

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

Tuesday, October 22, 2019 WELL WORK PERMIT Horizontal 6A / New Drill

TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD

CANONSBURG, PA 15317

Re: Permit approval for KEITH STERN S-18HU

47-051-02243-00-00

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

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

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

James A. Martin

Chief ___

Operator's Well Number: KEITH STERN S-18HU Farm Name: TH EXPLORATION, LLC

U.S. WELL NUMBER: 47-051-02243-00-00

Horizontal 6A New Drill

Date Issued: 10/22/2019

Promoting a healthy environment.

API Number: 4705/02243

PERMIT CONDITIONS

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

CONDITIONS

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

API Number: 4705/02243

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, cessation of drilling, sending an email to DEPOOGNotify@wv.gov.



west virginia department of environmental protection

Oil and Gas Conservation Commission 601 57th Street SE, Charleston, WV 25304 304-926-0499 Ext 1274

Barry K. Lay, Chairman dep.wv.gov

September 17, 2019

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

RE: Application for Deep Well Permit - API #47-051-02243

COMPANY: Tug Hill Operating, LLC

FARM: TH Exploration, LLC

Keith Stern S-18HU

COUNTY:

Marshall

DISTRICT: Meade

QUAD: Glen Easton

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

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

- 1. Comments to Notice of Deviation filed? No
- 2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
- 3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: **yes; Docket 285-281 Exception Location Hearing
- 4. Provided a plat showing that the proposed location is a distance of <u>400</u> feet from the nearest lease line or unit boundary and showing the following wells drilled to or capable of producing from the objective formation within 3,000 feet of the proposed location.

Sincerely,

Susan Rose Administrator **Ten High 1S-14HU 47-051-01966; Heaven Hill 3-6HU 47-051-01968; Heaven Hill 3-7HU 47-051-01969; Heaven Hill 3-8HU 47-051-01967; Heaven Hill 3N-10HU 47-051-02016; Heaven Hill 2-6HU 47-051-01910; Heaven Hill 2-7HU 47-051-01911; Heaven Hill 2-8HU 47-051-01912; Heaven Hill 2W-12HU 47-051-01952; Heaven Hill 2W-13HU 47-051-01957; Keith Stern N-14HU 47-051-02252; Keith Stern N-15HU 47-051-02241; Keith Stern N-16HU 47-051-02242; Keith Stern S-19HU 47-051-02244; OE Burge U MSH 501H 47-051-01853

API NO. 47-051 OPERATOR WELL NO. Keith Stern S-18HU
Well Pad Name: Keith Stern

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

1) Well Operator: Tug Hi	Il Operating, LLC	494510851	Marshall	Meade	Glen Easton 7.5'
		Operator ID	County	District	Quadrangle
2) Operator's Well Numbe	r: Keith Stern S-18H	IU Well P	ad Name: Keit	th Stern	
3) Farm Name/Surface Ow	ner: TH Exploration	, LLC Public Ro	oad Access: Fi	sh Creek Ro	ad (County Route 74)
4) Elevation, current groun	id: 741.50' E	Elevation, propose	d post-construc	ction: 744.6	55'
5) Well Type (a) Gas Other	<u>x</u> Oil _	Un	derground Stor	rage	
(b)If Gas	Shallow	Deep	х		-
	Horizontal X			pu 11/1	9
6) Existing Pad: Yes or No	No			151	
7) Proposed Target Format Point Pleasant is the target formation at a depth of				Pressure(s):	
No service de la contra del la contra del la contra del la contra del la contra de la contra del la contra	11.00.11				
8) Proposed Total Vertical					
9) Formation at Total Verti	ical Depth: Trenton				
10) Proposed Total Measur	red Depth: 18,566'				
11) Proposed Horizontal Lo	eg Length: 6,901.28	3'			
12) Approximate Fresh Wa	nter Strata Depths:	70' ; 390'			
13) Method to Determine F	Fresh Water Depths:	Offset well reports or	noticeable flow at	the flowline or v	when need to start soaping
14) Approximate Saltwater	Depths: 1,740'				
15) Approximate Coal Sear	m Depths: Sewickley	y Coal - 304' ; Pit	tsburgh Coal	- 397'	
16) Approximate Depth to	Possible Void (coal m	nine, karst, other):	none		
17) Does Proposed well loo directly overlying or adjace		nms Yes	N	[o <u>x</u>	
(a) If Yes, provide Mine I	Info: Name:				
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Depth:				
	Seam:				
	Owner:				RECEIVED Office of Oil and Ga

JUN 1 3 2019

WW-6B (04/15)

API NO. 47-051

OPERATOR WELL NO. Keith Stern S-18HU Well Pad Name: Keith Stern

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	20"	NEW	J55	106.5#	490'	490'	846 FT^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2200'	2200'	1,558FT^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	10,060'	10,060'	3,260FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	18,566'	18,566'	4,424FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,416'	
Liners							

Jul19

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water	20"	26"	.5	2,410	1,928	SEE # 24	1.2
Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.99
Production	5 1/2"	8 1/2"	.415	16,510	10,864	SEE #24	1.18
Tubing	2 7/8"			11,385	11,624		
Liners							

PACKERS

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

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WW-6B (10/14) API NO. 47- 051 -

OPERATOR WELL NO. Keith Stern S-18HU

Well Pad Name: Keith Stern

15/1/19

19) Describe proposed we	ll work, including	the drilling and	plugging back	of any pilot hole:
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Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP. 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 17,250,000 lb proppant and 266,698 bbl of water. Max rate = 80 bpm; max psi = 12,000#.

- 21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 10.35 acres
- 22) Area to be disturbed for well pad only, less access road (acres): 4.32 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 third joint. Production casing will have one centralizer every third joint in lateral, one centralizer every joint through curve, one centralizer every third 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.



30" Csg @ 120' MD / 120' TVD 20" Csg @ 490' MD / 490' TVD

13 3/8" Csg @ 2,201' MD / 2,200' TVD

9 5/8" Csg @ 10,060' MD / 9,952' TVD

KOP @ 10,916' ft MD

COUNTY: Marshall GL Elev: 744

WELL NAME: Keith Stern S-18HU
STATE: WV CO
DISTRICT: Meade
DF Elev: 744' GL
TD: 18,566'
TH Latitude: 39,77482608
TH Longitude: 80.69216638
BH Latitude: 39,754797
BH Longitude: 90,677617

Formation	Depth TVD
Deepest Fresh Water	390'
Sewickley Coal	304'
Pittsburgh Coal	397'
Big Lime	1,611'
Berea	2,116'
Tully	6,137
Marcellus	6,242'
Onondaga	6,293
Salina	7,018'
Lockport	8,071
Utica	10,828'
Point Pleasant	11,119'
Landing Depth	11,174
Trenton	11,241'
Pilot Hole TD	11,391

			CASING SUMM	ЛARY			
Туре	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cemer
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	26	20	490'	490'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,201	2,200'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,060	9,952'	47	HPP110	Surface
Production	8 1/2	5 1/2	18,566'	11,295'	23	HCP110	Surface

	CEMENT SUMM	IARY			DRILLING DETAILS
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	А	15.6	Air	None
Surface	908	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	1,689	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,805	Α	14.5	Air	1 Centralizer every other jt
Production	3,885	А	15	Air / SOBM	1 every other joint in lateral; 1 per joint in curve 1 every other jt to sfc

Pilot Hole

PH TD @ 11,391 WV Department of Environmental Protection

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Landing Point @1,666' MD / 11,174' TVD

PH TVD = 150' below Trenton Top

Lateral TD @ 18,566' ft MD

De 5/1/19

11,295 ft TVD



Tug Hill Operating, LLC Casing and Cement Program

Keith Stern S-18HU

		C	Casing		
	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	490'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,201'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,060'	CTS
Production	5 1/2"	HCP110	8 1/2"	18,566'	CTS

Cement

	Comone
Surface:	Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2
Intermediate 1:	Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.2
Intermediate 2:	Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.99
Production:	50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L — Production Cement mixed at 15.2ppg, Y = 1.18

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API Number 47 - 051

Operator's Well No. Keith Stern S-18HU

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP C	Code 494510851
Watershed (HUC 10) Fish Creek Quadrangle Glen Ea	aston 7.5'
Do you anticipate using more than 5,000 bbls of water to complete the proposed well won	rk? Yes V No
Will a pit be used? Yes No V	
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 V If so, what	at ml.? ASTTanks will be used with proper contain
Proposed Disposal Method For Treated Pit Wastes:	
Land Application	No. Compared and an activation
Underground Injection (UIC Permit Number UIC 2459, UIC 965 Reuse (at API Number	5, UIC 359, UIC 2D0/32540, UIC 2D0/32523
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 b	ased, 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 cutting	s to be disposed of in a Landfill
-If left in pit and plan to solidify what medium will be used? (cement, lime, saw	/dust)_N/A
-Landfill or offsite name/permit number? Wetzel County Sanitary Landfil (SWF-1021 / WV0109185) and Wetzel	stmoreland 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 cut West Virginia solid waste facility. The notice shall be provided within 24 hours of rejecti where it was properly disposed.	
I certify that I understand and agree to the terms and conditions of the GENER, on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Env provisions of the permit are enforceable by law. Violations of any term or condition of law or regulation can lead to enforcement action. I certify under penalty of law that I have personally examined and am family application form and all attachments thereto and that, based on my inquiry of those obtaining the information, I believe that the information is true, accurate, and complementation for submitting false information, including the possibility of fine or imprisonment Company Official Signature	ironmental Protection. I understand that the f the general permit and/or other applicable iar with the information submitted on this is individuals immediately responsible for etc. I am aware that there are significant
Company Official (Typed Name) Jim Pancake	RECEIVED Office of Oil and Gas
Company Official Title Vice President Geoscience	
	JUN 1 3 2019
Subscribed and sworn before me this 30 day of APRIL	, 20 19 WV Department of Environmental Protection
My commission expires 1/28/23	MAUREEN A STEAD - Notary Public Washington County My Commission Expires Jan 28, 2023 Commission Number 1259926

Proposed Revegetation Treatme	nt: Acres Disturbed 19	9.18 Prevegetation pF	6.0
Lime 3	_ Tons/acre or to correc	et to pH 6.5	
Fertilizer type 10-20-	20		
Fertilizer amount 500		lbs/acre	
Mulch 2.5		_Tons/acre	
		Seed Mixtures	
Тетр	oorary	Perma	nent
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Orchard Grass	12
Spring Oats	96	Ladino	3
		White Clover	2
	will be land applied, incarea.	d application (unless engineered plans included limensions (L x W x D) of the pit, and	
Maps(s) of road, location, pit an provided). If water from the pit acreage, of the land application Photocopied section of involved	will be land applied, incarea. 17.5' topographic sheet.	lude dimensions (L x W x D) of the pit, and	
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Well Site Safety Plan

Tug Hill Operating, LLC

Jul 19

Well Name: Keith Stern S-18HU

Pad Location: Keith Stern Pad

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

Northing: 4,402,810.91 Easting: 526,362.72

May 2019

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Database: Company: Project:

Site:

DB Jul2216dt v14 Tug Hill Operating LLC Marshall County, West Virginia.

Keith Stern

Well: Wellbore: Keith Stern S-18 HU (slot E)

Original Hole Design: rev1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well Keith Stern S-18 HU (slot E)

GL @ 744.00usft GL @ 744.00usft

Grid

Minimum Curvature

Project

Marshall County, West Virginia.

Map System:

Universal Transverse Mercator (US Survey Feet)

NAD83 West Virginia - HARN Geo Datum: Zone 17N (84 W to 78 W) Map Zone:

System Datum:

Mean Sea Level

Site

Keith Stern

Site Position:

Northing: Lat/Long Easting:

14,444,890.33 usft 1,726,932.47 usft

Longitude:

Latitude:

39.77483004 -80.69208048

From: Position Uncertainty:

0.00 usft Slot Radius:

13-3/16 "

Grid Convergence:

0.197

Well Well Position Keith Stern S-18 HU (slot E) +N/-S

+E/-W

rev1

0.00 usft 0.00 usft Northing: Easting:

14,444,888.80 usft 1,726,908.34 usft Latitude: Longitude:

39.77482608 -80,69216638

Position Uncertainty

0.00 usft

Wellhead Elevation:

Ground Level:

(usft)

0.00

Remarks

744.00 usft

Wellbore Original Hole

Field Strength Declination **Dip Angle** Magnetics **Model Name** Sample Date (°) (°) (nT) 52,102.19759345 IGRF2015 1/18/2018 -8.713 66.896

(usft)

0.00

Design

Audit Notes:

Version: Vertical Section: Phase:

Depth From (TVD)

(usft)

0.00

PLAN

+N/-S +E/-W

Tie On Depth:

Direction (°) 150.52

0.00

Plan Survey Tool Program

0.00

4/2/2019 Date

Depth From (usft)

Depth To (usft)

Survey (Wellbore) 18,566.35 rev1 (Original Hole)

Tool Name MWD

MWD - Standard

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JUN 1 3 2019



Database: Company: Project: DB_Jul2216dt_v14
Tug Hill Operating LLC
Marshall County, West Virginia.

Site: Keith Stern

Well:

Keith Stern S-18 HU (slot E)

Wellbore: Original Hole
Design: rev1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well Keith Stern S-18 HU (slot E)

GL @ 744.00usft GL @ 744.00usft

Grid

Minimum Curvature

an Sections										
Measured Depth (usft)	Inclination (°)	Azimuth	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,650.00	3.00	300.00	1,649.93	1.96	-3.40	2.00	2.00	0.00	300.000	
2,150.00	3.00	300.00	2,149.25	15.05	-26.06	0.00	0.00	0.00	0.000	
2,300.00	0.00	300.00	2,299.18	17.01	-29.46	2.00	-2.00	0.00	180,000	
8,000.82	0.00	300.00	8,000.00	17.01	-29.46	0.00	0.00	0.00	300.000	
8,706.42	21.17	147.73	8,689.66	-91.96	39.33	3.00	3.00	0.00	147.734	
10,915.58	21.17	147.73	10,749.76	-766.51	465.21	0.00	0.00	0.00	0.000	
11,276.25	50.00	149.81	11,040.00	-944.76	571.70	8.00	7.99	0.58	3.297	
11,666.31	89.00	150.80	11,174.00	-1,256.24	748.84	10.00	10.00	0.25	1.579	
18,566,35	89.00	150.80	11,295.00	-7,278,74	4,114.18	0.00	0.00	0.00	0.000	BHL Keith Stern S-1

RECEIVED Office of Oil and Gas

JUN 1 3 2019



Database: Company: Project:

Site:

DB_Jul2216dt_v14 Tug Hill Operating LLC Marshall County, West Virginia.

Keith Stern

Well:

Keith Stern S-18 HU (slot E)

Wellbore: Original Hole Design:

TVD Reference: MD Reference: North Reference:

Local Co-ordinate Reference:

Survey Calculation Method:

GL @ 744.00usft

Grid Minimum Curvature

Well Keith Stern S-18 HU (slot E) RECEIVED GL @ 744.00usft Office of Oil and Gas

JUN 1 3 2019

ign:	rev1							Env	rironmental Pro
nned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,444,888,80	1,726,908.34	39.77482608	-80.692166
100.00	0.00	0.00	100.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.692166
200,00	0.00	0.00	200.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.692166
300.00	0.00	0.00	300.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.692166
400.00	0.00	0.00	400.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.692166
500.00	0.00	0.00	500.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.692166
600.00	0.00	0.00	600.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.69216
700.00	0.00	0.00	700.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.69216
800.00	0.00	0.00	800.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.69216
900.00	0.00	0.00	900.00	0.00	0.00	14,444,888.80	1,726,908.34	39,77482608	-80.69216
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.69216
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.69216
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.69216
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.69216
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80,69216
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,444,888.80	1,726,908.34	39.77482608	-80.69216
KOP Bed	in 2°/100' bui	ld							
1,600.00	2.00	300.00	1,599.98	0.87	-1.51	14,444,889.67	1,726,906.83	39.77482849	-80.69217
1,650.00	3.00	300.00	1,649.93	1.96	-3.40	14,444,890.76	1,726,904.94	39.77483150	-80.69217
	0° tangent		***************************************						
1,700.00	3.00	300.00	1,699.86	3.27	-5.67	14,444,892.07	1,726,902.67	39.77483512	-80.69218
1,800.00	3.00	300.00	1,799.72	5.89	-10.20	14,444,894.69	1,726,898.14	39.77484235	-80.69220
1,900,00	3.00	300.00	1,899.59	8.50	-14.73	14,444,897.31	1,726,893.61	39.77484958	-80.69221
2,000.00	3.00	300.00	1,999.45	11.12	-19.26	14,444,899.92	1,726,889.08	39.77485681	-80.69223
2,100.00	3.00	300.00	2,099.31	13.74	-23.80	14,444,902.54	1,726,884.54	39.77486404	-80.69225
2,150.00	3.00	300.00	2,149.25	15.05	-26.06	14,444,903.85	1,726,882.28	39.77486765	-80.69225
	100' drop	120000	20.000			Total Contacting	41 4244 2352		
2,200.00	2.00	300.00	2,199.19	16.14	-27.95	14,444,904.94	1,726,880.39	39.77487066	-80.69226
2,300.00	0.00	300.00	2,299.18	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
	rtical hold	000.00	2,200110	11183	200.10	3.11.13(888818.1	110.55151.5152	45071071071	
2,400.00	0.00	0.00	2,399.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
2,500.00	0.00	0.00	2,499.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
2,599.99	0.00	0.00	2,599.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
2,699.99	0.00	0.00	2,699.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
2,799.99	0.00	0.00	2,799.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
2,899.99	0.00	0.00	2,899.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
2,999.99	0.00	0.00	2,999.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
3,099.99	0.00	0.00	3,099.17	17.01	-29.46	14,444,905.81	1,726,878.88	39,77487307	-80.69227
3,199.99	0.00	0.00	3,199.17	17.01	-29.46	14,444,905.81	1,726,878,88	39,77487307	-80,69227
3,299,99	0.00	0.00	3,299,17	17.01	-29.46	14,444,905.81	1,726,878.88	39,77487307	-80,69227
3,399.99	0.00	0.00	3,399.17	17.01	-29.46	14,444,905.81	1,726,878.88	39,77487307	-80,69227
3,499.99	0.00	0.00	3,499.17	17.01	-29.46	14,444,905.81	1,726,878.88	39,77487307	-80.69227
3,599.99	0.00	0.00	3,599.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
3,699.99	0.00	0.00	3,699.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80,69227
3,799.99	0.00	0.00	3,799.17	17.01	-29,46	14,444,905.81	1,726,878.88	39,77487307	-80,69227
3,899.99	0.00	0.00	3,899.17	17.01	-29.46	14,444,905,81	1,726,878.88	39,77487307	-80.69227
3,999.99	0.00	0.00	3,999.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
4,099.99	0.00	0.00	4,099.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80,69227
4,199.99	0.00	0.00	4,199.17	17.01	-29.46	14,444,905.81	1,726,878.88	39,77487307	-80,69227
4,299.99	0.00	0.00	4,299.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
4,399.99	0.00	0.00	4,399.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
4,499.99	0.00	0.00	4,499.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80,69227
4,599.99	0.00	0.00	4,599.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227
4,699.99	0.00	0.00	4,699.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.69227



Database: Company: Project: DB_Jul2216dt_v14 Tug Hill Operating LLC Marshall County, West Virginia.

Site: Keith Stern

Wellbore:

Keith Stern S-18 HU (slot E)

Wellbore: Original Hole
Design: rev1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well Keith Stern S-18 HU (slot E)

GL @ 744.00usft

GL @ 744.00usft Grid

Minimum Curvature

RECEIVED Office of Oil and Gas

JUN 1 3 2019

anned Survey									WV Departme Environmental Pr
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Map Northing	Map Easting		
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	Latitude	Longitude
4,799.99	0.00	0.00	4,799.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.6922710
4,899.99	0.00	0.00	4,899.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.6922710
4,999.99	0.00	0.00	4,999.17	17,01	-29.46	14,444,905,81	1,726,878,88	39.77487307	-80.6922710
5,099.99	0.00	0.00	5,099.17	17.01	-29.46	14,444,905,81	1,726,878.88	39.77487307	-80,6922710
5,199.99	0.00	0.00	5,199.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.6922710
5,299.99	0.00	0.00	5,299.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80,6922710
5,399.99	0.00	0.00	5,399.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.6922710
5,499.99	0.00	0.00	5,499.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.6922710
5,599.99	0.00	0.00	5,599.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.6922710
5,699.99	0.00	0.00	5,699.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.6922710
5,799.99	0.00	0.00	5,799.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
5,899.99	0.00	0.00	5,899.17	17.01	-29,46	14,444,905.81	1,726,878.88	39.77487307	-80.6922710
5,999.99	0.00	0.00	5,999.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
6,099.99	0.00	0.00	6,099.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
6,199.99	0.00	0,00	6,199.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
6,299.99	0.00	0.00	6,299.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
6,399.99	0.00	0.00	6,399.17	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80,692271
6,499.99	0.00	0.00	6,499.16	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
6,599.99	0.00	0.00	6,599.16	17.01	-29.46	14,444,905.81	1,726,878,88	39.77487307	-80,692271
6,699.99	0.00	0.00	6,699.16	17.01	-29.46	14,444,905,81	1,726,878.88	39.77487307	-80.692271
6,799.99	0.00	0.00	6,799.16	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80,692271
6,899.99	0.00	0.00	6,899.16	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
6,999.99	0.00	0.00	6,999.16	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
7,099.99	0.00	0.00	7,099.16	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
7,199.99	0.00	0.00	7,199.16	17.01	-29,46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
7,299.99	0.00	0.00	7,299.16	17.01	-29.46	14,444,905.81	1,726,878,88	39.77487307	-80.692271
7,399.99	0.00	0.00	7,399.16	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
7,499.99	0.00	0.00	7,499.16	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
7,599.98	0.00	0.00	7,599.16	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
7,699.98	0.00	0.00	7,699.16	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80,692271
7,799.98	0.00	0.00	7,799.16	17.01	-29.46	14,444,905.81	1,726,878.88	39,77487307	-80.692271
7,899.98	0.00	0.00	7,899.16	17.01	-29.46	14,444,905.81	1,726,878,88	39.77487307	-80.692271
7,999.98	0.00	0.00	7,999.16	17.01	-29.46	14,444,905.81	1,726,878.88	39,77487307	-80.692271
8,000.82	0.00	0.00	8,000.00	17.01	-29.46	14,444,905.81	1,726,878.88	39.77487307	-80.692271
Begin 3°	/100' build								
8,099.98	2.97	147.73	8,099.12	14.83	-28.09	14,444,903,64	1,726,880,25	39,77486708	-80.692266
8,199.98	5.97	147.73	8,198.80	8,24	-23,92	14,444,897.04	1,726,884.42	39.77484893	-80.692251
8,299.98	8.97	147.73	8,297.94	-2.76	-16.98	14,444,886.04	1,726,891.36	39,77481866	-80,692226
8,399.98	11.97	147.73	8,396.26	-18.13	-7.28	14,444,870.67	1,726,901,06	39.77477635	-80.692192
8,499,98	14.97	147.73	8,493.50	-37.83	5.16	14,444,850.97	1,726,913.50	39.77472213	-80.692148
8,599.98	17.97	147.73	8,589.38	-61.81	20.30	14,444,826.99	1,726,928.64	39.77465614	-80.692094
8,699.98	20.97	147.73	8,683.65	-90.00	38.10	14,444,798.80	1,726,946.44	39.77457856	-80,692031
8,706.42	21.17	147.73	8,689.66	-91.96	39.33	14,444,796.85	1,726,947.67	39.77457318	-80.692027
Begin 21	.17° tangent								
8,799.98	21.17	147.73	8,776.90	-120.52	57.37	14,444,768.28	1,726,965.71	39.77449455	-80,691963
8,899.98	21.17	147.73	8,870.16	-151.06	76.65	14,444,737.74	1,726,984.99	39.77441051	-80.691895
8,999.98	21.17	147.73	8,963.41	-181.59	95.92	14,444,707.21	1,727,004.26	39.77432647	-80.691827
9,099.98	21.17	147.73	9,056.66	-212.13	115.20	14,444,676.67	1,727,023.54	39.77424244	-80.691758
9,199.98	21.17	147.73	9,149.91	-242.66	134.48	14,444,646.14	1,727,042.82	39.77415840	-80.691690
9,299.98	21.17	147.73	9,243.17	-273.20	153.76	14,444,615.61	1,727,062.10	39.77407436	-80.691622
9,399.98	21.17	147.73	9,336.42	-303.73	173.03	14,444,585.07	1,727,081.37	39.77399033	-80.691554
9,499.98	21.17	147.73	9,429.67	-334.26	192.31	14,444,554.54	1,727,100.65	39.77390629	-80.691486
9,599.98	21.17	147.73	9,522.92	-364.80	211.59	14,444,524.00	1,727,119.93	39.77382225	-80.691417
9,699.98	21.17	147.73	9,616.18	-395.33	230.87	14,444,493.47	1,727,139.21	39.77373822	-80.691349



Database: Company: Project:

Site:

DB_Jul2216dt_v14 Tug Hill Operating LLC Marshall County, West Virginia.

Keith Stern

Well: Keith Stem S-18 HU (slot E)

Wellbore: Original Hole
Design: rev1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well Keith Stern S-18 HU (slot E)

GL @ 744.00usft GL @ 744.00usft

Grid

Minimum Curvature

RECEIVED Office of Oil and Gas

JUN 1 3 2019

lanned Survey	4								WV Department
Measured Depth (usft)	Inclination	Azimuth	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	nvironmental Prote
9,799.98	21.17	147.73	9,709.43	-425.87	250.15	14,444,462.94	1,727,158.48	39,77365418	-80.69128132
9,899.98	21.17	147.73	9,802.68	-456.40	269,42	14,444,432.40	1,727,177.76	39,77357014	-80.69121309
9,999.98	21.17	147.73	9,895.93	-486.93	288.70	14,444,401.87	1,727,197.04	39.77348610	-80.69114485
10,099.98	21.17	147.73	9,989,19	-517.47	307.98	14,444,371.33	1,727,216.32	39.77340207	-80,69107662
10,199.98	21.17	147.73	10,082.44	-548.00	327.26	14,444,340.80	1,727,235.60	39.77331803	-80,69100839
10,799.98	21.17	147.73	10,175.69	-578.54	346.53	14,444,310.26	1,727,254.87	39,77323399	-80,69094015
10,399.98	21.17	147.73	10,268.94	-609.07	365.81	14,444,279.73	1,727,274.15	39.77314995	-80.69087192
10,499.98	21.17	147.73	10,362.19	-639.60	385,09	14,444,249.20	1,727,293.43	39.77306592	-80,69080369
10,599.98	21.17	147.73	10,455.45	-670.14	404.37	14,444,218.66	1,727,312.71	39.77298188	-80.69073545
10,599.98	21.17	147.73	10,548.70	-700.67	423.64	14,444,188.13	1,727,331.98	39.77289784	-80.69066722
	21.17	147.73	10,641.95	-731.21	442.92		1,727,351.26	39.77281380	-80,69059899
10,799.98				-761.74	462.20	14,444,157.59	1,727,370.54	39.77272977	-80.69053075
10,899.98	21.17	147.73	10,735.20			14,444,127.06			-80.69052011
10,915.58	21.17	147.73	10,749.75	-766.51	465.21	14,444,122.30	1,727,373.55	39,77271666	-00.09032011
	/100' build/tur				122.32	44 1111111		00 77000 170	00 000 15 170
10,999.98	27.91	148.56	10,826.48	-796.28	483,67	14,444,092.52	1,727,392.01	39.77263472	-80.69045478
11,099.98	35.90	149.16	10,911.31	-841.50	510.95	14,444,047.30	1,727,419.29	39.77251027	-80.69035824
11,199.98	43.90	149.57	10,987.96	-896.66	543.59	14,443,992.14	1,727,451.93	39.77235847	-80.69024275
11,276.25	50.00	149.81	11,040.00	-944.76	571.70	14,443,944.04	1,727,480.04	39.77222612	-80.69014330
Begin 10	0°/100' build/tu	ırn							
11,299.98	52.37	149.89	11,054.87	-960.74	580.98	14,443,928.06	1,727,489.32	39.77218213	-80.69011045
11,399.98	62.37	150.19	11,108.72	-1,033.62	622.97	14,443,855.18	1,727,531.31	39.77198158	-80.68996191
11,499.98	72.37	150.44	11,147.16	-1,113.71	668,62	14,443,775.09	1,727,576.96	39.77176121	-80.68980046
11,599.98	82.36	150.66	11,169.00	-1,198.58	716.53	14,443,690.23	1,727,624.87	39.77152769	-80.68963100
11,666.31	89.00	150.80	11,174.00	-1,256.25	748.84	14,443,632.56	1,727,657.18	39.77136901	-80.68951670
Begin 89	0.00° lateral								
11,699.98	89.00	150.80	11,174.59	-1,285.63	765.26	14,443,603.17	1,727,673.60	39.77128815	-80.68945862
11,799.98	89.00	150.80	11,176.34	-1,372.91	814.04	14,443,515.89	1,727,722.38	39.77104799	-80.68928612
11,899.98	89.00	150.80	11,178.10	-1,460.19	862.81	14,443,428.61	1,727,771.15	39.77080782	-80.68911363
11,999.98	89.00	150,80	11,179.85	-1,547.48	911.58	14,443,341.33	1,727,819.92	39.77056766	-80.68894113
12,099.98	89.00	150.80	11,181.60	-1,634.76	960.36	14,443,254.04	1,727,868.69	39.77032750	-80.68876863
12,199.98	89.00	150.80	11,183.36	-1,722.04	1,009.13	14,443,166.76	1,727,917.47	39.77008733	-80.68859614
12,299.98	89.00	150.80	11,185.11	-1,809.32	1,057.90	14,443,079.48	1,727,966.24	39.76984717	-80.68842365
12,399.98	89.00	150.80	11,186.86	-1,896.60	1,106.67	14,442,992.20	1,728,015.01	39.76960700	-80.68825116
12,499.98	89.00	150.80	11,188.62	-1,983.88	1,155.45	14,442,904.92	1,728,063.78	39.76936684	-80,68807867
12,599.98	89.00	150,80	11,190,37	-2,071.17	1,204.22	14,442,817.63	1,728,112.56	39.76912667	-80.68790618
12,699.97	89.00	150.80	11,192.12	-2,158.45	1,252.99	14.442.730.35	1,728,161.33	39.76888651	-80.68773369
12,799,97	89.00	150.80	11,193.88	-2,245.73	1,301.76	14,442,643.07	1,728,210.10	39.76864634	-80.68756121
12,899.97	89.00	150.80	11,195,63	-2,333.01	1,350.54	14,442,555.79	1,728,258.88	39.76840617	-80.68738872
12,999.97	89.00	150,80	11,197.39	-2,420.29	1,399.31	14,442,468.51	1,728,307.65	39,76816601	-80.68721624
13,099.97	89.00	150.80	11,199.14	-2,507.58	1,448.08	14,442,381.23	1,728,356.42	39.76792584	-80.68704375
13,199.97	89.00	150.80	11,200.89	-2,594.86	1,496.85	14,442,293.94	1,728,405.19	39.76768567	-80.68687127
13,299.97	89.00	150.80	11,202.65	-2,682.14	1,545.63	14,442,206.66	1,728,453.97	39.76744551	-80.68669879
13,399.97	89.00	150.80	11,204.40	-2,769.42	1,594.40	14,442,119.38	1,728,502.74	39.76720534	-80.68652631
13,499.97	89.00	150.80	11,206.15	-2,856.70	1,643,17	14,442,032.10	1,728,551.51	39.76696517	-80.68635384
13,599.97	89.00	150.80	11,207.91	-2,943.98	1,691.94	14,441,944.82	1,728,600.28	39.76672500	-80.68618136
13,699.97	89.00	150.80	11,209.66	-3,031.27	1,740.72	14,441,857.53	1,728,649.06	39,76648483	-80.68600888
13,799.97	89.00	150.80	11,211,41	-3,118.55	1,789.49	14,441,770.25	1,728,697.83	39.76624467	-80.68583641
13,899.97	89.00	150.80	11,213.17	-3,205.83	1,838.26	14,441,682.97	1,728,746.60	39.76600450	-80.68566394
13,999.97	89.00	150.80	11,214.92	-3,293.11	1,887.03	14,441,595.69	1,728,795.37	39.76576433	-80.68549146
14,099.97	89.00	150,80	11,216.68	-3,380,39	1,935.81	14,441,508.41	1,728,844.15	39.76552416	-80.68531899
14,199.97	89.00	150,80	11,218.43	-3,467.68	1,984.58	14,441,421.13	1,728,892,92	39.76528399	-80.68514652
14,299.97	89.00	150.80	11,220.18	-3,554.96	2,033,35	14,441,333.84	1,728,941.69	39.76504382	-80.68497405
14,399.97	89.00	150.80	11,221,94	-3,642.24	2,082.12	14,441,246.56	1,728,990.46	39.76480365	-80.68480159
14,499.97	89.00	150.80	11,223.69	-3,729.52	2,130,90	14,441,159.28	1,729,039.24	39.76456348	-80,68462912



Database: Company: Project: DB_Jul2216dt_v14 Tug Hill Operating LLC Marshall County, West Virginia.

Site: Keith Stern

Well: Keith Stern S-18 HU (slot E)
Wellbore: Original Hole

Wellbore: Origi Design: rev1 Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well Keith Stern S-18 HU (slot E)

GL @ 744.00usft GL @ 744.00usft

Grid

Minimum Curvature

anned Survey		-110/101111011-	A1Macros 1)11	- Transmitt(se				***************************************	
anned Survey									
Measured			Vertical			Мар	Мар		
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting		
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	Latitude	Longitude
14,599.97	89,00	150.80	11,225.44	-3,816.80	2,179.67	14,441,072.00	1,729,088.01	39.76432331	-80.684456
14,699.97	89.00	150.80	11,227.20	-3,904.09	2,228.44	14,440,984.72	1,729,136.78	39.76408314	-80.684284
14,799.97	89.00	150.80	11,228.95	-3,991.37	2,277,22	14,440,897,43	1,729,185.55	39.76384297	-80.684111
14,899.97	89.00	150.80	11,230.70	-4,078.65	2,325.99	14,440,810.15	1,729,234.33	39.76360280	-80.683939
14,999.97	89.00	150.80	11,232.46	-4,165.93	2,374.76	14,440,722.87	1,729,283.10	39.76336262	-80.683766
15,099.97	89.00	150.80	11,234.21	-4,253,21	2,423,53	14,440,635.59	1,729,331.87	39.76312245	-80.683594
15,199.97	89.00	150.80	11,235.97	-4,340.49	2,472.31	14,440,548.31	1,729,380.64	39.76288228	-80.683421
15,299.97	89.00	150.80	11,237.72	-4,427.78	2,521.08	14,440,461.03	1,729,429.42	39.76264211	-80.683249
15,399.97	89.00	150.80	11,239.47	-4,515.06	2,569.85	14,440,373.74	1,729,478.19	39.76240193	-80.683076
15,499.97	89.00	150.80	11,241.23	-4,602.34	2,618.62	14,440,286.46	1,729,526.96	39.76216176	-80.68290
15,599.97	89.00	150.80	11,242.98	-4,689.62	2,667.40	14,440,199.18	1,729,575.74	39.76192159	-80.68273
15,699.97	89.00	150.80	11,244.73	-4,776.90	2,716.17	14,440,111.90	1,729,624.51	39.76168141	-80.68255
15,799.97	89.00	150.80	11,246.49	-4,864.19	2,764.94	14,440,024.62	1,729,673.28	39.76144124	-80.68238
15,899.97	89.00	150.80	11,248.24	-4,951.47	2,813.71	14,439,937.33	1,729,722.05	39.76120107	-80.68221
15,999.97	89.00	150.80	11,249.99	-5,038.75	2,862.49	14,439,850.05	1,729,770.83	39.76096089	-80.68204
16,099,97	89.00	150.80	11,251.75	-5,126.03	2,911.26	14,439,762.77	1,729,819.60	39.76072072	-80.68186
16,199.97	89.00	150.80	11,253.50	-5,213.31	2,960.03	14,439,675.49	1,729,868.37	39.76048054	-80.68169
16,199.97	89.00	150.80	11,255.26	-5,300.59	3.008.80	14,439,588.21	1,729,917.14	39.76024037	-80.68152
16,399.97	89.00	150.80	11,257.01	-5,387.88	3,057.58	14,439,500.93	1,729,965,92	39.76000019	-80,68135
	89.00	150.80	11,258.76	-5,475.16	3,106.35	14,439,413.64	1,730,014.69	39.75976002	-80,68118
16,499.97 16,599.97	89.00	150,80	11,260.52	-5,562.44	3,155.12	14,439,326.36	1,730,063.46	39,75951984	-80.68100
and the second second	89.00	150.80	11,262.27	-5,649.72	3,203.89	14,439,239.08	1,730,112.23	39,75927966	-80.68083
16,699.97	89.00	150.80			3,252.67		1,730,112.23	39,75903949	-80.68066
16,799.97		150.80	11,264.02	-5,737.00	3,301.44	14,439,151.80	1,730,161.01	39.75879931	-80.68049
16,899.97	89.00		11,265.78	-5,824.29	The second second	14,439,064.52	The second secon	39.75855913	-80.68031
16,999.97	89.00	150,80	11,267.53	-5,911.57	3,350.21	14,438,977.23	1,730,258.55	39.75831896	-80.68014
17,099.97	89.00	150.80	11,269.29	-5,998.85	3,398.98	14,438,889.95	1,730,307.32	39.75807878	-80.67997
17,199.97	89.00	150.80	11,271.04	-6,086.13	3,447.76	14,438,802.67	1,730,356.10	39.75783860	-80.67980
17,299.97	89.00	150.80	11,272.79	-6,173.41	3,496.53	14,438,715.39	1,730,404.87		-80.67962
17,399.97	89.00	150.80	11,274.55	-6,260.69	3,545.30	14,438,628.11	1,730,453.64	39.75759842	-80.67945
17,499.97	89.00	150.80	11,276.30	-6,347.98	3,594.08	14,438,540.82	1,730,502.41	39.75735825	-80.67928
17,599.97	89.00	150,80	11,278.05	-6,435,26	3,642.85	14,438,453.54	1,730,551.19	39.75711807	
17,699.96	89.00	150.80	11,279.81	-6,522.54	3,691.62	14,438,366.26	1,730,599.96	39.75687789	-80,67911
17,799.96	89.00	150.80	11,281.56	-6,609.82	3,740.39	14,438,278.98	1,730,648.73	39.75663771	-80.67893
17,899.96	89.00	150.80	11,283.31	-6,697.10	3,789.17	14,438,191.70	1,730,697.50	39,75639753	-80.67876
17,999.96	89.00	150.80	11,285.07	-6,784.39	3,837.94	14,438,104.42	1,730,746.28	39,75615735	-80.67859
18,099,96	89.00	150.80	11,286.82	-6,871.67	3,886.71	14,438,017.13	1,730,795.05	39.75591717	-80.67842
18,199.96	89.00	150.80	11,288.58	-6,958.95	3,935.48	14,437,929.85	1,730,843.82	39.75567699	-80.67824
18,299.96	89.00	150.80	11,290.33	-7,046.23	3,984.26	14,437,842.57	1,730,892.60	39.75543681	-80,67807
18,399.96	89.00	150.80	11,292.08	-7,133.51	4,033.03	14,437,755.29	1,730,941.37	39.75519663	-80,67790
18,499.96	89.00	150.80	11,293.84	-7,220.79	4,081.80	14,437,668.01	1,730,990.14	39,75495645	-80.67773
18,566.35	89.00	150.80	11,295.00	-7,278.74	4,114.18	14,437,610.06	1,731,022.52	39.75479700	-80.67761

RECEIVED Office of Oil and Gas

JUN 1 3 2019



Database: Company: Project: DB_Jul2216dt_v14
Tug Hill Operating LLC
Marshall County, West Virginia.

Site: Keith Stern

Well: Wellbore: Keith Stern S-18 HU (slot E)

Original Hole

Design: rev1

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well Keith Stern S-18 HU (slot E)

GL @ 744.00usft GL @ 744.00usft

Grid

Minimum Curvature

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle	Dip Dir.	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LP Keith Stern S-18 HU - plan misses target - Point	0.00 center by 43.6	0.01 7usft at 116	11,174.00 341.92usft MI	-1,256.26 O (11173.05 TV	698.83 VD, -1234.98	14,443,632.55 N, 736.95 E)	1,727,607.17	39.77136945	-80.68969470
LP Keith Stern S-18 HU - plan misses target - Point	0.00 center by 0.02	0.00 Pusft at 1166	11,174.00 66.31usft MD	-1,256.26 (11174.00 TV	748.83 D, -1256.25 N	14,443,632.55 I, 748.85 E)	1,727,657.17	39,77136898	-80.68951675
BHL Keith Stern S-18 Ht - plan hits target cen - Point		0.01	11,295.00	-7,278.74	4,114.18	14,437,610.06	1,731,022.52	39.75479700	-80.67761700

Measured	Vertical	Local Coor	dinates		
Depth (usft)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
1,500.00	1,500.00	0.00	0.00	KOP Begin 2°/100' build	
1,650.00	1,649.93	1.96	-3.40	Begin 3.00° tangent	
2,150.00	2,149.25	15.05	-26.06	Begin 2°/100' drop	
2,300.00	2,299.18	17.01	-29.46	Begin vertical hold	
8,000.82	8,000.00	17.01	-29.46	Begin 3°/100' build	
8,706.42	8,689.66	-91.96	39.33	Begin 21.17° tangent	
10,915.58	10,749.75	-766,51	465.21	Begin 8°/100' build/turn	
11,276.25	11,040.00	-944.76	571.70	Begin 10°/100' build/turn	
11,666.31	11,174.00	-1,256.25	748.84	Begin 89.00° lateral	
18,566.35	11,295.00	-7,278.74	4,114.18	PBHL/TD 18566,35 MD/11295,00 TVD	

RECEIVED Office of Oil and Gas

JUN 1 3 2019

PROPOSED KEITH STERN S - 18HU

STOCKOWE

SUPPLEMENT PG. 1

NOTES:

- O DENOTES INSTALL 18" PVC CULVERT AND APPLY APPROPRIATE SEDIMENT OUTLET CONTROL (RIP RAP SPLASH PAD)
- 2. DRAWING NOT TO SCALE
- 3. REFERENCE IS HEREBY MADE TO THE
 WY 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,
- 6. TEMPORARILY SEED AND MULCH ALL SLOPS UPON CONSTRUCTION
- 7. 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 BE UTILIZED DOWN SLOPE OF SITE AND
 STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.
- SEE KEITH STERN'S SITE PLAN PREPARED BY KELLEY SURVEYING, FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.

20' @ 0-5% GRADE

60' @ 5-10% GRADE

170' @ 10-15% GRADE 20' @ 5-10% GRADE

300' @ 0-5% GRADE

RECEIVED Office of Oil and Gar

JUN 1 3 2019

WV Department of Environmental Protection

SILT FENCE AND/OR SEDIMENT AND EROSION CONTROL MEASURE.



Land & Energy Development

Solutions from the ground up.

Solutions from the ground up.
P.O. Box 150 •12 Vanhom Drive • Glenville, WV 2635] •(304) 462-5634

www.slssurveys.com

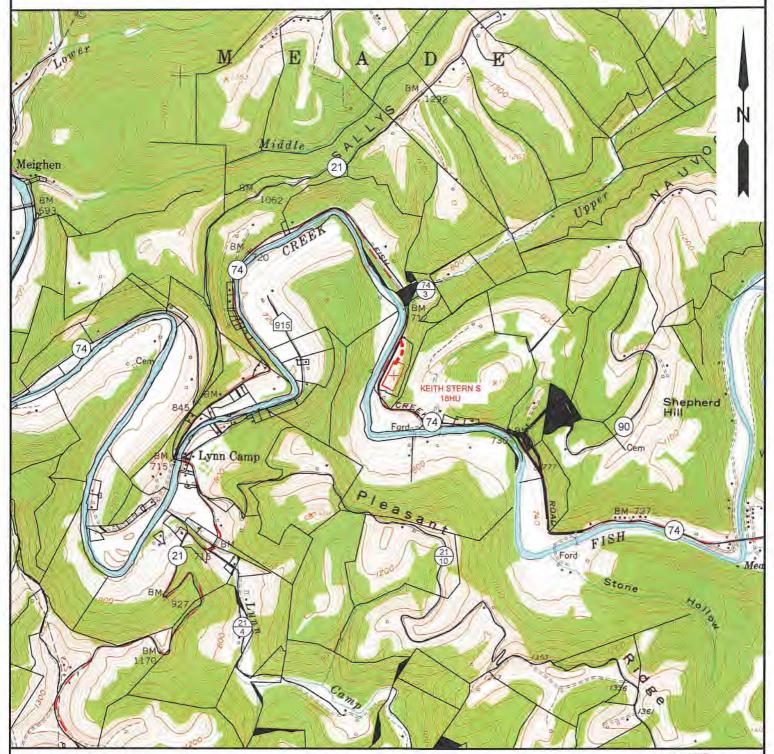
Ī	TOPO SE	CTION:	OPERAT	OR:				
Ì	GLEN EAS	STON 7.5'	PREPARED FOR: TUG HILL OPER	ATING, LLC				
I	COUNTY	COUNTY DISTRICT		380 SOUTHPOINTE BLVD				
	MARSHALL	MEADE	SUITE 200 CANONSBURG, PA 15317					
	DRAWN BY	JOB NO.	DATE	SCALE				
	K.G.M.	8811	05/01/2019	NONE				

KEITH STERN S



SUPPLEMENT PG. 2

PROPOSED KEITH STERN S - 18HU



NOTE: CLOSEST WATER PURVEYOR GRANDVIEW - DOOLIN PUBLIC SERVICE DISTRICT PROCTOR, W

LAT: 39.7137712 LON: -80.8258327

RECEIVED Office of Oil and Gas LOCATED: S 60°11'49" W AT 43,719.31' FROM THE CENTER OF KEITH STERN S WELL PAD LOCATION.

JUN 1 3 2019



Land	8	Energy Development
		utions from the ground up.
D. Box 150	•12	Vanhorn Drive • Glenville, WV 26351 • (304) 462-5634 www.slssurveys.com

TOPO SI	ECTION:	OPERATOR:				
GLEN EAS	STON 7.5'	PREPARED FOR: TUG HILL OPERATING, LLC				
COUNTY	DISTRICT	380 SOUTHPOI	NTE BLVD			
MARSHALL	MEADE	SUITE 200 CANONSBURG, PA 15317				
DRAWN BY	JOB NO.	DATE	SCALE			
K.G.M.	8811	05/01/2019	1" - 2000'			



KEITH STERN S LEASE UTICA UNIT - 452.76 AC±

WELL 18HU

TUG HILL OPERATING

NAD'83 S.P.C.(FT) N. 466,554.34

NAD'83 S.P.C.(FT) N. 465,285.3

NAD'83 S.P.C.(FT) N. 459,205.4

NAD'83 GEO.

NAD'83 GEO.

NAD'83 GEO.

NAD'83 UTM (M)

NAD'83 UTM (M)

NAD'83 UTM (M)

LAT-(N) 39.774826

LANDING POINT

N. 4,402,810.91

N. 4,402,428.0

N. 4,400,592.3

LONGITUDE

H.H. B.H.

13,430'

E. 1,634,161.1 LAT-(N) 39.771369 LONG-(W) 80.689517 E. 526,591.0

BOTTOM HOLE E. 1,637,426.5 LONG-(W) 80.677617 LAT-(N) 39.754797

E. 527,616.7

E. 1.633.433.14

E. 526,362.72

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD. 2. WELL SPOT CIRCLE & TOPO MARK SCALE ARE 1"=2000'

3. PROPOSED LATERAL OR TOP HOLE OF KEITH STERN S−18HU IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF PROPOSED KEITH STERN N−13HU,14HU,15HU & 16HU, PROPOSED KNOB CREEK N−13HU, PROPOSED KNOB CREEK S−16HU AND PROPOSED KNOB CREEK S−17HU & 19HU.

NOTES ON SURVEY

T.H:

REFERENCES

KEITH STERN S WOODS -B.H. WOODS 47-051-0059 WOODS DOUBLE 18" WHITE OAK 1" = 200' B

Land & Energy Development

Solutions from the ground up.

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 REGULATIONS ISSUED AND PRESCRIBED

PS 849

BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

No. 849
STATE OF
STONAL SURING

OPERATORS WELL NO. KEITH STERN S-18HU WELL NO. STATE

REVISED JUNE 11

DATE

051 COUNTY

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

MAY 1

02243 PERMIT

, 20

, 20

MINIMUM DEGREE OF ACCURACY

HORIZONTAL & VERTICAL

CONTROL DETERMINED BY

1/2500

8811P18HUR.dwg FILE NO.

KEITH STERN S-18HU-REV1

1" = 2000'

DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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



LIQUID WASTE IF WELL ___ GAS_X _ DEEP_ X_ SHALLOW _ INJECTION. DISPOSAL "GAS" PRODUCTION X STORAGE_ TYPE: GROUND = 740.50' PROPOSED = 744.65' LOCATION: FISH CREEK (HUC 10) _ WATERSHED_ **ELEVATION** GLEN EASTON 7.5' QUADRANGLE_

MARSHALL DISTRICT COUNTY TH EXPLORATION, LLC SURFACE OWNER _

ISAAC CROW, ET AL - SEE WW-6A1

10.05± ACREAGE _ 10.05± ACREAGE _ LEASE NO. -

ROYALTY OWNER -PROPOSED WORK: DRILL X CONVERT _

_ DRILL DEEPER ____

SCALE

_ REDRILL __ ____ FRACTURE OR STIMULATE X PLUG OFF OLD

SEE WW-6A1

FORMATION ____ PERFORATE NEW FORMATION ____ PLUG AND ABANDON __ PHYSICAL CHANGE IN WELL (SPECIFY)

CLEAN OUT AND REPLUG____ _ OTHER POINT PLEASANT TARGET FORMATION _ ESTIMATED DEPTH__TVD:11,391 1/ TMD: 18,566

WELL OPERATOR TUG HILL OPERATING, LLC

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500

FORT WORTH, TX 76107

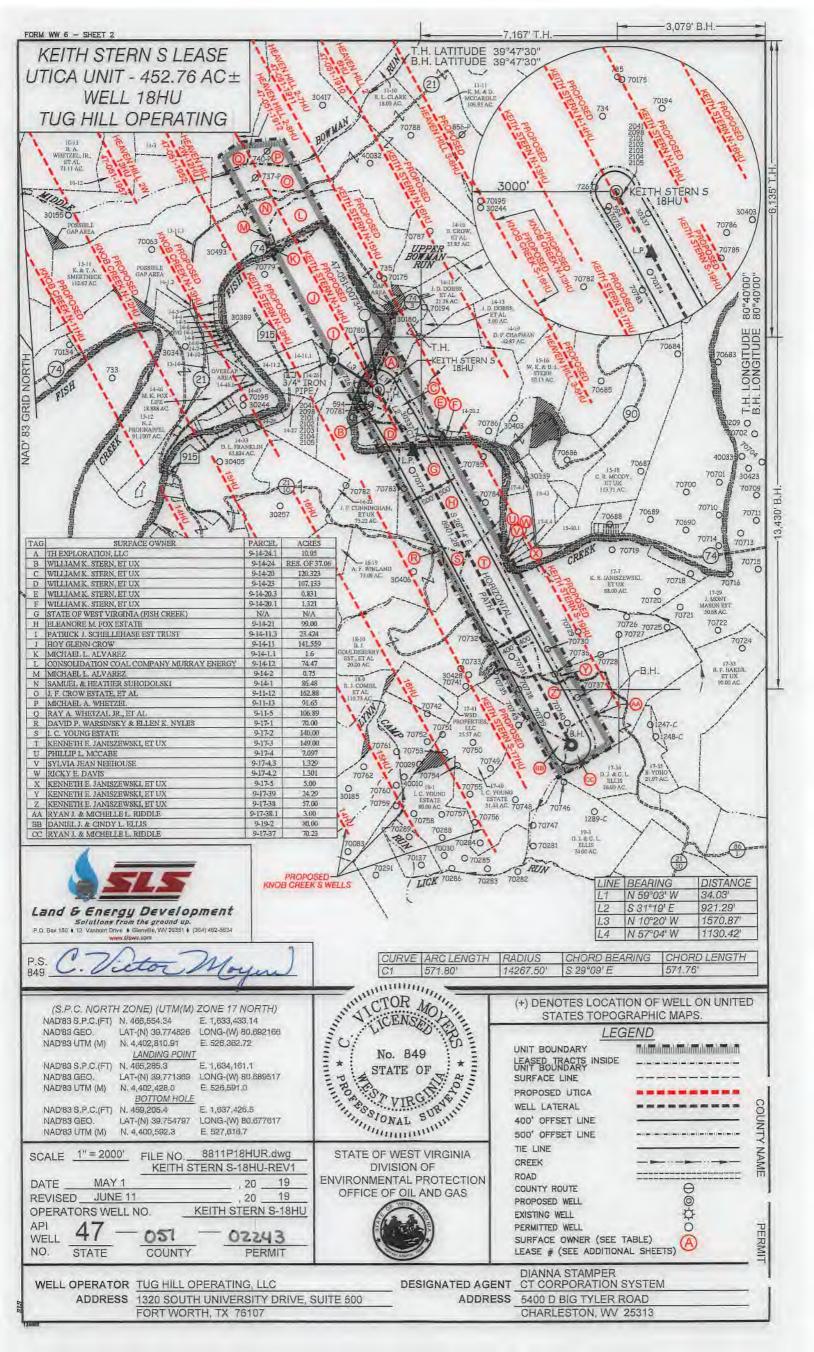
DESIGNATED AGENT

DIANNA STAMPER CT CORPORATION SYSTEM

ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY

NAME



WW-6A1 (5/13)

Operator's Well No. Keith Stern S-18HU

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

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

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

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

*See attached pages

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

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

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

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 Wy Shell					
Its:	Permitting Specialist - Appalachia Region					



lo.	Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Deed Bo	
1	10*15605	A	9-14-24.1	ISAAC CROW ET UX	74	394
3	10*15605 10*15509	C	9-14-24 9-14-20	ISAAC CROW ET UX WILLIAM K STERN AND BETTY L STERN	74	394
4	10*15812	D	9-14-23	WILLIAM K STERN AND BETTY L STERN	687	220
5	10*16436	D	9-14-23	REAGAN D YEATTS AND CHRISTOPHER M YEATTS	961	339
5	10*18269	D	9-14-23	GENELDA MASON	942	460
7	10*18299	D	9-14-23	CAROL L BOBBY AND DONALD J BOBBY	929	281
3	10*18354	D	9-14-23	DEBORAH L TURLEY	931	352
	10*18355	D	9-14-23	JUDITH F TEMPLE AND LOUIS (TEMPLE	931	350
0	10*18356	D	9-14-23	LARRY W ALLEY	931	348
2	10*18357 10*18358	D	9-14-23 9-14-23	DEBORAH SUE KYLE SHARLA ROLLINS AND GARY ROLLINS	931	358
3	10*18419	D	9-14-23	CARLA MAE ALLEY	932	539
4	10*18420	D	9-14-23	VICTOR E ALLEY JR AND DEBRA A ALLEY	932	582
5	10*18421	D	9-14-23	DONNA JUNE STRAIT AND GARY E STRAIT	932	58
6	10*18429	D	9-14-23	GEORGE L DUNN AND NANCY MARIE DUNN	932	60
7	10*18430	D	9-14-23	JAMES DUNN AND DONNA K DUNN	932	60
3	10*18432	D	9-14-23	ROSEMARIE BERISFORD	932	57
9	10*18484	D	9-14-23	BRENDA REED	933	10
0	10*18485	D	9-14-23	BARBARA JO BEVERIDGE	933	10
1	10*18490	D	9-14-23	STACY L BARNHART	933	12
2	10*18491	D	9-14-23	LORI A FARMER AND DANIEL K FARMER	933	13
	10*18512 10*18515	D	9-14-23 9-14-23	CHRISTINA NESTELL AND CHARLES E NESTELL III WILLIAM P DAUBE	933	56 57
	10*18518	D	9-14-23	SUSAN I BAKER	933	58
5	10*18520	D	9-14-23	CHRISTOPHER SAUDERS	933	58
,	10*18612	D	9-14-23	NANNETTE BERLETCH	932	54
3	10*18617	D	9-14-23	SHEILA SIMMONS AND JEFFREY R SIMMONS	934	61
3	10*18644	D	9-14-23	FRANK A STÖRCH JR AND SUSAN STORCH	936	14
)	10*18645	D	9-14-23	SANDRA SUE HALL AND DAVID HALL	936	15
	10*18647	D	9-14-23	PETER G STORCH AND LAURIE L STORCH	936	15
4	10*18648	D	9-14-23	LAWRENCE E CHIAPPETTA AND PATRICIA A CHIAPPETTA	936	16
1	10*18649	D	9-14-23	RODNEY K BANE AND CATHIEJ BANE	936	16
+	10*18652	D	9-14-23	BECKY LANDRIS DATE BALLEY	936	17
5	10*18653	D	9-14-23	DALE R ALLEY RACHEL THORNE AND FRED THORNE JR	936 938	57
,	10*18673 10*18674	D	9-14-23 9-14-23	JOHN T CRISWELL AND CATHERINE A CRISWELL	938	57
3	10*18675	D	9-14-23	JEFFREY BRYAN CRISWELL	938	58
,	10*18676	D	9-14-23	JENNIFER SHAWN GLOVER	938	57
)	10*18677	D	9-14-23	PATRICIA DOFKA	938	58
1	10*18578	D	9-14-23	WILLIAM LINSLEY CRISWELL	938	58
2	10*18763	D	9-14-23	VAUGHN HONE SR & LINDA MARIE HONE	938	22
3	10*18766	D	9-14-23	TOM ALLEY	938	22
1	10*18797	D	9-14-23	DORETTA RUSH	937	62
5	10*18808	D	9-14-23	PATRICIA KIRCHNER	937	64
-	10*18809	D	9-14-23	JUDITH C LORADITCH	937	64
3	10*19392 10*19400	D	9-14-23 9-14-23	RODNEY W RUSH AND CRYSTAL D RUSH BULA F YOST	940	33
9	10*19405	D	9-14-23	ANN MARIE STEVENS AND CURTIS STEVENS	939	28
	10*19417	D	9-14-23	SYLVIA R SPALENY AND ROBERT A SPALENY	939	59
	10*19423	D	9-14-23	KEITH W STORCH AND DEBORAH A STORCH	934	60
2	10*19477	D	9-14-23	DEBORAH A MILLER	941	32
3	10*19479	D	9-14-23	DENISE WILLIAMSON	941	32
1	10*19510	D	9-14-23	REED O MILLER	933	57
5	10*19525	D	9-14-23	AUGUSTUS R MCMAHON III AND MICHELE M MCMAHON TRUSTEES OF THE AUGUSTUS R MCMAHON III LIVING TRUST	943	50
5	10*19527	D	9-14-23	AUGUSTUS RUSH MCMAHON III TRUSTEE OF THE PAMELA J MCMAHON REVCBLE TRUST	052	
7	10*19530	D	9-14-23	SHAROL K CASADA	953 943	33
3	10*19531	D	9-14-23	DELBERT D RUSH AND BETTY RUTH RUSH	942	61
1	10*19625	D	9-14-23	DURR SUCKEL & ELIZABETH SUCKEL	944	15
1	10*19626	D	9-14-23	LAURIE R BROWN	944	15
	10*19676	D	9-14-23	RONALD W REINBEAU	944	45
2	10*19677	D	9-14-23	NEIL SCHAFER AND CHRISTALL SHAFER	944	14
1	10*19681	D	9-14-23	TIMOTHY LEE COLLEY	944	14
1	10*19683	D	9-14-23	TERESA ALLEY	944	14
-	10*19686	D	9-14-23	KAREN J AND MICHAEL E BRUGGEMAN	944	14
-	10*19712	D	9-14-23	CHAZ AARON COLLEY AND DANA COLLINS	957	13
-	10*19723 10*19859	D	9-14-23	REID ELATTRACHE AND TONYA ELATTRACHE	957	13
3	10*19859	D	9-14-23 9-14-23	ELIZABETH A STARC ALICIA N STARC	945	60
1	10*19861	D	9-14-23	JOSEPH F STARC JR AND DONNA STARC	945	60
	10*19862	D	9-14-23	STACY R BENNETT	945	50
	10*19864	D	9-14-23	JOE Y KELLER JR AND SHARON MARIE KELLER	945	61
3	10° 19935	D	9-14-23	SARA E STARC	948	55
	10*19936	D	9-14-23	SHERWOOD MASON NILA JUNE MASON	948	25
5	10*19940	D	9-14-23	EMMA JO CRISWELL	948	55
-	10*21028	D	9-14-23	BRENDA GILBERT	951	15
+	10*21094	D	9-14-23	KATHERINE DEGROOT AND DANIEL DEGROOT	951	15
1	10*21111 10*21209	D	9-14-23 9-14-23	DONNA G AND PAUL L'CHMELYNSKI CHARLES R WILLIAMSON JR	951 951	15
5	10*21209	D	9-14-23	CHARLES F HORNER & LORAINE G HORNER	951	43
1	10*21229	D	9-14-23	TARA E CAUSEY	952	43
	10*21395	D	9-14-23	DANIELL LANDRIS AND JOAN LLANDRIS	956	62
	10*21396	D	9-14-23	MICHAEL D ZUCKER	956	64
	10*21441	D	9-14-23	JOSEPH A MURPHY AND VIRGINIA ANNE MURPHY	956	63
5	10*21443	D	9-14-23	ROBERT L LANDRIS AND LIBERTY JANE LANDRIS	956	62
5	10*21490	D	9-14-23	DANIEL E WILLIAMSON AND HEATHER R WILLIAMSON	957	15
1	10*21493	D	9-14-23	DENZIL ALLEY JR	958	6
3	10*21497	D	9-14-23	KATHLEEN G WILLIAMSON	957	32
1	10*21837	D	9-14-23	WILLIAM BRYAN COLLEY	959	62
0	10*21873	D	9-14-23	MICHAEL WAYNE ALLEY AND LINDA ALLEY	953	50
2	10*21961 10*21972	D	9-14-23 9-14-23	JOHN WILLIAMSON JR CATHERINE LAND EDNEST IN SILVERIO	960	20
3	10*21972	D	9-14-23	CATHERINE I AND ERNEST M SILVERIO CHARLES C SEAMON	960	58
1	10*21979	D	9-14-23	CHARLES C SEAMON THE JOANN REILLY TRUST KIMBERLY MAEZ TRUSTEE	954	34
5	10*21991	D	9-14-23	MICHAEL SAUDERS AND AMI SAUDERS	953 953	50
5	10*22004	D	9-14-23	RALPH EDWARD WILLIAMSON	953	50
	10*22037	D	9-14-23	JOSHUA W SEAMON	953	50
7	10 22007					

8811P18HUR.dwg FILE NO. 8811P18HUR.dwg KEITH STERN S-18HU-REV1 DATE_ MAY 1 , 20 _ REVISED JUNE 11 _ , 20 _ 19 OPERATORS WELL NO. KEITH STERN S-18HU 057 02243 WELL NO. COUNTY

No. 849
** STATE OF VIRCHIANTS STONAL SURVINION

STATE OF WEST VIRGINIA DIVISION OF **ENVIRONMENTAL PROTECTION** OFFICE OF OIL AND GAS



849

WELL OPERATOR TUG HILL OPERATING, LLC

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107

DIANNA STAMPER
CT CORPORATION SYSTEM

ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313



	10*22089	D	9-14-23	MARCIA A LUKE	961	333
100	10*22110	D	9-14-23	JENNIFER ALLEY FISHER & ROBERT D FISHER	961	34
101	10*22127	D	9-14-23	JUDITH L BENEDICT AND LOUIS G BENEDICT	961	343
103	10*22150 10*22257	D	9-14-23	CHAD ERIC BENNETT AND MARY A BENNETT	954	338
104	10*22328	D	9-14-23	CHARLES F ALLEY TRUST EMMANUEL PREVOLES TRUSTEE	970	25
.05	10*22329	D	9-14-23 9-14-23	SUSAN L GOLDSBERRY	962	549
06	10*22380	D	9-14-23	JUDITH S KNIGHT	962	547
07	10*22411	D	9-14-23	EARL FRAZIER AND LYDIA ARMENTA	962	276
.08	10*22461	D	9-14-23	BRIAN R MORGAN	963	128
09	10*22501	D	9-14-23	UNDA K AND MICHAEL HUMES	964	453
10	10*22502	D	9-14-23	JAMES P MILLER	948	373
11	10*22775	D	9-14-23	DIANNA LEA SHEPARD	946	215
12	10*22778	D	9-14-23	DANNY E COCHRAN AND LORI ANN COCHRAN	970	30
13	10*22833	D	9-14-23	RANDY W MORRIS SR AND CHERYL MORRIS	972 966	46
14	10*22848	D	9-14-23	JULIA RAE BROOKS	977	30
15	10*22854	D	9-14-23	SUSAN EXUNE	977	32
16	10*22878	D	9-14-23	AUBREY E REILLY	977	26
17	10*22879	D	9-14-23	BRENDAN Q REILLY	977	28
18	10*23148	D	9-14-23	IDA A ALLEY AND J F ALLEY	117	45
19	10*15957	E	9-14-20.3	BRADLEY CROW AND BETTY L CROW	768	350
20	10*15958	E	9-14-20.3	GLADYS CROW	769	609
21	10*15959	E	9-14-20.3	LEWIS M QUIGLEY AND MAXINE V QUIGLEY	769	603
22	10*15960	E	9-14-20.3	CONNIE HECKLE	770	547
23	10*15961	E	9-14-20.3	H GLENN CROW	770	565
24	10*15962	F	9-14-20.1	BRADLEY CROW AND BETTY L CROW	768	362
5	10*15963	F	9-14-20.1	LEWIS M QUIGLEY AND MAXINE V QUIGLEY	769	416
6	10*15964	F	9-14-20.1	GLADYS CROW	769	410
7	10*15965	F	9-14-20.1	H GLENN CROW	770	535
8	10*15966	F	9-14-20.1	CONNIE HECKLE	770	541
9	10*23458	G	WV - FISH CREEK	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	1019	373
0	10*47051.243.1	Н	9-14-21	MARY A FOX	879	332
1	10*47051.243.2	н	9-14-21	PAUL G FOX	879	335
2	10*47051.243.3	н	9-14-21	MARK H FOX	879	338
3	10*47051.243.4	н	9-14-21	DAVIDEFOX	876	55
4	10*47051.243.5	н	9-14-21	LOUIS T FOX AND KAREN A FOX	876	58
5	10*47051.243.6	н	9-14-21	THOMAS J FOX	876	- 51
6	10*23053	T.	9-14-11.3	CE YOUNG	63	146
17	10*23053	_ 1 _	9-14-11	CE YOUNG .	63	148
8	10*19621	K	9-14-1.1	MARY RUTH FROHNAPFEL	938	595
39	10*19622	K	9-14-1.1	KENNETH D SIBURT JR AND LORI SIBURT	938	597
0	10*19623	K	9-14-1.1	SANDRA SIBURT FROWEN & GEORGE FROWEN	938	600
11	10*19627	K	9-14-1.1	RONALD S YOUNG	944	197
2	10*19655	K	9-14-1.1	CHESTNUT HOLDINGS INC	949	309
13	10*19678	K	9-14-1.1	WILLIAM O. IOBES	944	188
14	10*19679	K	9-14-1.1	DAVID A DARRAH SR AND ANITA SLOUGH-DARRAH	946	54
15	10*19725	K	9-14-1.1	MAMIE V ARNOLD	944	454
16	10*21213	K	9-14-1.1	JAMES B SIBURT AND DELILA D SIBURT	957	177
17	10*21214	K	9-14-1.1	VICKI J CHERRY AND RICKEY E CHERRY	949	139
18	10*21215	K	9-14-1.1	ALAN K SIBURT ET UX	949	136
19	10*21216	K	9-14-1,1	RODNEYLSIBURT	949	14
50	10*21559	K	9-14-1,1	GUY L BUZZARD TRUSTEE THE GUY L BUZZARD 2017 IRREVOCABLE TRUST	957	388
51	10*22464	K	9-14-1,1	DONNA KYLE	964	470
52	10*22465	K	9-14-1.1	LOIS KURPIL FKA LOIS HERCULES	964	47.
53	10*22466	K	9-14-1.1	JUDITH MAY CONNER	964	46
54	10*22516	K	9-14-1.1	SHARON RUSSELL	964	466
55	10*22518	к	9-14-1.1	GEORGE EDWARDS	964	51
66	10*22856	K	9-14-1.1	CHARLES W MILLER AND ESTHER JEAN MILLER	977 1008	30
57	10*23435	K	9-14-1.1	LLOYD C. ARNOLD & JUDITH C. ARNOLD	68	65
8	10*23087	L	9-14-12	REASON AND CATHERINE V YOUNG	938	59
59	10*19621	M	9-14-2	MARY RUTH FROHNAPFEL	938	59
50	10*19622	M	9-14-2	KENNETH D SIBURT IR AND LORI SIBURT		
61	10*19623	M	9-14-2	SANDRA SIBURT FROWEN & GEORGE FROWEN	938	19
62	10*19627	M	9-14-2	RONALD S YOUNG	944	30
63	10*19655	M	9-14-2	CHESTNUT HOLDINGS INC	949	18
64	10*19678	M	9-14-2	WILLIAM O. JOBES DAVID A DARRAH SR AND ANITA SLOUGH-DARRAH	946	5/
65	10*19679 10*19725	M	9-14-2	MAMIE V ARNOLD	944	45
66		M	9-14-2	JAMES B SIBURT AND DELILA D SIBURT	957	17
67	10*21213	M	9-14-2	VICKLY CHERRY AND RICKEY E CHERRY	949	13
68 69	10*21214 10*21215	M	9-14-2	ALAN K SIBURT ET UX	949	13
70	10*21215	M	9-14-2	RODNEY L SIBURT	949	14
71	10*21559	M	9-14-2	GUY L BUZZARD TRUSTEE THE GUY L BUZZARD 2017 IRREVOCABLE TRUST	957	38
72	10*22464	M	9-14-2	DONNA KYLE	964	47
73	10*22465	M	9-14-2	LOIS KURPIL FKA LOIS HERCULES	964	47
74	10*22466	M	9-14-2	JUDITH MAY CONNER	964	46
75	10*22516	M	9-14-2	SHARON RUSSELL	964	46
76	10*22518	M	9-14-2	GEORGE EDWARDS	964	-46
77	10*22856	M	9-14-2	CHARLES W MILLER AND ESTHER JEAN MILLER	977	5
78	10*23435	M	9-14-2	ILOYD C, ARNOLD & JUDITH C. ARNOLD	1008	30
79	10*19621	N	9-14-1	MARY RUTH FROHNAPFEL	938	59
80	10*19622	N	9-14-1	KENNETH D SIBURT JR AND LORI SIBURT	938	59
81	10*19623	N	9-14-1	SANDRA SIBURT FROWEN & GEORGE FROWEN	938	60
82	10*19627	N	9-14-1	RONALD S YOUNG	944	19
83	10*19655	N	9-14-1	CHESTNUT HOLDINGS INC	949	30
84	10*19678	N	9-14-1	WILLIAM O. JOBES	944	18
85	10*19679	N	9-14-1	DAVID A DARRAH SR AND ANITA SLOUGH-DARRAH	946	5
86	10*19725	N	9-14-1	MAMIE V ARNOLD	944	45
87	10*21213	N	9-14-1	JAMES B SIBURT AND DELILA D SIBURT	957	17
88	10*21214	N	9-14-1	VICKI J CHERRY AND RICKEY E CHERRY	949	13
.89	10*21215	N	9-14-1	ALAN K SIBURT ET UX	949	13
90	10*21216	N	9-14-1	RODNEY L SIBURT	949	14
91	10*21559	N	9-14-1	GUY L BUZZARD TRUSTEE THE GUY L BUZZARD 2017 IRREVOCABLE TRUST	957	38
-	10*22464	N	9-14-1	DONNA KYLE	964	4
_	10*22465	N	9-14-1	LOIS KURPIL FKA LOIS HERCULES	964	4
193	10*22466	N	9-14-1	JUDITH MAY CONNER	964	46
93 194		N	9-14-1	SHARON RUSSELL	964	46
192 193 194 195	10*22516	_			964	46
193 194 195 196	10*22516 10*22518	N	9-14-1	GEORGE EDWARDS		_
93 194	10*22516	_	9-14-1 9-14-1 9-14-1	GEORGE EDWARDS CHARLES W MILLER AND ESTHER JEAN MILLER ILLOYD C. ARNOLD & JUDITH C. ARNOLD	977	30

FILE NO. 8811P18HUR.dwg KEITH STERN S-18HU-REV1 DATE MAY 1 19 REVISED JUNE 11 , 20 ___ 19 OPERATORS WELL NO. KEITH STERN S-18HU 001 02243 WELL COUNTY NO. STATE PERMIT



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



P.S.

WELL OPERATOR TUG HILL OPERATING, LLC

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500

FORT WORTH, TX 76107

DESIGNATED AGENT

DIANNA STAMPER CT CORPORATION SYSTEM

ADDRESS 5400 D BIG TYLER ROAD

CHARLESTON, WV 25313



200	10*15511	0	9-11-12	DAVID E CROW	718	376
201	10*15512	0	9-11-12	FRANCES COFFEY	718	378
202	10*15513	0	9-11-12	KAY KEYES	718	330
203	10*15514	0	9-11-12	L PAUL CROW	718	335
204	10*15515	0	9-11-12	DESIRE L CROW	718	334
205	10*15516	0	9-11-12	ROSE MARIE KIELGCZEWSKI	718	354
206	10*15517	0	9-11-12	DIANNE GELLNER & GARY GELLNER	718	345
207	10*15518	0	9-11-12	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	718	347
208	10*15519	0	9-11-12	JOHN CROW	726	580
209	10*15520	0	9-11-12	TIMOTHY CROW	726	582
210	10*19685	0	9-11-12	MORGAN H MOSSER AND NANCY MOSSER	944	445
211	10*21093	0	9-11-12	DUNCAN S LINN AND POLLY LU BROWN	952	157
212	10*21492	0	9-11-12	JUDITH FISK	957	282
213	10*21494	0	9-11-12	EILEEN M SLATE AND DALE A SLATE	957	284
214	10*21495	0	9-11-12	E JEN BAIRD AND GEORGE'S BAIRD AMENDED REVOCABLE TRUST AGREEMENT	966	618
215	10*21843	0	9-11-12	JOHN B HOAGLAND AND PATRICIA A HOAGLAND	959	620
216	10*21923	0	9-11-12	DOROTHY JEAN BURKLE BOYD	953	468
217	10*22090	0	9-11-12	KATHERINE ANN BOYD BLAKE	953	473
218	10°22153	0	9-11-12	JODY A SCHOTTLER AND THOMAS A SCHOTTLER	953	470
219	10*22462	0	9-11-12	ROBERT CALDWELL MEAD	964	490
220	10*22608	0	9-11-12	SARAH BAIRD UNN	966	620
221	10*22666	0	9-11-12	JOSEPH W LINN JR AND TAMMY S LINN	968	230
222	10*22771	0	9-11-12	KATHARINE B SILBAUGH AND DANIEL JURAYJ	970	24
223	10*22855	0	9-11-12	KIM O MAGHAN AND JAMES G MAGHAN	977	49
224	10*23024	0	9-11-12	KATHRYN A TAGGART AND EVERETT TAGGART JR	977	289
225	10*23059	0	9-11-12	GAIL W STEWART	977	287
226	10*23165	0	9-11-12	EDITH BOYD ORR AND WENDELL FRANKLIN ORR	984	68
227	10*23389	0	9-11-12	LEESA O THOMPSON	972	45
228	10*23427	0	9-11-12	SANDY VINCENT AND STEVEN VINCENT	1008	307
229	10*23652	0	9-11-12	KATHARINE ATWOOD AND MICHAEL GRITTON	1009	291
230	10*23686	0	9-11-12	RANDALL TULLOM AND ROSAUE FERMO-ULLOM	1010	400
231	10*23687	0	9-11-12	ELIZABETH F BAIRD	1010	402
232	10*23688	0	9-11-12	MELISSA DUBOIS BAIRD	1010	404
233	10*23692	0	9-11-12	WILLIAM ATWOOD AND EUZABETH ATWOOD	1010	404
34	10*23693	0	9-11-12	JOHN ATWOOD AND ENCABETH ATWOOD	1010	406
35	10*24222	0	9-11-12	SALVATION ARMY	1022	371
235	10*24222	0	9-11-12	CLARA OSBORNE DOUGLAS	1022	481
35	10*24282	0	9-11-12	KATHARINE D LINN	1023	522
38	10*24296	0	9-11-12	JANE W VARDY ET AL	1023	317
239	10*47051.123.1	0	9-11-12	LLOYD G BAKER	865	389
240	10*47051.123.2	0	9-11-12	JAMES P HOLLIDAY AND JACQUELINE HOLLIDAY	873	143
$\overline{}$	10*16258	P	9-11-13	CHESTNUT HOLDINGS INC	848	234
241	10*15584	Q			686	239
243	10*15585	Q	9-11-5	VICKIE MASON		-
244	10*15586	Q	9-11-5 9-11-5	SHARON LWHETZAL	687	147 615
245	10*15587	Q		MARY A SOUTH	690 690	559
246	10*15588		9-11-5 9-11-5	ROBERT L WHETZAL RAY A WHETZAL JR	693	571
-		Q			-	
247	10*15589 10*47051.108.1	Q	9-11-5	MARK L WHETZAL	693	576
249	10*47051.108.5	Q	9-11-5 9-11-5	MICHAEL A WHETZEL BRENDA J WHETZEL	885	51 55
250					885	
251	10*17135 10*17136	R	9-17-1	ELLEN K NYLES	919	625
_				DAVID P WARSINSKY	919	627
252	10*15910	S	9-17-2	SHIRLEY KOONTZ	701	303
253	10*15911	S	9-17-2	ROBERT W. GRAY	715	441
254 255	10*15912	S	9-17-2	DELORES I RICHTER	715	448
_	10*15913 10*15914	S	9-17-2	ULA MCGUIRE	715	449
256		S	9-17-2	JUDY CALLOWAY	715	450
257	10*15915	S	9-17-2	JUDY WARNER CHRISTI LYNN CLAYTON	715	451
258	10*15916	S	9-17-2		715	452
259	10*15917	S	9-17-2	CINDY LOU SMITH	715	453
260	10*15918	S	9-17-2	ARTHUR EMORY	715	457
261	10*15919	S	9-17-2	CAROLYN SUE HENRY	715	454
262 263	10*15920 10*17233	S	9-17-2	DENNIS KOTKE TIMOTHY MCDOWELL	715	458 355
264 264	30 30 30			THEOTHER THEOTHER	1.00	10000
	10*17234	S	9-17-2	GAREN P. MCDOWELL	716	280
265	10*17235	S	9-17-2	WINONA RIDDLE	715	353
265	10*17235	5	9-17-2	TEXYN L. MILLER	716	270
267	10*17237	S	9-17-2	JENNIFER WHEATON	715	610
268 269	10*17238 10*17239	5	9-17-2	ANITA RAE MILLER	715	341
259		S	9-17-2		715	336
270	10*17240	S	9-17-2	BONNIE GRISELL BARBARA K RIBIEV	715	331
272	10*17241 10*17242	5	9-17-2	GERALD L MILLER	716	290 285
273	10*17242	S	9-17-2	DAVID MCDOWELL	-	
274	10*17244	S	9-17-2	KAREN CECIL	717	26
275	10*17245	S	9-17-2		716	295
276	10*17245	5	9-17-2	CHAD E LONGFELLOW ULA FAYE BONAR SNODGRASS AND DONALD T SNODGRASS	833	218
277	10*17673	S	9-17-2		949	172
278	10*17707	S	9-17-2	JACQUELYN S FERRARI AND JOHN C FERRARI	932	567 177
279	10*17709	S	9-17-2	CAROL GONGOLA	949	167
280	10*17981	S	9-17-2	MICHAEL E SWIFT AND MELODY A SWIFT	949	372
281	10*18099	5	9-17-2	RAE ELLEN FLOYD AND KENNETH FLOYD	925	233
282	10*18107	S	9-17-2	ANITA MAE MASON	927	238
283	10*18167	S	9-17-2	NEIL CALL AND MEUNDA CALL	927	492
284	10*18168	S	9-17-2	SANDRA YANAGAWA	-	492
285	10*18169	- 5	9-17-2	KAREN K WILLIAMS	927	
286	10*18192	S			927	628
287	10*18193	S	9-17-2 9-17-2	STEPHEN S MASON AND CAROLE K MASON CAROLYN LEE FUREY AND MARTIN J FUREY	928	625
288	10*18194	S	9-17-2	PAMELA BEYLER AND CHAD R BEYLER	949	158
289	10*18198	S	9-17-2	MARY THERESA SOLEAU AND THOMAS SOLEAU	928	630
290	10*18199	S	9-17-2		928	643
291	10*18260			LAWRENCE J VAUGHN AND GAIL L VAUGHN	928	532
292		S	9-17-2	GEMMA RUDY AND TIMOTHY RUDY	928	584
292	10*18261	5	9-17-2	TIMOTHY MCDOWELL AND CYNTHIA MCDOWELL	928	553
294	10*18262	S	9-17-2	KAREN MCDOWELL CECIL AND JAMES E CECIL	928	555
294	10*18263	5	9-17-2	USA ANN MCDOWELL AND ROBERT JOSEPH HILL	928	551
	10*18264	5	9-17-2	DAVID MCDOWELL AND CRYSTAL MCDOWELL	928	549
296	10*18295	5	9-17-2	THOMAS R BAKER AND VICKIE L BAKER	929	262
297	10*18417	S	9-17-2	CHERYLI HILL	932	577
298	10*18487	S	9-17-2	NANCY L STANGEL AND JOHN J STANGEL	933	113
	10*18488	5	9-17-2	CHARLINE M ENGLE AND KEVIN E ENGLE	933	118
300	10*18508	S	9-17-2	PATRICIA LUANNE BONAR	925	351

FILE NO. 8811P18HUR.dwg KEITH STERN S-18HU-REV1 MAY 1 DATE_ REVISED JUNE 11 , 20 ___19 OPERATORS WELL NO. KEITH STERN S-18HU 051 WELL 02243 NO. COUNTY PERMIT

No. 849
STATE OF
VIRCHARD
STATE OF
STONAL SURVINION

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



WELL OPERATOR TUG HILL OPERATING, LLC

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107

DIANNA STAMPER
CT CORPORATION SYSTEM

ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313 COUNTY NAME



301	10*18517	S	9-17-2	LORI SHANAHAN AND PATRICK SHANAHAN	933	575
302	10*18619	5	9-17-2	LOIS ELAINE WICKHAM	934	617
03	10*18620	S	9-17-2	MICHAEL A WALKER	934	620
04	10*18621	S	9-17-2	MARK A WALKER	934	622
)5	10*18622	5	9-17-2	CHAD A YOUNG	934	624
16	10*18623	5	9-17-2	NEIL ROBERT YOUNG	934	626
17	10*18624	S	9-17-2	CLARA SUE YOUNG	934	629
18	10*18655	5	9-17-2	PATRICIA L LEHN	936	95
19	10*18656	5	9-17-2	PAMELA CALL	936	100
0	10*18658	S	9-17-2	ELIZABETH JANE KELLER	936	107
1	10*18762	5	9-17-2	TRACYLBARNBY	938	481
2	10*19373	5	9-17-2	JESSICA WHEATON	931	411
3	10*19408	S	9-17-2	CAROLYN J YOUNG	940	149
14	10*19508	S	9-17-2	STONE HILL MINERALS HOLDINGS LLC	941	446
15	10*19532	5	9-17-2	CYNTHIA K KIRCHHOFF	942	637
16	10*19618	S	9-17-2	RONALD W YOUNG	937	371
17	10*19619	5	9-17-2	ERIC J YOUNG	937	377
18	10*19620	5	9-17-2	RONALD R YOUNG AND GERALDINE YOUNG	937	365
19	10*19624	S	9-17-2	JOHN TYINGLING	944	209
20	10*19668	5	9-17-2	MELISSA D FLETCHER & SCOTT A FLETCHER	938	326
21	10*19713	\$	9-17-2	MARSHA BERISFORD	944	452
22	10*19879	S	9-17-2	MARY V GILSON AND WALTER M GILSON	945	588
23	10*19933	5	9-17-2	MARY ANN GRIFFITH	948	555
24	10*21226	S	9-17-2	PENNY YODER AND KEVIN LYNN YODER	951	605
25	10*21342	5	9-17-2	LEIAND SINCLAIR YOUNG	946	52
26	10*21400	5	9-17-2	DENNIS REASBECK AND BARBARA REASBECK	956	645
27	10*21487	5	9-17-2	FLOYD D ANDERSON & CAROLYN SUE ANDERSON	957	294
28	10*21488	S	9-17-2	ALEXA B YOUNG	957	296
29	10*21462	5	9-17-2	SUSAN C YOUNG	949	201
30	10*21517	5			949	452
	10*21572	S	9-17-2	ALICE F WINLAND	957	404
31	10 TO			MICHAELS OTT AND SYBIL OTT		449
32	10*21575	5	9-17-2		957	409
33	10*21738	S	9-17-2	CRYSTAL DAWN YOUNG	957	
34	10*21741	5	9-17-2	HOLLY A YOUNG	957	411
35	10*21749	S	9-17-2	GRANT D RICHARDS AND KERRI S RICHARDS	957	459
36	10*21842	S	9-17-2	JOSEPH NOKOVICH	959	635
37	10*21844	S	9-17-2	ROBERTA YOUNG	959	629
38	10*21927	5	9-17-2	BLACK GOLD GROUP LTD	964	474
39	10*21928	S	9-17-2	JOHN D COX AND CONNIEJ COX	953	511
40	10*21940	5	9-17-2	ALYSIA JORDAN & TERRY M JORDAN	953	346
41	10*21967	S	9-17-2	ROGER G ALLEN AND DONNA KAY ALLEN	960	571
42	10*21970	S	9-17-2	CHRISTOPHER DAUGHERTY & JENNIFER R DAUGHERTY	960	578
43	10*21971	S	9-17-2	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	960	580
44	10*21975	5	9-17-2	RAYMOND A KUDERSKI AND KELLI I KUDERSKI	960	582
45	10*21984	5	9-17-2	SANFORD METZ	960	575
46	10*21986	5	9-17-2	RONALD D KOONTZ & BETH ANN KOONTZ	960	569
47	10*22052	5	9-17-2	RONALD R YOUNG	960	573
348	10*22088	5	9-17-2	BRANNEN DAUGHERTY	961	345
349	10*22147	5	9-17-2	LARRY R BONAR AND DEBRA L BONAR	957	406
950	10*22154	S	9-17-2	DONALD EUGENE ANDERSON	953	509
351	10*22599	S	9-17-2	BRYANTR SWIFT AND KATHY SWIFT	966	456
352	10*22600	5	9-17-2	AIDEN BOYD YOUNG JENNIFER A YOUNG, PETITIONER	966	462
353	10*22776	5	9-17-2	JAMES ROBERT WELLS	970	19
354	10*22849	S	9-17-2	NEIL MCELROY AND SUE MASON MCELROY	977	44
355	10*22851	5	9-17-2	JOHN J HELLSTERN AND LYNN D HELLSTERN	977	39
356	10*22853	S	9-17-2	RONALD LEE HENSLEY AND MARY ANN HENSLEY	977	34
357	10*23076	S	9-17-2	JACK R BERISFORD AKA RANDY BERISFORD	984	43
358	10*23260	5	9-17-2	IDA M TRAVIS ET AL DAVID C WHITE AS SPECIAL COMMISSIONER	988	73
359	10*23539	5	9-17-2	STONE HILL MINERALS HOLDINGS LLC	1010	224
		5	9-17-2	THE ESTATE OF RUTH N LUTHER SUZANNE L WOZNIAK EXECUTRIX	1009	286
360	10*23668	_		ANITA DIANE ANTILL AND TERRY ANTILL	742	121
361	10*15832	T	9-17-3		742	104
362	10*15835	T	9-17-3	LUCINDA RAE ALLEN AND DAVID A ALLEN	743	285
363	10*15847	T	9-17-3	ROGER BRIGHT AND SUSAN LEIMER - DECEASED		_
364	10*15848	T	9-17-3	HOMER LISIMMONS AND GLADYS RISIMMONS	745	194 635
365	10*15855	T	9-17-3	ALICE THIPPHAVONG AND VISITH THIPPHAVONG		629
366	10*15856	T	9-17-3	LEO C HILKE AND BETTY MHILKE	747	200
367	10*15870	T	9-17-3	JOHN H HILKE AND AUDA HILKE	750	_
368	10*15872	T	9-17-3	SUSAN H KEY	751	191
369	10*15836	U	9-17-4	LUCINDA RAE ALLEN AND DAVID A ALLEN	742	79
370	10*15837	U	9-17-4	ANITA DIANE ANTILL AND TERRY ANTILL	742	85
371	10*15842	u	9-17-4	HOMER L SIMMONS AND GLADYS R SIMMONS	742	329
372	10*16007	U	9-17-4	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	799	436
373	10*16008	U	9-17-4	DONNA KAY ALLEN AND ROGER ALLEN	801	222
374	10*17169	U	9-17-4	ALMA L VAN SCYOC	692	40
375	10*17171	U	9-17-4	OPAL MICKEY	690	63:
376	10*17173	U	9-17-4	LLOYD R. EVANS	694	526
377	10*17500	U	9-17-4	TRACY LAND KEITH W BARNBY	916	110
378	10*17666	U	9-17-4	LILA FAYE BONAR SNODGRASS AND DONALD T SNODGRASS	949	17:
379	10*17673	U	9-17-4	JAMES PERRY COCHRAN	932	56
380	10*17707	U	9-17-4	JACQUELYN S FERRARI AND JOHN C FERRARI	949	17
381	10*17709	U	9-17-4	CAROL GONGOLA	949	16
382	10*17765	U	9-17-4	ROBERTA YOUNG	949	16
383	10*17840	U	9-17-4	RONALD D KOONTZ & BETH ANN KOONTZ	942	43
384	10*17886	U	9-17-4	ANNETTE CAIN HANKINS AND HOWARD RONALD HANKINS	924	53
385	10*17887	U	9-17-4	LEO C HILKE AND BETTY MHILKE	924	53
386	10*17977	U	9-17-4	BRANNEN DAUGHERTY	925	35
387	10*17980	U	9-17-4	ANITA RAE MILLER	925	37
388	10*17981	U	9-17-4	MICHAEL E SWIFT AND MELODY A SWIFT	925	37
389	10*18031	U	9-17-4	LEE ANNE MILLER	927	22
390	10*18092	U	9-17-4	DAVID MCDOWELL AND CRYSTAL MCDOWELL	927	28
220	10*18093	U	9-17-4	JENNIFER WHEATON	927	28
201	10*18093	U	9-17-4	BONNIE GRISELL	927	23
		_		TEXYN L MILLER AND GEORGIA A MILLER	927	28
392	10*18095	U	9-17-4		939	26
392 393	10*18098	U	9-17-4	USA ANN MCDOWELL AND ROBERT JOSEPH HILL		23
394		U	9-17-4	RAE ELLEN FLOYD AND KENNETH FLOYD	927	_
392 393 394 395	10*18099		9-17-4	ANITA MAE MASON	927	23
392 393 394 395 396	10*18107	U	-			49
392 393 394 395		U	9-17-4	NEIL CALL AND MEUNDA CALL	927	
392 393 394 395 396	10*18107	u u	9-17-4 9-17-4	SANDRA YANAGAWA	927	49
392 393 394 395 396 397	10*18107 10*18167	U				

8811P18HUR.dwg FILE NO._ KEITH STERN S-18HU-REV1 DATE MAY 1 _ ,20 __ 19 REVISED JUNE 11 KEITH STERN S-18HU OPERATORS WELL NO. API 051 02243 WELL COUNTY NO. STATE PERMIT

No. 849
STATE OF VIRGINIAN STATE

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



P.S. C. Victor Moyne

WELL OPERATOR TUG HILL OPERATING, LLC

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500

FORT WORTH, TX 76107

DESIGNATED AGENT

DIANNA STAMPER CT CORPORATION SYSTEM

ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY NAME



02	10*18193	U	9-17-4	CAROLYN LEE FUREY AND MARTIN J FUREY	949	158
103	10*18194	U	9-17-4	PAMELA BEYLER AND CHAD R BEYLER	928	630
104	10*18197	U	9-17-4	BARBARA K BURLEY AND DAVID K BURLEY	928	641
105	10*18198	U	9-17-4 9-17-4	MARY THERESA SOLEAU AND THOMAS SOLEAU LAWRENCE J VAUGHN AND GAIL L VAUGHN	928 928	643 532
105	10*18199 10*18260	U	9-17-4	GEMMA RUDY AND TIMOTHY RUDY	928	584
108	10*18295	U	9-17-4	THOMAS R BAKER AND VICKIE L BAKER	929	262
109	10*18298	U	9-17-4	MAUREEN GREGG	929	27
10	10*18300	U	9-17-4	ROBERT W ODOM AND CASSANDRA L ODOM	929	283
11	10*18361	U	9-17-4	MARY JO CAIN	931	407
12	10*18417	U	9-17-4	CHERYL L HILL	932	57
13	10*18487	U	9-17-4	NANCY L STANGEL AND JOHN J STANGEL	933	113
14	10*18488	U	9-17-4	CHARLINE M ENGLE AND KEVIN E ENGLE	933	118
15	10*18508	U	9-17-4	PATRICIA LUANNE BONAR	925	35:
15	10*18517	u	9-17-4	LORI SHANAHAN AND PATRICK SHANAHAN JANE LOUISE CAIN AND DANIEL CARL HOLTZ	933	603
17	10*18613 10*18655	U	9-17-4 9-17-4	PATRICIA LIEHN	934	95
19	10*18656	U	9-17-4	PAMELA CALL	936	100
20	10*18658	U	9-17-4	ELIZABETH JANE KELLER	936	10
21	10*18659	U	9-17-4	CATHERINE P MASON	936	113
22	10*18799	U	9-17-4	CHARLES J DARMAFALL DECEASED	937	634
23	10*18805	U	9-17-4	CINDY STEVENS TOZIER	937	62
24	10*19373	U	9-17-4	JESSICA WHEATON	931	41
25	10*19403	U	9-17-4	LAWRENCE R LOTZ	951	114
26	10*19404	U	9-17-4	HOWARD M CAIN AND EMMA JEAN CAIN	939	28
27	10*19476	- U	9-17-4	WINONA RIDDLE	941	33
28	10*19689	U	9-17-4	EDMOND TURGEON JR AND CATHY STEVENS TURGEON	944	15
29	10*19702	U	9-17-4	WV MINERALS INC	951	10
30	10*19718	U	9-17-4	CHRISTOPHER DAUGHERTY & JENNIFER R DAUGHERTY	944	41
32	10*19879 10*19933	U	9-17-4	MARY V GILSON AND WALTER M GILSON MARY ANN GRIFFITH	945	58 55
33	10*19933	U	9-17-4	JAMES D STEVENS AND DOROTHY M STEVENS	948	15
14	10*19938	U	9-17-4	JOHN H STEVENS AND LYNDA L STEVENS	949	14
35	10*21026	U	9-17-4	NANCY M MORGAN	951	11
16	10*21211	Ų	9-17-4	NILA JEAN BAYLES	951	11
37	10*21841	U	9-17-4	ENERGY DEEP RESOURCES INC	959	63
38	10*21842	U	9-17-4	JOSEPH NOKOVICH	959	63
19	10*21927	U	9-17-4	BLACK GOLD GROUP LTD	964	47
10	10*21940	U	9-17-4	ALYSIA JORDAN & TERRY M JORDAN	953	34
41	10*22376	U	9-17-4	MARGARET KUCHARZ AND JAMES C KUCHARZ	962	27
42	10*22412	U	9-17-4	CHAD E LONGFELLOW	963	12
43	10*22599	U	9-17-4	BRYANT R SWIFT AND KATHY SWIFT	966	45
44	10*22776	U	9-17-4	JAMES ROBERT WELLS	970	1
15	10*22849	U	9-17-4	NEIL MCELROY AND SUE MASON MCELROY	977	4
16	10*22851	U	9-17-4	JOHN J HELLSTERN AND LYNN D HELLSTERN	977	3
18	10*22853 10*23076	U	9-17-4	JACK R BERISFORD AKA RANDY BERISFORD	977 984	34
19	10*23260	U	9-17-4	IDA MTRAVIS ET AL DAVID C WHITE AS SPECIAL COMMISSIONER	988	7.
50	10*23668	U	9-17-4	THE ESTATE OF RUTH IN LUTHER SUZANNE L WOZNIAK EXECUTRIX	1009	28
51	10*47051.219.1	U	9-17-4	DAVID LEE FRANKLIN	874	31
52	10*47051.219.27	U	9-17-4	MARSHA BERISFORD	902	42
53	10*47051.219.33	U	9-17-4	JOHN H HILKE AND ALIDA HILKE	898	60
54	10*47051.219.36	U	9-17-4	GAREN MCDOWELL AND EUZABETH MCDOWELL	898	61
55	10*47051.219.37	U	9-17-4	SUSAN H KEY	898	62
56	10*47051.219.38	U	9-17-4	TIMOTHY MCDOWELL AND CYNTHIA MCDOWELL	902	43
57	10*47051.219.39	U	9-17-4	ALICE THIPPHAYONG AND VISITH THIPPHAYONG	902	43
58	10*15836	V	9-17-4.3	LUCINDA RAE ALLEN AND DAVID A ALLEN	742	7
50	10*15837 10*15842	V	9-17-4.3	ANITA DIANE ANTILL AND TERRY ANTILL	742	8
61	10*16007	V	9-17-4.3 9-17-4.3	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	742 799	32
52	10*16008	v	9-17-4.3	DONNA KAY ALLEN AND ROGER ALLEN	801	22
53	10*17169	V	9-17-4.3	ALMA L VAN SCYOC	692	140
54	10*17171	v	9-17-4.3	OPAL MICKEY	690	63
55	10*17173	V	9-17-4.3	LLOYD R. EVANS	694	57
56	10*17500	٧	9-17-4.3	TRACY LAND KEITH W BARNBY	916	1
57	10*17666	٧	9-17-4.3	ULA FAYE BONAR SNODGRASS AND DONALD T SNODGRASS	949	17
58	10*17673	٧	9-17-4.3	JAMES PERRY COCHRAN	932	56
59	10*17707	V	9-17-4.3	JACQUELYN S FERRARI AND JOHN C FERRARI	949	17
70	10*17709	V	9-17-4.3	CAROL GONGOLA	949	18
71	10*17765	٧	9-17-4.3	ROBERTA YOUNG	949	16
72	10*17840	V	9-17-4.3	RONALD D KOONTZ & BETH ANN KOONTZ	942	43
73	10*17886	V	9-17-4.3	ANNETTE CAIN HANKINS AND HOWARD RONALD HANKINS	924	53
74	10*17887	V	9-17-4.3	LEO C HILKE AND BETTY M HILKE	924	53
76	10*17977 10*17980	V	9-17-4.3	BRANNEN DAUGHERTY ANITA RAE MILLER	925	35
77	10*17981	V	9-17-4.3	MICHAEL E SWIFT AND MELODY A SWIFT	925 925	37
78	10*18031	V	9-17-4.3	LEE ANNE MILLER	925	22
79	10*18092	V	9-17-4.3	DAVID MCDOWELL AND CRYSTAL MCDOWELL	927	28
30	10*18093	٧	9-17-4.3	JENNIFER WHEATON	927	28
31	10*18094	V	9-17-4.3	BONNIE GRISEU.	927	2
32	10*18095	V	9-17-4.3	TEXYN L MILLER AND GEORGIA A MILLER	927	28
33	10*18098	٧	9-17-4.3	USA ANN MCDOWELL AND ROBERT JOSEPH HILL	939	20
34	10*18099	V	9-17-4.3	RAE ELLEN FLOYD AND KENNETH FLOYD	927	23
35	10*18107	V	9-17-4.3	ANITA MAE MASON	927	23
17	10*18167	V	9-17-4.3	NEIL CALL AND MEUNDA CALL	927	49
8	10*18168 10*18169	V	9-17-4.3 9-17-4.3	SANDRA YANAGAWA KAREN K WILLIAMS	927	45
9	10*18170	V	9-17-4.3	KAREN MCDOWELL CECIL AND JAMES E CECIL	927 927	63
00	10*18192	V	9-17-4.3	STEPHEN 5 MASON AND CAROLE K MASON	927	62
1	10*18193	V	9-17-4.3	CAROLYN LEE FUREY AND MARTIN J FUREY	949	25
32	10*18194	V	9-17-4.3	PAMELA BEYLER AND CHAD R BEYLER	928	63
93	10*18197	V	9-17-4.3	BARBARA K BURLEY AND DAVID K BURLEY	928	64
14	10*18198	v	9-17-4.3	MARY THERESA SOLEAU AND THOMAS SOLEAU	928	64
)5	10*18199	v	9-17-4.3	LAWRENCE J VAUGHN AND GAIL L VAUGHN	928	53
96	10*18260	V	9-17-4.3	GEMMA RUDY AND TIMOTHY RUDY	928	58
)7	10*18295	٧	9-17-4.3	THOMAS R BAKER AND VICKIE L BAKER	929	26
8	10*18298	V	9-17-4.3	MAUREEN GREGG	929	27
99	10*18300	٧	9-17-4.3	ROBERT W ODOM AND CASSANDRA LODOM	929	28
00	10*18361	V	9-17-4.3	MARY JO CAIN	931	40
	10*18417	٧	9-17-4.3	CHERYL L HILL	932	57
01	10*18487	V	9-17-4.3	NANCY L STANGEL AND JOHN J STANGEL	933	11

		FILE NO.		1P18HUR S-18HU-	
DATE	MAY 1			_ ,20 _	19
REVISED_	JUNE 1	1		_ , 20 _	19
OPERATO	RS WELL	NOH	EITH S	STERN S	-18HU
WELL ST.	.7 ATE	COUNTY	-	D22A PERI	

No. 849
STATE OF
VIRCHIAN
STONAL SURVINIA

STATE OF WEST VIRGINIA DIVISION OF **ENVIRONMENTAL PROTECTION** OFFICE OF OIL AND GAS



849

WELL OPERATOR TUG HILL OPERATING, LLC

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107

DIANNA STAMPER
CT CORPORATION SYSTEM

ADDRESS 5400 D BIG TYLER ROAD

CHARLESTON, WV 25313



roa l	1.0kan ann		4 16 14			
503	10*18488	V	9-17-4.3	CHARLINE M ENGLE AND KEVIN E ENGLE	933	118
504	10*18508	٧	9-17-4.3	PATRICIA LUANNE BONAR	925	351
505	10*18517	V	9-17-4.3	LORI SHANAHAN AND PATRICK SHANAHAN	933	575
506	10°18613	٧	9-17-4.3	JANE LOUISE CAIN AND DANIEL CARL HOLTZ	934	603
507	10*18655	V	9-17-4,3	PATRICIA LLEHN	936	95
508	10*18656	V	9-17-4.3	PAMELA CALL	936	100
509	10*18658	V	9-17-4.3	ELIZABETH JANE KELLER	936	107
510	10*18659	V	9-17-4.3	CATHERINE P MASON	936	112
11	10*18799	V	9-17-4.3	CHARLES J DARMAFALL DECEASED		
12	10*18805	V	9-17-4.3	CINDY STEVENS TOZIER	937	634
_	1.00				937	628
13	10*19373	V	9-17-4.3	JESSICA WHEATON	931	411
14	10*19403	V	9-17-4.3	LAWRENCE R LOTZ	951	114
15	10*19404	V	9-17-4.3	HOWARD M CAIN AND EMMA JEAN CAIN	939	283
16	10*19476	V	9-17-4.3	WINONA RIDDLE	941	331
17	10*19689	V	9-17-4.3	EDMOND TURGEON JR AND CATHY STEVENS TURGEON	944	156
18	10*19702	V	9-17-4.3	WV MINERALS INC	951	108
19	10*19718	V	9-17-4.3	CHRISTOPHER DAUGHERTY & JENNIFER R DAUGHERTY	944	412
20	10*19879	v	9-17-4.3	MARY V GILSON AND WALTER M GILSON		_
					945	588
21	10*19933	V	9-17-4.3	MARY ANN GRIFFITH	948	555
22	10*19937	V	9-17-4.3	JAMES D STEVENS AND DOROTHY M STEVENS	949	151
23	10*19938	V	9-17-4.3	JOHN H STEVENS AND LYNDA L STEVENS	949	144
24	10°21026	V	9-17-4.3	NANCY M MORGAN	951	110
25	10°21211	V	9-17-4.3	NILA JEAN BAYLES	951	118
26	10*21841	V	9-17-4.3	ENERGY DEEP RESOURCES INC	959	631
27	10*21842	٧	9-17-4.3	JOSEPH NOKOVICH	959	635
				THE RESERVE AND ADDRESS OF THE ADDRE		
28	10*21927	V	9-17-4.3	BLACK GOLD GROUP LTD	964	474
29	10*21940	V	9-17-4.3	ALYSIA JORDAN & TERRY M JORDAN	953	346
30	10*22376	V	9-17-4.3	MARGARET KUCHARZ AND JAMES C KUCHARZ	962	270
31	10*22412	V	9-17-4.3	CHAD E LONGFELLOW	963	124
32	10*22599	V	9-17-4.3	BRYANT R SWIFT AND KATHY SWIFT	966	456
33	10*22776	V	9-17-4.3	JAMES ROBERT WELLS	970	19
34	10*22849	v	9-17-4.3	NEIL MCELROY AND SUE MASON MCELROY	977	44
-	1000000	V		JOHN J HELLSTERN AND LYNN D HELLSTERN	977	39
35	10*22851		9-17-4.3			
36	10*22853	V	9-17-4.3	RONALD LEE HENSLEY AND MARY ANN HENSLEY	977	34
37	10*23076	V	9-17-4.3	JACK R BERISFORD AKA RANDY BERISFORD	984	43
38	10*23260	V	9-17-4.3	IDA M TRAVIS ET AL DAVID C WHITE AS SPECIAL COMMISSIONER	988	73
39	10*23668	V	9-17-4.3	THE ESTATE OF RUTH IN LUTHER SUZANNE L WOZNIAK EXECUTRIX	1009	286
40	10*47051.219.1	V	9-17-4.3	DAVID LEE FRANKLIN	874	312
41	10*47051.219.27	V	9-17-4.3	MARSHA BERISFORD	902	425
42		V	9-17-4.3	JOHN H HILKE AND ALIDA HILKE	898	602
-	10*47051.219.33					615
43	10*47051.219.36	V	9-17-4.3	GAREN MCDOWELL AND ELIZABETH MCDOWELL	898	_
44	10*47051.219.37	V	9-17-4,3	SUSAN H KEY	898	621
45	10*47051.219.38	٧	9-17-4.3	TIMOTHY MCDOWELL AND CYNTHIA MCDOWELL	902	431
46	10*47051.219.39	V	9-17-4.3	ALICE THIPPHAYONG AND VISITH THIPPHAYONG	902	437
47	10*15836	W	9-17-4.2	LUCINDA RAE ALLEN AND DAVID A ALLEN	742	79
48	10*15837	W	9-17-4.2	ANITA DIANE ANTILL AND TERRY ANTILL	742	85
49	10*15842	W	9-17-4.2	HOMER L SIMMONS AND GLADYS R SIMMONS	742	329
$\overline{}$		w	9-17-4.2	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	799	436
50	10*16007	-			801	222
51	10*16008	W	9-17-4.2	DONNA KAY ALLEN AND ROGER ALLEN		_
52	10*17169	W	9-17-4.2	ALMA L VAN SCYOC	692	404
53	10*17171	W	9-17-4.2	OPALMICKEY	690	63:
54	10*17173	W	9-17-4.2	LLOYD R. EVANS	694	526
55	10*17500	W	9-17-4.2	TRACY LAND KEITH W BARNBY	916	110
56	10*17666	W	9-17-4.2	ULA FAYE BONAR SNODGRASS AND DONALD T SNODGRASS	949	177
57	10*17673	w	9-17-4.2	JAMES PERRY COCHRAN	932	56
58	10*17707	w	9-17-4.2	JACQUELYN S FERRARI AND JOHN C FERRARI	949	17
_		w	9-17-4.2	CAROL GONGOLA	949	16
59	10°17709				949	16
60	10*17765	W	9-17-4.2	ROBERTA YOUNG	942	437
61	10*17840	W	9-17-4.2	RONALD D KOONTZ & BETH ANN KOONTZ		
62	10*17886	W	9-17-4.2	ANNETTE CAIN HANKINS AND HOWARD RONALD HANKINS	924	536
63	10*17887	W	9-17-4.2	LEO C HILKE AND BETTY M HILKE	924	53
64	10*17977	w	9-17-4.2	BRANNEN DAUGHERTY	925	359
65	10*17980	w	9-17-4.2	ANITA RAE MILLER	925	370
666	10*17981	w	9-17-4.2	MICHAEL ESWIFT AND MELODY A SWIFT	925	37
100	20. 21.002	w	9-17-4.2	LEE ANNE MILLER	927	22
67	10*18031		9-17-4.2	DAVID MCDOWELL AND CRYSTAL MCDOWELL	927	28
668	10*18092	W				28
69	10*18093	W	9-17-4.2	JENNIFER WHEATON	927	
70	10*18094	W	9-17-4.2	BONNIE GRISELL	927	23
571	10*18095	W	9-17-4.2	TEXYN L MILLER AND GEORGIA A MILLER	927	28
572	10*18098	W	9-17-4.2	USA ANN MCDOWELL AND ROBERT JOSEPH HILL	939	26
573	10*18099	W	9-17-4.2	RAE ELLEN FLOYD AND KENNETH FLOYD	927	23
574	10*18107	W	9-17-4.2	ANITA MAE MASON	927	23
75	10*18167	W	9-17-4.2	NEIL CALL AND MEUNDA CALL	927	49
576	10°18168	w	9-17-4.2	SANDRA YANAGAWA	927	49
_		W	9-17-4.2	KAREN K WILLIAMS	927	62
577	10*18169	_			927	63
578	10*18170	W	9-17-4.2	KAREN MCDOWELL CECIL AND JAMES E CECIL		-
579	10*18192	W	9-17-4.2	STEPHEN S MASON AND CAROLE K MASON	928	62
580	10*18193	W	9-17-4.2	CAROLYN LEE FUREY AND MARTIN I FUREY	949	15
581	10*18194	W	9-17-4.2	PAMELA BEYLER AND CHAD R BEYLER	928	63
582	10*18197	W	9-17-4.2	BARBARA K BURLEY AND DAVID K BURLEY	928	64
583	10*18198	W	9-17-4.2	MARY THERESA SOLEAU AND THOMAS SOLEAU	928	64
584	10*18199	w	9-17-4.2	LAWRENCE J VAUGHN AND GAIL L VAUGHN	928	53
585	10*18260	w	9-17-4.2	GEMMA RUDY AND TIMOTHY RUDY	928	58
586	10*18295	W	9-17-4.2	THOMAS R BAKER AND VICKIE LBAKER	929	26
		W	9-17-4.2	MAUREEN GREGG	929	27
587	10*18298				929	28
588	10*18300	W	9-17-4.2	ROBERT W ODOM AND CASSANDRA LODOM		
589	10*18361	W	9-17-4.2	MARY JO CAIN	931	40
590	10*18417	W	9-17-4.2	CHERYLLHILL	932	57
591	10*18487	W	9-17-4.2	NANCY L STANGEL AND JOHN J STANGEL	933	11
592	10*18488	W	9-17-4.2	CHARLINE M ENGLE AND KEVIN E ENGLE	933	- 11
593	10*18508	w	9-17-4.2	PATRICIA LUANNE BONAR	925	35
		W	9-17-4.2	LORI SHANAHAN AND PATRICK SHANAHAN	933	57
594	10*18517				934	60
595	10*18613	W	9-17-4.2	JANE LOUISE CAIN AND DANIEL CARL HOLTZ		
596	10*18655	W	9-17-4.2	PATRICIA LLEHN	936	9
597	10*18656	W	9-17-4.2	PAMELA CALL	936	10
	10*18658	W	9-17-4.2	ELIZABETH JANE KELLER	936	10
	10*18659	W	9-17-4.2	CATHERINE P MASON	936	11
598		W	9-17-4.2	CHARLES J DARMAFALL DECEASED	937	68
598 599	10*18799	**			937	6
598 599 600	10*18799	VA/	9, 17,4.7			
598 599 600 601	10*18805	W	9-17-4.2	CINDY STEVENS TOZIER JESSICA WHEATON		41
598 599 600 601 602 603		w	9-17-4.2 9-17-4.2 9-17-4.2	JESSICA WHEATON LAWRENCE R LOTZ	931 951	

8811P18HUR.dwg KEITH STERN S-18HU-REV1 MAY 1 19 , 20 _ REVISED JUNE 11 _ , 20 _ 19 KEITH STERN S-18HU OPERATORS WELL NO. API 051 WELL 02243 STATE NO. COUNTY

No. 849
STATE OF VIRCHIA

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



P.S. 849

WELL OPERATOR TUG HILL OPERATING, LLC

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107

DIANNA STAMPER
CT CORPORATION SYSTEM

ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313 COUNTY NAME



604	10*19404	W	9-17-4.2	HOWARD M CAIN AND EMMA JEAN CAIN	939	283 331
605 606	10*19476 10*19689	W	9-17-4.2 9-17-4.2	WINONA RIDDLE EDMOND TURGEON JR AND CATHY STEVENS TURGEON	941	156
607	10*19702	w	9-17-4.2	WV MINERALS INC	951	108
608	10*19718	W	9-17-4.2	CHRISTOPHER DAUGHERTY & JENNIFER R DAUGHERTY	944	412
609	10*19879	w	9-17-4.2	MARY V GILSON AND WALTER M GILSON	945	588 555
610	10*19933 10*19937	w	9-17-4.2 9-17-4.2	MARY ANN GRIFFITH JAMES D STEVENS AND DOROTHY M STEVENS	949	151
612	10*19938	W	9-17-4.2	JOHN H STEVENS AND LYNDA LSTEVENS	949	144
613	10*21026	W	9-17-4.2	NANCY M MORGAN	951	110
614	10*21211	W	9-17-4.2	NILA JEAN BAYLES	951 959	118 631
615 616	10*21841 10*21842	W	9-17-4.2 9-17-4.2	ENERGY DEEP RESOURCES INC JOSEPH NOKOVICH	959	635
617	10*21927	W	9-17-4.2	BLACK GOLD GROUP LTD	964	474
618	10*21940	W	9-17-4.2	ALYSIA JORDAN & TERRY M JORDAN	953	346
519	10*22376	W	9-17-4.2	MARGARET KUCHARZ AND JAMES C KUCHARZ	962	270
620 621	10*22412 10*22599	w	9-17-4.2 9-17-4.2	BRYANT R SWIFT AND KATHY SWIFT	963	124 456
622	10*22776	W	9-17-4.2	JAMES ROBERT WELLS	970	19
623	10*22849	W	9-17-4.2	NEIL MCELROY AND SUE MASON MCELROY	977	44
624	10*22851	W	9-17-4.2	JOHN J HELLSTERN AND LYNN D HELLSTERN	977	39 34
625 626	10*22853 10*23076	W	9-17-4.2 9-17-4.2	RONALD LEE HENSLEY AND MARY ANN HENSLEY JACK R BERISFORD AKA RANDY BERISFORD	984	43
627	10*23260	w	9-17-4.2	IDA M TRAVIS ET AL DAVID C WHITE AS SPECIAL COMMISSIONER	988	73
628	10*23668	W	9-17-4.2	THE ESTATE OF RUTH IN LUTHER SUZANNE L WOZNIAK EXECUTRIX	1009	286
629	10*47051.219.1	W	9-17-4.2	DAVID LEE FRANKLIN	874	312
630 631	10*47051.219.27 10*47051.219.33	w	9-17-4.2 9-17-4.2	MARSHA BERISFORD JOHN H HILKE AND AUDA HILKE	902 898	425 602
632	10*47051.219.36	W	9-17-4.2	GAREN MCDOWELL AND ELIZABETH MCDOWELL	898	615
633	10*47051.219.37	W	9-17-4.2	SUSAN H KEY	898	621
634	10*47051.219.38	W	9-17-4.2	TIMOTHY MCDOWELL AND CYNTHIA MCDOWELL	902	431
635	10*47051.219.39	X	9-17-4.2	ALICE THIPPHAYONG AND VISITH THIPPHAYONG	902	437
636 637	10*15836 10*15837	X	9-17-5 9-17-5	LUCINDA RAE ALLEN AND DAVID A ALLEN ANITA DIANE ANTILL AND TERRY ANTILL	742	79 85
638	10°15842	X	9-17-5	HOMER L SIMMONS AND GLADYS R SIMMONS	742	329
639	10*16007	х	9-17-5	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	799	436
640	10*17169	X	9-17-5	ALMA LVAN SCYOC	692	404
641	10*17171 10*17173	X	9-17-5 9-17-5	LLOYD R. EVANS	690 694	526
643	10*17500	X	9-17-5	TRACY LAND KEITH W BARNBY	916	116
644	10*17666	X	9-17-5	LILA FAYE BONAR SNODGRASS AND DONALD T SNODGRASS	949	172
645	10*17673	X	9-17-5	JAMES PERRY COCHRAN	932	567
646 647	10*17707 10*17709	X	9-17-5 9-17-5	JACQUELYN S FERRARI AND JOHN C FERRARI CAROL GONGOLA	949	177
648	10*17765	×	9-17-5	ROBERTA YOUNG	949	163
649	10*17840	X	9-17-5	RONALD D KOONTZ & BETH ANN KOONTZ	942	432
650		X	9-17-5	ANNETTE CAIN HANKINS AND HOWARD RONALD HANKINS	924	536
651 652	10*17887 10*17977	×	9-17-5 9-17-5	BRANNEN DAUGHERTY	924	359
653	10*17980	X	9-17-5	ANITA RAE MILLER	925 925	370
654	10*17981	×	9-17-5	MICHAEL E SWIFT AND MELODY A SWIFT	925	372
655	10*18019	X	9-17-5	SUSAN H KEY	927	272
656	10*18020 10*18031	X	9-17-5 9-17-5	ALICE THIPPHAYONG AND VISITH THIPPHAYONG LEE ANNE MILLER	927	270
658	10*18092	×	9-17-5	DAVID MCDOWELL AND CRYSTAL MCDOWELL	927	222
659	10*18093	X	9-17-5	JENNIFER WHEATON	927	289
660	10*18094	X	9-17-5	BONNIE GRISELL	927	231
662	10*18095 10*18098	X	9-17-5 9-17-5	TEXYN L MILLER AND GEORGIA A MILLER LISA ANN MCDOWELL AND ROBERT JOSEPH HILL	927	287
563	10*18099	×	9-17-5	RAE ELLEN FLOYD AND KENNETH FLOYD	939	263
664	10*18107	X	9-17-5	ANITA MAE MASON	927	238
665	10*18113	X	9-17-5	JOHN H HILKE	927	159
666 667	10*18167 10*18168	X	9-17-5 9-17-5	NEIL CALL AND MELINDA CALL SANDRA YANAGAWA	927	492
668	10*18169	X	9-17-5	KAREN K WILLIAMS	927	628
669	10*18170	X	9-17-5	KAREN MCDOWELL CECIL AND JAMES E CECIL	927	633
670	10*18192	X	9-17-5	STEPHEN S MASON AND CAROLE K MASON	928	625
671	10*18193 10*18194	X	9-17-5 9-17-5	CAROLYN LEE FUREY AND MARTIN J FUREY PAMELA BEYLER AND CHAD R BEYLER	949	158
673	10*18197	X	9-17-5	BARBARA K BURLEY AND DAVID K BURLEY	928	630
674	10*18198	×	9-17-5	MARY THERESA SOLEAU AND THOMAS SOLEAU	928	643
675	10*18199	X	9-17-5	LAWRENCE J VAUGHN AND GAIL L VAUGHN	928	532
676 677	10*18260 10*18295	X	9-17-5 9-17-5	GEMMA RUDY AND TIMOTHY RUDY THOMAS R BAKER AND VICKIE L BAKER	928	584
678	10*18298	X	9-17-5	MAUREEN GREGG	929 929	262
679	10*18300	Х	9-17-5	ROBERT W ODOM AND CASSANDRA L ODOM	929	283
680	10*18361	Х	9-17-5	MARYJO CAIN	931	407
681 682	10*18417 10*18487	X	9-17-5	NAMEY STANGE AND JOHN I STANGE	932	577
683	10*18488	X	9-17-5 9-17-5	NANCY L STANGEL AND JOHN J STANGEL CHARLINE M ENGLE AND KEVIN E ENGLE	933	113
684	10*18508	х	9-17-5	PATRICIA LUANNE BONAR	925	351
685	10*18517	X	9-17-5	LORI SHANAHAN AND PATRICK SHANAHAN	933	575
686 687	10*18613 10*18655	X	9-17-5 9-17-5	JANE LOUISE CAIN AND DANIEL CARL HOLTZ PATRICIA L LEHN	934	603
688	10*18656	X	9-17-5	PAMELA CALL	936 936	95
689	10*18658	х	9-17-5	ELIZABETH JANE KELLER	936	107
690	10*18659	X	9-17-5	CATHERINE P MASON	936	112
691 692	10*18799 10*18805	X	9-17-5	CHARLES I DARMAFALL DECEASED	937	634
693	10*19373	X	9-17-5 9-17-5	JESSICA WHEATON	937	628 411
694	10*19403	X	9-17-5	LAWRENCE R LOTZ	951	114
695	10*19404	Х	9-17-5	HOWARD M CAIN AND EMMA JEAN CAIN	939	283
696	10*19475	X	9-17-5	WINDNA RIDDLE	941	331
697 698	10*19689 10*19702	X	9-17-5 9-17-5	EDMOND TURGEON JR AND CATHY STEVENS TURGEON WV MINERALS INC	944	156
699	10*19718	X	9-17-5	CHRISTOPHER DAUGHERTY & JENNIFER R DAUGHERTY	951 944	108
700	10*19879	×	9-17-5	MARY V GILSON AND WALTER M GILSON	945	588
701	10*19933	X	9-17-5	MARY ANN GRIFFITH	948	555
702 703	10*19937 10*19938	X	9-17-5 9-17-5	JAMES D STEVENS AND DOROTHY M STEVENS	949	151
	** TANDO	_ ^	3-1/-3	JOHN H STEVENS AND LYNDA L STEVENS	949	144

FILE NO. 8811P18HUR.dwg KEITH STERN S-18HU-REV1 DATE __ MAY 1 REVISED JUNE 11 _ , 20 _ 19 OPERATORS WELL NO. KEITH STERN S-18HU API 057 02243 WELL STATE COUNTY

No. 849
** STATE OF VIRCUMAN STATE OF VIRCUMAN STATE

STATE OF WEST VIRGINIA DIVISION OF **ENVIRONMENTAL PROTECTION** OFFICE OF OIL AND GAS



849

P.S.

WELL OPERATOR TUG HILL OPERATING, LLC

PERMIT

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107

DIANNA STAMPER CT CORPORATION SYSTEM

ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313



705 706	10*21211	X	9-17-5	NILA JEAN BAYLES	951	118
-	10*21841	X	9-17-5	ENERGY DEEP RESOURCES INC	959	631
707	10*21842	X	9-17-5	JOSEPH NOKOVICH	959	635
709	10*21927 10*21940	X	9-17-5	BLACK GOLD GROUP LTD	964	474
710	10*22376	X	9-17-5 9-17-5	ALYSIA JORDAN & TERRY M JORDAN	953	346
711	10*22412	X	9-17-5	MARGARET KUCHARZ AND JAMES C KUCHARZ CHAD E LONGFELLOW	962	270
712	10*22599	×	9-17-5	NOSC 38474 1/4/4 11 // Land 1/8	963	124
713	10*22776	X	9-17-5	BRYANT R SWIFT AND KATHY SWIFT JAMES ROBERT WELLS	966	456
714	10*22849	X	9-17-5	NEIL MCELROY AND SUE MASON MCELROY	970	19
715	10*22851	×	9-17-5	JOHN J HELLSTERN AND LYNN D HELLSTERN	977	44
716	10*22853	×	9-17-5	RONALD LEE HENSLEY AND MARY ANN HENSLEY	977	39
717	10*23076	X	9-17-5	JACK R BERISFORD AKA RANDY BERISFORD	977	43
718	10*23260	X	9-17-5	IDA M TRAVIS ET AL DAVID C WHITE AS SPECIAL COMMISSIONER		- 7.0
719	10*23668	×	9-17-5	THE ESTATE OF RUTH N LUTHER SUZANNE L WOZNIAK EXECUTRIX	988	73 286
720	10*47051.219.1	x	9-17-5	DAVID LEE FRANKLIN	1009 874	312
721	10*47051,219,27	X	9-17-5	MARSHA BERISFORD	902	425
722	10*47051.219.36	X	9-17-5	GAREN MCDOWELL AND EUZABETH MCDOWELL	898	615
723	10*47051.185.1	Y	9-17-39	HOMER LSIMMONS AND GLADYS R SIMMONS	885	68
724	10*47051.185.2	Y	9-17-39	LUCINDA RAE ALLEN AND DAVID A ALLEN	894	482
725	10*47051.185.3	y	9-17-39	ANITA DIANE ANTILL AND TERRY ANTILL	885	71
726	10*47051.185.1	Z	9-17-38	HOMER L SIMMONS AND GLADYS R SIMMONS	885	68
727	10*47051.185.2	Z	9-17-38	LUCINDA RAE ALLEN AND DAVID A ALLEN	894	482
728	10*47051.185.3	Z	9-17-38	ANITA DIANE ANTILL AND TERRY ANTILL	885	71
729	10*47051.185.1	AA	9-17-38.1	HOMER L SIMMONS AND GLADYS R SIMMONS	885	68
730	10*47051.185.2	AA	9-17-38.1	LUCINDA RAEALLEN AND DAVID A ALLEN	894	482
731	10*47051.185,3	AA	9-17-38.1	ANITA DIANE ANTILL AND TERRY ANTILL	885	71
732	10*18610	BB	9-19-2	NEIL ROBERT YOUNG	934	636
733	10*18614	BB	9-19-2	MICHAEL A WALKER	934	607
734	10*18615	BB	9-19-2	MARK A WALKER	934	609
735	10*18616	BB	9-19-2	CHAD A YOUNG	934	611
736	10*18625	BB	9-19-2	LOIS ELAINE WICKHAM	934	632
737	10*18626	BB	9-19-2	CLARA SUE YOUNG	934	634
738	10*19409	BB	9-19-2	CAROLYN J YOUNG	939	291
739	10*19667	BB	9-19-2	ERIC J YOUNG	937	375
740	10*19669	BB	9-19-2	RONALD W YOUNG	937	373
741	10*19670	BB	9-19-2	RONALD R YOUNG AND GERALDINE YOUNG	937	368
742	10*19671	BB	9-19-2	MEUSSA D FLETCHER & SCOTT A FLETCHER	938	316
743	10*21343	BB	9-19-2	LELAND SINCLAIR YOUNG	945	649
744	10*21489	BB	9-19-2	ALEXA B YOUNG	957	299
745	10*21518	BB	9-19-2	SUSAN C YOUNG	949	203
746	10*21568	BB	9-19-2	LARRY R BONAR AND DEBRA L BONAR	957	399
747	10*21573	BB	9-19-2	CARLA J SIMMS	957	397
748	10*21576	BB	9-19-2	ALICE F WINLAND	957	395
749	10*21577	BB	9-19-2	MICHAELS OTT AND SYBIL OTT	957	446
750	10*21739	BB	9-19-2	CRYSTAL DAWN YOUNG	957	413
751	10*21740	BB	9-19-2	HOLLY A YOUNG	957	415
752	10*21742	BB	9-19-2	GRANT D RICHARDS AND KERRI S RICHARDS	957	456
753	10*21743	BB	9-19-2	SHIRLEY KOONTZ POA KELLI KOONTZ BENLINE	957	454
754	10*22022	BB	9-19-2	PENNY YODER AND KEVIN LYNN YODER	952	356
755	10*22057	BB	9-19-2	RONALD R YOUNG	960	584
756	10*22600	BB	9-19-2	AIDEN BOYD YOUNG JENNIFER A YOUNG, PETITIONER	966	462
757	10*15802	CC	9-17-37	TOM GOULDS BERRY	683	640
758	10*15809	CC	9-17-37	CHARLOTTE CROW	683	631
759	10*15804	CC	9-17-37	JOE GOULDSBERRY	683	637
760	10*15805	CC	9-17-37	MARY ELLEN CHAMBERS	694	82
761	10*15806	CC	9-17-37	JOANNE FOX	683	634
762	10*15807	CC	9-17-37	GLORIS VAN SCYOC	685	190
763	10*15808	CC	9-17-37	ANGELA YOHO	685	193
764	10*15809	cc	9-17-37	RYAN J AND MICHELE L RIDDLE	687	225
765	10*15810 10*15811	cc	9-17-37	FLOSSIE P RUTAN	690 719	266
766			9-17-37	SANDRA M WINSLOW		51

			811P18HUR RN S-18HU-	
DATE	MAY 1		, 20	19
REVISED	JUNE 1	1	, 20	19
OPERATO	RS WELL	NO. KEITI	H STERN S-	18HU
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NO. ST	TATE	COUNTY	PER	TIN

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



849

WELL OPERATOR TUG HILL OPERATING, LLC

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107

DIANNA STAMPER
CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY NAME

4705102243

Operator's Well No. Keith Stern N - 18HU

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9-14-11.3 9-14-11 9-14-1.1	9-14-21 9-14-21	9-14-21 9-14-21 9-14-21	WV - FISH CREEK 9-14-21	9-14-20.1												
CE YOUNG CE YOUNG MARY RUTH FROH KENNETH O SIBURT LORI SIBURT LORI SIBURT ANDRA SIBURT FI	THOMAS J FOX	MARK H FOX DAVID E FOX	MARY A FOX	CONNIE HECKLE	H GI FNN CROW	STADING PROPERTY	LEMIS W QUIGLEY !	BRADLEY CROW AN	GI ENN CROW	ONNIE HECKLE	MAXINE A ONIGLEA W	HADYS CROW	RADLEY CROW AND	VILLIAM K STERN A)	ACCROW FT IX	Grantor, Lassor, Etc.
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ILES PLORATION, LLC PLORATION, LLC	PLORATION, LLC	PLORATION, LLC PLORATION, LLC	PLORATION, LLC	IPEAKE APPALACHIA LL	PEAKE APPALACHIA LU	PEAKE APPALACHIA LU	DEAKE VOOD THEFT		реаке аррагаснія ш	РЕАКЕ АРРАLАСНІА ЦІ	PEAKE APPALACHIA LLC	PEAKE APPALACHIA LLC	PEAKE APPALACHIA ILIC	ic .	CRAWFORD	DAMES CRAWFORD
1/8+ 1/8+ 1/8+	1/8+	1/8+	1/8+							1/8+				1/8+	1/8+	Royalty
938	876	879 879 876	1019 879	770	770	769	769	768	770	770	769	769	768	718	74	Book 74
146 146 595 597																P45*
N/A N/A N/A	N/A	N/A	N/A A/A	N/A	A/A	A/A	WA	√A	4 / A	VA.	√A	//A	/ /	VA	A	Assignment /A
N/A N/A	N/A	N/A N/A	N/A	N/A	N/A	A/N	N/A	N/A	N/A	N/A	N/A	N/A	A/N	N/A	N/A	Assignment N/A
South Penn Dil 60/367 TG Stile South Penn Dil N/A N/A	N/A N/A So/367 TG Siller	N/A	N/A N/A	N/A	N/A	WA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Assignment
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Company subjection of the Penn Oil Company subjection of Royal RIVA	N/A N/A Unrec South to Hoj to Hog to Hop gas le	N/A	N/A A/A	N/A	N/A	A/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	148/31 Ratura Manul	148/34 Natura Manuf Heat C
t leasehold t leasehold rorded transfer Penn Oil Company Penn Oil Company Penn Oil Company Penn Oil Company Sarll Info tos saehold rights of t leasehold	orded transfer - Penn Oil Company Penn Attrall Gas ann-ARTI in/to the assehold rights of														39 Wheeling ol Gas Company to facturers Light &	Assignment 148/389 Wheeling Natural Gas Company to Manufacturers light & Heat Company
South Fenn Oil Compan 1/359 South Penn 1/359 South Penn Oil Company to South Penn Oil Compan N/A	N/A N/A 2/359 South Penn Natural Gas Company to South Penn nil Company to South Penn nil Company	N/A	N/A N/A	N/A	N/A	N/A	ŊA	N/A	N/A	N/A	ŊA	WA	N/A	A/N	197/120 Manufacturers Light & Heat Company to Union Gasoline & Oil Corp	Assignment 197/120 Manufacturers Light & Heat Company to Union Gasoline & Oil Corp
South Penn Oil Comports of the Penn Oil Comports of the Penn Oil Company on 7/31/963 - WV Sec. VIAA WAA	N/A N/A N/A South Penn Oil Comparents to Pennagel Company on 7/31/1963 - WV Sec.	N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NΑ		Augmment 2/136 Union Gasoline & Oil Corp to Preston Oil Company
Inc Inc 395/335 Penntoll Company & United Corp to Penntoll United Inc N/A N/A	N/A N/A N/A 395/355 Pennzoil Company & United Company & United of Corp to Pennzoil United	N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2/225 Preston Oil & Company to Manufacturers Ligh Heat Company	Autynment 2/225 Preston Oil & Company to Manufacturers Light & Heat Company
Pennzoil United I Pennzoil United I Pennzoil ornpar ined 6/s Pennzoil ornpar ined 6/6/1972 - WV State website N/A N/A	N/A N/A N/A Pennzoil United I Pennzoil Compari Gas Pennzoil Compari Glas Pennzoil Compari State website State website	N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A	A/A	N/A	N/A	N/A	N/A	N/A	10.5.5.5	Merger of Manufacturers Light & Heat Company into t & Columbia Gas Transmission Corp. 4204
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ope Natural 505 Iny to Gas Supply Con Ing Ing Ing Ing Ing Ing Ing Ing Ing In	N/A	N/A N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		olumbia Gas 19/3 an Corp to Nati	Jumbia Gas 19/3 nn Corp to Natural Che
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ompany State Consolidated Gas Transmission Corp to CNG Development Company WA WA	V/A V/A 15/88 Consolidated Gas ransmission Corp to NG Development			31/279 Chesapeake uppalachia LLC to Statoil ISA Onshore Properties	11/279 Chesapeake oppalachia LLC to Statoil ISA Onshore Properties ic	31/279 Chesapeake Appalachia LLC to Statoil USA Onshore Properties inc	st/2/9 Chetapeake typalachia LLC to Statoil SA Onshore Properties	11/279 Chesapeake Uppalachia LLC to Statoil ISA Onshore Properties	1]/279 Chesapeake (ppalachia LLC to Statoil SSA Onshore Properties	11/279 Chesapeake uppalachia LIC to Statoil ISA Onshore Properties	31/279 Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc	ti/279 Chesapeake sppalachia LLC to Statoil SA Onshore Properties	ti/279 Chesapeake ppalachia LLC to Statoli SA Onshore Properties s		50/63 Columbia atural Resources LLC to hesapeake Appalachia	Assignment 650/63 Columbia Natural Resources LLC to Chesapeake Appalachia LLC
CNG Producing Company CMG Development Company merged into CNG Producing Company N/A N/A	N/A N/A N/A CNG Development Company merged into CNG Productor Corner	N/A	N/A N/A	33/110 Che Appalachia Production	33/110 Chesapeake Appalachia LLC to SWN Production Company U	Appal Produ	33/110 Chesapeake Appalachia LLC to SWN Production Company Ll	33/110 Chesapeake Appalachia LLC to SWN Production Company LL	33/424 Statoll USA Onshore Properties Inc to SWN Exchange Titleholder LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	33/424 Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC	33/424 Statoli USA Onshore Properties Inc to SWN Exchange Titleholder LLC	33/424 Statoii USA Onshore Properties Inc to SWN Exchange Titleholder LLC	A/A	675/279 Chesapeake Appalachia LLC to Stato Hydro USA Onshore Properties Inc	Assymment 675/279 Chesapeake Appalachia LLC to Statoil Hydro USA Onshore Properites Inc.
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Londol usa Comparany 19/346 Dominion n & Exploration & produir Exploration & produir Concol Gas Comparany N/A N/A	N/A N/A N/A N/A 19/546 Dominion 19/546 Dominion 18. Exploration & prod Inc. changed its non Concol fast compar	N/A	N/A N/A	Cert of Merger of Concern to Exchange Titlehold older to SWN Production Company LLC: 19/	Cert of Merger of: to Exchange Titlehold pider to SWN Production Company LIC: 19/	Cert of Merger of: to Exchange Titlehold older to SWN Production Company LLC: 19/1	c to Exchange Titlehold older to SWN Production Company LLC: 19/1	Cert of Merger of to Exchange Titlehold older to SWN Production Company LLC: 19/	19/624 Cert. of Me SWN Exchange VN Titleholder LLC to S				P # \$ 19	26/130 Chief Exploration, Radler Enerplus Resources to Chevron USA Inc	hore oil ties 30/427 Statoil USA Onshore Properties to Chevron USA inc	Augment Augment all all all all all all all a
duction 11/415 Gas Company LLL 10 merged with and Company LLL N/A N/A	N/A N/A N/A 11/415 Consol Ga duction Company merged me to and into CNC Company ILC Company	N/A	N/A N/A	36/4; Comp	SWN der LLC 36/431 SWN Proc n Company LLC to T /624 Exploration LLC	SWN ler LLC 36/431 SWN Pro Company LLC to 1 624 Exploration LLC	der LLC 36/431 SWN Proc n Company LLC to T /624 Exploration LLC	ker LLC 36/431 SWN Pro 1 Company LLC to 524 Exploration LLC	Exploring SA	erger - 36/431 SWN Proc SWN Company LLC to 1 Exploration LLC	### 35/431 SWN Pro ### Company LLC to 1 ### Exploration LLC	36/4: Comp	36/4: Comp	orp. 756/:	Appa Appa	Assgnment A 30/451 Chesapeake In Appalachia LLC to Chevron USA Inc.
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4705108843 Operator's Well No. Keith Stern N - 18HU

s LLC to 36/148 Chevron USA Inc to TH Exploration LLC	TriEnergy Holdings Chevron USA Inc	756/332 NPAR LLC to LLC Chevron USA Inc	24/430 TriEnergy Holdings LLC to NPAR LL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	345 N/A	718	, uc 1/8+	TRIENERGY HOLDINGS, LLC	DIANNE GELLNER & GARY GELLNER	0 9-11-12	0°15517
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s LLC to 36/148 Chevron USA Inc to TH Exploration LLC	TriEnergy Holdings Chevron USA Inc	756/332 NPAR LLC to Chevron USA Inc	24/430 TriEnergy Holdings LLC to NPAR LLC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	334 N/A	718	, IIC 1/8+	TRIENERGY HOLDINGS, LLC	DESIRE L CROW	0 9-11-12	10*15515
s LLC to 36/148 Chevron USA Inc to TH Exploration LLC	Chevron USA Inc. b	756/332 NPAR LLC to LLC Chevron USA Inc	24/430 TriEnergy Holdings LLC to NPAR LL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	336 N/A	718	, tic 1/8+	TRIENERGY HOLDINGS, LLC	L PAUL CROW	0 9-11-12	10*15514
inergy Holdings LLC to 35/148 Chevron USA Inc. wron USA Inc. to TH Exploration LLC	£ 2 ₹	756/332 NPAR LLC to LLC Chevron USA Inc	24/430 TriEnergy Holdings LLC to NPAR LL	N/A	N/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	330 N/A	718	, LLC 1/8+	TRIENERGY HOLDINGS, LLC	KAY KEYES	0 9-11-12	10*15513
1 LLC to 36/148 Chevron USA Inc	윤로	756/332 NPAR LLC to LLC Chevron USA Inc	24/430 TriEnergy Holdings LLC to NPAR LLC	N/A	N/A	N/A	N/A	N/A	N/A	A/N	N/A	N/A	N/A	N/A	N/A	378 N/A	718	, LLC 1/8+	TRIENERGY HOLDINGS, LLC	FRANCES COFFEY	0 9-11-12	10*15512
1 LLC to 36/148 Chevron USA Inc to TH Exploration LLC	Chevron USA Inc	756/332 NPAR LLC to Chevron USA Inc		Holdings LLC to MPAR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	376 N/A	718	, LLC 1/8+	TRIENERGY HOLDINGS, LLC	DAVID E CROW	0 9-11-12	10*15511
to TH Exploration LLC	무로	756/332 NPAR LLC to LLC Chevron USA Inc	24/430 TriEnergy Holdings LLC to NPAR LI	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A/N	N/A	N/A	N/A	326 N/A	718	,uc 1/8+	TRIENERGY HOLDINGS, LLC	ELAINE PHELPS ET VIR	0 9-11-12	10*15510
M/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	301 N/A	1008	1/8+		LLOYD C. ARNOLD & JUDITH C. ARNOLD		10*23435
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	977		TH EXPLORATION, LLC	CHARLES W MILLER AND ESTHER JEAN MILLER	N 9-14-1	10*22856
N/A N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	464 N/A 466 N/A	964 964	1/8+	TH EXPLORATION, LLC	SHARON RUSSELL GEORGE EDWARDS	N 9-14-1	10*22516
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<u> </u>	964		TH EXPLORATION, LLC	HERCULES HERCULES	N 9-14-1	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	388 N/A 470 N/A	957	1/8+	TH EXPLORATION, LLC	DONNA KYLE	N 9-14-1 N 9-14-1	10*21559
																				GUY L BUZZARD TRUSTEE TI GUY L BUZZARD 2017		-
N/A	N/A		N/A	N/A	N/A N/A	N/A A/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A A/N	N/N	136 N/A 142 N/A	949 949	1/8+	TH EXPLORATION, LLC	ALAN K SIBURT ET UX RODNEY L SIBURT	N 9-14-1	10*21215
NA S	N/A		N/A S	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA S	N/A	N/A	N/A		949	-		VICKI J CHERRY AND RICKEY E	+	+
N/A	N/A		2/2	\$	200	N/A	2/2	2/2	200	N/A 37	N/A	N/A	200	N()	N/A		257	+		JAMES B SIBURT AND DELIL	+	-
N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	S4 N/A	946	1/8+	TH EXPLORATION, LLC	AKITA SLOUGH-DARRAH	N 9-14-1	-
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ш	949	1/8+	TH EXPLORATION, LLC	WILLIAM O. JOBES	N 9-14-1	10*19655
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	192 N/A	944		TH EXPLORATION, LLC	RONALD S YOUNG	N 9-14-1 N 9-14-1	+
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		938			LORI SIBURT SANDRA SIBURT FROWEN &	N 9-14-1	10*19622
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		938	+	TH EXPLORATION, LLC	MARY RUTH FROHNAPFEL KENNETH D SIBURT JR AND	N 9-14-1	10*19621
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A/N		1008		C. TH EXPLORATION, LLC	LLOYD C. ARNOLD & JUDITH ARNOLD		
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		977		TH EXPLORATION, LLC	CHARLES W MILLER AND	+	+
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	464 N/A 466 N/A	964 964	1/8+	TH EXPLORATION, LLC	GEORGE EDWARDS	M 9-14-2	10*22516
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A/N	N/A	N/A		964		TH EXPLORATION, LLC	HERCULES CONNER	+	-
N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	388 N/A 470 N/A	957 964	1/8+	TH EXPLORATION, LLC	IRREVOCABLE TRUST DONNA KYLE OK KIIRDII EKA IOK	M 9-14-2 M 9-14-2	10*21559 I
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N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NA	NA A	N/A	N/A	N/A	N/A		957	1		VICKI J CHERRY AND RICKEY E	M 9-14-2	10*21213
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		944	1/8+		MAMIE V ARNOLD JAMES B SIBURT AND DELILA D	+	10*19725
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		946	1/8+	TH EXPLORATION, LLC	DAVID A DARRAH SR AND ANITA SLOUGH-DARRAH	-	-
N/A	N/A	N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	309 N/A	949	1/8+	TH EXPLORATION, LLC	CHESTNUT HOLDINGS INC	M 9-14-2 M 9-14-2	10*19657 h
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A/N A/N	N/A	N/A	N/A	N/A	N/A	N/A		938	1/8+	1	GEORGE FROWEN	H	H
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		938	1/8+	1	KENNETH D SIBURT JR AND LORI SIBURT	9-14-2	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	301 N/A	1008	1/8+	TH EXPLORATION, LLC	ARNOLD MARY RUTH FROHNAPFEL	9-14-1.1	10°23435 K
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		977	1/8+	TH EXPLORATION, LLC	ESTHER JEAN MILLER	k 9-14-1.1	10*22856
N/A	N/A	N/A	N/A	N/A	N/A	N/N	N/A	A/N	N/A	N/A	N/A	N/A	N/A	N/A	A/A		964	1/8+	TH EXPLORATION, LLC	GEORGE EDWARDS	9-14-1.1	22518
N/A N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	464 N/A	964	1/8+	TH EXPLORATION, LLC	JUDITH MAY CONNER	9-14-1.1	10°22465 K
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	WA A	N/A	N/A	N/A	N/A		964	1/8+	TH EXPLORATION, LLC	DONNA KYLE		10*22464 K
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	388 N/A	957	1/8+	TH EXPLORATION, LLC	IRREVOCABLE TRUST		11559 K
N/A	N/A	N/A	N/A A/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	136 N/A 142 N/A	949 949	1/8+	TH EXPLORATION, LLC	ALAN K SIBURT ET UX RODNEY L SIBURT	9-14-1.1	10*21215 K
N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		949	1/8+		VICKI J CHERRY AND RICKEY E	- 1	1714 ×
A Assignment	Assignment	Assignment	Assignment	ant Assignment	ent Assignme	nent Assignme	tent Assigna	ent Ausigno	unt Assignme	Jent Assignm	ment Audyn	Timent Assign	rument Assi	nament Assi	lemment Assi	Page Au	Book	Royalty	Grantes, Losses, Etc.	In-war laster, Etc.	Parral	

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Operator's Well No. Keith Stern N - 18HU

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HOMER L SIMMONS AND GLADYS	ROGER BRIGHT AND SUSAN LEIMER - DECEASED	LUCINDA RAE ALLEN AND DAVID A	ANITA DIANE ANTILL AND TERRY	DAVID P WARSINSKY	BRENDA J WHETZEL	MARK L WHETZEL		RAY A WHETZAL JR	WOODLY L MANELTANK		MARY A SOUTH	SHARON L WHETZAL		VICKIE MASON	CHESTNUT HOLDINGS INC	MCGOSTIMS HOLLION	JAMES P HOLLIDAY AND	LLOYD G BAKER	KATHARINE D LINN	SALVATION ARMY	JOHN ATWOOD AND ANKET	WILLIAM ATWOOD AND	MELISSA DUBOIS BAIRD	ROSALIE FERMO-ULLOM	MICHAEL GRITTON	SANDY VINCENT AND STEVE	WENDELL FRANKLIN ORR	GAIL W STEWART EDITH BOYD ORR AND	KATHRYN A TAGGART AND EVERETT TAGGART IR	KIM O MAGHAN AND JAMES MAGHAN	KATHARINE B SILBAUGH AND	JOSEPH W LINN JR AND TAMMY S LINN	SARAH BAIRD LINN	THOMAS A SCHOTTLER	KATHERINE ANN BOYD BLAKE	PATRICIA A HOAGLAND	JOHN B HOAGLAND AND	BAIRD AMENDED REVOCABLE	EILEEN M SLATE AND DALE A	JUDITH FISK	DUNCAN S LINN AND POLLY L	MORGAN H MOSSER AND	TILLOTHY CROW	JOHN CROW	JACQUELINE HOLLIDAY	JAMES P HOLLIDAY AND
3	CHESAPEAKE APPALACHIA LLI	>		TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC		CHESAPEAKE APPALACHIA LLC	City Company	Ē	CHEVRON U.S.A. INC.	CHESAPEAKE APPALACHIA		CHEVRON U.S.A. INC.	FOSSIL CREEK OHIO, LLC	in Colonia, see	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC	TH EXPLORATION, LLC		TH EXPLORATION, LLC	TH EXPLORATION, LLC		TH EXPLORATION, LLC		TH EXPLORATION, LLC		In executation, the		├ ─	TH EXPLORATION, LLC			TRIENERGY HOLDINGS, LLC	TRIENERGY HOLDINGS, LLC	TRIENERGY HOLDINGS, LLC	_
	C 1/8+	C 1/8+	-8/t	Н	1/8+			LLC 1/8+		1/8+	1/8+	rrc 1/8+		1/8+	1/8+	Į.	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/8+	1/01	1/8+	1/8+	1/8+	1/8.	1/8+	1/8+	1/8+	1/8+	
	743	742	742	919	885	885	3	693		 8	690	687		686	848		873	865	1023	1022	1010	1010	1010	1010	1009	1008	984 972	977	977	977	970	968	966	953	953	959	3	966	957	957	83	944	726	726	718	:
	285	104	121	627	S S	22 0	2	571		SS9	615	147		239	234		143	389	522	371	406	408	402	400	291	307	45 &	287	289	49	24	230	620	470	473	520	3	618	284	282	157	445	582	580	347	
	N/A	N/A	N/A	N/A	N/A	N/A		N/A		NA A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	N/A	N/A	NA	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-
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	N/A	N/A	N/A	N/A	N/A	N/A	*	N/A		N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	W/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-
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27/50 Chesapeake Appalachia LLC to Statoli	27/S0 Chesapeake Appalachia LLC to Statofi USA Onshore Properties	27/50 Chesepeake Appalachia LLC to Statoil USA Onshore Properdes in	27/50 Chesapeake Appalachia LLC to Statoll USA Onshore Properties	N/A	N/A	N/A		N/A		N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-
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33/424 Statoli USA Onshore Properties Inc to SWN	33/424 Stated USA Onshore Properties Inc to SWN C Exchange Titleholder LLC	33/424 State® USA Onshore Properties Inc to SWN C Exchange Titleholder LLC	33/424 Statoil USA Onshore Properties Inc to SWN C Exchange Titleholder LLC	N/A	N/A	N/A	Z/	N/A		N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	AIN	N/A	N/A A/N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A/N	N/A	N/A	N/A	N/A	24/430 TriEnergy Holdings LLC to NPAR I	Holdings LLC to NPAR LLC	Holdings LLC to NPAR	24/430 TriEnergy
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STATE OF WEST VIRGINIA
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Pages Recorded 20
Book-Page 36-148
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ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 17th day of May, 2016 (the "Effective Date"), by and between CHEVRON U.S.A. INC. (hereinafter "Assignor") and TH EXPLORATION, LLC (hereinafter "Assignee") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated May 2, 2016 (the "Acreage Trade Agreement"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

WITNESSETH:

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to those certain Oil and Gas Leases situated in Marshall County, West Virginia, as described in Exhibit "A", and as depicted in Exhibits "A-1" and "A-2", attached hereto and made a part hereof (hereinafter the "Leases"); and

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

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

1. Assignment. Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over and transfer, as of the Effective Date, to Assignee, its respective successors and assigns, forever, all of Assignor's right, title and interest in and to the Leases, and the lands covered thereby, together with all rights incident thereto and appurtenances thereon, except that Assignor accepts and reserves from this Assignment the Chevron ORRI previously conveyed to Assignor and as described in that certain Memorandum of Assignment of Oil and Gas Lease Interests dated November 6, 2012 by and between Cornell Holdings Incorporated and Chevron U.S.A. Inc., which is recorded at Book 0028, Page 0239 in the Office of the County Clerk of Marshall County, West Virginia.

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

2. Special Warranty. Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered (other than Permitted Encumbrances) its interest in the Conveyed Interests since the time that Assignor obtained its interests in the Leases. Assignor does covenant, promise and agree, to and with the Assignee, its respective successors and assigns, to forever specially warrant and defend the title to the Leases or portions thereof included under this Assignment, unto the Assignee and its respective successors and assigns, against the lawful claims of Assignor, and all persons claiming, or to claim, the same or any part thereof, by, through or under Assignor.

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Office of Oil and Gas

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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 August 22, 2016 (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 June 19, 2016 (the "Acreage Trade Agreement").

ARTICLE 1 ASSIGNMENT OF ASSETS

Section 1.1 <u>Assignment</u>. 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 <u>Exhibit A</u> attached hereto (the "Leases") INSOFAR AND ONLY INSOFAR as they cover the Target Formations and INSOFAR AND ONLY INSOFAR as they cover those lands described on <u>Exhibit A</u> (the "Leasehold Rights") and (ii) any surface use agreements that relate to such Leasehold Rights (collectively with the Leasehold Rights, the "Conveyed Assets"). Assignor does hereby reserve unto itself the right and subsurface easement to drill through the Leasehold Rights to access the those depths and formations in the Leases other than the Target Formations and (y) to shoot seismic, sonic, or other energy or waves through the Leasehold Rights and to receive, record and evaluate such energy or waves, including those reflected from or in any way pertaining to the reserved depths, and to utilize any and all other exploration technologies that image the subsurface of the leasehold including the reserved depths and to receive, record and evaluate all images resulting therefrom.

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 1.4 <u>Assignment Subject to Acreage Trade Agreement</u>. 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 <u>SECTION VI</u> OF THE ACREAGE TRADE AGREEMENT OR THIS ASSIGNMENT, ASSIGNOR MAKES NO, AND HEREBY EXPRESSLY DISCLAIMS, ANY REPRESENTATION OR WARRANTY, EXPRESS, IMPLIED OR STATUTORY, INCLUDING AS TO (I) TITLE TO THE LEASEHOLD RIGHTS, (II) THE CONTENTS, CHARACTER OR NATURE OF ANY

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JUN 1 3 2019

PARTIAL ASSIGNMENT OF OIL AND GAS LEASES

WHEREAS, Assignor desires to assign all of Assignor's right, title and interest in and to those Oil and Gas Lease(s) as same may have been previously or will in the future be modified, extended, or amended (hereinafter, "Lease" or "Leases"), covering certain tracts of land (hereinafter, "Lands") located in Marshall County, West Virginia; such Leases and Lands covered thereby being more particularly described on Exhibit "A" attached hereto and made a part hereof insofar and only insofar as such Leases cover the Target Formations (as defined below).

NOW, THEREFORE, for and in consideration of Ten AND No/100 DOLLARS (\$10.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Assignor does hereby GRANT, BARGAIN, ASSIGN, TRANSFER, AND CONVEY unto Assignee the following "Assigned Rights":

- (a) All of Assignor's right, title, and interest in and to those Leases set forth on Exhibit A attached hereto INSOFAR AND ONLY INSOFAR as to the particular Target Formation(s) (defined below) described and delineated on Exhibit A for each Lease:
 - i. "Target Formation(s)" means, with respect to each Lease, two hundred feet (200') above the top and two hundred feet (200') below the base of the Marcellus Formation or the Utica Formation or both, as specified for each Lease on <u>Exhibit A</u>. For the purposes of this Assignment, the Marcellus Formation shall be defined as the formation commonly known as the Marcellus Shale Formation, with the top of the Marcellus Shale Formation defined as the correlative stratigraphic equivalent to that point found at 6517 feet (6517') measured depth on the Halliburton Simms U-5H Composite_DLL_DEN_NEU Log dated June 14, 2014 (the "Log")

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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 August 22, 2016 (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 June 19, 2016 (the "Acreage Trade Agreement").

ARTICLE 1 ASSIGNMENT OF ASSETS

Section 1.1 <u>Assignment</u>. 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 <u>Exhibit A</u> attached hereto (the "Leases") INSOFAR AND ONLY INSOFAR as they cover the Target Formations and INSOFAR AND ONLY INSOFAR as they cover those lands described on <u>Exhibit A</u> (the "Leasehold Rights") and (ii) any surface use agreements that relate to such Leasehold Rights (collectively with the Leasehold Rights, the "Conveyed Assets"). Assignor does hereby reserve unto itself the right and subsurface easement to drill through the Leasehold Rights to access the those depths and formations in the Leases other than the Target Formations and (y) to shoot seismic, sonic, or other energy or waves through the Leasehold Rights and to receive, record and evaluate such energy or waves, including those reflected from or in any way pertaining to the reserved depths, and to utilize any and all other exploration technologies that image the subsurface of the leasehold including the reserved depths and to receive, record and evaluate all images resulting therefrom.

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 1.4 <u>Assignment Subject to Acreage Trade Agreement</u>. 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 <u>Disclaimers of Warranties and Representations</u>.

(a) EXCEPT AS EXPRESSLY REPRESENTED OTHERWISE IN <u>SECTION VI</u> OF THE ACREAGE TRADE AGREEMENT OR THIS ASSIGNMENT, ASSIGNOR MAKES NO, AND HEREBY EXPRESSLY DISCLAIMS, ANY REPRESENTATION OR WARRANTY, EXPRESS, IMPLIED OR STATUTORY, INCLUDING AS TO (I) TITLE TO THE LEASEHOLD RIGHTS, (II) THE CONTENTS, CHARACTER OR NATURE OF ANY

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August 3, 2018

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

RE: Keith Stern S-18HU

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 Keith Stern S-18HU 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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Date of Notice Certification: 06/07/2019

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

API No. 47- 051

Operator's Well No. Keith Stem S-18HU

		Well Pad Nar	ne; Keith Stem
Notice has I	oeen given:		The state of the Wall
		§ 22-6A, the Operator has provided the require	red parties with the Notice Forms liste
below for the State:	tract of land as follows: West Virginia	Easting: 52	26,362.72
County:	Marshall	TIM NAD 83	402,810.91
District:	Meade		sh Creek Road (County Route 74)
Quadrangle:	Glen Easton 7.5'		H Exploration, LLC
Watershed:	Fish Creek (HUC 10)		
prescribed by it has provide information roof giving the requirements Virginia Code of this article Pursuant to that the Ope	the secretary, shall be verified and seed the owners of the surface describequired by subsections (b) and (c), se surface owner notice of entry to surface owner notice of entry to surface of subsection (b), section sixteen of \$22-6A-11(b), the applicant shall thave been completed by the applicant	perator has attached proof to this Notice Cert	A certification from the operator that tion (b), section ten of this article, t rement was deemed satisfied as a resof this article six-a; or (iii) the notice surface owner; and Pursuant to We at the notice requirements of section to
TI I NO	Telephone and the Transferior	A CONTRACTOR DESCRIPTION DESCRIPTION	
LI 1, NO	TICE OF SEISMIC ACTIVITY OF	NOTICE NOT REQUIRED BECAUS. SEISMIC ACTIVITY WAS CONDUCTE	
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■ 2. NO	FICE OF ENTRY FOR PLAT SURV	SEISMIC ACTIVITY WAS CONDUCTE /EY or NO PLAT SURVEY WAS CON NOTICE NOT REQUIRED BECAUS NOTICE OF ENTRY FOR PLAT SURVE WAS CONDUCTED or WRITTEN WAIVER BY SURFACE	D NOT REQUIRED DUCTED RECEIVED E RECEIVED/ NOT REQUIRED OWNER

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 person securived the return receipt card or other postal receipt for certified mailing.

WW-6AC (1/12)

Certification of Notice is hereby given:

, have read and understand the notice requirements within West Virginia Code § 22-THEREFORE, I Amy L. Miller 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: Tug Hill Operating, LLC

Bv:

Its:

Amy L. Miller MALLY 1

Permitting Specialist - Appalachia Region

Telephone:

724-749-8388

Address:

380 Southpointe Boulevard, Plaza II, Suite 200

Canonsburg, PA 15317

Facsimile:

724-338-2030

Email:

amiller@tug-hillop.com

COMMONWEARPHABY FENNSYLVANIA

NOTARIAL SEAL Chester Arthur West IV, Notary Public Pine Twp., Allegheny County My Commission Expires Feb. 10, 2020

MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

Subscribed and sworn-before me this 7

day of

Notary Public

My Commission Expires

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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WW-6A (9-13) API NO. 47- 051 OPERATOR WELL NO. Keith Stern S-18HU
Well Pad Name: Keith Stern

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 t	han the filing date of permit application.
Date of Notice: 5/2/2019 Date Permit Application Filed: 5/2 Notice of:	3/2019
PERMIT FOR ANY WELL WORK CONSTRUCTION OF	PPROVAL FOR THE F AN IMPOUNDMENT OR PIT
Delivery method pursuant to West Virginia Code § 22-6A-	10(b)
	HOD OF DELIVERY THAT REQUIRES A EIPT OR SIGNATURE CONFIRMATION
registered mail or by any method of delivery that requires a receip sediment control plan required by section seven of this article, and the surface of the tract on which the well is or is proposed to be located and gas leasehold being developed by the proposed well work, described in the erosion and sediment control plan submitted pursuperator or lessee, in the event the tract of land on which the well more coal seams; (4) The owners of record of the surface tract or well work, if the surface tract is to be used for the placement, considered a water well, spring or water supply source located within or provide water for consumption by humans or domestic animals; and proposed well work activity is to take place. (c)(1) If more than the subsection (b) of this section hold interests in the lands, the applicate provision of this article to the contrary, notice to a lien holder is not to the contrary, notice to a lien holder is not record.	pit as required by this article shall deliver, by personal service or by tor signature confirmation, copies of the application, the erosion and the well plat to each of the following persons: (1) The owners of record of the surface tract or tracts overlying the if the surface tract is to be used for roads or other land disturbance as uant to subsection (c), section seven of this article; (3) The coal owner, proposed to be drilled is located [sic] is known to be underlain by one or tracts overlying the oil and gas leasehold being developed by the proposed struction, enlargement, alteration, repair, removal or abandonment of any Any surface owner or water purveyor who is known to the applicant to be thousand five hundred feet of the center of the well pad which is used to and (6) The operator of any natural gas storage field within which the ree tenants in common or other co-owners of interests described in the antique are the documents required upon the person described in the neight, article one, chapter eleven-a of this code. (2) Notwithstanding any of notice to a landowner, unless the lien holder is the landowner. W. Va. provide the Well Site Safety Plan ("WSSP") to the surface owner and any g as provided in section 15 of this rule.
☑ Application Notice ☑ WSSP Notice ☑ E&S Plan Notice	• •
SURFACE OWNER(s) Name: TH Exploration, LLC (Access Road and Well Pad)	☑ COAL OWNER OR LESSEE Name: CONSOL Energy, Inc. Attn: Casey Saynders
Address: 380 Southpointe Boulevard, Plaza II, Suite 200	Address: 1000 CONSOL Energy Drive
Canonsburg, PA 15318	Canonsburg, PA 15317
Name:	☐ COAL OPERATOR
Address:	Name:
	Address:
SURFACE OWNER(s) (Road and/or Other Disturbance)	TOVIDEL OF OVERTRE OF WAMER WITH
Name:	SURFACE OWNER OF WATER WELL
Address:	AND/OR WATER PURVEYOR(s) Name: *See attached list
Name:	Name: See attached list Address:
Name:Address:	1 kdd1000.
	OPERATOR OF ANY NATURAL GAS STORAGE FIELD
SURFACE OWNER(s) (Impoundments or Pits)	Name:
Name:	Address:
Address:	
	*Please attach additional forms if necessary RECEIVED Office of Oil and Gas

API NO. 47-051

OPERATOR WELL NO. Keith Stern S-18HU

Well Pad Name: Keith Stern

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 RECEIVED Office of Oil and Gas 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. JUN 1 3 2019

Well Location Restrictions

WV Department of Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally fron Early and Protection 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

API NO. 47-051

OPERATOR WELL NO. Keith Stern S-18HU

Well Pad Name: Keith Stern

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

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

JUN 1 3 2019

WV Department of Environmental Protection

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.

API NO. 47-051

OPERATOR WELL NO. Keith Stern S-18HU

Well Pad Name: Keith Stern

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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JUN 1 3 2019

WW-6A (8-13)

API NO. 47-051 OPERATOR WELL NO. Keith Stern S-18HU Well Pad Name: Keith Stern

Notice is hereby given by:

Well Operator: Tug Hill Operating, LLC

Telephone: 724-749-8388

Email: amiller@tug-hillop.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.

Commonwealth of Pennsylvania - Notary Seal MAUREEN A STEAD - Notary Public Washington County

My Commission Expires Jan 28, 2023 Commission Number 1259926

Subscribed and sworn before me this 2 day of MAY, 2019

My Commission Expires

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JUN 1 3 2019

Exhibit WW-6A

Supplement Pg. 1A

Tug Hill Operating, LLC 380 Southpointe Blvd, Suite 200 Cannonsburg, PA 15137

Residences within Two-Thousand Feet (2,000')

Well: KEITH STERN S – 18HU
District: Meade (House #'s 1-5)

State: WV

There are five (5) residences, no businesses, no churches, no schools or no emergency facilities within two-thousand feet (2,000') of the above referenced well location.

House 1	House 2	House 3
TM 14 Pcl. 20	TM 14 Pcl. 20.1	TM 14 Pcl. 21
William K. Stern, Et Ux	William K. Stern, Et Ux	Eleanore M. Fox Est.
Phone: 304-843-1478 (Per Address –	Phone: 304-843-1478 (Per Address –	Phone: 304-845-6016 (Per Tax Address –
Keith, Betty & Ginger Sue Stern	Keith, Betty & Ginger Sue Stern)	Thomas Fox)
Physical Address:	Physical Address:	Physical Address:
14912 Fish Creek Rd.	15056 Fish Creek Rd.	None Found – Appears to be an old
Glen Easton, WV 26039	Glen Easton, WV 26039	home.
Tax Address:	Tax Address:	Tax Address:
Same	14912 Fish Creek Rd.	100 Lynn Camp Ln.
	Glen Easton, WV 26039	Glen Easton, WV 26039-9707
House 4	House 5	
TM 14 Pcl. 27	TM 14 Pcl. 25	
Patrick J. Shellhase	Patricia A. Dugas	
Phone: 304-845-0742; 304-810-0258	Phone: None Found	
Physical Address:	Physical Address:	
593 Crow Dr.	681 Crow Dr.	
Glen Easton, WV 26039	Glen Easton, WV 26039	
Tax Address:	Tax Address:	
2300 7 th St.	Same	
Moundsville, WV 26041		

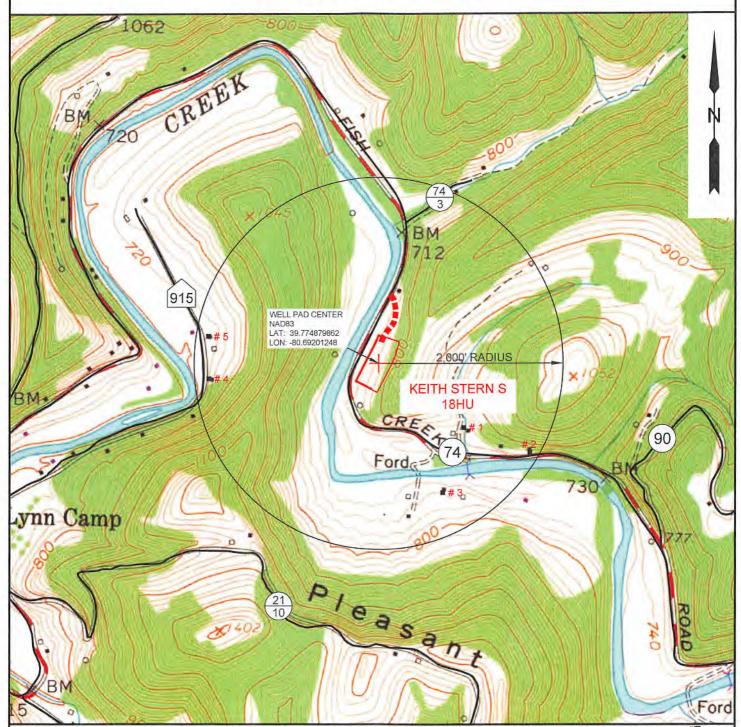
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Office of Oil and Gas

JUN 1 3 2019

WW-6A

PROPOSED KEITH STERN S - 18HU

SUPPLEMENT PG. 1B



NOTE: THERE APPEARS TO BE FIVE (5) POSSIBLE WATER SOURCES WITHIN 2,000'.

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Ĭ	TOPO SI	ECTION:	OPER	ATOR:
	GLEN EAS	STON 7.5'	PREPARED FOR	
ľ	COUNTY	DISTRICT	380 SOUTHPOI	NTE BLVD
	MARSHALL	MEADE	SUITE 200 CANONSBURG	, PA 15317
	DRAWN BY	JOB NO.	DATE	SCALE
34	K.G.M.	8811	05/01/2019	1" - 1000'



WW-6A3 (1/12)

Operator Well No. Keith Stern S-18HU

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time entry	Requirement: Notice shall be pr	ovided at least SEVEN (7) da	ys but no more tha	n FORTY-FIVE (45) days prior to
Date of Notic	ce: 12/11/17 Date of P	lanned Entry: 12/18/17			
Delivery met	hod pursuant to West Virginia	Code § 22-6A-10a			
☐ PERSO	NAL	■ METHOD OF DEI	IVERY THAT RE	QUIRES A	
SERVIC	E MAIL	RECEIPT OR SIGN	NATURE CONFIR	MATION	
on to the surf but no more t beneath such owner of min and Sediment Secretary, wh enable the sur	Vest Virginia Code § 22-6A-10(a) ace tract to conduct any plat surve han forty-five days prior to such tract that has filed a declaration perals underlying such tract in the Control Manual and the statutes lich statement shall include contained owner to obtain copies from eby provided to:	eys required pursuant to this an entry to: (1) The surface owne bursuant to section thirty-six, a county tax records. The notic and rules related to oil and gas et information, including the a	ticle. Such notice s r of such tract; (2) r rticle six, chapter t e shall include a sta s exploration and p	shall be provided a to any owner or les wenty-two of this o atement that copies roduction may be o	t least seven days see of coal seams code; and (3) any s of the state Erosion obtained from the
		□ ao	OND THE OR VE	COPP	
	CE OWNER(s)		L OWNER OR LE	SSEE	
	oration, LLC (Access Road and Well Pad) Southpointe Boulevard, Plaza II, Suite 200		nsol Energy, Inc. CNX Center, 1000 Consol	Energy Drive	_
the state of the s	nsburg, PA 15318		Canonsburg, PA 15317	Lifelgy Diffe	
Name:					-
Address:		■ MINI	ERAL OWNER(s)		
		Name: Will	iam K. and Betty L. Stern	,	
Name:			14912 Fish Creek Road	/	
Address:			Glen Easton, WV 26039	W (10 to 10	_
		*please attac	h additional forms if ne	cessary	
	reby given: /est Virginia Code § 22-6A-10(a) on the tract of land as follows: West Virginia		e undersigned well	operator is planni	
County:	Marshall	Public Road		Fish Creek Road (Coun	ty Route 74)
District:	Meade	Watershed:		Fish Creek (HUC 10)	
Quadrangle:	Glen Easton 7.5'	Generally use	d farm name:	TH Exploration, LLC	
may be obtain Charleston, V	state Erosion and Sediment Contined from the Secretary, at the WVVV 25304 (304-926-0450). Copin the Secretary by visiting www.d	Department of Environmenta es of such documents or addit	l Protection headquional information r	uarters, located at 6	501 57 th Street, SE,
Notice is he	reby given by:				
Well Operato		Address:	380 Southpointe Bouley	ard, Plaza II, Suite 200	Office of Oil and Gas
Telephone:	724-749-8388		Canonsburg, PA 15317		Office of Off arise 4.50
Email:	amiller@tug-hillop.com	Facsimile:	724-338-2030		JUN 1 3 2019
Oil and Gas	S Privacy Notice:				WV Department of

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.

WW-6A5 (1/12) Operator Well No. Keith Stem S-18HU

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

Delivery me	hod pursuant to West Virginia Co	de §	22-6A-16(c)		
CEDTI	FIED MAIL		HAND		
			DELIVERY		
RETU	RN RECEIPT REQUESTED		DELIVERY		
return receipt the planned of required to be drilling of a damages to the (d) The notice of notice.	requested or hand delivery, give the operation. The notice required by a provided by subsection (b), section horizontal well; and (3) A proposed the surface affected by oil and gas op	e surfa this su ten o d surfa eration given t	ace owner whose land absection shall included this article to a surface use and compens as to the extent the date to the surface owner a	will be used for de: (1) A copy ace owner whos ation agreement mages are com	cation, an operator shall, by certified mail or the drilling of a horizontal well notice of of this code section; (2) The information se land will be used in conjunction with the at containing an offer of compensation for pensable under article six-b of this chapter, sted in the records of the sheriff at the time
(at the addres	s listed in the records of the sheriff,				
Name: TH Expl	oration, LLC		Name:		
Address: 380	Southpointe Boulevard, Plaza II, Suite 200		Address	:	
Address: 380 Canonsburg, PA Notice is her Pursuant to V	Southpointe Boulevard, Plaza II, Suite 200 15318 eby given: /est Virginia Code § 22-6A-16(c), n		s hereby given that th	ne undersigned	well operator has developed a planned act of land as follows:
Address: 380 Canonsburg, PA Notice is her Pursuant to V operation on State: County: District:	eby given: /est Virginia Code § 22-6A-16(c), n the surface owner's land for the pur West Virginia Marshall Meade		s hereby given that the formal drilling a horizonta UTM NAD 8 Public Road A	ne undersigned of the transport of the t	nct of land as follows: 526,362.72 4,402,810.91 Fish Creek Road (County Route 74)
Address: 380 Canonsburg, PA Notice is her Pursuant to V	eby given: /est Virginia Code § 22-6A-16(c), n the surface owner's land for the pur West Virginia Marshall		s hereby given that the formal drilling a horizonta UTM NAD 8 Public Road A	ne undersigned of lawell on the tra Basting: Northing:	net of land as follows: 526,362.72 4,402,810.91
Address: 380 Canonsburg, PA Notice is her Pursuant to Voperation on State: County: District: Quadrangle: Watershed: This Notice Sepursuant to Voto be provide horizontal we surface affect information in headquarters,	eby given: //est Virginia Code § 22-6A-16(c), n the surface owner's land for the pur West Virginia Marshall Meade Glen Easton 7.5' Fish Creek (HUC 10) Shall Include: //est Virginia Code § 22-6A-16(c), t ed by W. Va. Code § 22-6A-10(b) ell; and (3) A proposed surface use a led by oil and gas operations to the elated to horizontal drilling may be located at 601 57th Street, SE,	his no to a sand co exten	s hereby given that the farilling a horizonta UTM NAD 8 Public Road A Generally use tice shall include: (1) surface owner whose in the damages are contined from the Secret	The undersigned of the well on the tracesting: Access: A copy of this land will be undersigned arm, at the WV	nct of land as follows: 526,362.72 4,402,810.91 Fish Creek Road (County Route 74)
Address: 380 Canonsburg, PA Notice is her Pursuant to Voperation on State: County: District: Quadrangle: Watershed: This Notice Sepursuant to Voto be provide horizontal we surface affect information readquarters, gas/pages/def	eby given: //est Virginia Code § 22-6A-16(c), n the surface owner's land for the pur West Virginia Marshall Meade Glen Easton 7.5' Fish Creek (HUC 10) Shall Include: //est Virginia Code § 22-6A-16(c), t ed by W. Va. Code § 22-6A-10(b) ell; and (3) A proposed surface use a fed by oil and gas operations to the elated to horizontal drilling may be located at 601 57th Street, SE, ault.aspx.	his no to a sand co exten	s hereby given that the of drilling a horizonta — UTM NAD 8 — Public Road A Generally use tice shall include: (1) surface owner whose mentation agreement the damages are coined from the Secret eston, WV 25304 (1)	The undersigned of the well on the tracesting: Access: A copy of this land will be undersigned arm, at the WV	act of land as follows: 526,362.72 4,402,810.91 Fish Creek Road (County Route 74) TH Exploration, LLC code section; (2) The information required used in conjunction with the drilling of an offer of compensation for damages to the ler article six-b of this chapter. Additional Department of Environmental Protection
Address: 380 Canonsburg, PA Notice is her Pursuant to Voperation on State: County: District: Quadrangle: Watershed: This Notice Sepursuant to Voto be provide horizontal we surface affect information reheadquarters, gas/pages/def	eby given: //est Virginia Code § 22-6A-16(c), n the surface owner's land for the pur West Virginia Marshall Meade Glen Easton 7.5' Fish Creek (HUC 10) Shall Include: //est Virginia Code § 22-6A-16(c), t ed by W. Va. Code § 22-6A-10(b) ell; and (3) A proposed surface use a fed by oil and gas operations to the elated to horizontal drilling may be located at 601 57th Street, SE, ault.aspx.	his no to a sand co exten	s hereby given that the farilling a horizonta UTM NAD 8 Public Road A Generally use tice shall include: (1) surface owner whose in the damages are contined from the Secret	The undersigned of twell on the tradition of the traditio	act of land as follows: 526,362.72 4,402,810.91 Fish Creek Road (County Route 74) TH Exploration, LLC code section; (2) The information required used in conjunction with the drilling of an offer of compensation for damages to the ler article six-b of this chapter. Additional Department of Environmental Protection
Address: 380 Canonsburg, PA Notice is her Pursuant to Voperation on State: County: District: Quadrangle: Watershed: This Notice Sepursuant to Voto be provide horizontal we surface affect information in headquarters,	eby given: //est Virginia Code § 22-6A-16(c), n the surface owner's land for the pur West Virginia Marshall Meade Glen Easton 7.5' Fish Creek (HUC 10) Shall Include: //est Virginia Code § 22-6A-16(c), t ed by W. Va. Code § 22-6A-10(b) ell; and (3) A proposed surface use a fed by oil and gas operations to the elated to horizontal drilling may be located at 601 57th Street, SE, ault.aspx.	his no to a sand co exten	s hereby given that the of drilling a horizonta — UTM NAD 8 — Public Road A Generally use tice shall include: (1) surface owner whose mentation agreement the damages are coined from the Secret eston, WV 25304 (1)	The undersigned of twell on the tradition of the traditio	act of land as follows: 526,362.72 4,402,810.91 Fish Creek Road (County Route 74) TH Exploration, LLC code section; (2) The information required used in conjunction with the drilling of an offer of compensation for damages to the ler article six-b of this chapter. Additional Department of Environmental Protection or by visiting www.dep.wv.gov/oil-and-ulevard , Plaza II, Suite 200

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.

JUN 1 3 2019

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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

June 11, 2019

Byrd E. White, III Secretary of Transportation

Jimmy Wriston, P. E. Deputy Secretary/ Acting Commissioner

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

Subject: DOH Permit for the Keith Stern Pad, Marshall County Keith Stern S-18HU Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2018-0068 issued to Tug Hill Operating for access to the State Road for a well site located off of Marshall County Route 74 SLS.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018.

Very Truly Yours,

Gary K. Clayton, P.E.

Regional Maintenance Engineer

Gary K. Clayton

Central Office O&G Coordinator

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JUN 1 3 2019

WV Department of Environmental Protection

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



PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Well No. Keith Stern S-18HU

PRODUCT NAME:	CHEMICAL DESCRIPTION:	PRODUCT USE:	HAZARDOUS COMPONENT:
GBW-20C	Hemicellulase Breaker	Breaker - Water	None
ALPHA 1427		Biocide	Glutaraldehyde – CAS#000111-30-8 Quatemary 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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