



west virginia department of environmental protection

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

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

Friday, August 10, 2018
WELL WORK PERMIT
Horizontal 6A / New Drill

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

Re: Permit approval for HILLROCK 7HM
47-051-02062-00-00

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

A handwritten signature in blue ink, appearing to read 'James A. Martin', is positioned to the right of the printed name and title.

Operator's Well Number: HILLROCK 7HM
Farm Name: TERRY E. & DEBORAH SIMM
U.S. WELL NUMBER: 47-051-02062-00-00
Horizontal 6A New Drill
Date Issued: 8/10/2018

PERMIT CONDITIONS

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

CONDITIONS

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

PERMIT CONDITIONS

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

4705 + 02062

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

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

2) Operator's Well Number: Hillrock 7HM Well Pad Name: Simms

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

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

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

(b) If Gas Shallow Deep _____
Horizontal

6) Existing Pad: Yes or No Yes

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6/20/18

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus is the target formation at a depth of 6500 - 6551' thickness of 51' and anticipated pressure of approx. 3800 psi

8) Proposed Total Vertical Depth: 6,651'

9) Formation at Total Vertical Depth: Onondaga

10) Proposed Total Measured Depth: 19,195'

11) Proposed Horizontal Leg Length: 11,672'

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

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

14) Approximate Saltwater Depths: 2,167' ✓

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

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

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

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

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18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120' ✓	259ft^3(CTS)
Fresh Water	13 3/8"	NEW	H40	48#	920'	920'	989ft^3(CTS)
Coal	13 3/8"	NEW	H40	48#	920'	920' ✓	989ft^3(CTS)
Intermediate	9 5/8"	NEW	J55	36#	2,800'	2,800' ✓	952ft^3(CTS)
Production	5 1/2"	NEW	P110	20#	19,195'	19,195'	4889ft^3(CTS)
Tubing	2 3/8"	NEW	N80	4.7#		7,144'	
Liners							

de 6/20/18

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

PACKERS

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

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6/20/18

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

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

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

Well to be completed with approximately 29,180,000 lb proppant and 451,144 bbl of water. Max rate = 80 bpm; max psi = 9,000#. ✓

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

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

23) Describe centralizer placement for each casing string:

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

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

*See Attachment

25) Proposed borehole conditioning procedures:

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

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*Note: Attach additional sheets as needed.

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 DPS GIS (05/24/2018) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

Request maps for:

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

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

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

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Permit well - Hillrock 7HM

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101452	Tug Hill Operating	6584' TVD 11386' MD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101468	Tug Hill Operating	6599' TVD 12585' MD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101469	Tug Hill Operating	6631' TVD 12825' MD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101505	Tug Hill Operating	6608' TVD 13102' MD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101506	Tug Hill Operating	6611' TVD 12348' MD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101524	Tug Hill Operating	6612' TVD 12508' MD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101533	Tug Hill Operating	6509' TVD 9961' MD	Marcellus	Unknown	Yes, existing Marcellus producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Marcellus horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705101731	Tug Hill Operating	11492' TVD 15804' MD	Point Pleasant	Unknown	Yes, existing Point Pleasant producer. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Producing Point Pleasant horizontal well. A field survey was conducted to locate this well and it was found producing at the location shown on the well plat.
4705170796	Manufacturers Light & Heat	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	State records are incomplete
4705170219	Manufacturers Light & Heat	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	State records are incomplete
4705130507	Perkins Carl D	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Marcellus well.	Well was plugged 10/6/1975

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4705100575	Ross & Wharton Gas Co., Inc	2774' TVD	Gordon	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation.
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Well: County = 51 Permit = 01452

Well Information - View Log

WELL ID	WELL NAME	WELL TYPE	WELL STATUS	WELL DEPTH	WELL CLASS	WELL TYPE	WELL STATUS	WELL DEPTH	WELL CLASS	WELL TYPE	WELL STATUS
4705100575	Ross & Wharton Gas Co., Inc	2774' TVD	Gordon	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation.						

Well Log Information

DEPTH (FT)	LOG TYPE	LOG DATE	LOG TIME	LOG USER	LOG COMMENTS
100

Well Production Information

WELL ID	WELL NAME	WELL TYPE	WELL STATUS	WELL DEPTH	WELL CLASS	WELL TYPE	WELL STATUS	WELL DEPTH	WELL CLASS	WELL TYPE	WELL STATUS
4705100575	Ross & Wharton Gas Co., Inc	2774' TVD	Gordon	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation.						

Well Log Information

DEPTH (FT)	LOG TYPE	LOG DATE	LOG TIME	LOG USER	LOG COMMENTS
100

Well: County = 51 Permit = 01466

Well Information - View Log

WELL ID	WELL NAME	WELL TYPE	WELL STATUS	WELL DEPTH	WELL CLASS	WELL TYPE	WELL STATUS	WELL DEPTH	WELL CLASS	WELL TYPE	WELL STATUS
4705100575	Ross & Wharton Gas Co., Inc	2774' TVD	Gordon	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation.						

Well Log Information

DEPTH (FT)	LOG TYPE	LOG DATE	LOG TIME	LOG USER	LOG COMMENTS
100

Well Production Information

WELL ID	WELL NAME	WELL TYPE	WELL STATUS	WELL DEPTH	WELL CLASS	WELL TYPE	WELL STATUS	WELL DEPTH	WELL CLASS	WELL TYPE	WELL STATUS
4705100575	Ross & Wharton Gas Co., Inc	2774' TVD	Gordon	Unknown	No, the well is not deep enough to be within the expected fracture propagation from a Marcellus stimulation.						

Well Log Information

DEPTH (FT)	LOG TYPE	LOG DATE	LOG TIME	LOG USER	LOG COMMENTS
100

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WV Design & Economic Survey Well: County - 51 Permit - 01469

Location Information: View Map
 COUNTY PERMITS DISTRICT QUAD 15 LAT 40' LONG 06' UTM 18W
 47051400 Morgan 1500 Basin Fossiliferous Sandstone 30 0000 30 0000 30000 4 10000

Basin Hole Information: View Map
 WELLS: 1500 Basin UTM 18W 40' 06' 00" UTM 18W
 47051400 1500 Basin UTM 18W 40' 06' 00" UTM 18W

Owner Information: View Map
 WELLS: 1500 Basin UTM 18W 40' 06' 00" UTM 18W
 47051400 1500 Basin UTM 18W 40' 06' 00" UTM 18W

Completion Information: View Map
 WELLS: 1500 Basin UTM 18W 40' 06' 00" UTM 18W
 47051400 1500 Basin UTM 18W 40' 06' 00" UTM 18W

Production Case Information: (Columns in Bold) ** some operators may have reported NGL under Oil
 WELLS: 1500 Basin UTM 18W 40' 06' 00" UTM 18W
 47051400 1500 Basin UTM 18W 40' 06' 00" UTM 18W

Production NGL Information: (Columns in Bold) ** some operators may have reported NGL under Oil
 WELLS: 1500 Basin UTM 18W 40' 06' 00" UTM 18W
 47051400 1500 Basin UTM 18W 40' 06' 00" UTM 18W

Production Water Information: (Columns in Bold)
 WELLS: 1500 Basin UTM 18W 40' 06' 00" UTM 18W
 47051400 1500 Basin UTM 18W 40' 06' 00" UTM 18W

Relativity Information: View Map
 WELLS: 1500 Basin UTM 18W 40' 06' 00" UTM 18W
 47051400 1500 Basin UTM 18W 40' 06' 00" UTM 18W

WV Design & Economic Survey Well: County - 51 Permit - 01505

Location Information: View Map
 COUNTY PERMITS DISTRICT QUAD 15 LAT 06' LONG 06' UTM 18W
 47051500 Morgan 1500 Basin Fossiliferous Sandstone 30 0000 30 0000 30000 4 10000

Basin Hole Information: View Map
 WELLS: 1500 Basin UTM 18W 06' 00" UTM 18W
 47051500 1500 Basin UTM 18W 06' 00" UTM 18W

Owner Information: View Map
 WELLS: 1500 Basin UTM 18W 06' 00" UTM 18W
 47051500 1500 Basin UTM 18W 06' 00" UTM 18W

Completion Information: View Map
 WELLS: 1500 Basin UTM 18W 06' 00" UTM 18W
 47051500 1500 Basin UTM 18W 06' 00" UTM 18W

Production Case Information: (Columns in Bold) ** some operators may have reported NGL under Oil
 WELLS: 1500 Basin UTM 18W 06' 00" UTM 18W
 47051500 1500 Basin UTM 18W 06' 00" UTM 18W

Production NGL Information: (Columns in Bold) ** some operators may have reported NGL under Oil
 WELLS: 1500 Basin UTM 18W 06' 00" UTM 18W
 47051500 1500 Basin UTM 18W 06' 00" UTM 18W

Production Water Information: (Columns in Bold)
 WELLS: 1500 Basin UTM 18W 06' 00" UTM 18W
 47051500 1500 Basin UTM 18W 06' 00" UTM 18W

Relativity Information: View Map
 WELLS: 1500 Basin UTM 18W 06' 00" UTM 18W
 47051500 1500 Basin UTM 18W 06' 00" UTM 18W

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Well: County - 51 Permit - 01506

WV Geology & Economic Geology

Location information - View Map

County - Wayne

Section Information

Table with columns: Well ID, Well Name, Well Status, Section Name, Well Section, Well Depth, etc.

Table with columns: Well ID, Well Name, Well Status, Section Name, Well Section, Well Depth, etc.

Table with columns: Well ID, Well Name, Well Status, Section Name, Well Section, Well Depth, etc.

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Table with columns: Well ID, Well Name, Well Status, Section Name, Well Section, Well Depth, etc.

Table with columns: Well ID, Well Name, Well Status, Section Name, Well Section, Well Depth, etc.

Well: County - 51 Permit - 01524

WV Geology & Economic Geology

Location information - View Map

County - Wayne

Section Information

Table with columns: Well ID, Well Name, Well Status, Section Name, Well Section, Well Depth, etc.

Table with columns: Well ID, Well Name, Well Status, Section Name, Well Section, Well Depth, etc.

Table with columns: Well ID, Well Name, Well Status, Section Name, Well Section, Well Depth, etc.

Table with columns: Well ID, Well Name, Well Status, Section Name, Well Section, Well Depth, etc.

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Table with columns: Well ID, Well Name, Well Status, Section Name, Well Section, Well Depth, etc.

Table with columns: Well ID, Well Name, Well Status, Section Name, Well Section, Well Depth, etc.

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WV Geological & Economic Survey Well: County = 51 Permit = 01533

Location information: Well Name, County, Permit, Date Constructed, Status, Well ID, Well Name, Lease Name, Mineral Owner, Operator, Completion Date, Production Start Date, Production End Date

Owner information: Well Name, Well ID, Well Name, Lease Name, Mineral Owner, Operator, Completion Date, Production Start Date, Production End Date

Completion information: Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Completion Date, Production Start Date, Production End Date

Production Gas Information (Volumes in Mcf): Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Production Start Date, Production End Date, Production Volumes (Mcf)

Table with columns: Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Completion Date, Production Start Date, Production End Date, Production Volumes (Mcf)

Production Oil Information (Volumes in Bbl): Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Production Start Date, Production End Date, Production Volumes (Bbl)

Production N2 Information (Volumes in Bbl): Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Production Start Date, Production End Date, Production Volumes (Bbl)

Production Water Information (Volumes in Gallons): Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Production Start Date, Production End Date, Production Volumes (Gallons)

Table with columns: Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Completion Date, Production Start Date, Production End Date, Production Volumes (Gallons)

Well: County = 51 Permit = 01731

Location information: Well Name, County, Permit, Date Constructed, Status, Well ID, Well Name, Lease Name, Mineral Owner, Operator, Completion Date, Production Start Date, Production End Date

Owner information: Well Name, Well ID, Well Name, Lease Name, Mineral Owner, Operator, Completion Date, Production Start Date, Production End Date

Completion information: Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Completion Date, Production Start Date, Production End Date

Production Gas Information (Volumes in Mcf): Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Production Start Date, Production End Date, Production Volumes (Mcf)

Table with columns: Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Completion Date, Production Start Date, Production End Date, Production Volumes (Mcf)

Production Oil Information (Volumes in Bbl): Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Production Start Date, Production End Date, Production Volumes (Bbl)

Production N2 Information (Volumes in Bbl): Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Production Start Date, Production End Date, Production Volumes (Bbl)

Production Water Information (Volumes in Gallons): Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Production Start Date, Production End Date, Production Volumes (Gallons)

Table with columns: Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Completion Date, Production Start Date, Production End Date, Production Volumes (Gallons)

Table with columns: Well ID, Well Name, Well Name, Lease Name, Mineral Owner, Operator, Completion Date, Production Start Date, Production End Date, Production Volumes (Gallons)

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WV Geological & Economic Survey Well: County = 51 Permit = 70796

Location Information: View Map
WV COUNTY PERMIT NO DISTRICT COUNTY COAD IS LAT CO LONG CO UNITS UNITS
51 112297 Mineral 5202 Fwd000 0611/06/06 51 112297 51 112297 51 112297 4200000

There is no Bottom Hole Location data for this well

Owner Information
WV WEL ID STATUS STATUS SURFACE OWNER WELL NAME CO NAME LEASE LEASE_NOM MINERAL_OWN OPERATOR AT COMPLETION PROP_ID PROP_PROD_ID TRAILER_ID
62111712 000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000 000000

Completion Information
WV WEL ID PROD_ID BEVY DATUM FIELD DEEPFT_FH DEEPFT_FHT MINCL_CLASS FINAL_CLASS TYPE NO COMP_MHO TWI TWI_NGC_HO NOO Q_BSP_Q_CAPP_Q_CAPP_WEL_NGC
62111712 000

There is no Pay data for this well
There is no Production Gas data for this well
There is no Production Oil data for this well ** some operators may have reported NGL under Oil
There is no Production NGL data for this well ** some operators may have reported NGL under Oil
There is no Production Water data for this well
There is no Stratigraphy data for this well
There is no Wellbore (S-Log) data for this well
There is no Flugging data for this well
There is no Sample data for this well

WV Geological & Economic Survey Well: County = 51 Permit = 70219

Location Information: View Map
WV COUNTY PERMIT NO DISTRICT COUNTY COAD IS LAT CO LONG CO UNITS UNITS
51 112297 Mineral 5202 Fwd000 0611/06/06 51 112297 51 112297 51 112297 4200000

There is no Bottom Hole Location data for this well

Owner Information
WV WEL ID STATUS STATUS SURFACE OWNER WELL NAME CO NAME LEASE LEASE_NOM MINERAL_OWN OPERATOR AT COMPLETION PROP_ID PROP_PROD_ID TRAILER_ID
62111712 000 000000

Completion Information
WV WEL ID PROD_ID BEVY DATUM FIELD DEEPFT_FH DEEPFT_FHT MINCL_CLASS FINAL_CLASS TYPE NO COMP_MHO TWI TWI_NGC_HO NOO Q_BSP_Q_CAPP_Q_CAPP_WEL_NGC
62111712 000

There is no Pay data for this well
There is no Production Gas data for this well
There is no Production Oil data for this well ** some operators may have reported NGL under Oil
There is no Production NGL data for this well ** some operators may have reported NGL under Oil
There is no Production Water data for this well
There is no Stratigraphy data for this well
There is no Wellbore (S-Log) data for this well
There is no Flugging data for this well
There is no Sample data for this well

WV Geological & Economic Survey Well: County = 51 Permit = 30507

Location Information: View Map
WV COUNTY PERMIT NO DISTRICT COUNTY COAD IS LAT CO LONG CO UNITS UNITS
51 112297 Mineral 5202 Fwd000 0611/06/06 51 112297 51 112297 51 112297 4200000

There is no Bottom Hole Location data for this well

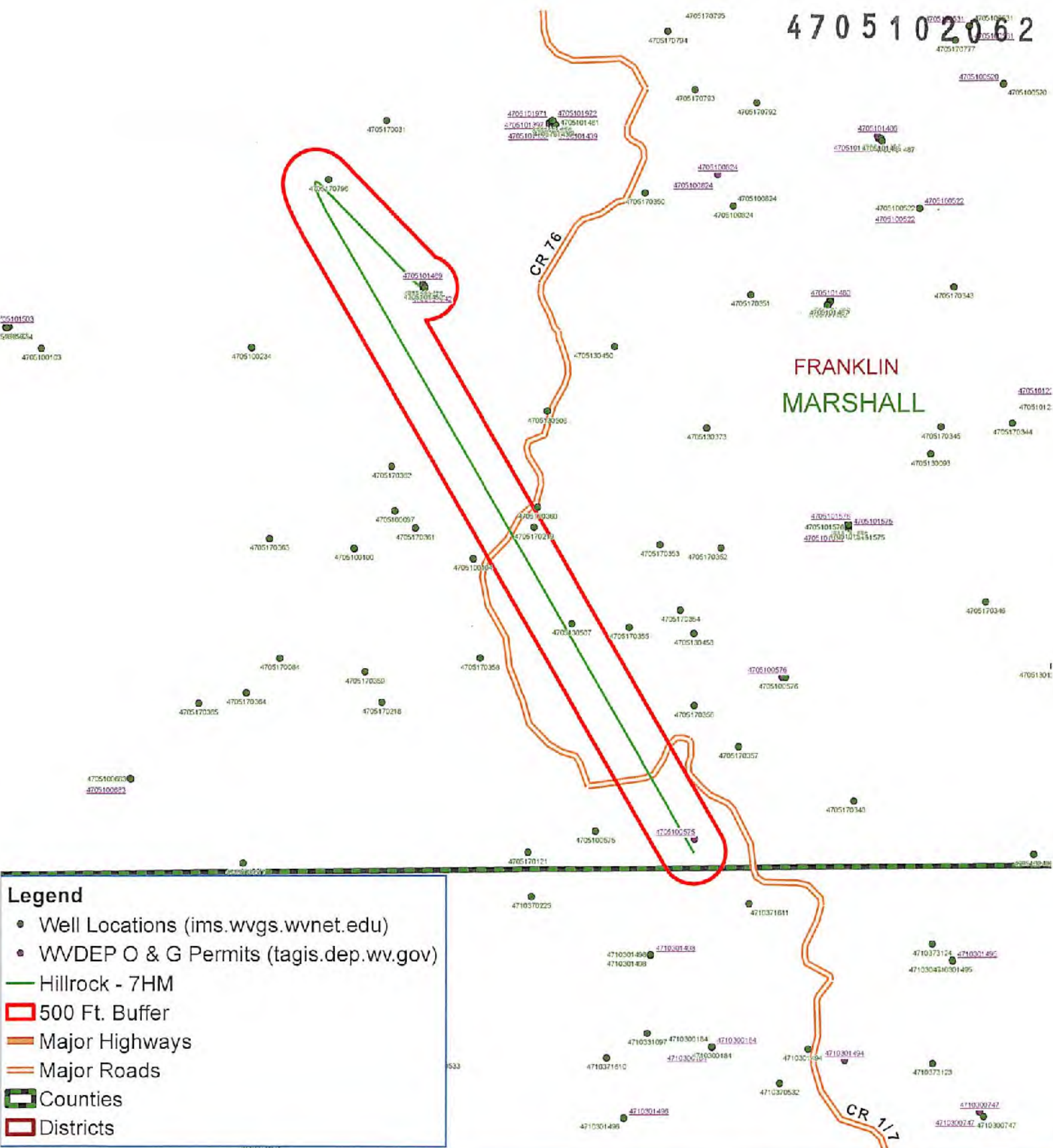
Owner Information
WV WEL ID STATUS STATUS SURFACE OWNER WELL NAME CO NAME LEASE LEASE_NOM MINERAL_OWN OPERATOR AT COMPLETION PROP_ID PROP_PROD_ID TRAILER_ID
62111712 000 000000

Completion Information
WV WEL ID PROD_ID BEVY DATUM FIELD DEEPFT_FH DEEPFT_FHT MINCL_CLASS FINAL_CLASS TYPE NO COMP_MHO TWI TWI_NGC_HO NOO Q_BSP_Q_CAPP_Q_CAPP_WEL_NGC
62111712 000

There is no Pay data for this well
There is no Production Gas data for this well
There is no Production Oil data for this well ** some operators may have reported NGL under Oil
There is no Production NGL data for this well ** some operators may have reported NGL under Oil
There is no Production Water data for this well
There is no Stratigraphy data for this well
There is no Wellbore (S-Log) data for this well
There is no Flugging data for this well
There is no Sample data for this well

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Legend

- Well Locations (ims.wvgs.wvnet.edu)
- WVDEP O & G Permits (tagis.dep.wv.gov)
- Hillrock - 7HM
- ▭ 500 Ft. Buffer
- Major Highways
- Major Roads
- ▭ Counties
- ▭ Districts



Hillrock - 7HM Franklin District Marshall County, WV

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Map Created: May 24, 2018
Map Current as of: May 24, 2018

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



Tug Hill Operating, LLC Casing and Cement Program

Hillrock 7HM

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	13 3/8"	J55	17 1/2"	920'	CTS
Intermediate	9 5/8"	J55	12 1/4"	2,896'	CTS
Production	5 1/2"	CYHP110	8 7/8 x 8 3/4	19,195'	CTS

Cement

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

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

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

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

Production: 50.50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 15.2ppg, Y = 1.19

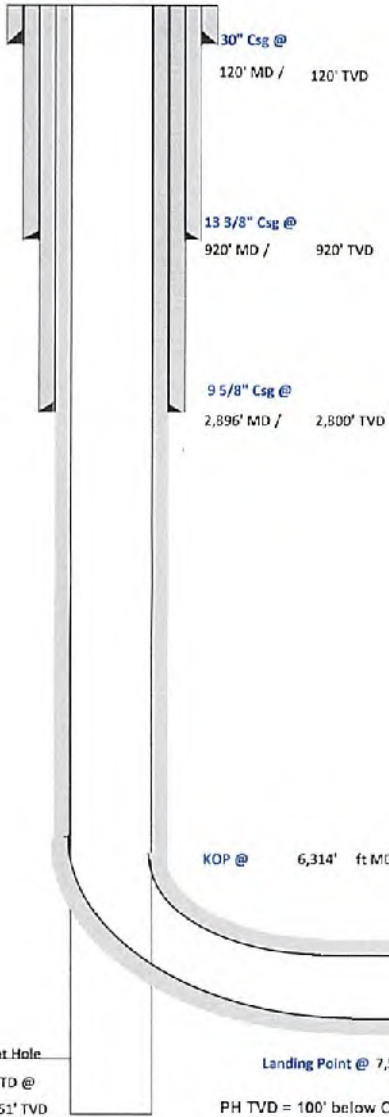
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WELL NAME: Hillrock 7HM
 STATE: WV COUNTY: Marshall
 DISTRICT: Franklin
 DF Elev: 1,219' GL Elev: 1,219'
 TD: 19,195'
 TH Latitude: 39.7459359
 TH Longitude: -80.77026393
 BH Latitude: 39.72118576
 BH Longitude: -80.75490982



FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	812
Sewickley Coal	706
Pittsburgh Coal	806
Big Lime	1610
Welr	1790
Berea	1897
Gordon	2018
Rhinestreet	3547
Geneseo/Burkett	3779
Tully	3814
Hamilton	3832
Marcellus	6500
Landing Depth	6535
Onondaga	6551
Pilot Hole Depth	6651

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	17.5	13 3/8	920'	920'	54.5	J55	Surface
Intermediate 1	12 1/4	9 5/8	2,896'	2,800'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	19,195'	6,718'	20	CYHP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	992	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	944	A	15	Air	1 Centralizer every other jt
Production	4,314	A	14.5	Air / SOB M	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc

Handwritten signature and date: 6/20/18

Pilot Hole
PH TD @
6,651' TVD

Landing Point @ 7,523' MD / 6,535' TVD
PH TVD = 100' below Onondaga Top

470502062
 Lateral TD @ 19,195' ft MD
 6,718' ft TVD

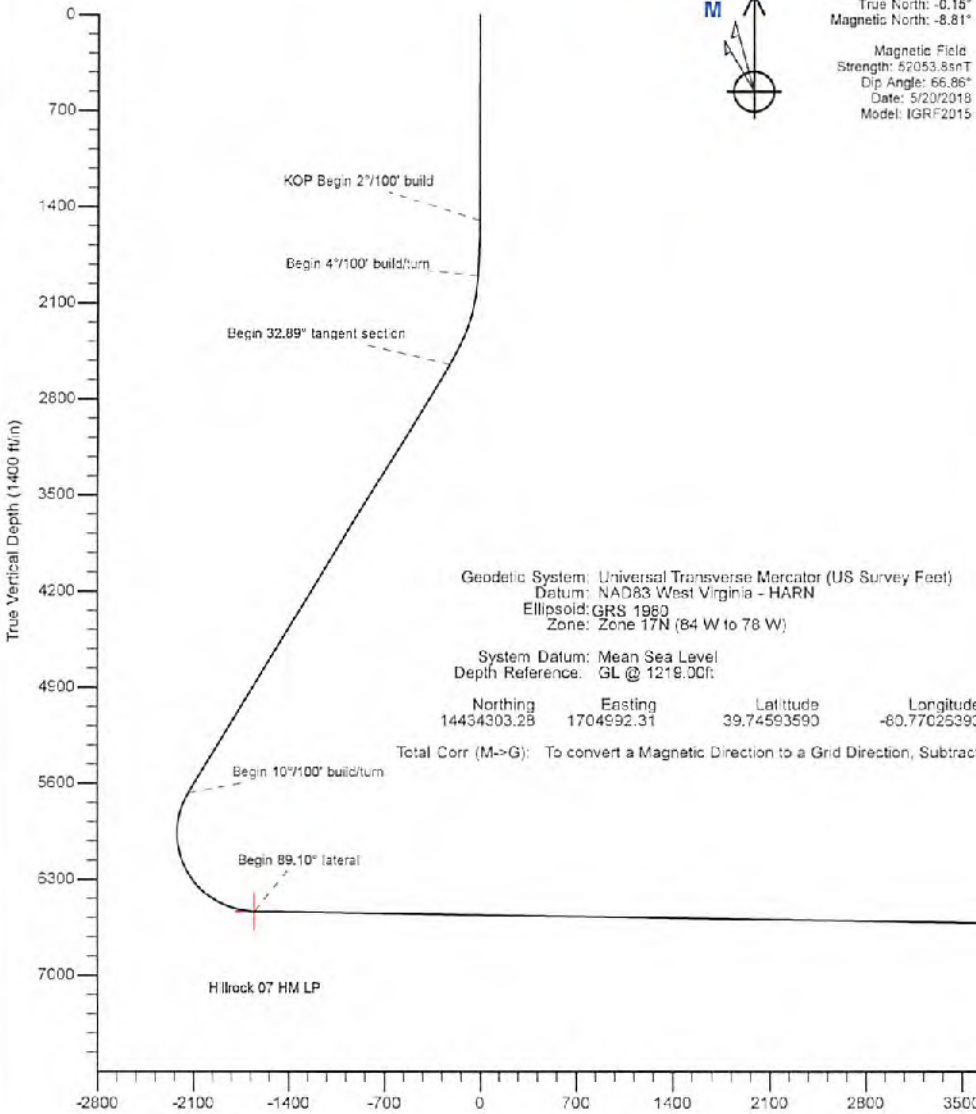
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Well: Hillrock 07 HM (F)
 Site: Hillrock/Simms
 Project: Marshall County, West Virginia.
 Design: rev1

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2°/100' build
3	1900.00	8.00	270.00	1898.70	0.00	-27.88	2.00	270.00	-12.11	Begin 4°/100' build/turn
4	2596.37	32.89	315.89	2548.72	138.48	-211.61	4.00	56.55	-216.65	Begin 32.89° tangent section
5	6314.38	32.89	315.89	5670.68	1587.93	-1617.33	0.00	0.00	-2132.82	Begin 10°/100' build/turn
6	7523.30	89.10	150.00	6535.00	1136.84	-1494.25	10.00	-163.43	-1646.02	Begin 89.10° lateral
7	19195.49	89.10	150.00	6713.00	-9030.71	4340.48	0.00	0.00	9992.63	PBHLTD 19195.49 MD/6718.00 TVD



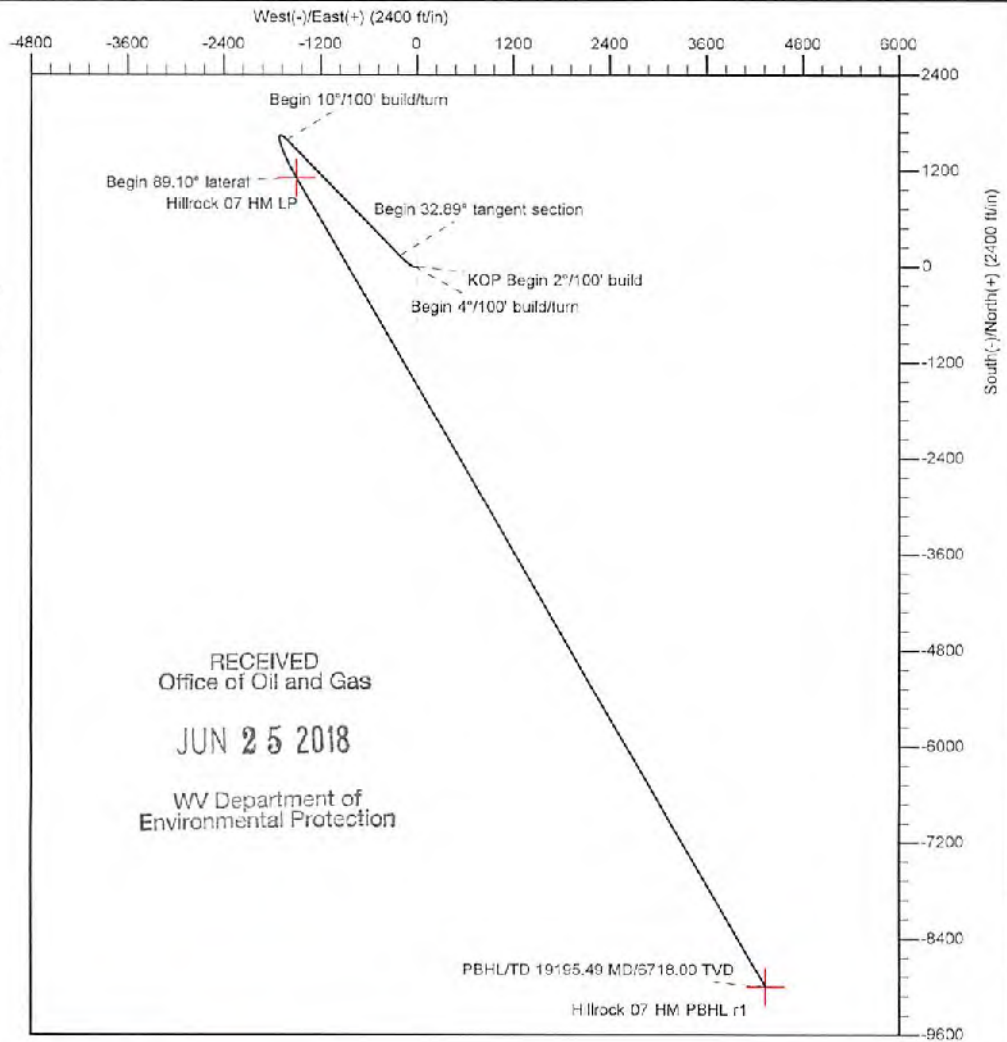
Azimuths to Grid North
 True North: -0.15°
 Magnetic North: -8.81°

 Magnetic Field
 Strength: 52053.85nT
 Dip Angle: 66.86°
 Date: 5/20/2018
 Model: IGRF2015

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

 System Datum: Mean Sea Level
 Depth Reference: GL @ 1218.00ft

 Northing: 14434303.28 Easting: 1704992.31 Latitude: 39.74593590 Longitude: -80.77025393
 Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract: 8.81°



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Planning Report - Geographic

JUN 25 2018
4705 102062

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Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Hillrock 07 HM (F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1219.00ft
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1219.00ft
Site:	Hillrock/Simms	North Reference:	Grid
Well:	Hillrock 07 HM (F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

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

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

Well	Hillrock 07 HM (F)					
Well Position	+N/-S	0.00 ft	Northing:	14,434,303.28 usft	Latitude:	39.74593590
	+E/-W	0.00 ft	Easting:	1,704,992.31 usft	Longitude:	-80.77026393
Position Uncertainty	0.00 ft	Wellhead Elevation:		Ground Level:	1,219.00 ft	

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2015	5/20/2018	(°)	(°)	(nT)
			-8.66	66.86	52,053.79862997

Design	rev1				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	154.25	

Plan Survey Tool Program	Date	6/13/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	19,195.49 rev1 (Original Hole)	MWD	MWD - Standard	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,900.00	8.00	270.00	1,698.70	0.00	-27.88	2.00	2.00	0.00	270.00	
2,596.37	32.89	315.88	2,548.72	138.48	-211.61	4.00	3.57	6.59	56.55	
6,314.38	32.89	315.88	5,670.68	1,587.93	-1,617.33	0.00	0.00	0.00	0.00	
7,523.30	89.10	150.00	6,535.00	1,106.84	-1,494.25	10.00	4.65	-13.72	-163.48	Hillrock 07 HM LP
19,195.49	89.10	150.00	6,718.00	-9,000.71	4,340.48	0.00	0.00	0.00	0.00	Hillrock 07 HM PBHL



Database: DB_Jul2216dt_v14
Company: Tug Hill Operating LLC
Project: Marshall County, West Virginia.
Site: Hillrock/Simms
Well: Hillrock 07 HM (F)
Wellbore: Original Hole
Design: rev1

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

Well Hillrock 07 HM (F)
GL @ 1219.00ft
GL @ 1219.00ft
Grid
Minimum Curvature

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Environmental Protection

Planned Survey

Table with 11 columns: Measured Depth (ft), Inclination (°), Azimuth (°), Vertical Depth (ft), +N/-S (ft), +E/-W (ft), Map Northing (usft), Map Easting (usft), Latitude, Longitude. Rows include depth intervals from 0.00 to 1,500.00, and specific survey points like 'KOP Begin 2°/100' build' and 'Begin 4°/100' build/turn'.



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Environmental Protection

Database: DB_Jul2216dt_v14
Company: Tug Hill Operating LLC
Project: Marshall County, West Virginia.
Site: Hillrock/Simms
Well: Hillrock 07 HM (F)
Wellbore: Original Hole
Design: rev1

Local Co-ordinate Reference: Well Hillrock 07 HM (F)
TVD Reference: GL @ 1219.00ft
MD Reference: GL @ 1219.00ft
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	
15,500.00	89.10	150.00	6,660.06	-5,800.60	2,493.17	14,428,502.70	1,707,485.47	39.72998790	-80.76144918	
15,600.00	89.10	150.00	6,661.63	-5,887.19	2,543.16	14,428,416.10	1,707,535.46	39.72974972	-80.76127220	
15,700.00	89.10	150.00	6,663.20	-5,973.79	2,593.15	14,428,329.51	1,707,585.45	39.72951154	-80.76109523	
15,800.00	89.10	150.00	6,664.76	-6,060.38	2,643.13	14,428,242.91	1,707,635.44	39.72927336	-80.76091825	
15,900.00	89.10	150.00	6,666.33	-6,146.98	2,693.12	14,428,156.32	1,707,685.43	39.72903517	-80.76074128	
16,000.00	89.10	150.00	6,667.90	-6,233.57	2,743.11	14,428,069.72	1,707,735.41	39.72879699	-80.76056431	
16,100.00	89.10	150.00	6,669.47	-6,320.17	2,793.10	14,427,983.13	1,707,785.40	39.72855881	-80.76038734	
16,200.00	89.10	150.00	6,671.04	-6,406.76	2,843.09	14,427,896.53	1,707,835.39	39.72832063	-80.76021037	
16,300.00	89.10	150.00	6,672.60	-6,493.36	2,893.08	14,427,809.94	1,707,885.38	39.72808244	-80.76003340	
16,400.00	89.10	150.00	6,674.17	-6,579.95	2,943.06	14,427,723.34	1,707,935.37	39.72784426	-80.75985643	
16,500.00	89.10	150.00	6,675.74	-6,666.55	2,993.05	14,427,636.75	1,707,985.35	39.72760608	-80.75967947	
16,600.00	89.10	150.00	6,677.31	-6,753.14	3,043.04	14,427,550.15	1,708,035.34	39.72736789	-80.75950250	
16,700.00	89.10	150.00	6,678.88	-6,839.74	3,093.03	14,427,463.56	1,708,085.33	39.72712971	-80.75932554	
16,800.00	89.10	150.00	6,680.44	-6,926.33	3,143.02	14,427,376.96	1,708,135.32	39.72689153	-80.75914858	
16,900.00	89.10	150.00	6,682.01	-7,012.93	3,193.01	14,427,290.37	1,708,185.31	39.72665334	-80.75897162	
17,000.00	89.10	150.00	6,683.58	-7,099.52	3,242.99	14,427,203.77	1,708,235.30	39.72641516	-80.75879466	
17,100.00	89.10	150.00	6,685.15	-7,186.12	3,292.98	14,427,117.18	1,708,285.28	39.72617697	-80.75861770	
17,200.00	89.10	150.00	6,686.71	-7,272.71	3,342.97	14,427,030.58	1,708,335.27	39.72593879	-80.75844074	
17,300.00	89.10	150.00	6,688.28	-7,359.31	3,392.96	14,426,943.99	1,708,385.26	39.72570060	-80.75826379	
17,400.00	89.10	150.00	6,689.85	-7,445.90	3,442.95	14,426,857.39	1,708,435.25	39.72546241	-80.75808683	
17,500.00	89.10	150.00	6,691.42	-7,532.50	3,492.94	14,426,770.80	1,708,485.24	39.72522423	-80.75790988	
17,600.00	89.10	150.00	6,692.99	-7,619.09	3,542.92	14,426,684.20	1,708,535.22	39.72498604	-80.75773292	
17,700.00	89.10	150.00	6,694.55	-7,705.69	3,592.91	14,426,597.61	1,708,585.21	39.72474785	-80.75755597	
17,800.00	89.10	150.00	6,696.12	-7,792.28	3,642.90	14,426,511.01	1,708,635.20	39.72450967	-80.75737902	
17,900.00	89.10	150.00	6,697.69	-7,878.88	3,692.89	14,426,424.42	1,708,685.19	39.72427148	-80.75720207	
18,000.00	89.10	150.00	6,699.26	-7,965.47	3,742.88	14,426,337.82	1,708,735.18	39.72403329	-80.75702513	
18,100.00	89.10	150.00	6,700.82	-8,052.07	3,792.86	14,426,251.23	1,708,785.17	39.72379510	-80.75684818	
18,200.00	89.10	150.00	6,702.39	-8,138.66	3,842.85	14,426,164.63	1,708,835.15	39.72355692	-80.75667124	
18,300.00	89.10	150.00	6,703.96	-8,225.26	3,892.84	14,426,078.04	1,708,885.14	39.72331873	-80.75649429	
18,400.00	89.10	150.00	6,705.53	-8,311.85	3,942.83	14,425,991.44	1,708,935.13	39.72308054	-80.75631735	
18,500.00	89.10	150.00	6,707.10	-8,398.45	3,992.82	14,425,904.85	1,708,985.12	39.72284235	-80.75614041	
18,600.00	89.10	150.00	6,708.66	-8,485.04	4,042.81	14,425,818.25	1,709,035.11	39.72260416	-80.75596347	
18,700.00	89.10	150.00	6,710.23	-8,571.64	4,092.79	14,425,731.66	1,709,085.09	39.72236597	-80.75578653	
18,800.00	89.10	150.00	6,711.80	-8,658.23	4,142.78	14,425,645.06	1,709,135.08	39.72212778	-80.75560959	
18,900.00	89.10	150.00	6,713.37	-8,744.83	4,192.77	14,425,558.47	1,709,185.07	39.72188959	-80.75543265	
19,000.00	89.10	150.00	6,714.94	-8,831.42	4,242.76	14,425,471.87	1,709,235.06	39.72165140	-80.75525572	
19,100.00	89.10	150.00	6,716.50	-8,918.02	4,292.75	14,425,385.28	1,709,285.05	39.72141321	-80.75507879	
19,195.49	89.10	150.00	6,718.00	-9,000.71	4,340.48	14,425,302.59	1,709,332.78	39.72118576	-80.75490983	

PBHL/TD 19195.49 MD/6718.00 TVD

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Hillrock 07 HM LP - hit/miss target - Shape - Point	0.00	0.01	6,535.00	1,106.64	-1,494.25	14,435,410.12	1,703,498.06	39.74898600	-80.77557000	
Hillrock 07 HM PBHL r1 - plan hits target center - Point	0.00	0.00	6,718.00	-9,000.71	4,340.48	14,425,302.59	1,709,332.78	39.72118576	-80.75490983	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Hillrock 07 HM (F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1219.00ft
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1219.00ft
Site:	Hillrock/Simms	North Reference:	Grid
Well:	Hillrock 07 HM (F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,500.00	1,500.00	0.00	0.00	KOP Begin 2°/100' build
1,900.00	1,898.70	0.00	-27.88	Begin 4°/100' build/turn
2,596.37	2,548.72	138.48	-211.61	Begin 32.89° tangent section
6,314.38	5,670.68	1,587.93	-1,617.33	Begin 10°/100' build/turn
7,523.30	6,535.00	1,106.84	-1,494.25	Begin 89.10° lateral
19,195.49	6,718.00	-9,000.71	4,340.48	PBHL/TD 19195.49 MD/6718.00 TVD

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 WV Department of
 Environmental Protection

WW-9
(4/16)

4705102062

API Number 47 - 051 - _____
Operator's Well No. Hillrock 7HM

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

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JUN 25 2018

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851 WV Department of Environmental Protection
Watershed (HUC 10) Fish Creek Quadrangle New Martinsville 7.5'

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

Will a pit be used? Yes No

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

Will a synthetic liner be used in the pit? Yes No If so, what ml.? AST Tanks will be used with proper 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? Wetzel County Sanitary Landfill (SWF-1021 / WV0100185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP EC#1396426)

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.

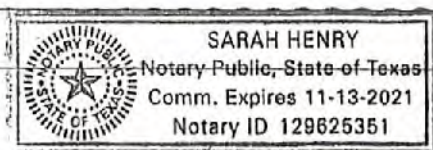
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is 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 [Signature]
Company Official (Typed Name) Sean Gasser
Company Official Title Engineer

Subscribed and sworn before me this 18 day of June, 20 18

Notary Public

My commission expires _____



[Signature]

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 11.63 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

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Environmental Protection

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: *John W. ...*

Comments: _____

Title: Oil and Gas Inspector Date: 6/20/18

Field Reviewed? Yes No

WW-9

PROPOSED HILLROCK 7HM

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 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.

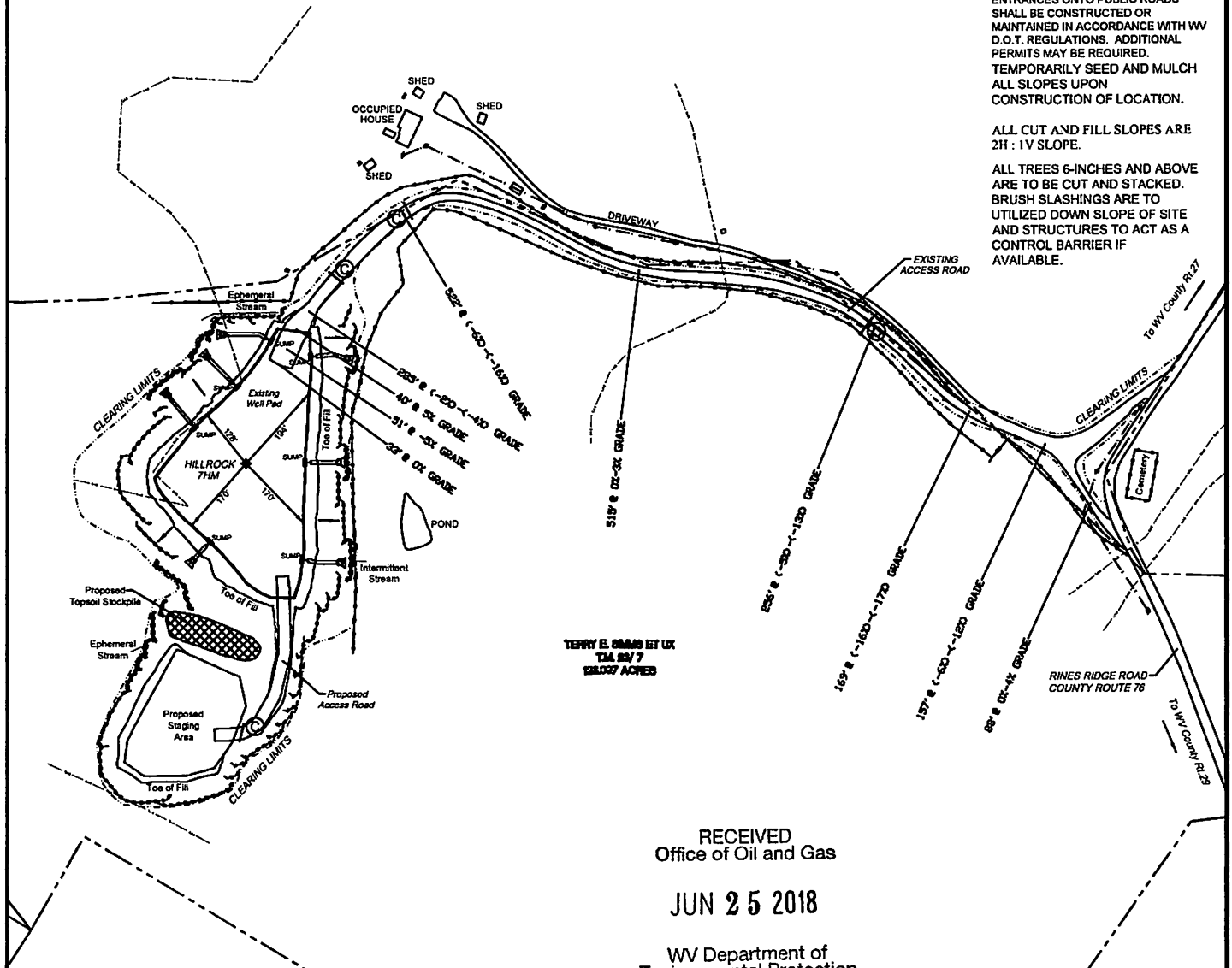
ALL TREES 6-INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHINGS ARE TO UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.

DRAWING NOT TO SCALE

KENNETH N. CORLEY et al.
T.M. 07/8
120 Acres

TERRY E. GRAND ET UX
T.M. 02/7
62,027 ACRES

WILLIAM + VERONA ROUPE
T.M. 28/81
84 Acres



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LEGEND

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



Well Site Safety Plan

Tug Hill Operating, LLC

Handwritten signature and date: 6/20/18

Well Name: Hillrock 7HM

Pad Location: Simms Pad

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

 Northing:

 4,399,584.44

 Easting: 519,682.70

June 2018

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Environmental Protection

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WW-9

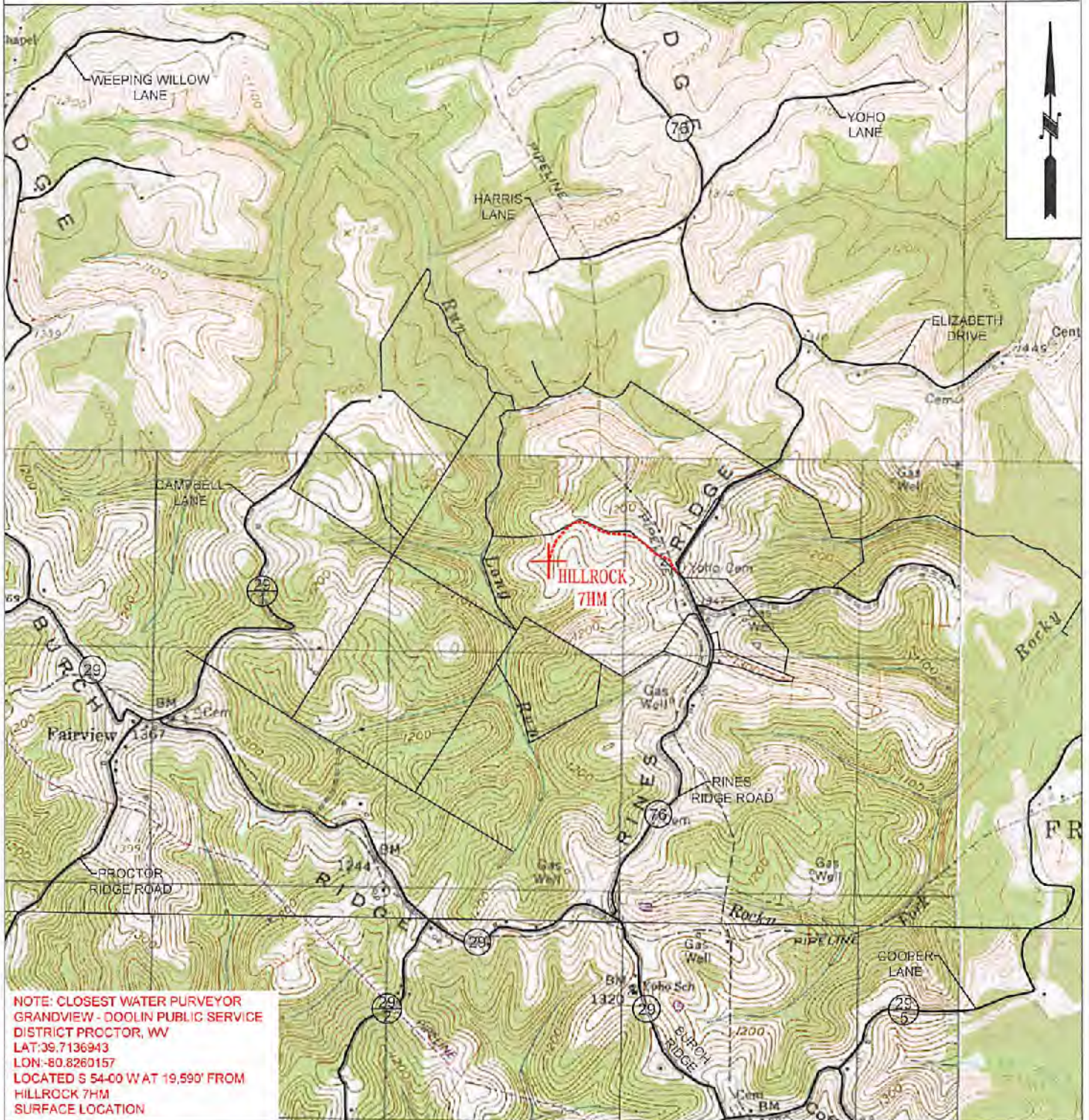
JUN 25 2018

PROPOSED

4705 SUPPLEMENT PG 2

WV Department of
Environmental Protection

HILLROCK 7HM

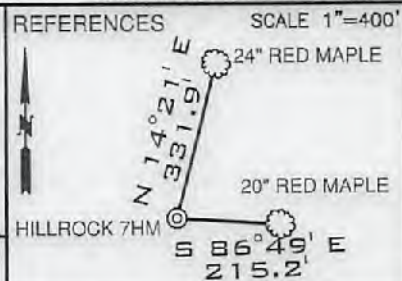


OPERATOR	494510851	TOPO SECTION	LEASE NAME
TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		NEW MARTINSVILLE 7.5'	HILLROCK
		SCALE:	DATE:
		1" = 2000'	DATE: 06-11-2018

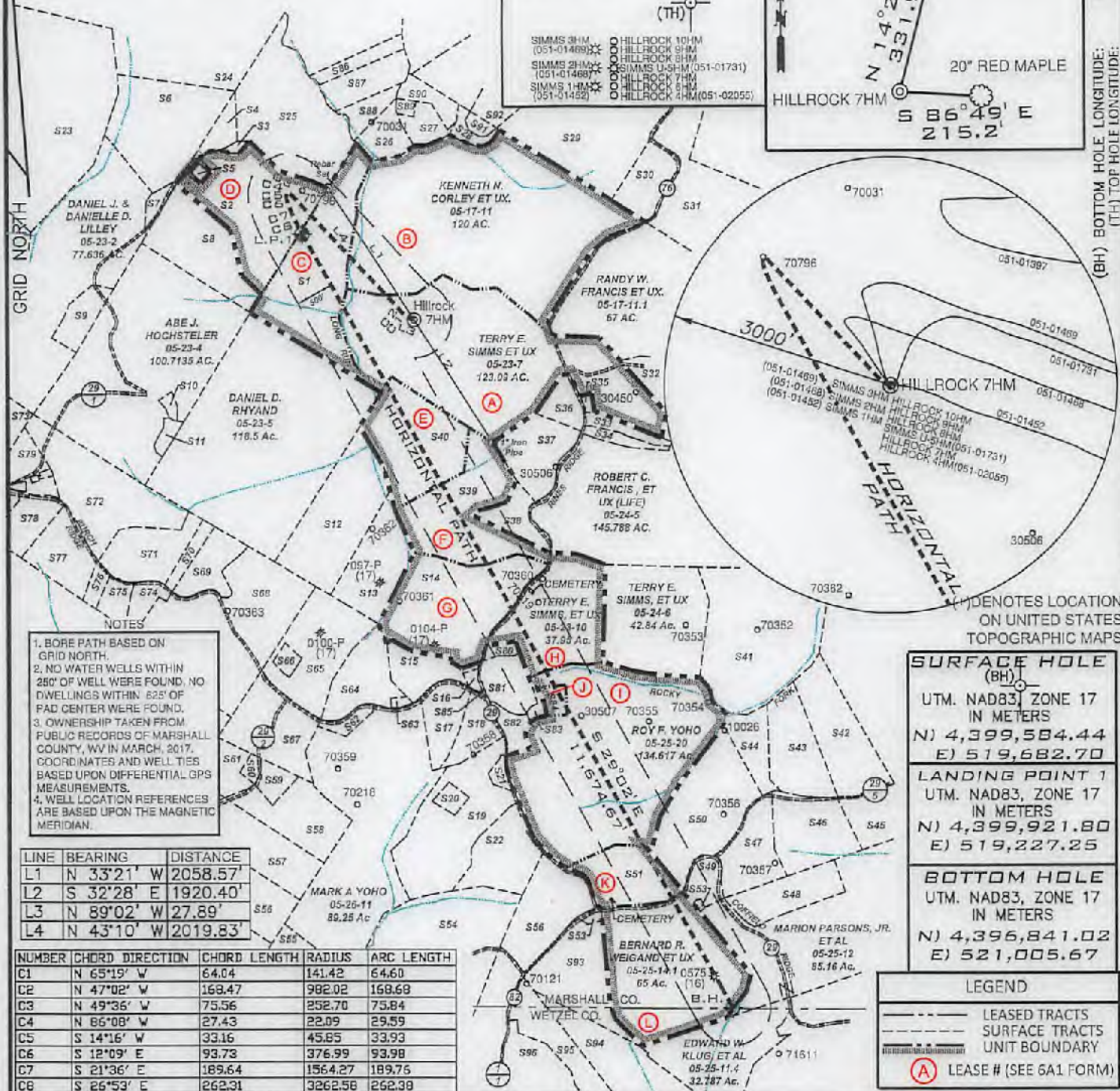
HILLROCK LEASE WELL 7HM 716.228± ACRES

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

DETAIL SKETCH "A"
SCALE 1"=100'



- HILLROCK 10HM (051-01469)
- HILLROCK 9HM (051-01468)
- HILLROCK 8HM (051-01467)
- HILLROCK 7HM (051-01466)
- HILLROCK 6HM (051-01465)
- HILLROCK 5HM (051-01464)
- HILLROCK 4HM (051-02055)



- NOTES**
1. BORE PATH BASED ON GRID NORTH.
 2. NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 525' OF PAD CENTER WERE FOUND.
 3. OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 2017. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
 4. WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.

LINE	BEARING	DISTANCE
L1	N 33°21' W	2058.57'
L2	S 32°28' E	1920.40'
L3	N 89°02' W	27.89'
L4	N 43°10' W	2019.83'

NUMBER	CHORD DIRECTION	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 65°19' W	64.04	141.42	64.60
C2	N 47°02' W	169.47	982.02	168.69
C3	N 49°36' W	75.56	252.70	75.84
C4	N 86°08' W	27.43	22.09	29.59
C5	S 14°16' W	33.16	45.85	33.93
C6	S 12°09' E	93.73	376.99	93.98
C7	S 21°36' E	189.64	1564.27	189.75
C8	S 26°53' E	262.31	3262.56	262.39

SURFACE HOLE (BH)
UTM. NAD83, ZONE 17
IN METERS
N) 4,399,584.44
E) 519,682.70

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,399,921.80
E) 519,227.25

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,396,841.02
E) 521,005.67

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

FILE NUMBER _____

DRAWING NUMBER HILLROCK_WP_7HM

SCALE 1" = 2000'

MINIMUM DEGREE OF ACCURACY 1/200

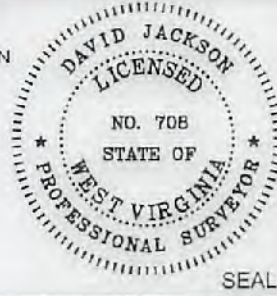
PROVEN SOURCE OF ELEVATION SUBMETER MAPPING GRADE GPS

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: JUNE 20, 2018

OPERATORS WELL NO. HILLROCK 7HM

API WELL NO. 47-051-02062 H6A

STATE WV COUNTY MARSHALL PERMIT _____

LOCATION ELEVATION 1219.5' WATERSHED (HUC 10) FISH CREEK

DISTRICT FRANKLIN COUNTY MARSHALL

QUADRANGLE NEW MARTINSVILLE 7.5' LEASE NUMBER SEE WW-6A1 Form

SURFACE OWNER TERRY E. & DEBORAH SIMMS ACREAGE 123.09

OIL & GAS ROYALTY OWNER TERRY E. & DEBORAH L. SIMMS, ET AL - SEE WW-6A1 FORM LEASE ACREAGE 319.91

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION

PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____

TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD 6,651' TMD: 19,195'

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

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

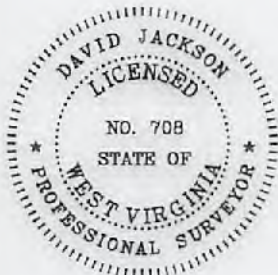
COUNTY NAME
PERMIT

form ww6

**HILLROCK LEASE
WELL 7HM
716.228± ACRES**

Number	TAX MAP-PARCEL	ADJOINER OWNER	ACRES
S1	05-23-06	James A. Channing, et al	48.0
S2	05-18-21	Curtis E. & Michelle J. Hall	43.119
S3	05-18-21.3	Hilda M. Wayt-Gilbertson (Life)	0.811
S4	05-18-21.1	Rodney & Rhonda Jackson	5.47
S5	05-18-21.2	David P. Lassar, et ux (Life)	1.0
S6	05-18-22	Rodney & Rhonda Jackson	30.345
S7	05-23-2.1	William L. & Janice M. Wayne	2.364
S8	05-23-03	Abe J. Hochstetler	50.0
S9	05-23-2.2	Jessica N. & Andrew L. Jones	7.636
S10	05-23-4.2	James S. & Jeanne B. Hall	1.169
S11	05-23-4.1	James S. & Jeanne B. Hall	2.1575
S12	05-23-08	Carl David & Suzanne L. Guseman	29.5
S13	05-23-9.3	Linda D. Greathouse	17.5
S14	05-23-11.1	John H. & Sonya D. Holliday	46.482
S15	05-23-11.4	Evelyn L. Hudson	10.879
S16	05-23-11.2	Evelyn Hudson	1.154
S17	05-23-11.3	Colin R. Yoho	11.29
S18	05-23-11.5	Roy F. Yoho	9.25
S19	05-25-18	Joseph Johnson, et ux (Life)	37.746
S20	05-25-18.1	Pamela Joan Ferrell, et vir	2.491
S21	05-25-19	Joseph Johnson, et ux (Life)	1.973
S22	05-25-17	Emily Jones Irrevocable Trust	22.790
S23	05-18-24	Duane Brunn	102.0
S24	05-18-23	Blaine E. Channing, et al	110.0
S25	05-18-20	Wayne E. Channing, et al	75.60
S26	05-18-31	Kenneth E. Rastall	6.94
S27	05-18-32	Kenneth E. Rastall	5.335
S28	05-17-12	James A. & Jill C. Corley	3.33
S29	05-17-10	James A. Corley, et al	92.61
S30	05-17-9.3	James A. Corley, et ux	12.478
S31	05-17-9.4	Vicki L. Bowen	60.3
S32	05-24-01	Linda L. Hendrickson	175.0
S33	05-24-5.1	James D. Watkins, et ux	4.60
S34	05-24-5.2	James D. Watkins, et ux	3.151
S35	05-23-7.1	H.J. Weigand, et ux	0.549
S36	05-23-7.2	H.J. Weigand, et ux	6.354
S37	05-24-5.5	H.J. Weigand, et ux	17.194
S38	05-24-5.3	Thomas V. Tuttle, et ux	8.543
S39	05-24-5.4	Thomas V. Tuttle, et ux	38.224
S40	05-23-8.1	William & Virginia Roupe	34.0
S41	05-23-04	Abe J. Hochstetler	100.7235
S42	05-25-1.3	Michael E. & Annie A. Chapman	26.20
S43	05-25-1.2	William Jr. & Andrea J. Dubiel	20.10
S44	05-25-1.1	Ryan A. & Jacqueline E. Layman	9.79
S45	05-25-13.3	William M. Sr. & Cynthia A. Ferda	17.21
S46	05-25-1.5	Ryan J. Bratton	21.35
S47	05-25-13	Nicholas J. & Debra L. Klug	16.014
S48	05-25-12.1	Kent & Betty Mason	15.0
S49	05-25-13.2	David A. Klug	5.89
S50	05-25-01	Michael L. Mason	35.43
S51	05-25-14	Roy F. Yoho	23.0

Number	TAX MAP-PARCEL	ADJOINER OWNER	ACRES
S52	05-25-16	Emily Jones Irrevocable Trust	23.5
S53	05-25-16.2	Rodney J. Loy	1.087
S54	05-26-12	Marjorie Ann Stoneking (Life)	153.969
S55	05-26-13	Marjorie Ann Stoneking (Life)	40.0
S56	05-26-10	Robert D. & Bonnie L. Oliver Family Trust	24.94
S57	05-26-09	Robert D. & Bonnie L. Oliver Family Trust	21.75
S58	05-26-08	Richard Joseph Otte, et ux	18.27
S59	05-26-20	Donald Lee Anderson, et al	4.2
S60	05-26-21	Richard Joseph Otte, et ux	1.25
S61	05-26-22	Richard Joseph Otte, et ux	8.3
S62	05-23-12	Mark A. Yoho	3.05
S63	05-23-13.1	James R. & Pamela J. Ferrell	0.7625
S64	05-23-13	Linda D. Greathouse	14.24
S65	05-23-9.2	Linda D. Greathouse	25.58
S66	05-23-9.4	Jackson R. Sr. & Deanna L. Davis	2.087
S67	05-23-9.1	John W. Van Orden, et ux	23.376
S68	05-23-14	Dominion Transmission, Inc.	59.5
S69	05-23-15	Virginia Ethel Henry Est.	15.5
S70	05-23-16.1	Donald B. Henry	1.97
S71	05-23-16	Roy Friend Yoho Sr.	18.03
S72	05-23-18	Abe J. Hochstetler	35.382
S73	05-23-01	Patricia Accetolo, et al	146.66
S74	05-23-17.3	William & Katherine Flewelling	5.018
S75	05-23-17	Tammy & Thomas E. Brown	4.62
S76	05-23-17.4	Tammy D. Meadows	2.605
S77	05-23-17.2	Dick Jr. & Carol J. Rowan	14.92
S78	05-23-17.1	Curtis E. Hall, et ux	10.051
S79	05-23-18.1	Mark A. Yoho	7.8
S80	05-25-11.7	Bryan L. Huggins	1.835
S81	05-25-11	Roy F. Yoho	3.445
S82	05-25-20.3	James A. & Jo C. Estep	4.49
S83	05-25-20.2	James M. Zombotti	1.347
S84	05-25-20.1	James M. Zombotti	2.746
S85	05-23-11.6	T.H. Exploration II, LLC & Atinum Marcellus I, LLC	0.094
S86	05-18-30	Jon Schmidt, et al	5.46
S87	05-18-13.10	Carl Berg	10.88
S88	05-18-29	Carl B. Berg	5.319
S89	05-18-32.1	Lori D. Carpenter	1.165
S90	05-18-13.8	Lori D. Carpenter	5.545
S91	05-17-12.1	Williams Ohio Valley Midstream, LLC	1.67
S92	05-17-10.5	Williams Ohio Valley Midstream, LLC	4.24
S93	05-25-16.1	David L. Cunningham	6.34
S94	12-02-14	David L. Cunningham	56.23
S95	12-02-14.2	John G. Jr. & Geraldine M. Rogers	25.1
S96	12-02-14.1	Sammy J. Greathouse, Sr. (Life) and Sammy J. Greathouse, Jr.	18.67



P.S. 708 *David L Jackson*



TUG HILL
OPERATING

OPERATOR'S
WELL #: HILLROCK 7HM
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV

WELL PLAT
PAGE 2 OF 2
DATE: 06/20/2018

4705102062

**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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Office of Oil and Gas

JUN 25 2018

WV Department of
Environmental Protection

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

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

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

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

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

Lease No.	Tags	Parcel	Lessor	Lessee	Royalty	Book	Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*14140	A	5-23-7	TERRY E SIMMS AND DEBORAH L SIMMS	TRIENERGY, INC	1/8+	666	529	NA	20/348 Trienergy, Inc to AB Resources LLC	21/491 AB Resources LLC to Chief Exploration & Development LLC	685/643 Chief Exploration & Development and Radler 2000 Limited Partnership to Enerplus Resources Corp	24/39 AB Resources LLC, Chief Exploration & Development LLC, Radler 2000 Limited Partnership and Enerplus Resources Corp to Gastar Exploration USA, Inc	4705102062	
10*14126	B	5-17-11	SHARON MIDCAP	GASTAR EXPLORATION USA, INC	1/8+	697	152	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*17186	C	5-23-6	ROBERT J HENRY	CHESAPEAKE APPALACHIA LLC	1/8+	708	51	NA	NA	NA	NA	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC
10*14824	D	5-18-21	HARLAN KITTLE & BARBARA KITTLE	GASTAR EXPLORATION USA INC	1/8+	799	453	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*17145	D	5-18-21	JAMES J. CAMPBELL BETTY J. CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	458	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc. to TH Exploration, LLC
10*17146	D	5-18-21	CAROLYN CAMPBELL BRITTON ROBERT C. BRITTON	CHESAPEAKE APPALACHIA LLC	1/8+	685	464	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc. to TH Exploration, LLC
10*17147	D	5-18-21	JOANN J. PARSONS GARY D. PARSONS	CHESAPEAKE APPALACHIA LLC	1/8+	685	470	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc. to TH Exploration, LLC
10*17148	D	5-18-21	DONALD E. CAMPBELL JUNE L. CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	476	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc. to TH Exploration, LLC
10*17149	D	5-18-21	WANDA M. BLAKE	CHESAPEAKE APPALACHIA LLC	1/8+	685	482	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc. to TH Exploration, LLC
10*17150	D	5-18-21	IDA L. CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	685	488	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc. to TH Exploration, LLC
10*22169	D	5-18-21	BARBARA KITTLE	TH EXPLORATION, LLC	1/8+	954	641	NA	NA	NA	NA	NA	NA	NA
10*17191	E	5-23-8.1	ROBERT J HENRY	CHESAPEAKE APPALACHIA LLC	1/8+	715	463	NA	NA	NA	NA	NA	23/127 Chesapeake Appalachia, LLC to Statoil USA Onshore Properties, Inc	41/238 Statoil USA Onshore Properties Inc. to TH Exploration, LLC

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JUN 25 2018

WW-6A1 Supplement

Operator's Well No. Hillrock - 7HM

4705102062

10*17290	E	5-23-8.1	WILLIAM N ROUPE AND VIRGINIA A ROUPE	TH EXPLORATION, LLC	1/8+	942	402	NA	NA	NA	NA	NA	NA	NA
10*14797	F	5-24-5.4	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14814	F	5-24-5.4	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	537	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14815	F	5-24-5.4	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	535	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14817	F	5-24-5.4	DONNA V YOHO	GASTAR EXPLORATION INC	1/8+	874	351	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14818	F	5-24-5.4	DEWEY A MILICIA	GASTAR EXPLORATION INC	1/8+	875	591	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14819	F	5-24-5.4	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION INC	1/8+	875	593	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14820	F	5-24-5.4	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION INC	1/8+	875	595	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14821	F	5-24-5.4	JANICE HAUDENSCHILT	GASTAR EXPLORATION INC	1/8+	875	597	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14822	F	5-24-5.4	ONWARD E BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14823	F	5-24-5.4	SARAH L BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*17181	F	5-24-5.4	PAUL F HAMMERS	CHESAPEAKE APPALACHIA LLC	1/8+	705	593	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC merger SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17182	F	5-24-5.4	TWILA ORA WHIPKEY	CHESAPEAKE APPALACHIA LLC	1/8+	715	505	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC merger SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17184	F	5-24-5.4	KERMIT L. PARSONS	CHESAPEAKE APPALACHIA LLC	1/8+	716	83	NA	29/325 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	33/110 Chesapeake LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	19/624 SWN Exchange Titleholder LLC merger SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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10*17195	F	5-24-5.4	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17196	F	5-24-5.4	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17197	F	5-24-5.4	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17199	F	5-24-5.4	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17200	F	5-24-5.4	STEPHANIE L. HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17201	F	5-24-5.4	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17202	F	5-24-5.4	JANE GALE	GASTAR EXPLORATION USA INC	1/8+	697	385	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17203	F	5-24-5.4	BARRY RAY MOORE	GASTAR EXPLORATION USA INC	1/8+	697	387	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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10*17204	F	5-24-5.4	CLARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	391	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17206	F	5-24-5.4	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA INC	1/8+	697	399	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17207	F	5-24-5.4	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA INC	1/8+	697	389	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17210	F	5-24-5.4	MARILYN NOEL	GASTAR EXPLORATION USA INC	1/8+	697	393	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17211	F	5-24-5.4	GARY WAYNE ZESIGER & VICKIE ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	397	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17212	F	5-24-5.4	DARRELL NEWLAND LYDIA NEWLAND	GASTAR EXPLORATION USA INC	1/8+	697	158	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17213	F	5-24-5.4	CAROL DEEN GARDNER	GASTAR EXPLORATION USA INC	1/8+	697	154	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*18275	F	5-24-5.4	BETTY JEAN NEELY	TH EXPLORATION LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA
10*18366	F	5-24-5.4	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	F	5-24-5.4	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	F	5-24-5.4	SAMUEL D YOHO	TH EXPLORATION LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA

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10*18379	F	5-24-5.4	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA	NA
10*19540	F	5-24-5.4	ERICA M MASON	TH EXPLORATION LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*19652	F	5-24-5.4	JACK R HAMMERS	TH EXPLORATION LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA
10*19903	F	5-24-5.4	PAUL F HAMMERS	TH EXPLORATION LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*14785	G	5-23-11.1	DAVID W. STRAUCH	GASTAR EXPLORATION USA, INC	1/8+	799	64	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14786	G	5-23-11.1	TWILA ORA WHIPKEY	GASTAR EXPLORATION USA, INC	1/8+	799	61	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14796	G	5-23-11.1	KIMBERLY S. DENNY	GASTAR EXPLORATION USA, INC	1/8+	799	540	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14797	G	5-23-11.1	ORVILLE YOUNG	GASTAR EXPLORATION USA, INC	1/8+	800	598	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14806	G	5-23-11.1	DONNA VIVIAN YOHO	GASTAR EXPLORATION USA, INC	1/8+	809	558	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14807	G	5-23-11.1	JANICE N HAUDENSCHILT	GASTAR EXPLORATION USA, INC	1/8+	809	555	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14808	G	5-23-11.1	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION USA, INC	1/8+	809	552	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14809	G	5-23-11.1	DEWEY A. MILICIA	GASTAR EXPLORATION USA, INC	1/8+	809	549	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14810	G	5-23-11.1	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION USA, INC	1/8+	809	546	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14814	G	5-23-11.1	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION, INC	1/8+	827	537	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14815	G	5-23-11.1	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION, INC	1/8+	827	535	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14822	G	5-23-11.1	ONWARD E BURGE TRUST	GASTAR EXPLORATION, INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14823	G	5-23-11.1	SARAH L BURGE TRUST	GASTAR EXPLORATION, INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC

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10*17195	G	5-23-11.1	PATRICIA HARTMAN	GASTAR EXPLORATION USA, INC	1/8+	695	317	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17196	G	5-23-11.1	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA, INC	1/8+	695	311	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17197	G	5-23-11.1	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA, INC	1/8+	695	313	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17199	G	5-23-11.1	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA, INC	1/8+	695	315	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17200	G	5-23-11.1	STEPHANIE L. HALL	GASTAR EXPLORATION USA, INC	1/8+	697	156	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17201	G	5-23-11.1	DENISE A GALE	GASTAR EXPLORATION USA, INC	1/8+	697	395	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17202	G	5-23-11.1	JANE GALE	GASTAR EXPLORATION USA, INC	1/8+	697	385	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17203	G	5-23-11.1	BARRY RAY MOORE	GASTAR EXPLORATION USA, INC	1/8+	697	387	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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10*17204	G	5-23-11.1	CLARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA, INC	1/8+	697	391	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17206	G	5-23-11.1	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA, INC	1/8+	697	399	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17207	G	5-23-11.1	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA, INC	1/8+	697	389	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17210	G	5-23-11.1	MARILYN NOEL	GASTAR EXPLORATION USA, INC	1/8+	697	393	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17211	G	5-23-11.1	GARY WAYNE ZESIGER & VICKIE ZESIGER	GASTAR EXPLORATION USA, INC	1/8+	697	397	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17212	G	5-23-11.1	DARRELL NEWLAND LYDIA NEWLAND	GASTAR EXPLORATION USA, INC	1/8+	697	158	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17213	G	5-23-11.1	CAROL DEEN GARDNER	GASTAR EXPLORATION USA, INC	1/8+	697	154	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*18275	G	5-23-11.1	BETTY JEAN NEELY	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA
10*18366	G	5-23-11.1	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	G	5-23-11.1	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	G	5-23-11.1	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA

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10*18379	G	5-23-11.1	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA	NA	NA
10*19540	G	5-23-11.1	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA	NA
10*19652	G	5-23-11.1	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA	NA
10*19903	G	5-23-11.1	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA	NA
10*22008	G	5-23-11.1	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA	NA
10*22025	G	5-23-11.1	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA	NA
10*22129	G	5-23-11.1	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA	NA
10*22441	G	5-23-11.1	APRIL ROSE POSTLETHWAIT	TH EXPLORATION, LLC	1/8+	963	646	NA	NA	NA	NA	NA	NA	NA	NA
10*22510	G	5-23-11.1	DONNA YOHO	TH EXPLORATION, LLC	1/8+	964	432	NA	NA	NA	NA	NA	NA	NA	NA
10*14786	H	5-23-10	TWILA ORA WHIPKEY	GASTAR EXPLORATION USA INC	1/8+	799	61	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14795	H	5-23-10	LARRY YOHO	GASTAR EXPLORATION USA INC	1/8+	799	526	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14797	H	5-23-10	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14806	H	5-23-10	DONNA VIVIAN YOHO	GASTAR EXPLORATION USA INC	1/8+	809	558	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14807	H	5-23-10	JANICE N HAUDENSCHILT	GASTAR EXPLORATION USA INC	1/8+	809	555	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14808	H	5-23-10	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION USA INC	1/8+	809	552	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14809	H	5-23-10	DEWEY A. MILICIA	GASTAR EXPLORATION USA INC	1/8+	809	549	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14810	H	5-23-10	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION USA INC	1/8+	809	546	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14811	H	5-23-10	MARK YOHO AND MARY YOHO	GASTAR EXPLORATION USA INC	1/8+	809	543	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14814	H	5-23-10	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	537	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14815	H	5-23-10	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	535	NA	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC

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10*14822	H	5-23-10	ONWARD E BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14823	H	5-23-10	SARAH L BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*17195	H	5-23-10	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17196	H	5-23-10	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17197	H	5-23-10	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17199	H	5-23-10	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17200	H	5-23-10	STEPHANIE L. HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17201	H	5-23-10	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17202	H	5-23-10	JANE GALE	GASTAR EXPLORATION USA INC	1/8+	697	385	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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

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10*18366	H	5-23-10	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	H	5-23-10	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	H	5-23-10	SAMUEL D YOHO	TH EXPLORATION LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA
10*18379	H	5-23-10	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA	NA
10*19540	H	5-23-10	ERICA M MASON	TH EXPLORATION LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*19652	H	5-23-10	JACK R HAMMERS	TH EXPLORATION LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA
10*19903	H	5-23-10	PAUL F HAMMERS	TH EXPLORATION LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*22008	H	5-23-10	COLIN R YOHO	TH EXPLORATION LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA
10*22025	H	5-23-10	MARK & MARY YOHO	TH EXPLORATION LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA
10*22129	H	5-23-10	JANICE N HAUDENSCHILT	TH EXPLORATION LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA
10*22441	H	5-23-10	APRIL ROSE POSTLETHWAIT	TH EXPLORATION LLC	1/8+	963	646	NA	NA	NA	NA	NA	NA	NA
10*22510	H	5-23-10	DONNA YOHO	TH EXPLORATION LLC	1/8+	964	432	NA	NA	NA	NA	NA	NA	NA
10*14786	I	5-25-20	TWILA ORA WHIPKEY	GASTAR EXPLORATION USA INC	1/8+	799	61	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14792	I	5-25-20	TIMOTHY YOHO	GASTAR EXPLORATION USA INC	1/8+	799	536	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14795	I	5-25-20	LARRY YOHO	GASTAR EXPLORATION USA INC	1/8+	799	526	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14797	I	5-25-20	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14798	I	5-25-20	CECILIA D. NEWLAND	GASTAR EXPLORATION USA INC	1/8+	800	609	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14800	I	5-25-20	DAPHNE HUFFMAN & CHARLES HUFFM	GASTAR EXPLORATION USA INC	1/8+	800	613	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14804	I	5-25-20	DEBORAH K. & FRANK KLIMASZEWSK	GASTAR EXPLORATION USA INC	1/8+	801	333	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14805	I	5-25-20	HAROLD C. SIMMONS	GASTAR EXPLORATION USA INC	1/8+	803	148	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14806	I	5-25-20	DONNA VIVIAN YOHO	GASTAR EXPLORATION USA INC	1/8+	809	558	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	

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10*14807	I	5-25-20	JANICE N HAUDENSCHILT	GASTAR EXPLORATION USA INC	1/8+	809	555	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14808	I	5-25-20	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION USA INC	1/8+	809	552	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14809	I	5-25-20	DEWEY A. MILICIA	GASTAR EXPLORATION USA INC	1/8+	809	549	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14810	I	5-25-20	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION USA INC	1/8+	809	546	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14811	I	5-25-20	MARK YOHO AND MARY YOHO	GASTAR EXPLORATION USA INC	1/8+	809	543	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14812	I	5-25-20	DENISE ANN GALE	GASTAR EXPLORATION USA INC	1/8+	815	224	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14813	I	5-25-20	DEBRA JANE GALE	GASTAR EXPLORATION USA INC	1/8+	818	568	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14814	I	5-25-20	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	537	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14815	I	5-25-20	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	535	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14822	I	5-25-20	ONWARD E BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14822	I	5-25-20	ONWARD E BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14823	I	5-25-20	SARAH L BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14823	I	5-25-20	SARAH L BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*17195	I	5-25-20	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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10*17196	I	5-25-20	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17197	I	5-25-20	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17199	I	5-25-20	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17200	I	5-25-20	STEPHANIE L. HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17201	I	5-25-20	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17202	I	5-25-20	JANE GALE	GASTAR EXPLORATION USA INC	1/8+	697	385	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17203	I	5-25-20	BARRY RAY MOORE	GASTAR EXPLORATION USA INC	1/8+	697	387	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17204	I	5-25-20	CLARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	391	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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10*17206	I	5-25-20	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA INC	1/8+	697	399	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17207	I	5-25-20	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA INC	1/8+	697	389	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17210	I	5-25-20	MARILYN NOEL	GASTAR EXPLORATION USA INC	1/8+	697	393	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17211	I	5-25-20	GARY WAYNE ZESIGER & VICKIE ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	397	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17212	I	5-25-20	DARRELL NEWLAND LYDIA NEWLAND	GASTAR EXPLORATION USA INC	1/8+	697	158	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17213	I	5-25-20	CAROL DEEN GARDNER	GASTAR EXPLORATION USA INC	1/8+	697	154	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*18275	I	5-25-20	BETTY JEAN NEELY	TH EXPLORATION, LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA
10*18366	I	5-25-20	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION, LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA
10*18369	I	5-25-20	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION, LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA
10*18370	I	5-25-20	SAMUEL D YOHO	TH EXPLORATION, LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA
10*18379	I	5-25-20	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA	NA
10*19540	I	5-25-20	ERICA M MASON	TH EXPLORATION, LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA
10*19652	I	5-25-20	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA

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10*19662	I	5-25-20	CHESTNUT HOLDINGS INC	TH EXPLORATION, LLC	1/8+	949	311	NA	NA	NA	NA	NA	NA	NA
10*19903	I	5-25-20	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*21179	I	5-25-20	JACK R HAMMERS	TH EXPLORATION, LLC	1/8+	952	188	NA	NA	NA	NA	NA	NA	NA
10*21180	I	5-25-20	ANTOINE E GERAUD	TH EXPLORATION, LLC	1/8+	952	192	NA	NA	NA	NA	NA	NA	NA
10*21183	I	5-25-20	DONALD R NEWLAND AND SUZANNE NEWLAND	TH EXPLORATION, LLC	1/8+	952	205	NA	NA	NA	NA	NA	NA	NA
10*21241	I	5-25-20	DARRELL NEWLAND	TH EXPLORATION, LLC	1/8+	952	636	NA	NA	NA	NA	NA	NA	NA
10*21315	I	5-25-20	CLAUDIA LOWERY MALLOY	TH EXPLORATION, LLC	1/8+	953	302	NA	NA	NA	NA	NA	NA	NA
10*21316	I	5-25-20	JAMES MICHAEL YOHO	TH EXPLORATION, LLC	1/8+	953	300	NA	NA	NA	NA	NA	NA	NA
10*21317	I	5-25-20	BRADFORD D LOWERY & DEBORAH BRADFORD	TH EXPLORATION, LLC	1/8+	953	297	NA	NA	NA	NA	NA	NA	NA
10*21383	I	5-25-20	JANET LEE SPARKS	TH EXPLORATION, LLC	1/8+	957	27	NA	NA	NA	NA	NA	NA	NA
10*21419	I	5-25-20	DAPHNE HUFFMAN AND CHARLES HUFFMAN	TH EXPLORATION, LLC	1/8+	957	59	NA	NA	NA	NA	NA	NA	NA
10*21431	I	5-25-20	GARY WAYNE ZESIGER & VICKIE ZESIGER	TH EXPLORATION, LLC	1/8+	957	57	NA	NA	NA	NA	NA	NA	NA
10*21436	I	5-25-20	CECILIA D NEWLAND	TH EXPLORATION, LLC	1/8+	957	55	NA	NA	NA	NA	NA	NA	NA
10*21439	I	5-25-20	M VIRGINIA & EDWARD C MARSH	TH EXPLORATION, LLC	1/8+	957	53	NA	NA	NA	NA	NA	NA	NA
10*21456	I	5-25-20	TONI JO MASON LIVING TRUST	TH EXPLORATION, LLC	1/8+	953	540	NA	NA	NA	NA	NA	NA	NA
10*21469	I	5-25-20	KIMBERLY S DENNY AND JAMES E DENNY	TH EXPLORATION, LLC	1/8+	957	244	NA	NA	NA	NA	NA	NA	NA
10*21471	I	5-25-20	RICHARD ROSS WILSON	TH EXPLORATION, LLC	1/8+	960	190	NA	NA	NA	NA	NA	NA	NA
10*21620	I	5-25-20	ROBERT CRAIG MONTGOMERY AND CYNTHIA R MONTGOMERY	TH EXPLORATION, LLC	1/8+	959	496	NA	NA	NA	NA	NA	NA	NA
10*21621	I	5-25-20	MARILYN NOEL	TH EXPLORATION, LLC	1/8+	959	494	NA	NA	NA	NA	NA	NA	NA
10*21658	I	5-25-20	CLARENCE RICHARD ZESIGER & MARY ZESIGER	TH EXPLORATION, LLC	1/8+	959	490	NA	NA	NA	NA	NA	NA	NA
10*21659	I	5-25-20	DEBORAH BLOUGH	TH EXPLORATION, LLC	1/8+	958	392	NA	NA	NA	NA	NA	NA	NA
10*21660	I	5-25-20	PAMELA L DRAZIC AND JEFFREY DRAZIC	TH EXPLORATION, LLC	1/8+	958	390	NA	NA	NA	NA	NA	NA	NA
10*21830	I	5-25-20	MARISSA MASON	TH EXPLORATION, LLC	1/8+	960	200	NA	NA	NA	NA	NA	NA	NA
10*21831	I	5-25-20	MATTHEW MASON	TH EXPLORATION, LLC	1/8+	966	122	NA	NA	NA	NA	NA	NA	NA
10*21834	I	5-25-20	GEORGE DANIEL KRUGER	TH EXPLORATION, LLC	1/8+	960	204	NA	NA	NA	NA	NA	NA	NA
10*21947	I	5-25-20	WALLACE LYNN WENDEL	TH EXPLORATION, LLC	1/8+	965	59	NA	NA	NA	NA	NA	NA	NA
10*21988	I	5-25-20	ERICA M MASON	TH EXPLORATION, LLC	1/8+	960	552	NA	NA	NA	NA	NA	NA	NA
10*22007	I	5-25-20	DEBORAH K KLIMASZEWSI AND FRANK KLIMASZEWSKI	TH EXPLORATION, LLC	1/8+	959	492	NA	NA	NA	NA	NA	NA	NA

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10*22008	I	5-25-20	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA	NA
10*22008	I	5-25-20	COLIN R YOHO	TH EXPLORATION, LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA	NA
10*22009	I	5-25-20	MARGARET F RICHMOND	TH EXPLORATION, LLC	1/8+	954	626	NA	NA	NA	NA	NA	NA	NA	NA
10*22010	I	5-25-20	ROBERT I BONAR SR	TH EXPLORATION, LLC	1/8+	954	624	NA	NA	NA	NA	NA	NA	NA	NA
10*22011	I	5-25-20	BARBARA ANN MAYNARD	TH EXPLORATION, LLC	1/8+	954	628	NA	NA	NA	NA	NA	NA	NA	NA
10*22012	I	5-25-20	PAUL F HAMMER	TH EXPLORATION, LLC	1/8+	954	622	NA	NA	NA	NA	NA	NA	NA	NA
10*22025	I	5-25-20	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA	NA
10*22025	I	5-25-20	MARK & MARY YOHO	TH EXPLORATION, LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA	NA
10*22031	I	5-25-20	PHILLIP YOHO AND PATRICIA YOHO	TH EXPLORATION, LLC	1/8+	960	535	NA	NA	NA	NA	NA	NA	NA	NA
10*22032	I	5-25-20	JOANNE E RAY	TH EXPLORATION, LLC	1/8+	960	537	NA	NA	NA	NA	NA	NA	NA	NA
10*22106	I	5-25-20	BARRY RAY MOORE	TH EXPLORATION, LLC	1/8+	954	643	NA	NA	NA	NA	NA	NA	NA	NA
10*22129	I	5-25-20	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA	NA
10*22129	I	5-25-20	JANICE N HAUDENSCHILT	TH EXPLORATION, LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA	NA
10*22137	I	5-25-20	CONNIE L NEELY	TH EXPLORATION, LLC	1/8+	961	466	NA	NA	NA	NA	NA	NA	NA	NA
10*22152	I	5-25-20	PAUL F HAMMERS	TH EXPLORATION, LLC	1/8+	954	622	NA	NA	NA	NA	NA	NA	NA	NA
10*22285	I	5-25-20	DONALD JAMES WILSON AND SANDY L WILSON	TH EXPLORATION, LLC	1/8+	962	193	NA	NA	NA	NA	NA	NA	NA	NA
10*22334	I	5-25-20	JOHN BRYANT	TH EXPLORATION, LLC	1/8+	962	540	NA	NA	NA	NA	NA	NA	NA	NA
10*22441	I	5-25-20	APRIL ROSE POSTLETHWAIT	TH EXPLORATION, LLC	1/8+	963	646	NA	NA	NA	NA	NA	NA	NA	NA
10*22510	I	5-25-20	DONNA YOHO	TH EXPLORATION, LLC	1/8+	964	432	NA	NA	NA	NA	NA	NA	NA	NA
10*22561	I	5-25-20	MARY ROSE YOHO	TH EXPLORATION, LLC	1/8+	968	200	NA	NA	NA	NA	NA	NA	NA	NA
10*22562	I	5-25-20	HAROLD C SIMMONS	TH EXPLORATION, LLC	1/8+	966	100	NA	NA	NA	NA	NA	NA	NA	NA
10*22563	I	5-25-20	KIMBERLY D STRAUCH	TH EXPLORATION, LLC	1/8+	966	522	NA	NA	NA	NA	NA	NA	NA	NA
10*22718	I	5-25-20	WILLIAM R RICHMOND AND CONNIE S RICHMOND	TH EXPLORATION, LLC	1/8+	963	389	NA	NA	NA	NA	NA	NA	NA	NA
10*14786	J	5-25-20.1	TWILA ORA WHIPKEY	GASTAR EXPLORATION USA INC	1/8+	799	61	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14795	J	5-25-20.1	LARRY YOHO	GASTAR EXPLORATION USA INC	1/8+	799	526	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14797	J	5-25-20.1	ORVILLE YOUNG	GASTAR EXPLORATION USA INC	1/8+	800	598	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14806	J	5-25-20.1	DONNA VIVIAN YOHO	GASTAR EXPLORATION USA INC	1/8+	809	558	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC
10*14807	J	5-25-20.1	JANICE N HAUDENSCHILT	GASTAR EXPLORATION USA INC	1/8+	809	555	NA	NA	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC

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10*14808	J	5-25-20.1	DANA MILICIA HUMPHREYS	GASTAR EXPLORATION USA INC	1/8+	809	552	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14809	J	5-25-20.1	DEWEY A. MILICIA	GASTAR EXPLORATION USA INC	1/8+	809	549	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14810	J	5-25-20.1	NICOLETTA MILICIA BLOODWORTH	GASTAR EXPLORATION USA INC	1/8+	809	546	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14811	J	5-25-20.1	MARK YOHO AND MARY YOHO	GASTAR EXPLORATION USA INC	1/8+	809	543	NA	NA	NA	NA	21/41 Gastar Exploration USA Inc to Gastar Exploration, Inc	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14814	J	5-25-20.1	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	537	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14815	J	5-25-20.1	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	535	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14822	J	5-25-20.1	ONWARD E BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	463	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*14823	J	5-25-20.1	SARAH L BURGE TRUST	GASTAR EXPLORATION INC	1/8+	876	459	NA	NA	NA	NA	NA	36/9 Gastar Exploration, Inc. to TH Exploration II, LLC	
10*17195	J	5-25-20.1	PATRICIA HARTMAN	GASTAR EXPLORATION USA INC	1/8+	695	317	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17196	J	5-25-20.1	DELBERT R. MONTGOMERY	GASTAR EXPLORATION USA INC	1/8+	695	311	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17197	J	5-25-20.1	GLORIA J. SIMMONS HAROLD SIMMONS	GASTAR EXPLORATION USA INC	1/8+	695	313	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17199	J	5-25-20.1	PAMELA L DRAZIC AND JEFFREY DRAZIC	GASTAR EXPLORATION USA INC	1/8+	695	315	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

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10*17200	J	5-25-20.1	STEPHANIE L. HALL	GASTAR EXPLORATION USA INC	1/8+	697	156	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17201	J	5-25-20.1	DENISE A GALE	GASTAR EXPLORATION USA INC	1/8+	697	395	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17202	J	5-25-20.1	JANE GALE	GASTAR EXPLORATION USA INC	1/8+	697	385	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17203	J	5-25-20.1	BARRY RAY MOORE	GASTAR EXPLORATION USA INC	1/8+	697	387	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17204	J	5-25-20.1	CLARENCE RICHARD ZESIGER & MARY ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	391	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17206	J	5-25-20.1	M VIRGINIA & EDWARD C MARSH	GASTAR EXPLORATION USA INC	1/8+	697	399	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17207	J	5-25-20.1	DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR.	GASTAR EXPLORATION USA INC	1/8+	697	389	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC
10*17210	J	5-25-20.1	MARILYN NOEL	GASTAR EXPLORATION USA INC	1/8+	697	393	23/353 Gastar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gastar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC

10*17211	J	5-25-20.1	GARY WAYNE ZESIGER & VICKIE ZESIGER	GASTAR EXPLORATION USA INC	1/8+	697	397	23/353 Gatar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gatar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC	4705102062		
10*17212	J	5-25-20.1	DARRELL NEWLAND LYDIA NEWLAND	GASTAR EXPLORATION USA INC	1/8+	697	158	23/353 Gatar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gatar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC			
10*17213	J	5-25-20.1	CAROL DEEN GARDNER	GASTAR EXPLORATION USA INC	1/8+	697	154	23/353 Gatar Exploration USA Inc to Atinum Marcellus I, LLC	27/311 Gatar Exploration USA, Inc and Atinum Marcellus I, LLC to Chesapeake Appalachia, LLC and Statoil USA Onshore Properties Inc	33/110 Chesapeake Appalachia, LLC to SWN Production Company, LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC	19/624 SWN Exchange Titleholder LLC to SWN Production Company, LLC	41/238 Statoil USA Onshore Properties Inc to TH Exploration, LLC	41/256 SWN Production Company, LLC to TH Exploration, LLC			
10*18275	J	5-25-20.1	BETTY JEAN NEELY	TH EXPLORATION LLC	1/8+	929	60	NA	NA	NA	NA	NA	NA	NA		NA	
10*18366	J	5-25-20.1	MARY LOU WILSON AND STANLEY D WILSON	TH EXPLORATION LLC	1/8+	931	311	NA	NA	NA	NA	NA	NA	NA		NA	
10*18369	J	5-25-20.1	CRAIG ALAN YOHO AND DONNA M YOHO	TH EXPLORATION LLC	1/8+	931	303	NA	NA	NA	NA	NA	NA	NA		NA	
10*18370	J	5-25-20.1	SAMUEL D YOHO	TH EXPLORATION LLC	1/8+	931	300	NA	NA	NA	NA	NA	NA	NA		NA	
10*18379	J	5-25-20.1	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION LLC	1/8+	932	439	NA	NA	NA	NA	NA	NA	NA		NA	
10*19540	J	5-25-20.1	ERICA M MASON	TH EXPLORATION LLC	1/8+	942	53	NA	NA	NA	NA	NA	NA	NA		NA	
10*19652	J	5-25-20.1	JACK R HAMMERS	TH EXPLORATION LLC	1/8+	944	108	NA	NA	NA	NA	NA	NA	NA		NA	
10*19903	J	5-25-20.1	PAUL F HAMMERS	TH EXPLORATION LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA		NA	
10*22008	J	5-25-20.1	COLIN R YOHO	TH EXPLORATION LLC	1/8+	953	304	NA	NA	NA	NA	NA	NA	NA		NA	
10*22025	J	5-25-20.1	MARK & MARY YOHO	TH EXPLORATION LLC	1/8+	960	544	NA	NA	NA	NA	NA	NA	NA		NA	
10*22129	J	5-25-20.1	JANICE N HAUDENSCHILT	TH EXPLORATION LLC	1/8+	961	459	NA	NA	NA	NA	NA	NA	NA		NA	
10*22441	J	5-25-20.1	APRIL ROSE POSTLETHWAIT	TH EXPLORATION LLC	1/8+	963	646	NA	NA	NA	NA	NA	NA	NA		NA	
10*22510	J	5-25-20.1	DONNA YOHO	TH EXPLORATION LLC	1/8+	964	432	NA	NA	NA	NA	NA	NA	NA	NA		
10*19727	K	5-25-14	S RICHARD MELLON	TH EXPLORATION LLC	1/8+	944	465	NA	NA	NA	NA	NA	NA	NA	NA		
10*19728	K	5-25-14	KATHLEEN I FRANCIS	TH EXPLORATION LLC	1/8+	944	463	NA	NA	NA	NA	NA	NA	NA	NA		
10*19729	K	5-25-14	JANICE F BROOKOVER	TH EXPLORATION LLC	1/8+	944	90	NA	NA	NA	NA	NA	NA	NA	NA		
10*19730	K	5-25-14	JEANETTE M HEATH	TH EXPLORATION LLC	1/8+	944	577	NA	NA	NA	NA	NA	NA	NA	NA		
10*19731	K	5-25-14	ARELENA B HORNER AND QUAY ALLEN HORNER	TH EXPLORATION LLC	1/8+	944	467	NA	NA	NA	NA	NA	NA	NA	NA		
10*19844	K	5-25-14	BARBARA BARNHART AND WALTER BARNHART	TH EXPLORATION LLC	1/8+	946	40	NA	NA	NA	NA	NA	NA	NA	NA		

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10*19895	K	5-25-14	DAVID BELL	TH EXPLORATION LLC	1/8+	948	589	NA	NA	NA	NA	NA	NA	NA
10*19896	K	5-25-14	ISABEL GEORGE AND HENSLEY J GEORGE	TH EXPLORATION LLC	1/8+	949	231	NA	NA	NA	NA	NA	NA	NA
10*19897	K	5-25-14	ROSE BELL	TH EXPLORATION LLC	1/8+	949	223	NA	NA	NA	NA	NA	NA	NA
10*19898	K	5-25-14	NANCY J TODD	TH EXPLORATION LLC	1/8+	949	226	NA	NA	NA	NA	NA	NA	NA
10*19899	K	5-25-14	WILLIAM H BELL	TH EXPLORATION LLC	1/8+	948	228	NA	NA	NA	NA	NA	NA	NA
10*19900	K	5-25-14	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION LLC	1/8+	948	580	NA	NA	NA	NA	NA	NA	NA
10*19901	K	5-25-14	MIRIAM D LYDICK	TH EXPLORATION LLC	1/8+	948	585	NA	NA	NA	NA	NA	NA	NA
10*19903	K	5-25-14	PAUL F HAMMERS	TH EXPLORATION LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*19904	K	5-25-14	WILLAJEAN NEVA HORES AND DONALD HORES	TH EXPLORATION LLC	1/8+	948	582	NA	NA	NA	NA	NA	NA	NA
10*19905	K	5-25-14	GEORGE CUMBERLEDGE	TH EXPLORATION LLC	1/8+	948	578	NA	NA	NA	NA	NA	NA	NA
10*19906	K	5-25-14	CAROL JUNE MILLER	TH EXPLORATION LLC	1/8+	948	587	NA	NA	NA	NA	NA	NA	NA
10*19913	K	5-25-14	JACK R HAMMERS	TH EXPLORATION LLC	1/8+	949	229	NA	NA	NA	NA	NA	NA	NA
10*19964	K	5-25-14	THOMAS JACOB BELL	TH EXPLORATION LLC	1/8+	948	218	NA	NA	NA	NA	NA	NA	NA
10*19965	K	5-25-14	HARRY R BELL	TH EXPLORATION LLC	1/8+	948	221	NA	NA	NA	NA	NA	NA	NA
10*19966	K	5-25-14	CHERYL RIDGELY	TH EXPLORATION LLC	1/8+	948	225	NA	NA	NA	NA	NA	NA	NA
10*19967	K	5-25-14	CHARLES R PARSONS AND LINDA R PARSONS	TH EXPLORATION LLC	1/8+	948	215	NA	NA	NA	NA	NA	NA	NA
10*19969	K	5-25-14	MATTHEW E WEAR AND LEIGH ANN WEAR	TH EXPLORATION LLC	1/8+	948	232	NA	NA	NA	NA	NA	NA	NA
10*20002	K	5-25-14	ELSIE KAREN PADGELEK	TH EXPLORATION LLC	1/8+	951	561	NA	NA	NA	NA	NA	NA	NA
10*21003	K	5-25-14	SARA JANE RINEHART AND JAMES RINEHART	TH EXPLORATION LLC	1/8+	951	559	NA	NA	NA	NA	NA	NA	NA
10*21128	K	5-25-14	BARBARA J CONWAY AND JAMES G CONWAY	TH EXPLORATION LLC	1/8+	952	218	NA	NA	NA	NA	NA	NA	NA
10*21181	K	5-25-14	DONNA V YOHO	TH EXPLORATION LLC	1/8+	952	194	NA	NA	NA	NA	NA	NA	NA
10*21182	K	5-25-14	JANICE N HAUDENSCHILT	TH EXPLORATION LLC	1/8+	952	203	NA	NA	NA	NA	NA	NA	NA
10*21422	K	5-25-14	COLIN R YOHO	TH EXPLORATION LLC	1/8+	957	182	NA	NA	NA	NA	NA	NA	NA
10*21453	K	5-25-14	MICHELLE E OVERALL AND JAMES E OVERALL	TH EXPLORATION LLC	1/8+	953	312	NA	NA	NA	NA	NA	NA	NA
10*21544	K	5-25-14	MADLYN MOSSER LISA SUZANNA FONNER POA	TH EXPLORATION LLC	1/8+	949	221	NA	NA	NA	NA	NA	NA	NA
10*21988	K	5-25-14	ERICA M MASON	TH EXPLORATION, LLC	1/8+	960	552	NA	NA	NA	NA	NA	NA	NA
10*22135	K	5-25-14	DANA MILICIA HUMPHREYS	TH EXPLORATION LLC	1/8+	961	455	NA	NA	NA	NA	NA	NA	NA
10*22136	K	5-25-14	NICOLETTA MILICIA BLOODWORTH	TH EXPLORATION LLC	1/8+	961	457	NA	NA	NA	NA	NA	NA	NA
10*22166	K	5-25-14	MARK E YOHO	TH EXPLORATION LLC	1/8+	954	639	NA	NA	NA	NA	NA	NA	NA
10*22193	K	5-25-14	CAROLE PARSONS	TH EXPLORATION LLC	1/8+	952	625	NA	NA	NA	NA	NA	NA	NA
10*22331	K	5-25-14	TIMOTHY J CARROLL AND KATHLEEN A CARROLL	TH EXPLORATION LLC	1/8+	957	472	NA	NA	NA	NA	NA	NA	NA
10*22439	K	5-25-14	DEWEY A MILICIA	TH EXPLORATION LLC	1/8+	964	220	NA	NA	NA	NA	NA	NA	NA

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10*22454	K	5-25-14	NANCY ELAINE BELL	TH EXPLORATION LLC	1/8+	958	385	NA	NA	NA	NA	NA	NA	NA
10*22841	K	5-25-14	AARON PATRICK WEAR	TH EXPLORATION LLC	1/8+	962	313	NA	NA	NA	NA	NA	NA	NA
10*22983	K	5-25-14	SEAN MICHAEL WEAR	TH EXPLORATION LLC	1/8+	962	318	NA	NA	NA	NA	NA	NA	NA
10*19727	L	5-25-14.1	S RICHARD MELLON	TH EXPLORATION LLC	1/8+	944	465	NA	NA	NA	NA	NA	NA	NA
10*19728	L	5-25-14.1	KATHLEEN I FRANCIS	TH EXPLORATION LLC	1/8+	944	463	NA	NA	NA	NA	NA	NA	NA
10*19729	L	5-25-14.1	JANICE F BROOKOVER	TH EXPLORATION LLC	1/8+	944	90	NA	NA	NA	NA	NA	NA	NA
10*19730	L	5-25-14.1	JEANETTE M HEATH	TH EXPLORATION LLC	1/8+	944	577	NA	NA	NA	NA	NA	NA	NA
10*19731	L	5-25-14.1	ARELENA B HORNER AND QUAY ALLEN HORNER	TH EXPLORATION LLC	1/8+	944	467	NA	NA	NA	NA	NA	NA	NA
10*19844	L	5-25-14.1	BARBARA BARNHART AND WALTER BARNHART	TH EXPLORATION LLC	1/8+	946	40	NA	NA	NA	NA	NA	NA	NA
10*19895	L	5-25-14.1	DAVID BELL	TH EXPLORATION LLC	1/8+	948	589	NA	NA	NA	NA	NA	NA	NA
10*19896	L	5-25-14.1	ISABEL GEORGE AND HENSLEY J GEORGE	TH EXPLORATION LLC	1/8+	949	231	NA	NA	NA	NA	NA	NA	NA
10*19897	L	5-25-14.1	ROSE BELL	TH EXPLORATION LLC	1/8+	949	223	NA	NA	NA	NA	NA	NA	NA
10*19898	L	5-25-14.1	NANCY J TODD	TH EXPLORATION LLC	1/8+	949	226	NA	NA	NA	NA	NA	NA	NA
10*19899	L	5-25-14.1	WILLIAM H BELL	TH EXPLORATION LLC	1/8+	948	228	NA	NA	NA	NA	NA	NA	NA
10*19900	L	5-25-14.1	DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST	TH EXPLORATION LLC	1/8+	948	580	NA	NA	NA	NA	NA	NA	NA
10*19901	L	5-25-14.1	MIRIAM D LYDICK	TH EXPLORATION LLC	1/8+	948	585	NA	NA	NA	NA	NA	NA	NA
10*19903	L	5-25-14.1	PAUL F HAMMERS	TH EXPLORATION LLC	1/8+	948	236	NA	NA	NA	NA	NA	NA	NA
10*19904	L	5-25-14.1	WILLAJEAN NEVA HORES AND DONALD HORES	TH EXPLORATION LLC	1/8+	948	582	NA	NA	NA	NA	NA	NA	NA
10*19905	L	5-25-14.1	GEORGE CUMBERLEDGE	TH EXPLORATION LLC	1/8+	948	578	NA	NA	NA	NA	NA	NA	NA
10*19906	L	5-25-14.1	CAROL JUNE MILLER	TH EXPLORATION LLC	1/8+	948	587	NA	NA	NA	NA	NA	NA	NA
10*19913	L	5-25-14.1	JACK R HAMMERS	TH EXPLORATION LLC	1/8+	949	229	NA	NA	NA	NA	NA	NA	NA
10*19964	L	5-25-14.1	THOMAS JACOB BELL	TH EXPLORATION LLC	1/8+	948	218	NA	NA	NA	NA	NA	NA	NA
10*19965	L	5-25-14.1	HARRY R BELL	TH EXPLORATION LLC	1/8+	948	221	NA	NA	NA	NA	NA	NA	NA
10*19966	L	5-25-14.1	CHERYL RIDGELY	TH EXPLORATION LLC	1/8+	948	225	NA	NA	NA	NA	NA	NA	NA
10*19967	L	5-25-14.1	CHARLES R PARSONS AND LINDA R PARSONS	TH EXPLORATION LLC	1/8+	948	215	NA	NA	NA	NA	NA	NA	NA
10*19969	L	5-25-14.1	MATTHEW E WEAR AND LEIGH ANN WEAR	TH EXPLORATION LLC	1/8+	948	232	NA	NA	NA	NA	NA	NA	NA
10*20002	L	5-25-14.1	ELSIE KAREN PADGELEK	TH EXPLORATION LLC	1/8+	951	561	NA	NA	NA	NA	NA	NA	NA
10*21003	L	5-25-14.1	SARA JANE RINEHART AND JAMES RINEHART	TH EXPLORATION LLC	1/8+	951	559	NA	NA	NA	NA	NA	NA	NA
10*21128	L	5-25-14.1	BARBARA J CONWAY AND JAMES G CONWAY	TH EXPLORATION LLC	1/8+	952	218	NA	NA	NA	NA	NA	NA	NA
10*21181	L	5-25-14.1	DONNA V YOHO	TH EXPLORATION LLC	1/8+	952	194	NA	NA	NA	NA	NA	NA	NA
10*21182	L	5-25-14.1	JANICE N HAUDENSCHILT	TH EXPLORATION LLC	1/8+	952	203	NA	NA	NA	NA	NA	NA	NA
10*21422	L	5-25-14.1	COLIN R YOHO	TH EXPLORATION LLC	1/8+	957	182	NA	NA	NA	NA	NA	NA	NA

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10*21453	L	5-25-14.1	MICHELLE E OVERALL AND JAMES E OVERALL	TH EXPLORATION LLC	1/8+	953	312	NA	NA	NA	NA	NA	NA	NA
10*21544	L	5-25-14.1	MADELYN MOSSER LISA SUZANNA FONNER POA	TH EXPLORATION LLC	1/8+	949	221	NA	NA	NA	NA	NA	NA	NA
10*21988	L	5-25-14.1	ERICA M MASON	TH EXPLORATION, LLC	1/8+	960	552	NA	NA	NA	NA	NA	NA	NA
10*22135	L	5-25-14.1	DANA MILICIA HUMPHREYS	TH EXPLORATION LLC	1/8+	961	455	NA	NA	NA	NA	NA	NA	NA
10*22136	L	5-25-14.1	NICOLETTA MILICIA BLOODWORTH	TH EXPLORATION LLC	1/8+	961	457	NA	NA	NA	NA	NA	NA	NA
10*22166	L	5-25-14.1	MARK E YOHO	TH EXPLORATION LLC	1/8+	954	639	NA	NA	NA	NA	NA	NA	NA
10*22193	L	5-25-14.1	CAROLE PARSONS	TH EXPLORATION LLC	1/8+	952	625	NA	NA	NA	NA	NA	NA	NA
10*22331	L	5-25-14.1	TIMOTHY J CAROLL AND KATHLEEN A CARROLL	TH EXPLORATION LLC	1/8+	957	472	NA	NA	NA	NA	NA	NA	NA
10*22439	L	5-25-14.1	DEWEY A MILICIA	TH EXPLORATION LLC	1/8+	964	220	NA	NA	NA	NA	NA	NA	NA
10*22454	L	5-25-14.1	NANCY ELAINE BELL	TH EXPLORATION LLC	1/8+	958	385	NA	NA	NA	NA	NA	NA	NA
10*22841	L	5-25-14.1	AARON PATRICK WEAR	TH EXPLORATION LLC	1/8+	962	313	NA	NA	NA	NA	NA	NA	NA
10*22983	L	5-25-14.1	SEAN MICHAEL WEAR	TH EXPLORATION LLC	1/8+	962	318	NA	NA	NA	NA	NA	NA	NA

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WV Department of
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AFFIDAVIT

STATE OF TEXAS §
§ SS
COUNTY OF TARRANT §

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

WV Department of
Environmental Protection

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

FURTHER, AFFIANT SAITH NOT.

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

David D. Kalish
Affiant: David D. Kalish

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

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STATE OF TEXAS §
§ SS
COUNTY OF TARRANT §

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

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



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

Jan Pest 4705102062
MARSHALL County 01:22:38 PM
Instrument No 1403489
Date Recorded 04/27/2016
Document Type ASN
Pages Recorded 77
Book-Page 36-9
Recording Fee \$77.00
Additional 413.00

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

Execution Version

ASSIGNMENT AND BILL OF SALE

STATE OF WV

§
§
§

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF MARSHALL

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

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

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

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

(a) all oil, gas and/or mineral leases of Assignor, together with any and all other right, title and interest of Assignor in and to the leasehold estates created thereby, including subleases, royalties, overriding royalties, net profits interest, carried interests or similar rights or interests in such leases, and together with all rights, privileges, benefits and powers conferred upon Assignor with respect to the use and occupation of the lands covered thereby that may be necessary, convenient or incidental to the possession and enjoyment of such leases, located in Marshall, Wetzal, Doddridge, Harrison, Lewis, Marion, and Monongalia Counties, West Virginia and Greene, Butler, Fayette, Somerset, and Clearfield Counties, Pennsylvania, including those described on Exhibit A—Part 1 attached hereto (subject to any reservations, limitations or depth restrictions described on Exhibit A—Part 1), (Assignor's interest in such leases and other right, title and interest as so limited, the "Leases");

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

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ASSIGNMENT AND CONVEYANCE

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

**ARTICLE 1
ASSIGNMENT OF ASSETS**

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

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

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

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

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

Section 2.2 Disclaimers of Warranties and Representations.

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

ASSIGNMENT AND CONVEYANCE

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

ARTICLE 1 ASSIGNMENT OF ASSETS

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

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

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

ARTICLE 2 SPECIAL WARRANTY OF TITLE AND DISCLAIMERS

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

Section 2.2 Disclaimers of Warranties and Representations.

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



TUG HILL

4705102062

June 22, 2018

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

RE: Hillrock 7HM

Subject: Road Crossing Letter

Dear Laura:

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 Hillrock 7HM 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 amiller@tug-hillop.com.

Sincerely,

Amy L. Miller
Permitting Specialist – Appalachia Region

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WV Department of
Environmental Protection

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

Date of Notice Certification: 06/22/2018

API No. 47- 051 -
Operator's Well No. Hillrock 7HM
Well Pad Name: Simms

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>519,682.70</u>
County: <u>Marshall</u>		Northing: <u>4,399,584.44</u>
District: <u>Franklin</u>	Public Road Access: <u>Rines Ridge Road (County Route 76)</u>	
Quadrangle: <u>New Martinsville 7.5'</u>	Generally used farm name: <u>Terry E. and Deborah Simms</u>	
Watershed: <u>Fish Creek (HUC 10)</u>		

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following: *PLEASE CHECK ALL THAT APPLY <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED <input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED <input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH) <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION <input checked="" type="checkbox"/> 5. PUBLIC NOTICE <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		OOG OFFICE USE ONLY <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED
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Required Attachments:

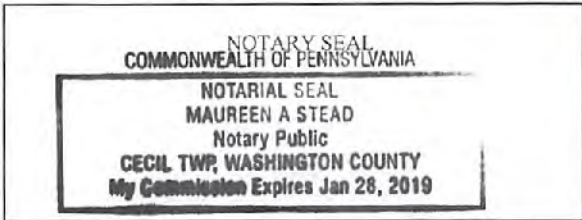
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

4705102062

Certification of Notice is hereby given:

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

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



Subscribed and sworn before me this 22 day of JUNE 2018.
Maureen A Stead Notary Public
 My Commission Expires 1/26/19

Oil and Gas Privacy Notice:

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

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Environmental Protection

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4705102062
API NO. 47- 051
OPERATOR WELL NO. Hillrock 7HM
Well Pad Name: Simms

**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: 6/21/2018 **Date Permit Application Filed:** 6/22/2018

Notice of:

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

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

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

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

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

SURFACE OWNER(s)

Name: Terry and Deborah Simms (Access Road and Well Pad)
Address: 7175 Rines Ridge Road
Proctor, WV 26055

Name: Kenneth and Nadine Corley (Access Road)
Address: 7069 Rines Ridge Road
Proctor, WV 26055

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

Name: _____
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
Address: _____

COAL OWNER OR LESSEE

Name: CNX Land Attn: Casey Saunders
Address: 1000 CONSOL Energy Drive
Canonsburg, PA 15317

COAL OPERATOR

Name: _____
Address: _____

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

Name: See attached list
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary

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4705102062
API NO. 47- 051 -
OPERATOR WELL NO. Hillock 7HM
Well Pad Name: Slims

Notice is hereby given:

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

This Notice Shall Include:

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

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) 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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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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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WW-6A
(8-13)

API NO. 47- 051 -
OPERATOR WELL NO. Hillrock 7HM
Well Pad Name: Simms
4705102062

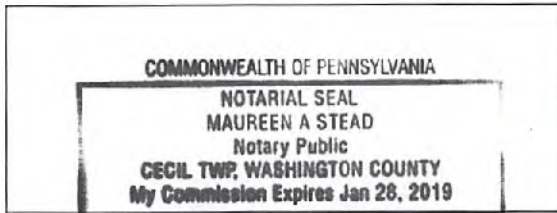
Notice is hereby given by:

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

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.



Subscribed and sworn before me this 21 day of JUNE 2018.
Maureen A Stead Notary Public
My Commission Expires 1/28/19

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WW-6A

Supplement Pg. 1A

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

WATER WELL REPORT

Well: HILLROCK 7HM
 District: Franklin
 County: Marshall
 State: WV

There appears to be Four (4) possible water sources within 2,000 feet of the above referenced well location.

Topo Spot #1 TM 17 Par.11 Kenneth N. Corley et ux 304-455-4983 7069 Rines Ridge Rd. Proctor, WV 26055	Topo spot #2 TM 17 Par.11 Kenneth N. & Deborah Corley 304-455-5670(H), 304-455-3844(C) 7069 Rines Ridge Rd. Proctor, WV 26055	Topo spot #3 TM 23 Par.7 Terry E. & Deborah Simms 304-455-1439 7175 Rines Ridge Rd. Proctor, WV 26055
Topo Spot #4 TM 23 Par.6 James A. Channing, et al 304-797-0119 c/o James Channing 3954 Clarimont Pl. Weirton, WV 26026		

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JUN 25 2018

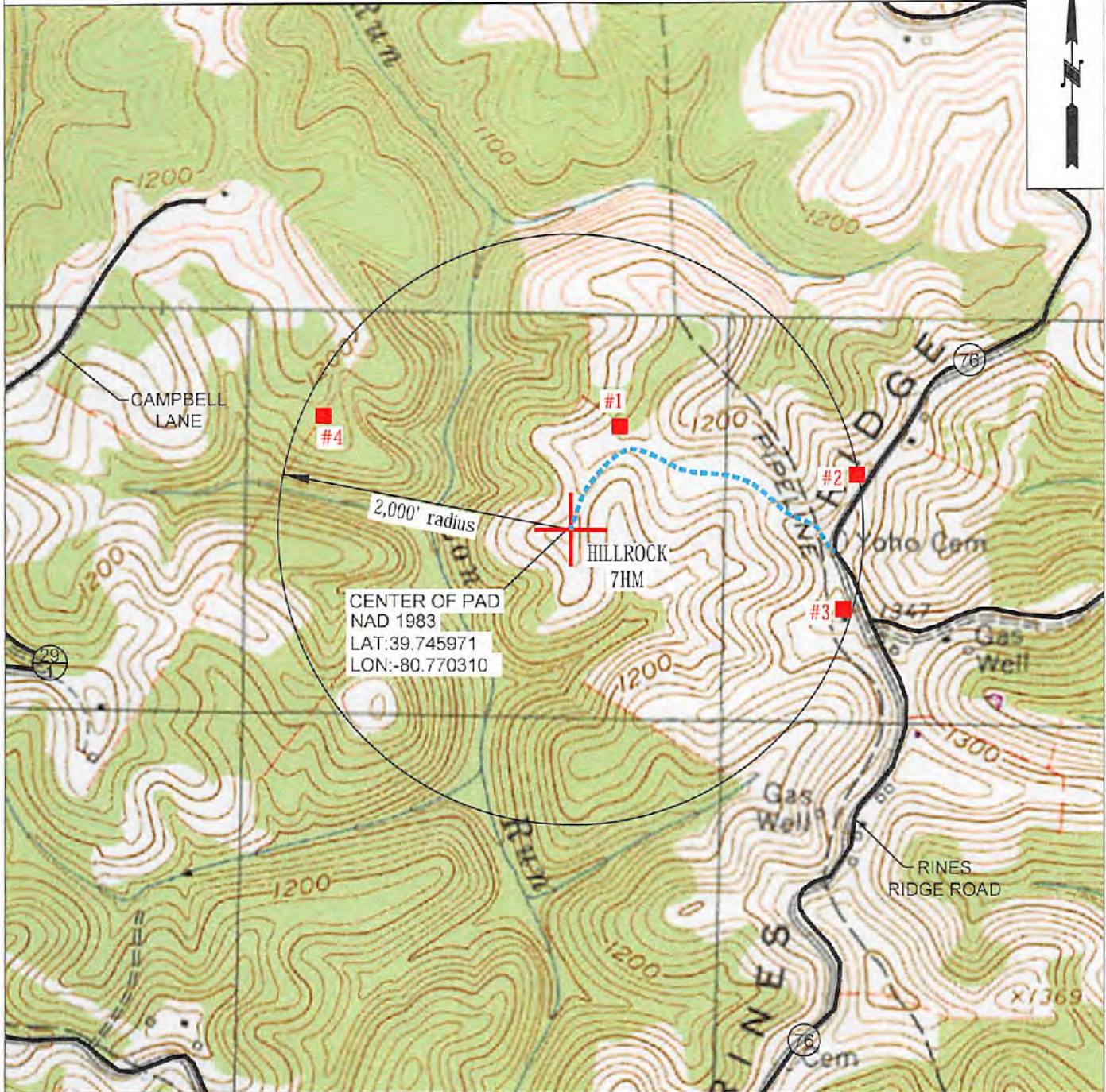
PROPOSED

SUPPLEMENT PG 1

WV Department of
Environmental Protection

HILLROCK 7HM

There appears to be Four (4) possible water sources within 2,000'.



CENTER OF PAD
NAD 1983
LAT:39.745971
LON:-80.770310



TUG HILL
OPERATING

OPERATOR	494510851	TOPO SECTION	LEASE NAME
TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		NEW MARTINSVILLE 7.5'	HILLROCK
SCALE:		DATE:	
1" = 1000'		DATE: 06-11-2018	

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: 06/21/2018 **Date Permit Application Filed:** 06/22/2018

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: Terry and Deborah Simms (Access Road and Well Pad)
Address: 7175 Rines Ridge Road
Proctor, WV 26055

Name: Kenneth and Nadine Corley (Access Road)
Address: 7069 Rines Ridge Road
Proctor, WV 26055

Notice is hereby given:

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>519,682.44</u>
County:	<u>Marshall</u>		Northing:	<u>4,399,584.44</u>
District:	<u>Franklin</u>	Public Road Access:	<u>Rines Ridge Road (County Route 76)</u>	
Quadrangle:	<u>New Martinsville 7.5'</u>	Generally used farm name:	<u>Simms, Terry E. and Deborah</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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: Tug Hill Operating, LLC
Telephone: 724-749-8338
Email: amiller@tug-hilltop.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.

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

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

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

May 16, 2018

Jill M. Newman
Deputy Commissioner

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

Subject: DOH Permits for the Simms Well Pad, Marshall County
Hillrock 7HM Well

Dear Mr. Martin,

This well site will be accessed from Permit #06-2011-0123 transferred to Tug Hill Operating for access to the State Road for a well site located off of Marshall County Route 76 SLS.

The operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

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

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

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4705 02062

PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Well No. Hillrock 7HM

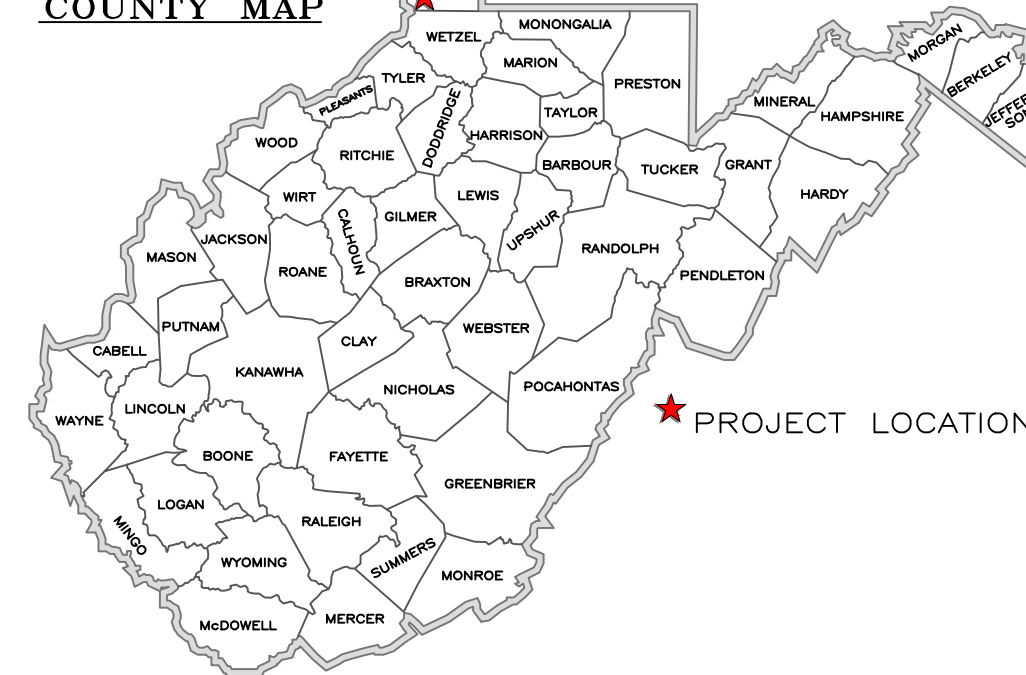
PRODUCT NAME:	CHEMICAL DESCRIPTION:	PRODUCT USE:	HAZARDOUS COMPONENT:
GBW-20C	Hemicellulase Breaker	Breaker - Water	None
ALPHA 1427		Biocide	Glutaraldehyde – CAS#000111-30-8 Quaternary ammonium chloride CAS# 007173-51-5 Alky dimethyl benzyl ammonium Chloride (C12-16) – CAS#068424-85-1 Ethanol – CAS#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

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WEST VIRGINIA COUNTY MAP



WVDEP OOG
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WV 7/3/2018

Simms Well Site

Site Design, Construction Plan, & Erosion and Sediment Control Plans
Tug Hill Operating
Marshall County
Franklin District
Latitude 39.74597093°
Longitude -80.77030987°
Lower Fish Creek Watershed

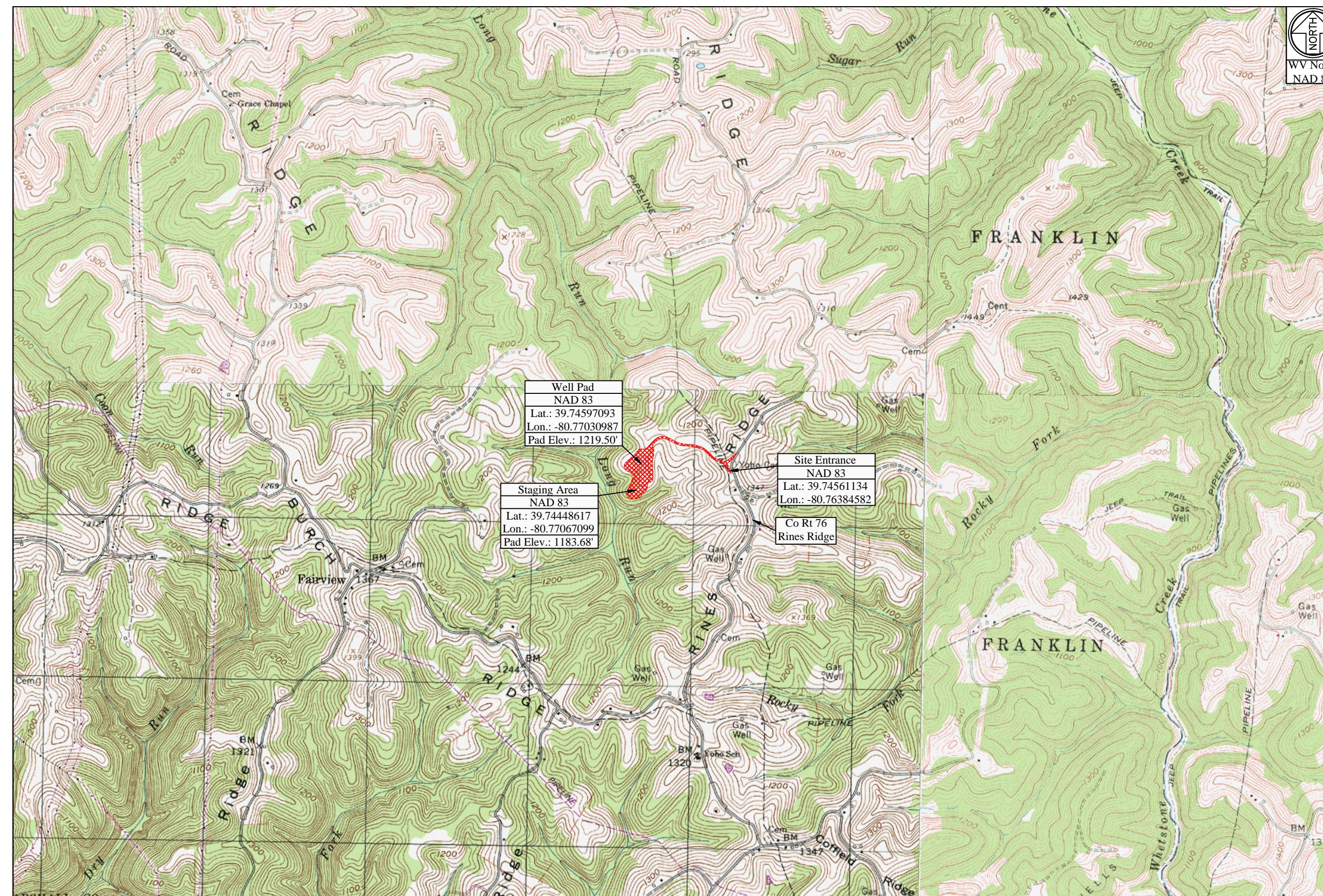
Pertinent Site Information

Simms 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

Property Owner Information - Simms Well Site

Table with columns: Owner, TM - Parcel, Well Pad, Staging, Access Road, Topsoil/Excess, Add. Clearing, Total Disturbed. Rows include Kenneth Corley et ux and Terry Simms et ux.

Exhibit A: Final Design: Issue for Permitting



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

Table with columns: Surface Owner, TM - Parcel, Road Length, Type. Rows include Kenneth Corley et ux and Terry Simms et ux.

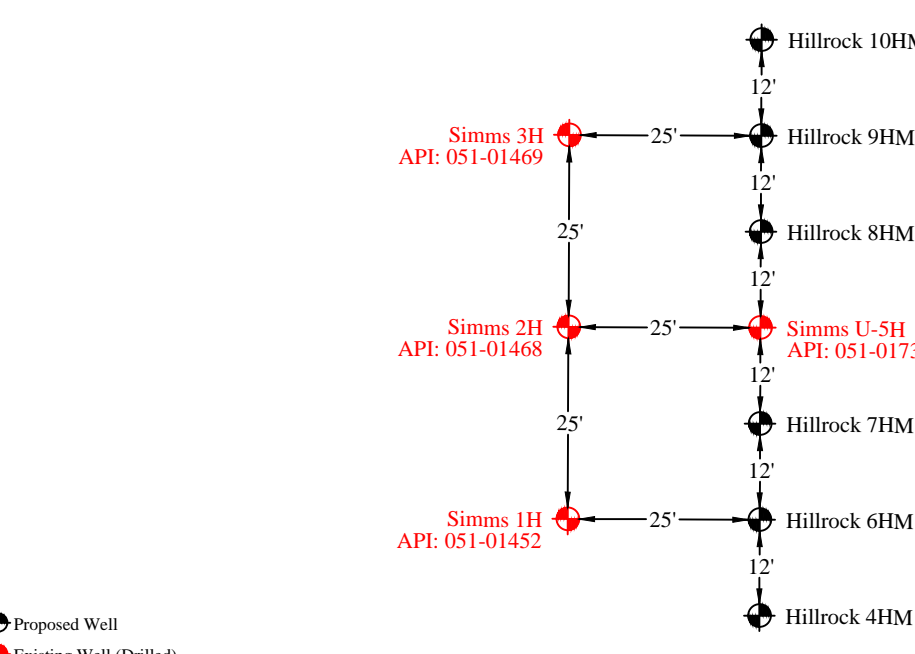
Disturbed Area

Table with columns: Well Pad Construction, Staging Area Construction, Access Road Construction, Topsoil / Excess Material, Additional Clearing, Total Disturbed Area, Total Wasted Acres Disturbed, Total Linear Feet of Access Road.

Simms Well Site Quantities

Table with columns: Description, Cut (CY), Fill (CY), Spoil (CY), Max. Slope, Length of Slope. Rows include Well Pad Grading, Access Road Mountable Berm, Staging Area, Staging Area Access Road, Topsoil/Excess Material Stockpile.

Coordinate data table for Site Entrance, Center of Well Pad, and Center of Staging Area.



Well Table with columns for Well Name and coordinates (NAD 83, UTM 17 NAD 83).

Project Contacts

Tug Hill Operating
Jonathan White - Regulatory Analyst
Geoff Radler - V.P. Production

Survey and Engineer
Kenneth Kelly
John P. See
Zachary Summerfield

Tug Hill Operating, LLC
380 Southpointe Blvd
Cantonburg, PA 15117

Environmental:
Wetland Delineations as provided by Allstar Ecology dated April 9, 2018

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

MISS UTILITY OF WEST VIRGINIA 1-800-245-8484
811 logo and slogan: 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

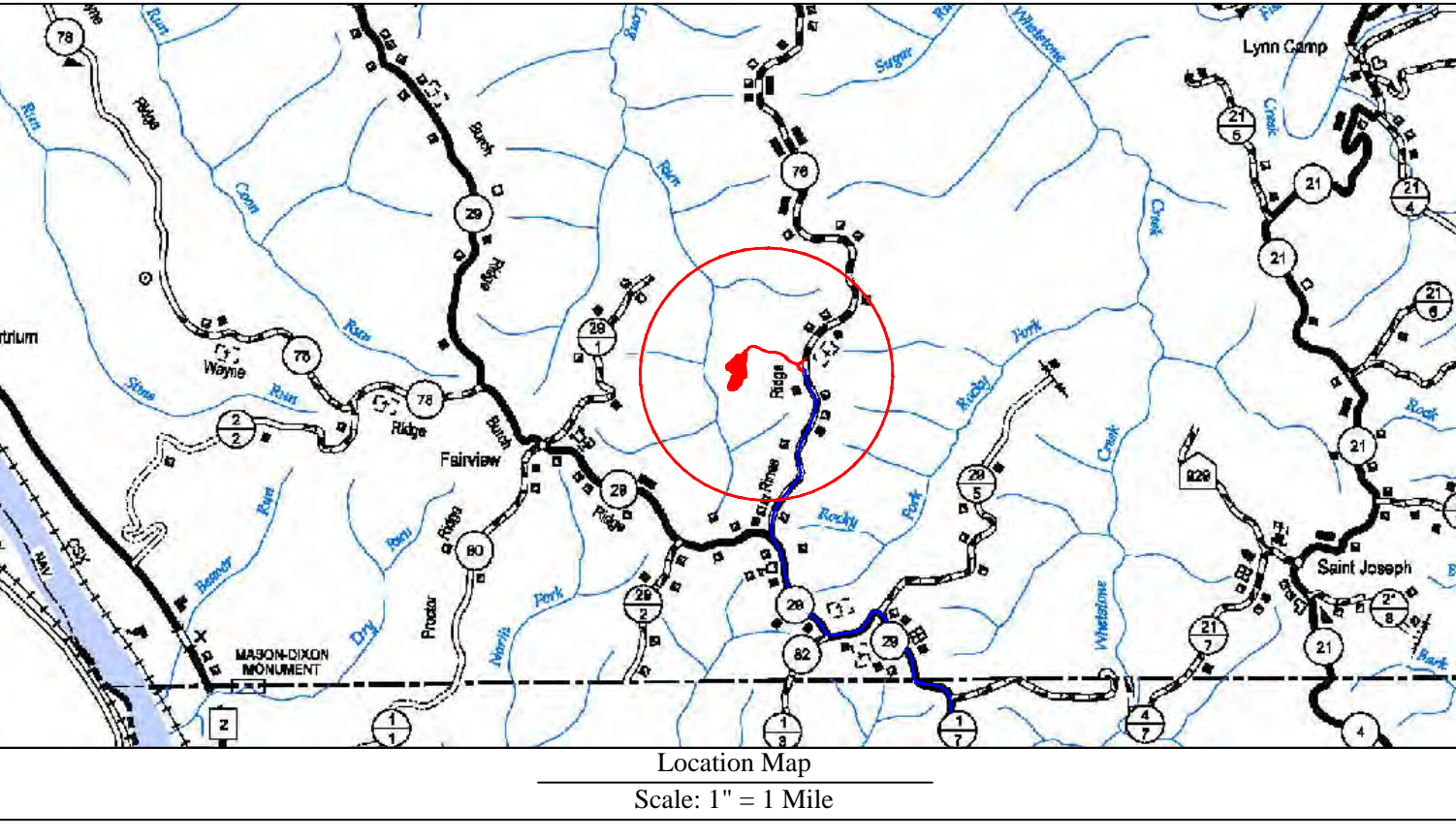
The WV Mines Website was consulted. Previous (Current) mining activities are not within the AOI
WVDEP Website files show that there are active and/or abandoned gas wells within the AOI

Approach Routes:

From the intersection of OH Rt 7 and WV Rt 2 near New Martinsville, WV. Follow WV Rt 2 North for 4.5 mi. Turn Right onto Co Rt 89 (Proctor Creek Rd). Follow Co Rt 89 for 5.9 mi. Turn Left onto Co Rt 1/7 (Coffield Ridge). Follow Co Rt 1/7 for 1.7 mi. Co Rt 1/7 becomes Co Rt 29 (Coffield Ridge). Follow Co Rt 29 for 1.4 mi. Turn Right onto Co Rt 76 (Rines Ridge Rd). Follow Co Rt 76 for 1.1 mi. The site entrance will be on the Left (West) side of the road.

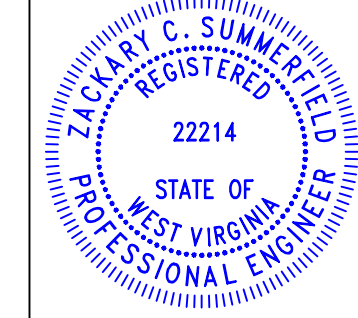
Site Locations (NAD 27) table with columns: Structure, Latitude (DD), Longitude (DD).

Site Locations (NAD 83) table with columns: Structure, Latitude (DD), Longitude (DD).



Well Location Restrictions

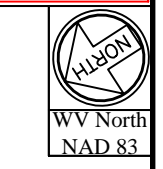
- All Pad construction complies with the following restrictions.
*250' from an existing well or developed spring used for human or domestic animals.
*625' from an occupied dwelling or barn greater than 2,500 SF used for poultry or dairy measured from the center of the pad.
*100' from the edge of disturbance 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)



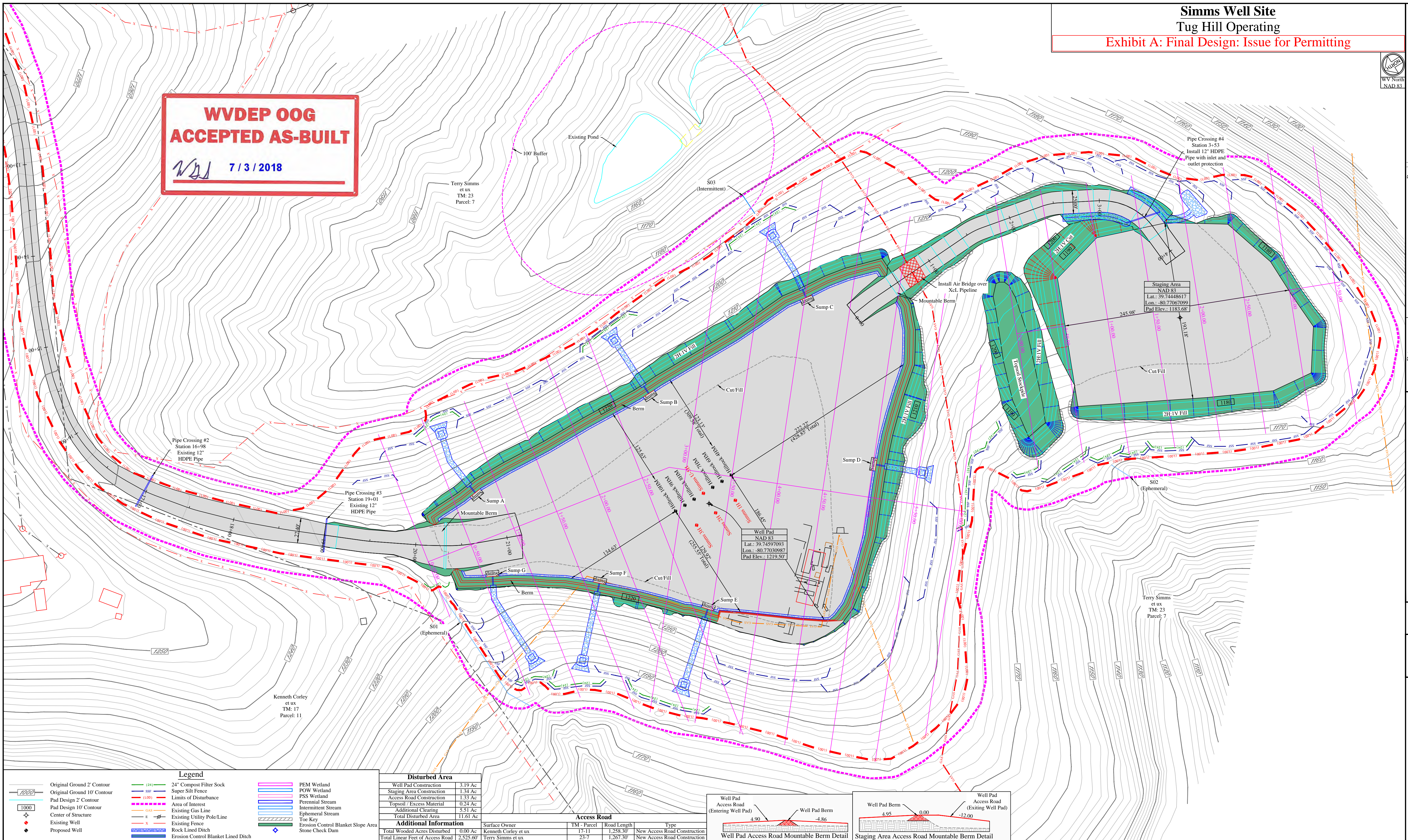
Design Certification
The drawings, construction notes and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas, §30-30.01.
All Plans, Sheets, and/or Reference Diagrams included in this 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, CDO# C0423-09
Date: 05-24-2018

Table with columns: Sheet, Description. Lists sheets 1 through P1 and their corresponding descriptions.

Vertical sidebar containing revision table, dates (05-24-2018, 07-02-2018), logos for Tug Hill Operating and Kelly Surveying, and document title: Simms Well Site Franklin District Marshall County, WV. Sheet 1 of 13.



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WJ 7/3/2018



Legend

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

Disturbed Area

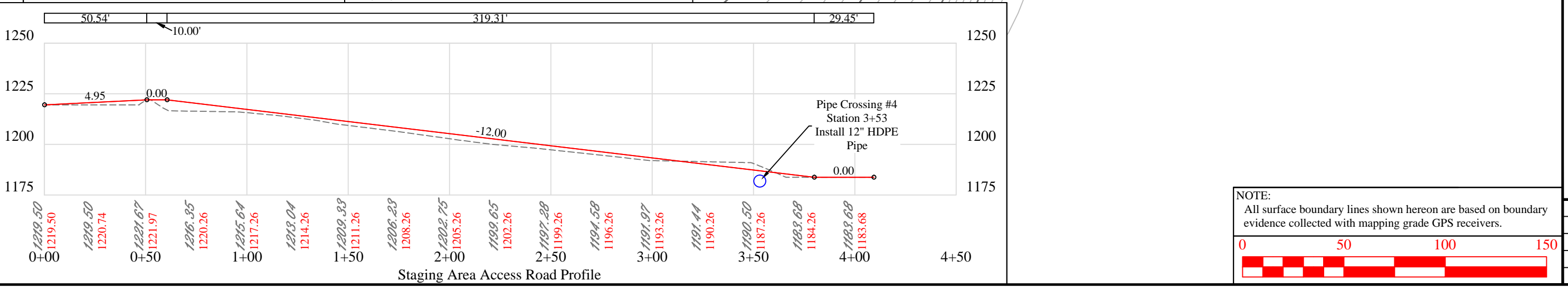
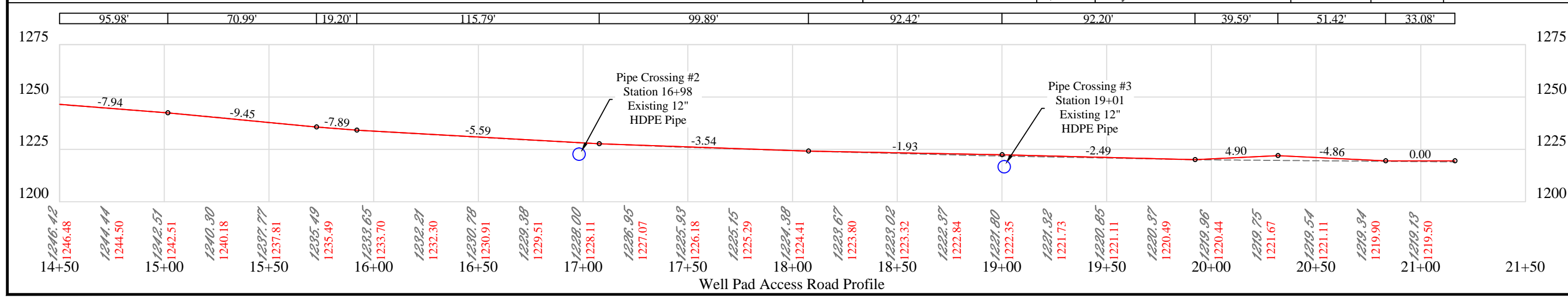
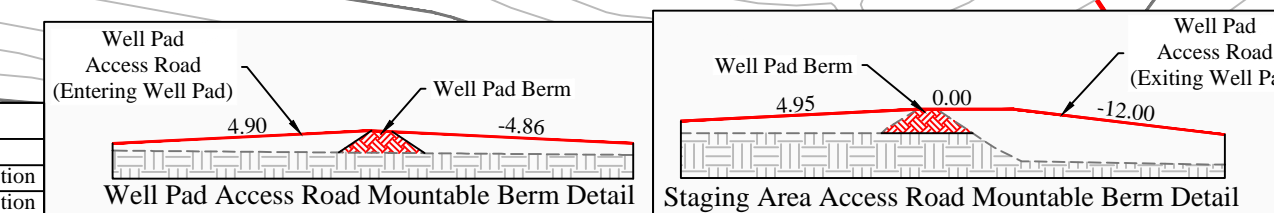
Well Pad Construction	3.19 Ac
Staging Area Construction	1.34 Ac
Access Road Construction	1.33 Ac
Topsoil / Excess Material	0.24 Ac
Additional Clearing	5.51 Ac
Total Disturbed Area	11.61 Ac

Additional Information

Total Worsened Acres Disturbed	0.00 Ac
Total Linear Feet of Access Road	2,525.60'

Access Road

Surface Owner	TM - Parcel	Road Length	Type
Kenneth Corley et ux	17-11	1,238.30'	New Access Road Construction
Terry Simms et ux	23-7	1,267.30'	New Access Road Construction



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

Revision

Revision	Date	Description
Design	05-24-2018	Design: WVDEP Corrections
	07-02-2018	

TUG HILL OPERATING

THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

Kelly Surveying
 250 West 254
 Salisbury, WV 26429
 304-538-6985