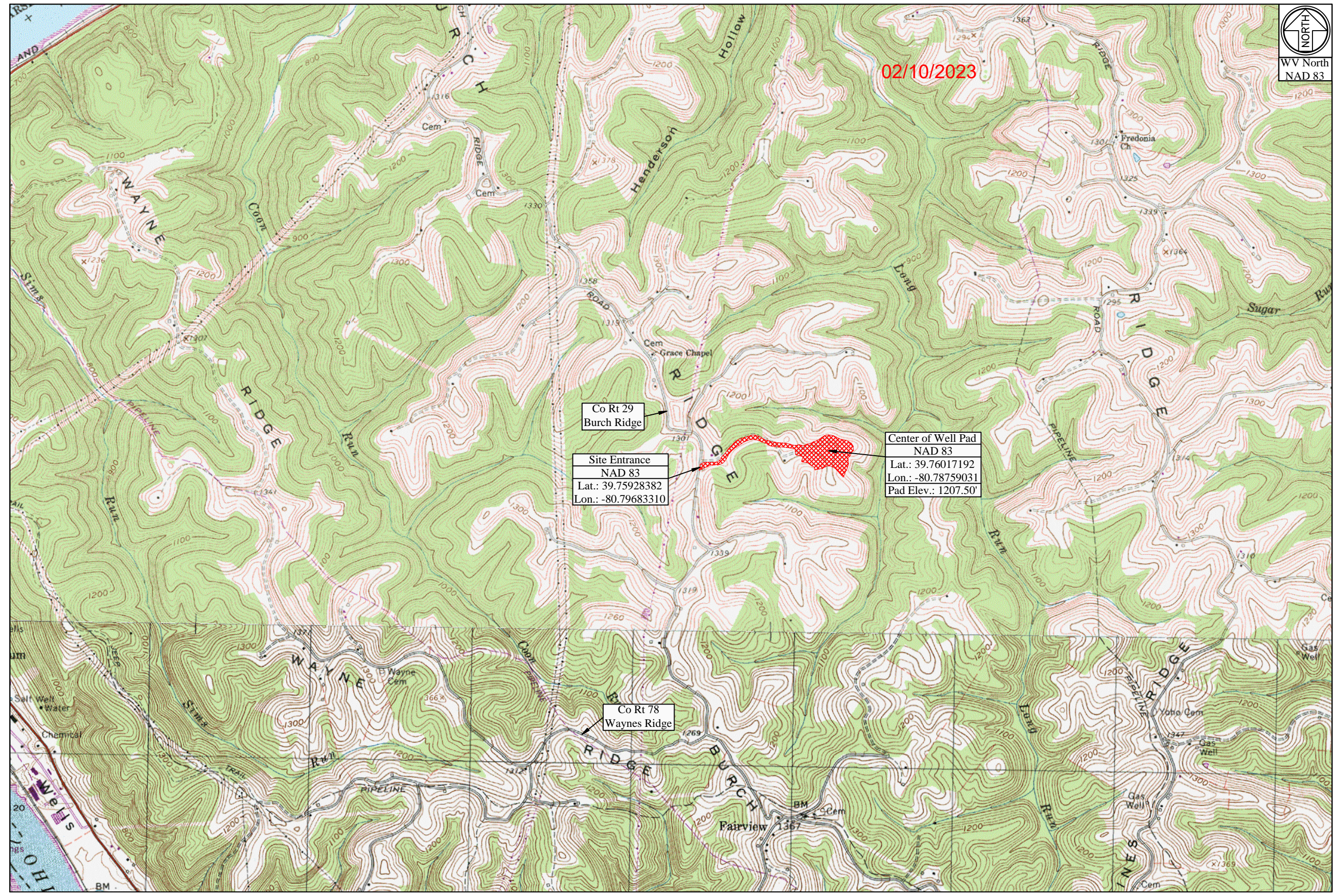
MISS UTILITY OF WEST VIRGINIA  
 1-800-245-4848  
 West Virginia State Law  
 Section XIV, Chapter 24-C requires  
 that you call two business days  
 before  
 you dig in the state of West Virginia.  
**IT'S THE LAW**  
 Know what's below.  
 Call before you dig.

Tug Hill Operating will obtain an Encroachment Permit (Form MM-109) from the WV Department of Transportation, Division of Highways, prior to the commencement of any construction activities

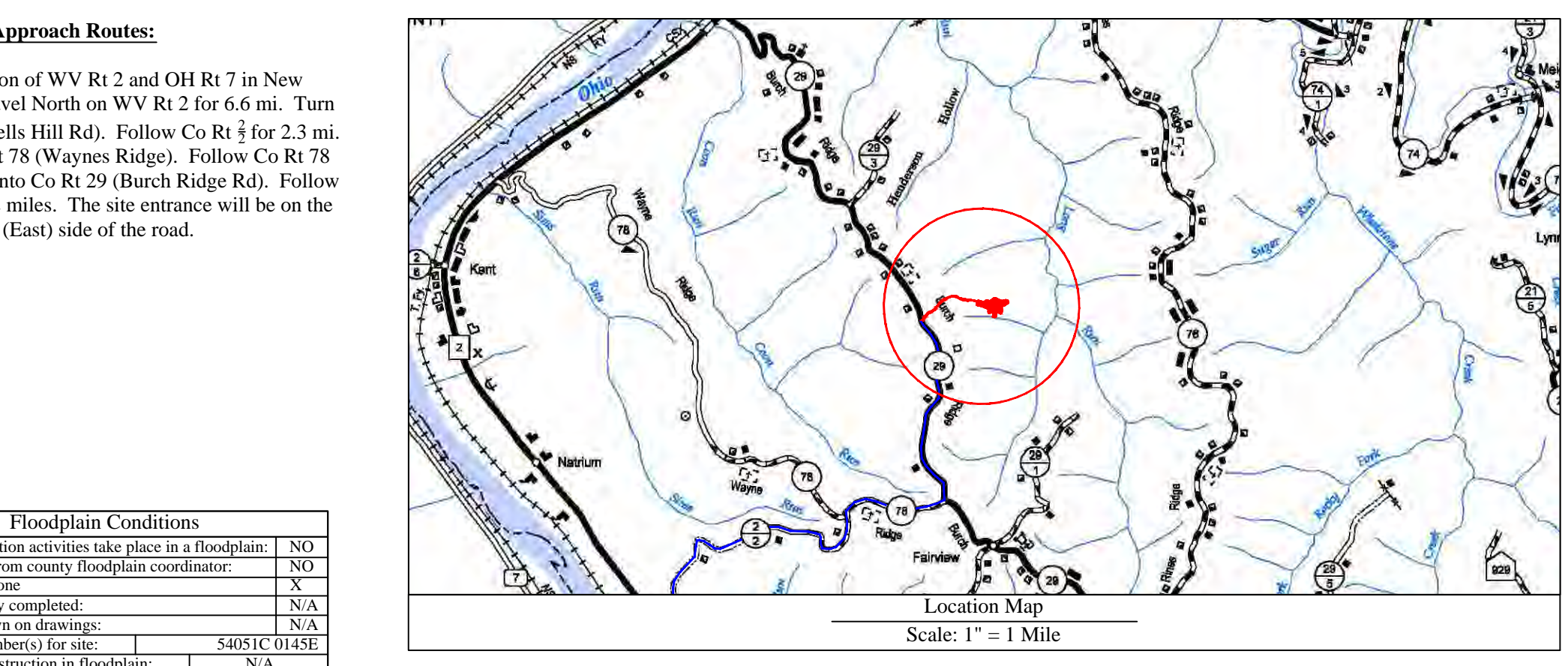
The WV Mines Website was consulted. Previous (Current) mining activities are not within the AOI.

WVDEP Website files show that there are active and/or abandoned gas wells within the AOI

## Exhibit A: As-Built



Site Locations (NAD 27)			Site Locations (NAD 83)		
Structure	Latitude (DD)	Longitude (DD)	Structure	Latitude (DD)	Longitude (DD)
Site Entrance	39.75928382	-80.79701944	Site Entrance	39.75928382	-80.79683310
Center of Well Pad	39.76009494	-80.78777110	Center of Well Pad	39.76017192	-80.78759031



WV State Plane Coordinate System  
 North Zone, NAD 83  
 Elevations Based on NAV88  
 Established by Survey Grade GPS  
 and OPUS Post-Processing

Property Owner Information - Shields Well Site						
Franklin District - Marshall County						
Owner	TM - Parcel	Well Pad	Borrow	Access Road	Topsoil/Excess	Add. Clearing
M. Yoho	19-24	0.00	0.00	0.00	0.00	0.02
M. Yoho	19-17	0.00	0.00	0.19	0.00	0.50
R. Shields	19-16	0.00	0.00	0.48	0.00	1.65
R. Shields	18-2	5.84	0.70	1.44	0.23	6.71
<b>Site Totals (Ac)</b>	<b>5.84</b>	<b>0.70</b>	<b>2.11</b>	<b>0.23</b>	<b>8.88</b>	<b>17.76</b>

Access Road			
Surface Owner	TM - Parcel	Road Length	Type
M. Yoho	19-17	417.45'	Existing Access Road
R. Shields	19-16	1,099.06'	Existing Access Road
R. Shields	18-2	3,062.70'	Access Road Construction

Disturbed Area	
Well Pad Area	5.84 Ac
Access Road Area	2.11 Ac
Borrow Area	0.70 Ac
Topsoil / Excess Material	0.23 Ac
Additional Clearing	8.88 Ac
<b>Total Disturbed Area</b>	<b>17.76 Ac</b>

Shields Well Site Quantities						
Description	Cut (CY)	Fill (CY)	Spoil (CY)	Borrow (CY)	Max. Slope	Length of Slope
Well Pad Grading	199.66	5,958.99	-	5,759.33	N/A	N/A
Well Pad Berm	33.20	1,679.37	-	1,646.17	N/A	N/A
Well Pad Access Road	0.70	230.06	-	230.06	17.09%	70.20'
Landowner Access Road #1	965.74	967.51	-	1.77	17.89%	61.50'
Landowner Access Road #2	242.93	158.40	84.53	-	15.22%	65.71'
Borrow Area	7,500.74	7,500.74	-	-	N/A	N/A
Topsoil/Excess Material Stockpile	8,942.97	1,500.00	1,500.00	1,500.00	N/A	N/A
<b>Totals</b>	<b>8,942.97</b>	<b>10,494.47</b>	<b>7,585.13</b>	<b>8,907.27</b>		
<b>Total Spoil (CY) =</b>	<b>-1,551.50</b>	<b>(Excess Spoil Capacity)</b>				

**Stream Note**  
 The Limits of Disturbance (LOD) shown is the originally permitted boundary. There will be no disturbance to streams within the LOD. Disturbance within the LOD shall be limited to the clearing limits.

Shields 6H		Shields 7H		Shields 8H		Shields 9H		Shields 10H	
WV-N NAD 83 N: 461618.58 WV-N NAD 83 E: 1606640.39 WV-N NAD 27 N: 461582.46 WV-N NAD 27 E: 1637878.03 Lat. NAD 83: 39.7602541 Lon. NAD 83: -80.7879421 Lat. NAD 27: 39.7601771 Lon. NAD 27: -80.7881288 UTM 17 NAD 83 (m) N: 4401169.82 UTM 17 NAD 83 (m) E: 518164.36	WV-N NAD 83 N: 461619.03 WV-N NAD 83 E: 1606620.01 WV-N NAD 27 N: 461582.91 WV-N NAD 27 E: 1637878.62 Lat. NAD 83: 39.7602545 Lon. NAD 83: -80.7880146 Lat. NAD 27: 39.7601775 Lon. NAD 27: -80.7882013 UTM 17 NAD 83 (m) N: 4401169.85 UTM 17 NAD 83 (m) E: 518158.14	WV-N NAD 83 N: 461619.75 WV-N NAD 83 E: 1606638.60 WV-N NAD 27 N: 461583.62 WV-N NAD 27 E: 1637878.62 Lat. NAD 83: 39.7602557 Lon. NAD 83: -80.7880858 Lat. NAD 27: 39.7601787 Lon. NAD 27: -80.7882726 UTM 17 NAD 83 (m) N: 4401169.97 UTM 17 NAD 83 (m) E: 518146.13	WV-N NAD 83 N: 461620.61 WV-N NAD 83 E: 1606380.60 WV-N NAD 27 N: 461584.48 WV-N NAD 27 E: 1637798.25 Lat. NAD 83: 39.7602585 Lon. NAD 83: -80.7882260 Lat. NAD 27: 39.7601803 Lon. NAD 27: -80.7884127 UTM 17 NAD 83 (m) N: 4401170.13 UTM 17 NAD 83 (m) E: 518140.03	WV-N NAD 83 N: 461621.45 WV-N NAD 83 E: 1606360.61 WV-N NAD 27 N: 461585.33 WV-N NAD 27 E: 1637798.25 Lat. NAD 83: 39.7602588 Lon. NAD 83: -80.7882260 Lat. NAD 27: 39.7601818 Lon. NAD 27: -80.7884127 UTM 17 NAD 83 (m) N: 4401170.28 UTM 17 NAD 83 (m) E: 518140.03					

**WVDEP OOG**  
**ACCEPTED AS-BUILT**  
 2/6/2023

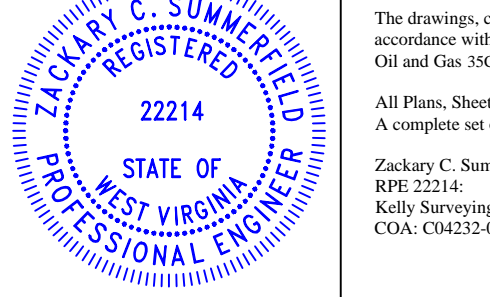
**Well Location Restrictions**

All Pad construction complies with the following restrictions.

- \*250' from an existing well or developed spring used for human or domestic animals.
- \*625' from an occupied dwelling or barn greater than 2,500 SF used for poultry or dairy measured from the center of the pad.
- \*100' from the edge of disturbance to wetlands, perennial streams, natural or artificial lake, pond or reservoir.
- \*300' from the edge of disturbance to a naturally reproducing trout stream.
- \*1,000' of a surface or ground water intake to a public water supply.

(Well Location Restrictions of WV Code 22-6A-12)

Sheet	Description
1	Cover Sheet
V1	Schedule of Quantities
N1-N4	Site Notes
2	Pre-Construction Site Conditions
3	Site Soil Map
4	Overall Plan View
5-7	Plan View
8-9	Cross Sections - Well Pad
10	Cross Sections - Well Pad Access Road
G1-G2	Geotechnical Exhibit
L1	Landowner Disturbed Area Exhibit
S1	Site Reclamation
M1-M3	Production Exhibit
D1-D2	Erosion and Sediment Control Details
R1	Access Road Details
P1	Pad Details



As-Built Certification  
 The drawings, construction notes and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas Section 2008.  
 All Plans, Sheets, and/or Reference Diagrams included in this design constitute a complete set of plans. A complete set of plans is necessary to construct the site in accordance with the design.  
 Zachary C. Summerfield  
 RPE 22214  
 Kelly Surveying PLLC  
 COA: C0423-09  
 Date: 11-17-2022

Revision  
 As-Built

Date  
 11-17-2022



THIS DOCUMENT  
 PREPARED FOR  
 TUG HILL  
 OPERATING



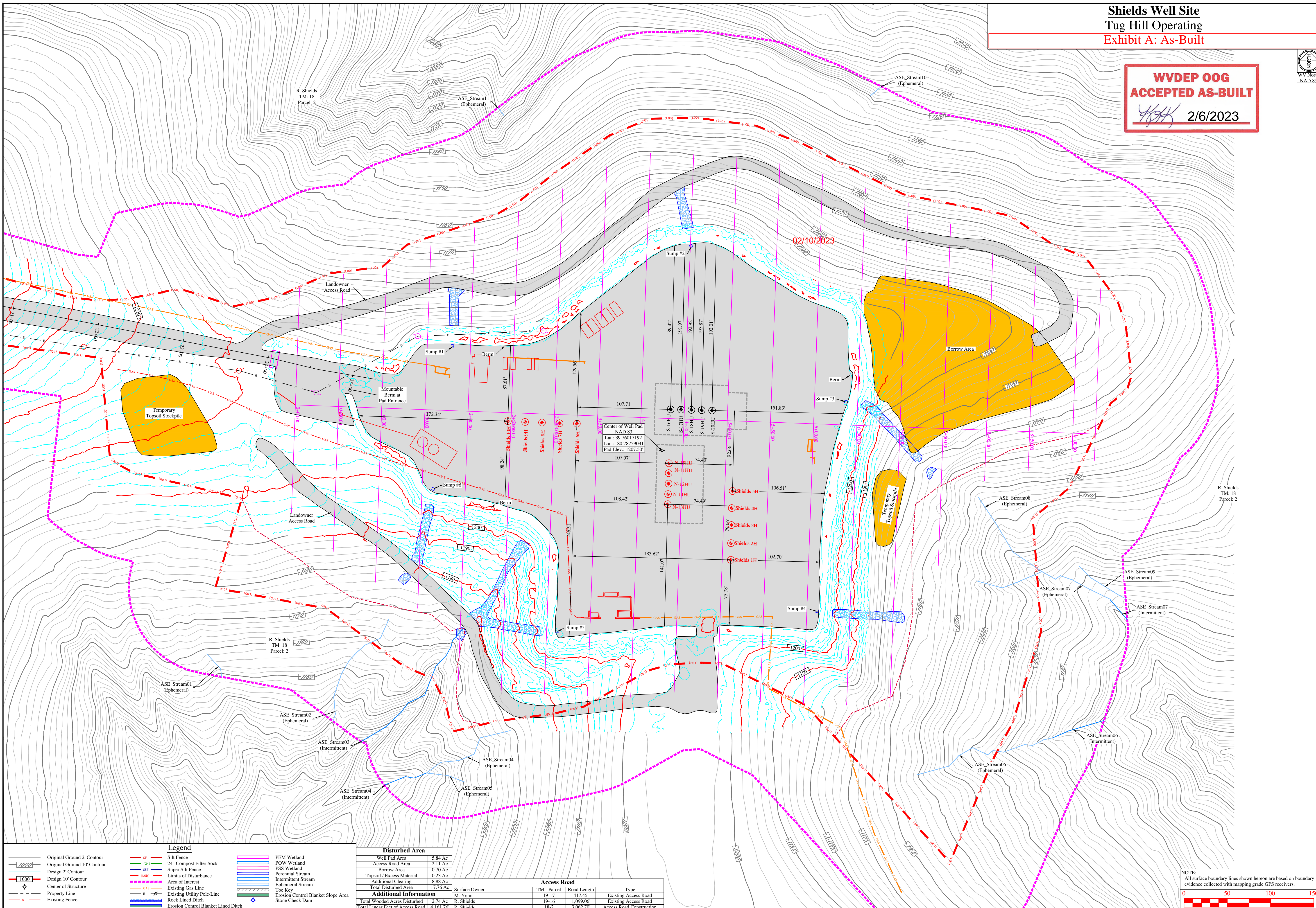
Cover Sheet  
**Shields Well Site**  
 Franklin District  
 Marshall County, WV

Date: 11/17/2022  
 Scale: As Shown  
 Designed By: ZS  
 File No.  
 Sheet 1 of 10





**WVDEP OOG  
ACCEPTED AS-BUILT**  
*[Signature]* 2/6/2023



**Legend**

	Original Ground 2' Contour		Silt Fence		PEM Wetland
	Original Ground 10' Contour		24' Composite Filter Sock		POW Wetland
	Design 2' Contour		Super Silt Fence		PSS Wetland
	Design 10' Contour		Limits of Disturbance		Perennial Stream
	Center of Structure		Area of Interest		Intermittent Stream
	Property Line		Existing Gas Line		Ephemeral Stream
	Existing Fence		Existing Utility Pole Line		Toe Key
			Rock Lined Ditch		Erosion Control Blanket Slope Area
			Erosion Control Blanket Lined Ditch		Stone Check Dam

**Disturbed Area**

Well Pad Area	5.84 Ac
Access Road Area	2.11 Ac
Borrow Area	0.70 Ac
Topsoil / Excess Material	0.23 Ac
Additional Clearing	8.88 Ac
<b>Total Disturbed Area</b>	<b>17.76 Ac</b>

**Access Road**

Surface Owner	TM - Parcel	Road Length	Type
M. Yoho	19-17	417.45'	Existing Access Road
R. Shields	19-16	1,099.16'	Existing Access Road
R. Shields	18-2	3,062.70'	Access Road Construction

**Additional Information**

Total Wooded Acres Disturbed	2.74 Ac
Total Linear Feet of Access Road	4,161.76'

NOTE:  
All surface boundary lines shown hereon are based on boundary evidence collected with mapping grade GPS receivers.

Revision: As-Built  
Date: 11-17-2022

**TUG HILL OPERATING**

THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

**Kelly Surveying**  
1000 254  
Dalton, WV 26039  
304-338-6985

Site Plan  
**Shields Well Site**  
Franklin District  
Marshall County, WV

Date: 11/17/2022  
Scale: As Shown  
Designed By: ZS  
File No.  
Sheet 7 of 10