



west virginia department of environmental protection

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

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

Thursday, June 14, 2018
WELL WORK PERMIT
Horizontal 6A / New Drill

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

Re: Permit approval for TEN HIGH 1N-13HU
47-051-01965-00-00

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: TEN HIGH 1N-13HU
Farm Name: LAWRENCE & SHIRLEY CON.
U.S. WELL NUMBER: 47-051-01965-00-00
Horizontal 6A New Drill
Date Issued: 6/14/2018

PERMIT CONDITIONS

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

CONDITIONS

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

PERMIT CONDITIONS

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



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

March 16, 2018

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

RE: Application for Deep Well Permit – API #47-051-01965

COMPANY: Tug Hill Operating, LLC

FARM: Tug Hill Operating, LLC Ten High 1N-13HU

COUNTY: Marshall DISTRICT: Meade QUAD: Glen Easton 7.5'

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: 47-051-01967, 47-051-01969, 47-051-01961, and 47-051-01960
4. Provided a plat showing that the proposed location is a distance of 400+ 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,

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

Susan Rose
Administrator

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

1) Well Operator: Tug Hill Operating, LLC 494510851 Marshall Meade Glen Easton 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Ten High 1N-13HU Well Pad Name: Ten High

3) Farm Name/Surface Owner: Lawrence & Shirley Conkle, ests Public Road Access: Shepherd Ridge Lane CR 21/9

4) Elevation, current ground: 1317' Elevation, proposed post-construction: 1310'

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

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No Yes *JN 6/12/18*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,589' - 11,728' thickness of 139' and anticipated pressure of approx. 9500 psi

8) Proposed Total Vertical Depth: 11,878'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 18,315'

11) Proposed Horizontal Leg Length: 6,141'

12) Approximate Fresh Water Strata Depths: 70', 1026'

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

14) Approximate Saltwater Depths: 2,167'

15) Approximate Coal Seam Depths: Sewickly Coal - 935' and Pittsburgh Coal - 1020'

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

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

(a) If Yes, provide Mine Info: Name: Marshall County Coal Co. / Marshall County Mine
Depth: 1020' TVD and 290' subsea level
Seam: Pittsburgh #8
Owner: Murray Energy / Consolidated Coal Co.

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	100'	100'	216FT^3(CTS)
Fresh Water	20"	NEW	J55	106.5#	1,086'	1,086'	1,725ft^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2,800'	2,800'	1,975ft^3(CTS)
Intermediate	9 5/8"	NEW	HPP110	47#	10,574'	10,574'	3,451ft^3(CTS)
Production	5 1/2"	NEW	HCP110	23#	18,315'	18,315'	4,375ft^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,476'	
Liners							

JN 6/12/18

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water	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	13,580	10,864	SEE#24	1.18
Tubing	2 7/8"			14,530	11,624		
Liners							

PACKERS

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

JW 6/12/18

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

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

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

Well to be completed with approximately 15,352,500 lb proppant and 237,361 bbl of water. Max rate = 100 bpm; max psi = 12,500#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 16.2

22) Area to be disturbed for well pad only, less access road (acres): 5.92

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

*Note: Attach additional sheets as needed.



Tug Hill Operating, LLC Casing and Cement Program
Ten High 1N-13HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	100'	CTS
Surface	20"	J55	26"	1,086'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,800'	CTS
Intermediate 2	9 5/8"	HP110	12 1/4"	10,574'	CTS
Production	5 1/2"	HCP110	8 1/2"	18,315'	CTS

Cement

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

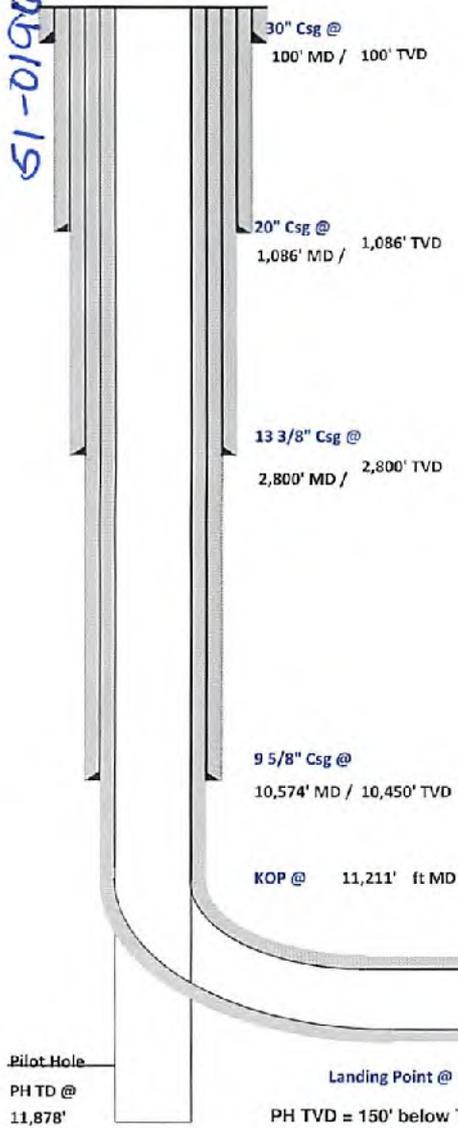
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51-01965

WELL NAME: Ten High 1N-13HU
STATE: West Virginia **COUNTY:** Marshall
DISTRICT: Meade
DF Elev: 1,310' **GL Elev:** 1,310'
TD: 18,315'
TH Latitude: 39.80677019
TH Longitude: -80.68079336
BH Latitude: 39.82377823
BH Longitude: -80.6821348

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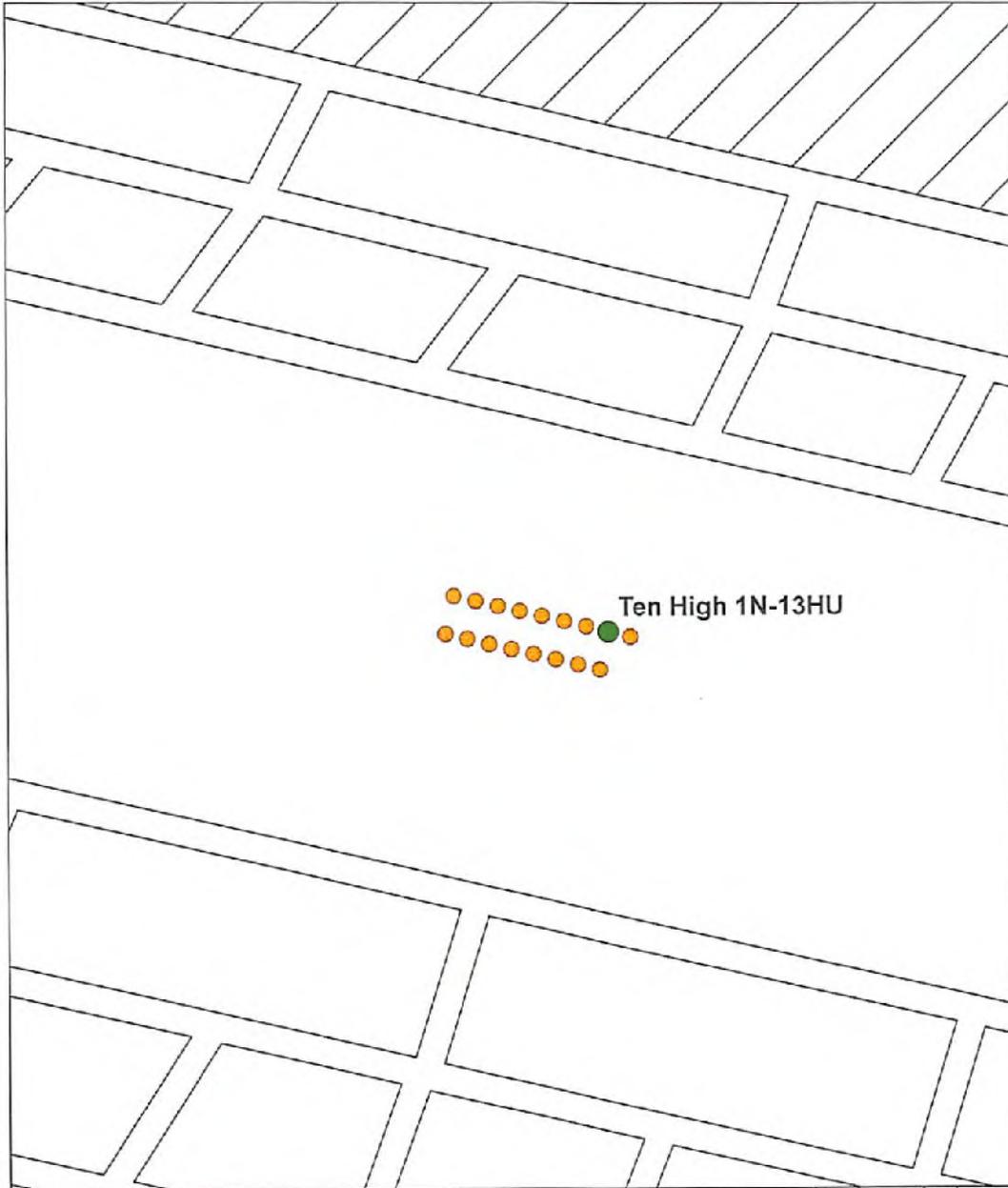
FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	1,026'
Sewickley Coal	935'
Pittsburgh Coal	1,020'
Big Lime	2,049'
Berea	2,673'
Tully	6,606'
Marcellus	6,713'
Onondaga	6,765'
Salina	7,497'
Lockport	8,562'
Utica	11,413'
Point Pleasant	11,589'
Landing Depth	11,630'
Trenton	11,728'
Pilot Hole TD	11,878'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	100'	100'	BW	BW	Surface
Surface	26	20	1,086'	1,086'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,800'	2,800'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,574'	10,450'	47	HP110	Surface
Production	8 1/2	5 1/2	18,315'	11,523'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	291	A	15.6	Air	None
Surface	1,874	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,144	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,809	A	14.5	Air	1 Centralizer every other jt
Production	3,755	A	15	Air / SOBMs	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc

Handwritten signature and date: 1/18/18

Pilot Hole PH TD @ 11,878'
 Landing Point @ 12,174' MD / 11,630' TVD
 PH TVD = 150' below Trenton Top
 Lateral TD @ 18,315' ft MD / 11,523' ft TVD



<small>Legend</small> <small>Scale</small> <small>North Arrow</small>	<p>CONFIDENTIAL</p>	<p>Ten High Pad</p> <p>Ten High 1N-13HU Well Location</p>	
<p>0 510 20 30 40 Feet</p>		<p>● Surface Location</p> <p>— Coal Mined Area</p>	

Customer Path: E:\GIS\USDRS\MAPS_DEV\JUGA\JUGA.mxd
Map Created By: joneska on: 09/20/17

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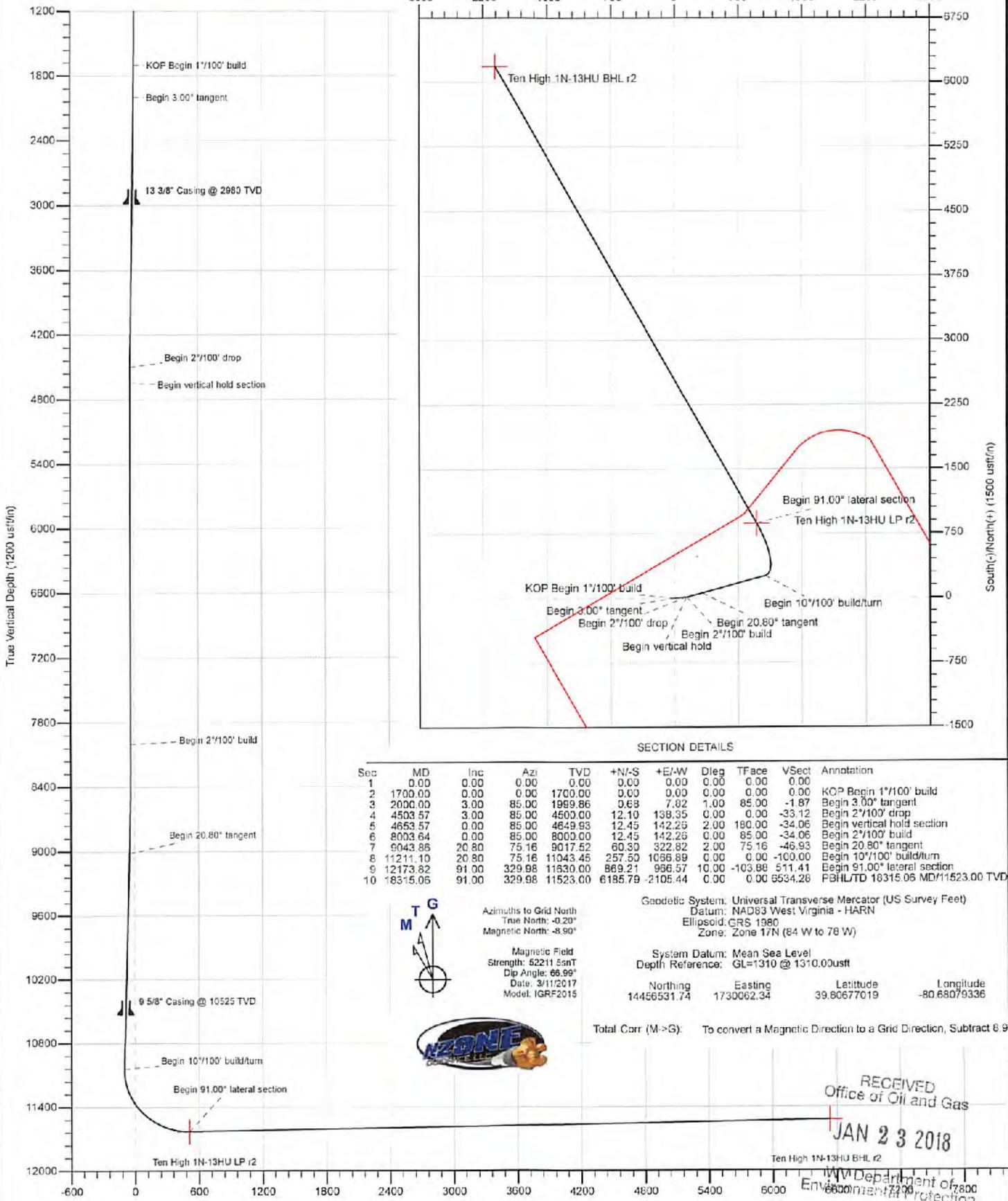
06/15/2018

51-01965



Well: Ten High 1N-13HU (F)
 Site: Ten High
 Project: Marshall County, West Virginia
 Design: rev3

West(-)/East(+) (1500 usft/in)



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSEct	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 1'7/100' build
2	1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	0.00	0.00	Begin 3.00' tangent
3	2000.00	3.00	85.00	1999.86	0.68	7.02	1.00	85.00	-1.87	Begin vertical hold section
4	4503.57	3.00	85.00	4500.00	12.10	138.35	0.00	0.00	-33.12	Begin 2'7/100' drop
5	4653.57	0.00	85.00	4649.83	12.45	142.25	2.00	180.00	-34.06	Begin 20.80' tangent
6	8003.64	0.00	85.00	8000.00	12.45	142.25	0.00	85.00	-34.06	Begin 2'7/100' build
7	9043.86	20.80	75.16	9017.52	60.30	322.82	2.00	75.16	-46.93	Begin 10'7/100' build/turn
8	11211.10	20.80	75.16	11043.45	257.50	1056.89	0.00	0.00	-100.00	Begin 91.00' lateral section
9	12173.82	91.00	329.98	11830.00	869.21	956.57	10.00	-103.88	511.41	Begin 10'7/100' build/turn
10	18315.05	91.00	329.98	11523.00	6185.79	-2105.44	0.00	0.00	6534.26	P3H/LTD 10315.05 MD/11523.00 TVD



Azimuths to Grid North
 True North: -0.20°
 Magnetic North: -8.90°
 Magnetic Field
 Strength: 52211.5nT
 Dip Angle: 66.99°
 Date: 3/11/2017
 Model: IGRF2015

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

System Datum: Mean Sea Level
 Depth Reference: GL=1310 @ 1310.00usft

Northing: 14456531.74 Easting: 1730062.34 Latitude: 39.80677019 Longitude: -80.68079336

Total Corr (M>G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.9°



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Ten High 1N-13HU BHL r2
 WV Department of Environmental Protection

06/15/2018



Planning Report - Geographic



Database:	DB_Jul2218dt_v14	Local Co-ordinate Reference:	Well Ten High 1N-13HU (F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL=1310 @ 1310.00usft
Project:	Marshall County, West Virginia	MD Reference:	GL=1310 @ 1310.00usft
Site:	Ten High	North Reference:	Grid
Well:	Ten High 1N-13HU (F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

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

Site	Ten High				
Site Position:		Northing:	14,456,545.60 usft	Latitude:	39.80680885
From:	Lat/Long	Easting:	1,730,001.41 usft	Longitude:	-80.68101011
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.20 °

Well	Ten High 1N-13HU (F)					
Well Position	+N/-S	0.00 usft	Northing:	14,456,531.74 usft	Latitude:	39.80677019
	+E/-W	0.00 usft	Easting:	1,730,062.34 usft	Longitude:	-80.68079336
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	1,310.00 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/11/2017	-8.70	66.99	52,211.49090564

Design	rev3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	341.20

Plan Survey Tool Program	Date	11/26/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,314.42 rev3 (Original Hole)	MWD	
			MWD - Standard	

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Planning Report - Geographic



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1N-13HU (F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL=1310 @ 1310.00usft
Project:	Marshall County, West Virginia	MD Reference:	GL=1310 @ 1310.00usft
Site:	Ten High	North Reference:	Grid
Well:	Ten High 1N-13HU (F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Plan 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	0.00		
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00		
2,000.00	3.00	85.00	1,999.86	0.68	7.82	1.00	1.00	0.00	85.00		
4,503.57	3.00	85.00	4,500.00	12.10	138.35	0.00	0.00	0.00	0.00		
4,653.57	0.00	85.00	4,649.93	12.45	142.26	2.00	-2.00	0.00	180.00		
8,003.64	0.00	85.00	8,000.00	12.45	142.26	0.00	0.00	0.00	85.00		
9,043.86	20.60	75.16	9,017.52	60.30	322.82	2.00	2.00	-0.95	75.16		
11,211.10	20.80	75.16	11,043.45	257.50	1,066.89	0.00	0.00	0.00	0.00		
12,173.62	91.00	329.98	11,630.00	869.21	966.57	10.00	7.29	-10.92	-103.88	Ten High 1N-13HU LF	
18,315.06	91.00	329.98	11,523.00	6,185.79	-2,105.44	0.00	0.00	0.00	0.00	Ten High 1N-13HU BI	

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Planning Report - Geographic



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1N-13HU (F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL=1310 @ 1310.00usft
Project:	Marshall County, West Virginia	MD Reference:	GL=1310 @ 1310.00usft
Site:	Ten High	North Reference:	Grid
Well:	Ten High 1N-13HU (F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

Planned 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	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
100.00	0.00	0.00	100.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
200.00	0.00	0.00	200.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
300.00	0.00	0.00	300.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
400.00	0.00	0.00	400.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
500.00	0.00	0.00	500.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
600.00	0.00	0.00	600.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
700.00	0.00	0.00	700.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
800.00	0.00	0.00	800.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
900.00	0.00	0.00	900.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,456,531.74	1,730,062.34	39.80677019	-80.68079336	
KOP Begin 1°/100' build										
1,800.00	1.00	85.00	1,799.99	0.08	0.87	14,456,531.82	1,730,063.21	39.80677039	-80.68079026	
1,900.00	2.00	85.00	1,899.96	0.30	3.48	14,456,532.05	1,730,065.81	39.80677099	-80.68078098	
2,000.00	3.00	85.00	1,999.86	0.58	7.82	14,456,532.43	1,730,070.16	39.80677199	-80.68076550	
Begin 3.00° tangent										
2,100.00	3.00	85.00	2,099.73	1.14	13.04	14,456,532.88	1,730,075.37	39.80677320	-80.68074693	
2,200.00	3.00	85.00	2,199.59	1.60	18.25	14,456,533.34	1,730,080.59	39.80677440	-80.68072836	
2,300.00	3.00	85.00	2,299.45	2.05	23.46	14,456,533.79	1,730,085.80	39.80677560	-80.68070979	
2,400.00	3.00	85.00	2,399.31	2.51	28.66	14,456,534.25	1,730,091.01	39.80677680	-80.68069122	
2,500.00	3.00	85.00	2,499.18	2.97	33.89	14,456,534.71	1,730,096.23	39.80677800	-80.68067265	
2,600.00	3.00	85.00	2,599.04	3.42	39.10	14,456,535.16	1,730,101.44	39.80677920	-80.68065408	
2,700.00	3.00	85.00	2,698.90	3.88	44.32	14,456,535.62	1,730,106.66	39.80678041	-80.68063551	
2,800.00	3.00	85.00	2,798.77	4.33	49.53	14,456,536.08	1,730,111.87	39.80678161	-80.68061694	
2,900.00	3.00	85.00	2,898.63	4.79	54.75	14,456,536.53	1,730,117.08	39.80678281	-80.68059837	
3,000.00	3.00	85.00	2,998.49	5.25	59.96	14,456,536.99	1,730,122.30	39.80678401	-80.68057980	
3,100.00	3.00	85.00	3,098.36	5.70	65.17	14,456,537.44	1,730,127.51	39.80678521	-80.68056123	
3,200.00	3.00	85.00	3,198.22	6.16	70.39	14,456,537.90	1,730,132.72	39.80678641	-80.68054266	
3,300.00	3.00	85.00	3,298.08	6.61	75.60	14,456,538.36	1,730,137.94	39.80678762	-80.68052409	
3,400.00	3.00	85.00	3,397.94	7.07	80.81	14,456,538.81	1,730,143.15	39.80678882	-80.68050552	
3,500.00	3.00	85.00	3,497.81	7.53	86.03	14,456,539.27	1,730,148.36	39.80679002	-80.68048695	
3,600.00	3.00	85.00	3,597.67	7.98	91.24	14,456,539.72	1,730,153.58	39.80679122	-80.68046838	
3,700.00	3.00	85.00	3,697.53	8.44	96.45	14,456,540.18	1,730,158.79	39.80679242	-80.68044981	
3,800.00	3.00	85.00	3,797.40	8.89	101.67	14,456,540.64	1,730,164.01	39.80679362	-80.68043124	
3,900.00	3.00	85.00	3,897.26	9.35	106.88	14,456,541.09	1,730,169.22	39.80679482	-80.68041267	
4,000.00	3.00	85.00	3,997.12	9.81	112.10	14,456,541.55	1,730,174.43	39.80679603	-80.68039409	
4,100.00	3.00	85.00	4,096.99	10.26	117.31	14,456,542.01	1,730,179.65	39.80679723	-80.68037552	
4,200.00	3.00	85.00	4,196.85	10.72	122.52	14,456,542.46	1,730,184.86	39.80679843	-80.68035695	
4,300.00	3.00	85.00	4,296.71	11.18	127.74	14,456,542.92	1,730,190.07	39.80679963	-80.68033838	
4,400.00	3.00	85.00	4,396.57	11.63	132.95	14,456,543.37	1,730,195.29	39.80680083	-80.68031981	
4,500.00	3.00	85.00	4,496.44	12.09	138.16	14,456,543.83	1,730,200.50	39.80680203	-80.68030124	
4,503.57	3.00	85.00	4,500.00	12.10	138.35	14,456,543.85	1,730,200.69	39.80680208	-80.68030058	
Begin 2°/100' drop										
4,600.00	1.07	85.00	4,596.37	12.40	141.76	14,456,544.14	1,730,204.10	39.80680286	-80.68028843	
4,653.57	0.00	85.00	4,649.93	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665	
Begin vertical hold section										
4,700.00	0.00	0.00	4,696.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665	

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 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Ten High
 Well: Ten High 1N-13HU (F)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Ten High 1N-13HU (F)
 TVD Reference: GL=1310 @ 1310.00usft
 MD Reference: GL=1310 @ 1310.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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 JAN 23 2018
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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,800.00	0.00	85.00	4,796.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
4,900.00	0.00	85.00	4,896.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
5,000.00	0.00	0.00	4,996.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
5,100.00	0.00	85.00	5,096.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
5,200.00	0.00	85.00	5,196.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
5,300.00	0.00	85.00	5,296.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
5,400.00	0.00	0.00	5,396.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
5,500.00	0.00	0.00	5,496.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
5,600.00	0.00	85.00	5,596.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
5,700.00	0.00	0.00	5,696.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
5,800.00	0.00	85.00	5,796.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
5,900.00	0.00	85.00	5,896.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
6,000.00	0.00	85.00	5,996.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
6,100.00	0.00	0.00	6,096.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
6,200.00	0.00	85.00	6,196.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
6,300.00	0.00	85.00	6,296.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
6,400.00	0.00	0.00	6,396.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
6,500.00	0.00	85.00	6,496.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
6,600.00	0.00	85.00	6,596.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
6,700.00	0.00	0.00	6,696.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
6,800.00	0.00	85.00	6,796.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
6,900.00	0.00	85.00	6,896.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
7,000.00	0.00	85.00	6,996.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
7,100.00	0.00	0.00	7,096.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
7,200.00	0.00	0.00	7,196.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
7,300.00	0.00	85.00	7,296.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
7,400.00	0.00	0.00	7,396.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
7,500.00	0.00	85.00	7,496.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
7,600.00	0.00	85.00	7,596.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
7,700.00	0.00	0.00	7,696.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
7,800.00	0.00	85.00	7,796.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
7,900.00	0.00	0.00	7,896.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
8,000.00	0.00	85.00	7,996.36	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
8,003.64	0.00	85.00	8,000.00	12.45	142.26	14,456,544.19	1,730,204.60	39.80680298	-80.68028665
Begin 2°/100' build									
8,100.00	1.93	75.16	8,096.35	12.88	143.83	14,456,544.60	1,730,206.17	39.80680410	-80.68028107
8,200.00	3.93	75.16	8,196.21	14.17	148.76	14,456,545.91	1,730,211.10	39.80680765	-80.68026347
8,300.00	5.93	75.16	8,295.84	16.37	157.07	14,456,548.11	1,730,219.40	39.80681361	-80.68023399
8,400.00	7.93	75.16	8,395.10	19.46	168.72	14,456,551.20	1,730,231.06	39.80682198	-80.68019234
8,500.00	9.93	75.16	8,493.88	23.43	183.72	14,456,555.18	1,730,246.08	39.80683275	-80.68013898
8,600.00	11.93	75.16	8,592.07	28.29	202.05	14,456,560.03	1,730,264.38	39.80684590	-80.68007357
8,700.00	13.93	75.16	8,689.53	34.02	223.67	14,456,565.76	1,730,286.01	39.80686143	-80.67999650
8,800.00	15.93	75.16	8,786.15	40.62	248.57	14,456,572.36	1,730,310.91	39.80687931	-80.67990776
8,900.00	17.93	75.16	8,881.81	48.08	278.71	14,456,579.82	1,730,339.05	39.80689951	-80.67980746
9,000.00	19.93	75.16	8,976.40	56.39	308.06	14,456,588.13	1,730,370.40	39.80692203	-80.67969572
9,043.86	20.80	75.16	9,017.52	60.30	322.82	14,456,592.04	1,730,385.16	39.80693262	-80.67964313
Begin 20.80° tangent									
9,100.00	20.80	75.16	9,070.00	65.41	342.09	14,456,597.15	1,730,404.43	39.80694646	-80.67957444
9,200.00	20.80	75.16	9,163.47	74.51	376.42	14,456,606.25	1,730,438.76	39.80697111	-80.67945207
9,300.00	20.80	75.16	9,256.95	83.61	410.76	14,456,615.35	1,730,473.09	39.80699576	-80.67932971
9,400.00	20.80	75.16	9,350.43	92.70	445.09	14,456,624.45	1,730,507.43	39.80702041	-80.67920734
9,500.00	20.80	75.16	9,443.91	101.80	479.42	14,456,633.55	1,730,541.76	39.80704506	-80.67908498
9,600.00	20.80	75.16	9,537.39	110.90	513.76	14,456,642.65	1,730,576.09	39.80706971	-80.67896261
9,700.00	20.80	75.16	9,630.87	120.00	548.09	14,456,651.74	1,730,610.43	39.80709436	-80.67884024



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 Design: rev3

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,800.00	20.80	75.16	9,724.35	129.10	582.42	14,456,660.84	1,730,644.76	39.80711901	-80.67871788	
9,900.00	20.80	75.16	9,817.83	138.20	616.75	14,456,669.94	1,730,679.09	39.80714366	-80.67859551	
10,000.00	20.80	75.16	9,911.31	147.30	651.09	14,456,679.04	1,730,713.42	39.80716831	-80.67847315	
10,100.00	20.80	75.16	10,004.79	156.40	685.42	14,456,688.14	1,730,747.76	39.80719296	-80.67835078	
10,200.00	20.80	75.16	10,098.27	165.50	719.75	14,456,697.24	1,730,782.09	39.80721761	-80.67822842	
10,300.00	20.80	75.16	10,191.75	174.60	754.08	14,456,706.34	1,730,816.42	39.80724226	-80.67810605	
10,400.00	20.80	75.16	10,285.23	183.70	788.42	14,456,715.44	1,730,850.75	39.80726691	-80.67798368	
10,500.00	20.80	75.16	10,378.71	192.80	822.75	14,456,724.54	1,730,885.09	39.80729156	-80.67786132	
10,600.00	20.80	75.16	10,472.19	201.90	857.08	14,456,733.64	1,730,919.42	39.80731621	-80.67773895	
10,700.00	20.80	75.16	10,565.67	210.99	891.42	14,456,742.74	1,730,953.75	39.80734086	-80.67761659	
10,800.00	20.80	75.16	10,659.15	220.09	925.75	14,456,751.84	1,730,988.09	39.80736551	-80.67749422	
10,900.00	20.80	75.16	10,752.63	229.19	960.08	14,456,760.93	1,731,022.42	39.80739016	-80.67737185	
11,000.00	20.80	75.16	10,846.11	238.29	994.41	14,456,770.03	1,731,056.75	39.80741480	-80.67724949	
11,100.00	20.80	75.16	10,939.59	247.39	1,029.75	14,456,779.13	1,731,091.08	39.80743945	-80.67712712	
11,200.00	20.80	75.16	11,033.07	256.49	1,063.08	14,456,788.23	1,731,125.42	39.80746410	-80.67700475	
11,211.10	20.80	75.16	11,043.45	257.50	1,066.89	14,456,789.24	1,731,129.23	39.80746684	-80.67699117	
Begin 10°/100' build/turn										
11,300.00	20.49	49.78	11,126.80	271.62	1,094.09	14,456,803.36	1,731,156.42	39.80750535	-80.67689415	
11,400.00	24.21	25.13	11,219.48	301.56	1,116.21	14,456,833.31	1,731,178.55	39.80758736	-80.67681498	
11,500.00	30.72	8.52	11,308.29	345.50	1,128.73	14,456,877.25	1,731,191.07	39.80770790	-80.67676983	
11,600.00	38.64	357.70	11,390.53	402.11	1,131.27	14,456,933.85	1,731,193.61	39.80786332	-80.67676005	
11,700.00	47.25	350.20	11,463.72	469.65	1,123.75	14,457,001.39	1,731,186.09	39.80804889	-80.67678596	
11,800.00	56.22	344.57	11,525.61	546.09	1,106.40	14,457,077.83	1,731,168.74	39.80825097	-80.67684677	
11,900.00	65.41	340.03	11,574.34	629.09	1,079.75	14,457,160.83	1,731,142.08	39.80848718	-80.67694062	
12,000.00	74.71	336.11	11,608.43	716.14	1,044.59	14,457,247.88	1,731,106.93	39.80872659	-80.67706467	
12,100.00	84.07	332.53	11,626.83	804.59	1,002.02	14,457,336.33	1,731,064.35	39.80896991	-80.67721514	
12,173.82	91.00	329.98	11,630.00	869.21	966.57	14,457,400.95	1,731,028.91	39.80914772	-80.67734053	
Begin 91.00° lateral section										
12,200.00	91.00	329.98	11,629.54	891.87	953.48	14,457,423.61	1,731,015.81	39.80921009	-80.67736687	
12,300.00	91.00	329.98	11,627.80	978.44	903.45	14,457,510.18	1,730,965.79	39.80944833	-80.67756388	
12,400.00	91.00	329.98	11,626.06	1,065.01	853.43	14,457,596.75	1,730,915.77	39.80968657	-80.67774089	
12,500.00	91.00	329.98	11,624.32	1,151.58	803.41	14,457,683.33	1,730,865.74	39.80992481	-80.67791791	
12,600.00	91.00	329.98	11,622.57	1,238.16	753.38	14,457,769.90	1,730,815.72	39.81016306	-80.67809492	
12,700.00	91.00	329.98	11,620.83	1,324.73	703.36	14,457,856.47	1,730,765.70	39.81040130	-80.67827194	
12,800.00	91.00	329.98	11,619.09	1,411.30	653.34	14,457,943.04	1,730,715.68	39.81063954	-80.67844896	
12,900.00	91.00	329.98	11,617.35	1,497.87	603.32	14,458,029.61	1,730,665.65	39.81087778	-80.67862598	
13,000.00	91.00	329.98	11,615.61	1,584.44	553.29	14,458,116.19	1,730,615.63	39.81111602	-80.67880300	
13,100.00	91.00	329.98	11,613.86	1,671.02	503.27	14,458,202.76	1,730,565.61	39.81135426	-80.67898002	
13,200.00	91.00	329.98	11,612.12	1,757.59	453.25	14,458,289.33	1,730,515.59	39.81159250	-80.67915704	
13,300.00	91.00	329.98	11,610.38	1,844.16	403.23	14,458,375.90	1,730,465.58	39.81183074	-80.67933406	
13,400.00	91.00	329.98	11,608.64	1,930.73	353.20	14,458,462.47	1,730,415.54	39.81206898	-80.67951109	
13,500.00	91.00	329.98	11,606.89	2,017.30	303.18	14,458,549.04	1,730,365.52	39.81230722	-80.67968812	
13,600.00	91.00	329.98	11,605.15	2,103.87	253.16	14,458,635.62	1,730,315.49	39.81254546	-80.67986514	
13,700.00	91.00	329.98	11,603.41	2,190.45	203.13	14,458,722.19	1,730,265.47	39.81278369	-80.68004217	
13,800.00	91.00	329.98	11,601.67	2,277.02	153.11	14,458,808.76	1,730,215.45	39.81302193	-80.68021920	
13,900.00	91.00	329.98	11,599.92	2,363.59	103.09	14,458,895.33	1,730,165.43	39.81326017	-80.68039623	
14,000.00	91.00	329.98	11,598.18	2,450.16	53.07	14,458,981.90	1,730,115.40	39.81349841	-80.68057327	
14,100.00	91.00	329.98	11,596.44	2,536.73	3.04	14,459,068.48	1,730,065.38	39.81373664	-80.68075030	
14,200.00	91.00	329.98	11,594.70	2,623.31	-46.98	14,459,155.05	1,730,015.36	39.81397488	-80.68092734	
14,300.00	91.00	329.98	11,592.96	2,709.88	-97.00	14,459,241.62	1,729,965.34	39.81421312	-80.68110437	
14,400.00	91.00	329.98	11,591.21	2,796.45	-147.02	14,459,328.19	1,729,915.31	39.81445136	-80.68128141	
14,500.00	91.00	329.98	11,589.47	2,883.02	-197.05	14,459,414.76	1,729,865.29	39.81468959	-80.68145845	
14,600.00	91.00	329.98	11,587.73	2,969.59	-247.07	14,459,501.34	1,729,815.27	39.81492783	-80.68163549	
14,700.00	91.00	329.98	11,585.99	3,056.17	-297.09	14,459,587.91	1,729,765.24	39.81516606	-80.68181253	



Planning Report - Geographic



Database: DB_Jul2216dt_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Ten High
 Well: Ten High 1N-13HU (F)
 Wellbore: Original Hole
 Design: rev3

Local Co-ordinate Reference: Well Ten High 1N-13HU (F)
 TVD Reference: GL=1310 @ 1310.00usft
 MD Reference: GL=1310 @ 1310.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
14,900.00	91.00	329.98	11,584.24	3,142.74	-347.12	14,459,674.48	1,729,715.22	39.81540430	-80.68198957	
14,900.00	91.00	329.98	11,582.50	3,229.31	-397.14	14,459,761.05	1,729,685.20	39.81564253	-80.68216661	
15,000.00	91.00	329.98	11,580.76	3,315.88	-447.16	14,459,847.62	1,729,615.16	39.81596077	-80.68234366	
15,100.00	91.00	329.98	11,579.02	3,402.45	-497.18	14,459,934.19	1,729,565.15	39.81611800	-80.68252070	
15,200.00	91.00	329.98	11,577.27	3,489.02	-547.21	14,460,020.77	1,729,515.13	39.81635724	-80.68269775	
15,300.00	91.00	329.98	11,575.53	3,575.60	-597.23	14,460,107.34	1,729,465.11	39.81659547	-80.68287480	
15,400.00	91.00	329.98	11,573.79	3,662.17	-647.25	14,460,193.91	1,729,415.09	39.81683371	-80.68305185	
15,500.00	91.00	329.98	11,572.05	3,748.74	-697.27	14,460,280.48	1,729,365.06	39.81707194	-80.68322890	
15,600.00	91.00	329.98	11,570.31	3,835.31	-747.30	14,460,367.05	1,729,315.04	39.81731017	-80.68340595	
15,700.00	91.00	329.98	11,568.56	3,921.88	-797.32	14,460,453.63	1,729,265.02	39.81754840	-80.68358301	
15,800.00	91.00	329.98	11,566.82	4,008.46	-847.34	14,460,540.20	1,729,214.99	39.81778664	-80.68376006	
15,900.00	91.00	329.98	11,565.08	4,095.03	-897.37	14,460,626.77	1,729,164.97	39.81802487	-80.68393712	
16,000.00	91.00	329.98	11,563.34	4,181.60	-947.39	14,460,713.34	1,729,114.95	39.81826310	-80.68411417	
16,100.00	91.00	329.98	11,561.59	4,268.17	-997.41	14,460,799.91	1,729,064.93	39.81850133	-80.68429123	
16,200.00	91.00	329.98	11,559.85	4,354.74	-1,047.43	14,460,886.49	1,729,014.90	39.81873957	-80.68446829	
16,300.00	91.00	329.98	11,558.11	4,441.32	-1,097.46	14,460,973.06	1,728,964.88	39.81897780	-80.68464535	
16,400.00	91.00	329.98	11,556.37	4,527.89	-1,147.48	14,461,059.63	1,728,914.86	39.81921603	-80.68482241	
16,500.00	91.00	329.98	11,554.62	4,614.48	-1,197.50	14,461,146.20	1,728,864.84	39.81945426	-80.68499948	
16,600.00	91.00	329.98	11,552.88	4,701.03	-1,247.52	14,461,232.77	1,728,814.81	39.81969249	-80.68517654	
16,700.00	91.00	329.98	11,551.14	4,787.60	-1,297.55	14,461,319.35	1,728,764.79	39.81993072	-80.68535361	
16,800.00	91.00	329.98	11,549.40	4,874.17	-1,347.57	14,461,405.92	1,728,714.77	39.82016895	-80.68553067	
16,900.00	91.00	329.98	11,547.66	4,960.75	-1,397.59	14,461,492.49	1,728,664.74	39.82040718	-80.68570774	
17,000.00	91.00	329.98	11,545.91	5,047.32	-1,447.62	14,461,579.06	1,728,614.72	39.82064541	-80.68588481	
17,100.00	91.00	329.98	11,544.17	5,133.89	-1,497.64	14,461,665.63	1,728,564.70	39.82088364	-80.68606188	
17,200.00	91.00	329.98	11,542.43	5,220.46	-1,547.66	14,461,752.20	1,728,514.68	39.82112187	-80.68623895	
17,300.00	91.00	329.98	11,540.69	5,307.03	-1,597.68	14,461,838.78	1,728,464.65	39.82136009	-80.68641602	
17,400.00	91.00	329.98	11,538.94	5,393.61	-1,647.71	14,461,925.35	1,728,414.63	39.82159832	-80.68659310	
17,500.00	91.00	329.98	11,537.20	5,480.18	-1,697.73	14,462,011.92	1,728,364.61	39.82183655	-80.68677017	
17,600.00	91.00	329.98	11,535.46	5,566.75	-1,747.75	14,462,098.49	1,728,314.59	39.82207478	-80.68694725	
17,700.00	91.00	329.98	11,533.72	5,653.32	-1,797.77	14,462,185.06	1,728,264.56	39.82231301	-80.68712433	
17,800.00	91.00	329.98	11,531.97	5,739.89	-1,847.80	14,462,271.64	1,728,214.54	39.82255123	-80.68730141	
17,900.00	91.00	329.98	11,530.23	5,826.47	-1,897.82	14,462,358.21	1,728,164.52	39.82278946	-80.68747849	
18,000.00	91.00	329.98	11,528.49	5,913.04	-1,947.84	14,462,444.78	1,728,114.49	39.82302769	-80.68765557	
18,100.00	91.00	329.98	11,526.75	5,999.61	-1,997.87	14,462,531.35	1,728,064.47	39.82326591	-80.68783265	
18,200.00	91.00	329.98	11,525.00	6,086.18	-2,047.89	14,462,617.92	1,728,014.45	39.82350414	-80.68800973	
18,300.00	91.00	329.98	11,523.26	6,172.75	-2,097.91	14,462,704.50	1,727,964.43	39.82374237	-80.68818682	
18,315.06	91.00	329.98	11,523.00	6,185.79	-2,105.44	14,462,717.53	1,727,956.89	39.82377823	-80.68821348	

PBHL/TD 18315.06 MD/11523.00 TVD

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Ten High 1N-13HU BHL - hit/miss target - Shape - Point	0.00	0.01	11,523.00	6,185.79	-2,105.44	14,462,717.53	1,727,956.89	39.82377823	-80.68821348	
Ten High 1N-13HU LP r - plan hits target center - Point	0.00	0.01	11,630.00	869.21	966.57	14,457,400.95	1,731,028.91	39.80914772	-80.67734053	



Planning Report - Geographic



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1N-13HU (F)
Company:	Tug Hill Operating LLC	TVD Reference:	GL=1310 @ 1310.00usft
Project:	Marshall County, West Virginia	MD Reference:	GL=1310 @ 1310.00usft
Site:	Ten High	North Reference:	Grid
Well:	Ten High 1N-13HU (F)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev3		

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Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,175.00	1,175.00	20" Casing @ 1175 TVD	20	24
2,981.48	2,980.00	13 3/8" Casing @ 2980 TVD	13-3/8	17-1/2
10,656.49	10,525.00	9 5/8" Casing @ 10525 TVD	9-5/8	12-1/4

WV Department of Environmental Protection

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,700.00	1,700.00	0.00	0.00	KOP Begin 1°/100' build
2,000.00	1,999.86	0.68	7.82	Begin 3.00° tangent
4,503.57	4,500.00	12.10	138.35	Begin 2°/100' drop
4,653.57	4,649.93	12.45	142.26	Begin vertical hold section
8,003.64	8,000.00	12.45	142.26	Begin 2°/100' build
9,043.86	9,017.52	60.30	322.62	Begin 20.80° tangent
11,211.10	11,043.45	257.50	1,066.89	Begin 10°/100' build/turn
12,173.82	11,630.00	869.21	966.57	Begin 91.00° lateral section
18,315.06	11,523.00	6,185.79	-2,105.44	PBHL/TD 18315.06 MD/11523.00 TVD

WW-9
(4/16)

API Number 47 - 051 - 01965
Operator's Well No. Ten High 1N-13HJ

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 Code 494510851

Watershed (HUC 10) Fish Creek Quadrangle Glen Easton 7.5'

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

Will a pit be used? Yes No

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

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

Proposed Disposal Method For Treated Pit Wastes:

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

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

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

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

Additives to be used in drilling medium? Barite for weight

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

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

-Landfill or offsite name/permit number? Wetzel County Sanitary Landfill (SWP-1021 / FW910985) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP ECR1305426)

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

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

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

Company Official Signature _____

Company Official (Typed Name) Sean Gasser

Company Official Title Engineer

Subscribed and sworn before me this 14th day of August, 2017

Kaitlin McCawley Kaitlin McCawley, Notary Public

My commission expires 05/08/2021



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Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 16.20 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

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

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Jim Triloban*

Comments: _____

Title: *Oil & Gas Inspector* Date: *8/15/17*

Field Reviewed? Yes No

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51-01965

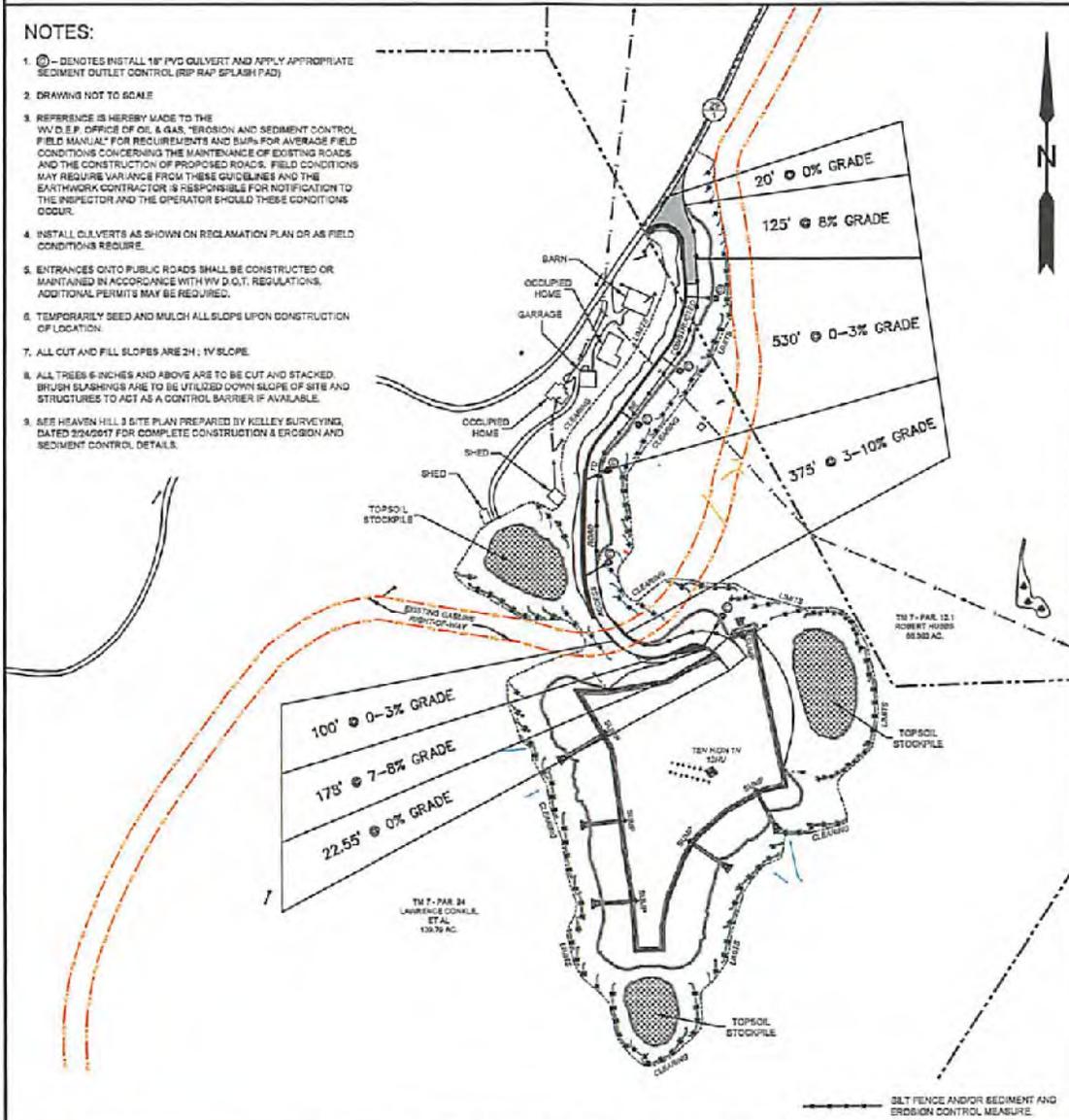
WW-9

PROPOSED TEN HIGH 1N - 13HU

SUPPLEMENT PG. 1

NOTES:

1.  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 WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND DATA 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.
4. INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE.
5. 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 SLOPES UPON CONSTRUCTION OF LOCATION.
7. ALL CUT AND FILL SLOPES ARE 2H : 1V SLOPE.
8. ALL TREES 6 INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH SLASHERS ARE TO BE UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.
9. SEE HEAVEN HILL 3 SITE PLAN PREPARED BY KELLEY SURVEYING, DATED 2/24/2017 FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.




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Land & Energy Development
Solutions from the ground up.
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www.slsurveyors.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT	DATE	SCALE
MARSHALL	MEADE	08-14-17	1" = 300'
DRAWN BY	JOB NO.		
K.G.M.	8655		



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OPERATING**

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06/15/2018

SI-01965



Well Site Safety Plan

Tug Hill Operating, LLC

Jre
1/18/18

Well Name: Ten High 1N-13HU

Pad Location: Ten High
Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

NORTHING -4,406,359.69

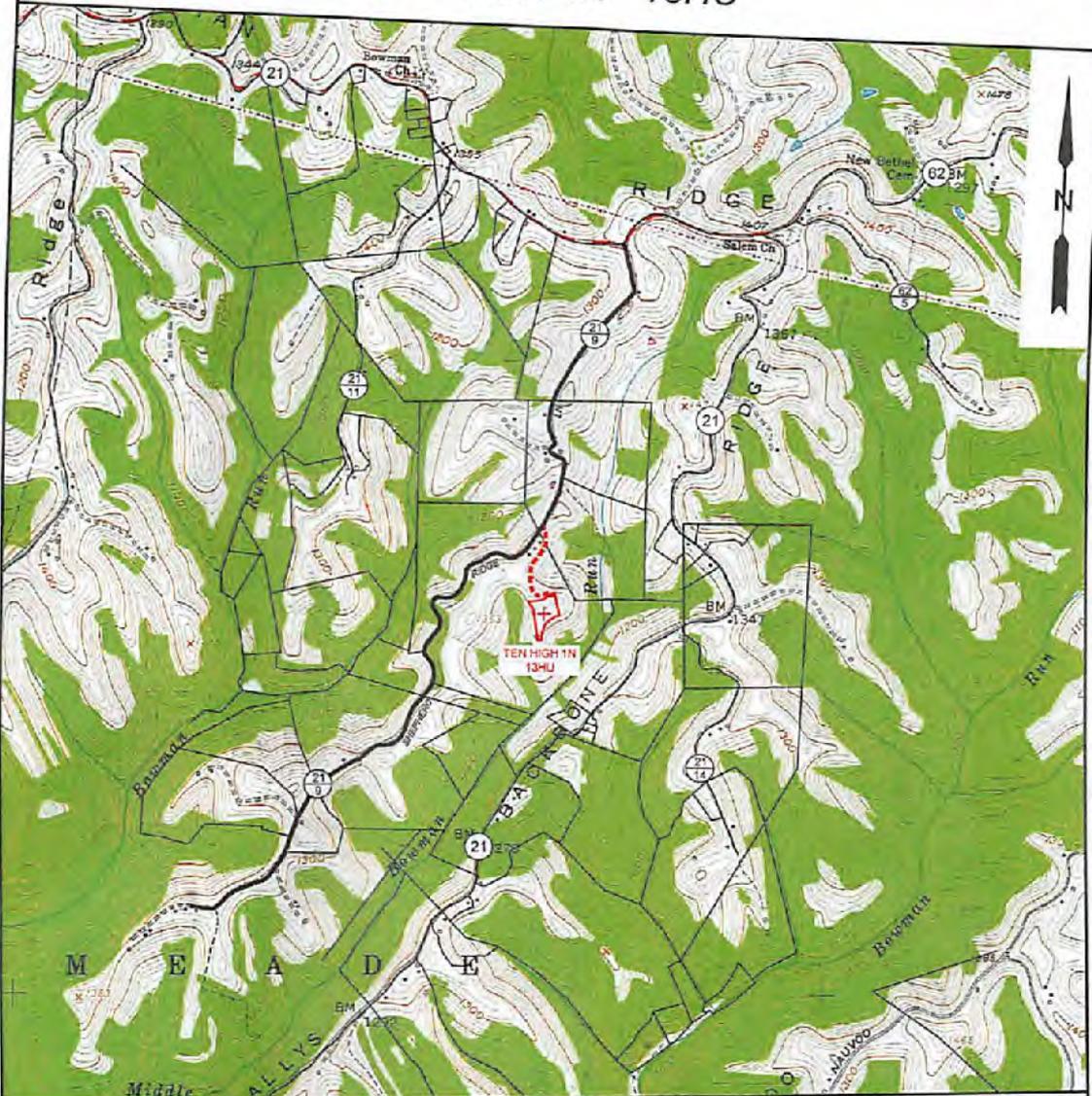
EASTING -527,324.06

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Environmental Protection

06/15/2018

PROPOSED TEN HIGH 1N - 13HU



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

LAT: 39.7137712
LON: -80.8258327
LOCATED: S 51°03'40" W AT 52,970' FROM TEN HIGH 1N - 13HU SURFACE LOCATION

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www.slsurveys.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
DRAWN BY		DATE	SCALE
K.G.M.		08-14-17	1" = 2000'



**TUG HILL
OPERATING**

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Environmental Pro

**TEN HIGH 1N LEASE
WELL 13HU
TUG HILL OPERATING**

6,052' B.H.
3,989' T.H.
LATITUDE 39°50'00"

LONGITUDE 80°40'00"
3,481' B.H.
9,676' T.H.

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'83 S.P.C.(FT) N. 479,146.86 E. 1,636,782.34
 NAD'83 GEO. LAT-(N) 39.806770 LONG-(W) 80.680793
 NAD'83 UTM (M) N. 4,408,359.89 E. 527,324.06
LANDING POINT
 NAD'83 S.P.C.(FT) N. 479,000.1 E. 1,637,789.7
 NAD'83 GEO. LAT-(N) 39.809148 LONG-(W) 80.677341
 NAD'83 UTM (M) N. 4,408,624.8 E. 527,618.7
BOTTOM HOLE
 NAD'83 S.P.C.(FT) N. 484,899.1 E. 1,634,779.9
 NAD'83 GEO. LAT-(N) 39.923778 LONG-(W) 80.686213
 NAD'83 UTM (M) N. 4,408,245.1 E. 526,682.3

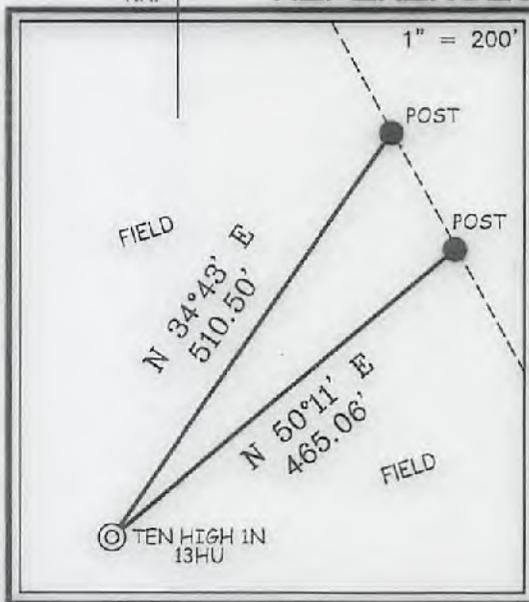


TAG	SURFACE OWNER	PARCEL	ACRES
A	LAWRENCE & SHIRLEY CONKLE ESTS	9-7-24	139.79
B	THOMAS R. & KIMBERLY WHITFIELD	9-7-25.2	76.40
C	MARK H. FOX	9-7-11	75.37
D	ROBERT G. HUBBS, ET AL	9-7-12.1	86.363
E	RONALD MOORE, ET UX	9-7-12	16.587
F	RONALD MOORE, ET UX	9-7-13	51.49
G	ROBERT GLENN HUBBS, ET AL	9-7-7	108.61
H	JERRY G. & CAROLYN K. FLETCHER	9-7-6	103.30
I	DAVID L. HOLMES, ET UX	9-5-14	37.345
J	DAVID L. HOLMES, ET UX	9-5-14.2	4.99
K	DAVID L. HOLMES, ET UX	9-5-14.5	1.66
L	BETTY R. OTT	9-5-14.4	10.50
M	CARLA SUE CROW	9-5-17	6.34
N	DONALD E. LEACH - LIFE	9-5-18	5.80
O	DONALD E. LEACH - LIFE	9-5-20	6.92
P	BETTY R. OTT	9-5-19	0.93
Q	JERRY L. RUSH JR., ET UX	9-5-16	2.36
R	MARK H. FOX, ET UX	9-5-15	36.53
S	SCOTT A. HOSTUTLER	9-5-16.1	0.14
T	SCOTT A. HOSTUTLER	9-5-8	26.75
U	MICHAEL JOSEPH SNYDER	9-5-5.4	64.00

NOTES ON SURVEY

- 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.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'

REFERENCES



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 BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 Gregory A. Smith



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE AUGUST 14, 20 17
 REVISED JANUARY 10 & FEBRUARY 8, 20 18
 OPERATORS WELL NO. TEN HIGH 1N-13HU
 API WELL NO. 47 - 051 - 01965 *H6A*
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8855P13HUR2.dwg
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 1000'

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



WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: GROUND = 1,321.50' ELEVATION PROPOSED = 1,310.06' WATERSHED MIDDLE BOWMAN RUN OF FISH CREEK (HUC-10)
 DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER LAWRENCE & SHIRLEY CONKLE ESTS ACREAGE 139.79±
 ROYALTY OWNER ANDY PAUL & JACKIE KUHN, ET AL - SEE PGS. 3, 4, 5 & 6 ACREAGE 139.79±

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

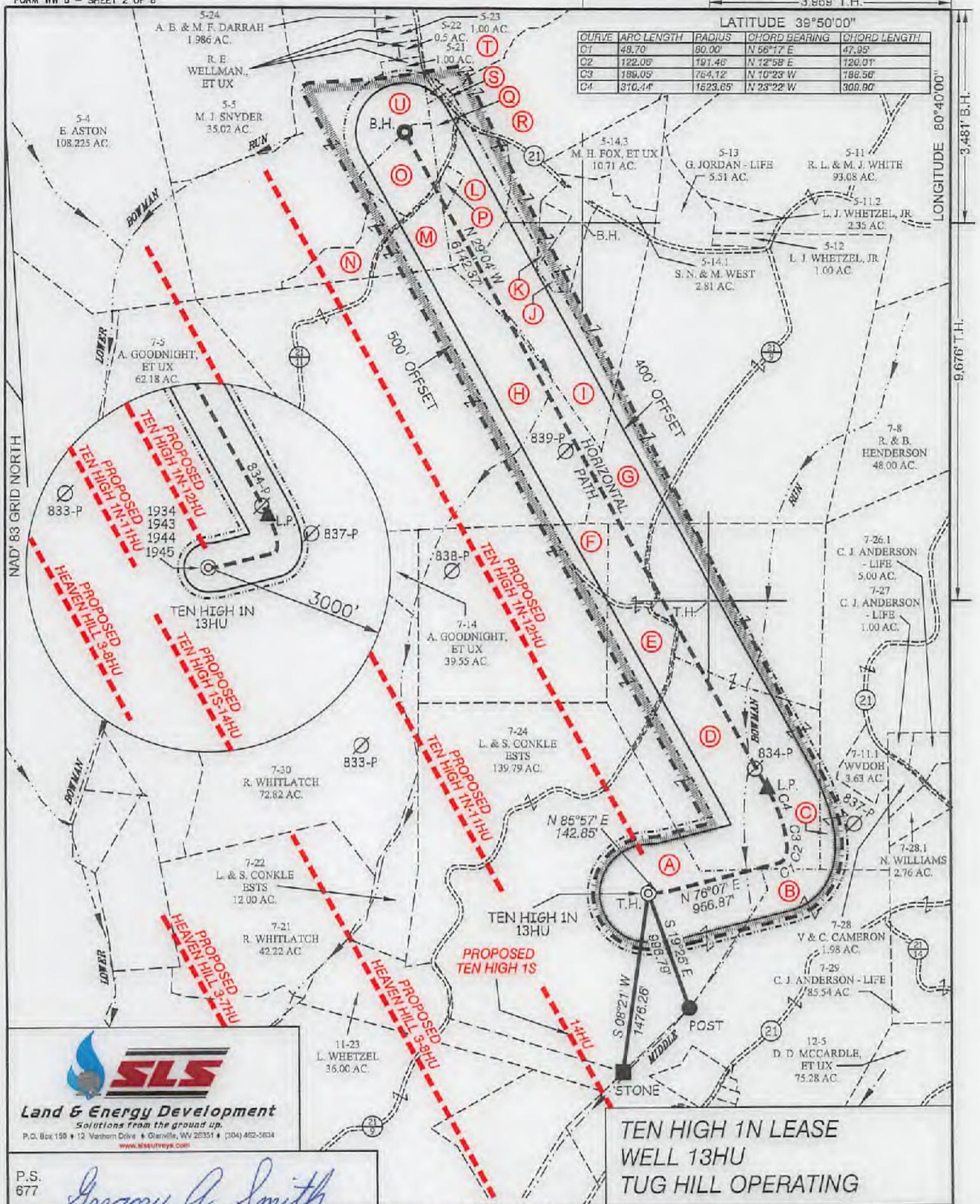
PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,878' / TMD: 18,325'

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
PERMIT

06/15/2018

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	48.70	80.00	N 56°17' E	47.95
C2	122.06	191.46	N 12°58' E	120.01
C3	189.05	764.12	N 10°23' W	188.56
C4	310.44	1623.85	N 23°22' W	309.90



SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 25351 • (304) 462-5634
www.slsurveyors.com

P.S. 677
Gregory A. Smith

**TEN HIGH 1N LEASE
WELL 13HU
TUG HILL OPERATING**

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'83 S.P.C.(FT)	N. 478,146.86	E. 1,536,782.34
NAD'83 GEO.	LAT-(N) 39.806770	LONG-(W) 80.680793
NAD'83 UTM (M)	N. 4,405,359.69	E. 527,324.06

LANDING POINT

NAD'83 S.P.C.(FT)	N. 479,000.1	E. 1,837,783.7
NAD'83 GEO.	LAT-(N) 39.809148	LONG-(W) 80.677341
NAD'83 UTM (M)	N. 4,405,624.6	E. 527,613.7

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 484,388.1	E. 1,834,779.9
NAD'83 GEO.	LAT-(N) 39.823778	LONG-(W) 80.688213
NAD'83 UTM (M)	N. 4,409,245.1	E. 526,882.3



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

LEGEND

UNIT BOUNDARY	
LEASED TRACTS INSIDE	
UNIT BOUNDARY	
SURFACE LINE	
DEED WELL LATERAL WITHIN 3000'	
WELL LATERAL	
400' OFFSET LINE	
500' OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
COUNTY ROUTE	
PROPOSED WELL	
EXISTING WELL	
PERMITTED WELL	
SURFACE OWNER (SEE TABLE-SHEET 1)	
LEASE # (SEE PGS. 3,4,5&6)	

SCALE 1" = 1000' FILE NO. 8655P13HUR2.dwg
DATE AUGUST 14, 20 17
REVISED JANUARY 10 & FEBRUARY 8, 20 18
OPERATORS WELL NO. TEN HIGH 1N-13HU
API WELL NO. 47 - OS1 - 01965H6A
NO. STATE COUNTY PERMIT

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

WELL OPERATOR	TUG HILL OPERATING, LLC	DESIGNATED AGENT	DIANNA STAMPER
ADDRESS	1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107	ADDRESS	5400 D BIG TYLER ROAD CHARLESTON, WV 25313

06/15/2018

COUNTY NAME PERMIT

TEN HIGH 1N LEASE
WELL 13HU
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owners	Deed Book/Page
1	10*15662	A	9-7-24	LARRY LEE CONKLE	863 354
2	10*15663	A	9-7-24	ROY A CONKLE SR	863 311
3	10*15664	A	9-7-24	THERESA ANNE HUGHES	863 343
4	10*15666	A	9-7-24	BRENDA J WHETZEL	863 635
5	10*16049	A	9-7-24	DANNY SHAWN KERNS AND AMY LYNN KERNS	905 518
6	10*16820	A	9-7-24	ROBERTA ANN AND DAVID S GIBB	919 257
7	10*17365	A	9-7-24	MYSTI JOANNE GOODMAN	927 468
8	10*17370	A	9-7-24	KELLY JUNE GOODMAN	927 470
9	10*47051.295.10	A	9-7-24	DEENA J PALOMO	905 470
10	10*47051.295.11	A	9-7-24	REGINA D FIGUEROA AND DAVID FIGUEROA	905 435
11	10*47051.295.12	A	9-7-24	EARL D WELLMAN	905 432
12	10*47051.295.13	A	9-7-24	THE DOLLY F WOOD REVOCABLE TRUST BY NICHOLAS CHARLES WOOD AS TRUSTEE	904 641
13	10*47051.295.3	A	9-7-24	HAZEL ARIZONA MOORE REYNOLDS	904 632
14	10*47051.295.4	A	9-7-24	LLOYD D MOORE	904 459
15	10*47051.295.5	A	9-7-24	DALE R MOORE	904 635
16	10*47051.295.6	A	9-7-24	MARY I BURKHART	904 638
17	10*47051.295.7	A	9-7-24	JEANNE V MELCHIORI	904 462
18	10*47051.295.9	A	9-7-24	JAMES E HIMELRICK JR AND KAREN HIMELRICK	904 465
19	10*15481	B	9-7-25.2	DEAN P RIGBY AND SUSAN RIGBY	908 197
20	10*15482	B	9-7-25.2	SUSAN NELSON	908 208
21	10*15686	B	9-7-25.2	JOHN OMER BOLTZ	908 160
22	10*15750	B	9-7-25.2	SANDRA K TRULL	908 329
23	10*16058	B	9-7-25.2	MATTIE RUTH JACKSON PRESCOTT	908 231
24	10*16118	B	9-7-25.2	RUBY RIDDLE JACKSON	908 233
25	10*16297	B	9-7-25.2	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	908 235
26	10*16298	D	9-7-25.2	GEOFFREY A SCHIEFER AND STEPHANIE L SCHIEFER	908 238
27	10*16383	B	9-7-25.2	ROBERT STEPHEN DRIGGERS	908 224
28	10*16414	B	9-7-25.2	MARY ELIZABETH DRIGGERS	908 208
29	10*16415	B	9-7-25.2	TERENCE J ANDERSON AND NANCY J ANDERSON	908 213
30	10*16416	B	9-7-25.2	CYNTHIA HUDSON	908 219
31	10*16424	B	9-7-25.2	ROBERT J RIGBY	908 241
32	10*16448	B	9-7-25.2	RALPH L AND JUANITA L CRIM	908 584
33	10*16478	B	9-7-25.2	MARION L AND EMILY CAMPBELL	908 245
34	10*16514	B	9-7-25.2	ALEX RUSSELL AND JOYCE A CAMPBELL	908 248
35	10*16515	B	9-7-25.2	ANNA MARIE JACKSON	908 251
36	10*16516	B	9-7-25.2	WILSON ANDREW JACKSON	908 253
37	10*16545	B	9-7-25.2	ROBERT G & ELLEN FOUNDS	908 260
38	10*16662	B	9-7-25.2	RICHARD THOMAS AND VICKI J MIMS	908 863
39	10*16666	B	9-7-25.2	MICHAEL P PYLE	908 255
40	10*16667	B	9-7-25.2	CHARLES F AND GAIL ANN PYLE	908 266
41	10*16668	B	9-7-25.2	JACK I AND MERRILEE PYLE	908 257
42	10*16689	B	9-7-25.2	JOHN S AND PATRICIA S DADO	908 289
43	10*16686	B	9-7-25.2	CHERYLE M TRACEY	927 475
44	10*16688	B	9-7-25.2	SHERRYL PYLE BAIR	927 481
45	10*16689	B	9-7-25.2	JOHN C FOUNDS	927 478
46	10*16690	B	9-7-25.2	RICARDO ORTIZ	921 352
47	10*16720	B	9-7-25.2	DONNA ELAINE BRASKETT	921 152
48	10*16742	B	9-7-25.2	PAUL C WILSON	927 490
49	10*16747	B	9-7-25.2	WILLIAM DALE BRASKETT	921 96
50	10*16798	B	9-7-25.2	PATRICK A RANKIN AND ROBIN A RANKIN	921 364
51	10*16800	B	9-7-25.2	JAMES KENNETH JACKSON AND JULIE JACKSON	921 83
52	10*16802	B	9-7-25.2	CHRISTOPHER AND TAMMY RICHARDSON	921 495
53	10*16804	B	9-7-25.2	WILLIAM N AND SHERRY D TAYLOR	921 510
54	10*16806	B	9-7-25.2	VIRGINIA I WHITMAN	921 528
55	10*16807	B	9-7-25.2	DAVID TULLER AND SUSAN STORTS TULLER	921 513
56	10*16808	B	9-7-25.2	MICHAEL L ORTIZ	921 349
57	10*16815	B	9-7-25.2	HAROLD W PYLE	921 357
58	10*16819	B	9-7-25.2	TERESA ORTIZ BIGGS	921 147
59	10*16821	B	9-7-25.2	SHEILA BRASKETT WEICHEY	921 516
60	10*16836	B	9-7-25.2	RICK A AND LENORE A STORTS	921 507
61	10*16837	B	9-7-25.2	TERRY L AND THELMA A POFF	927 472
62	10*16838	B	9-7-25.2	ROBERT G FUNARI	921 82
63	10*16839	B	9-7-25.2	JAMES B FOUNDS AND LYNN M MOWERY	921 73
64	10*16863	B	9-7-25.2	TINA MOORE	921 334
65	10*16868	B	9-7-25.2	MICHAEL W STORTS AND JESSICA M STORTS	921 504
66	10*16879	B	9-7-25.2	MARK E AND LESLEY A STORTS	921 501
67	10*16880	B	9-7-25.2	BEVERLY ANN STORTS	921 498
68	10*16902	B	9-7-25.2	MARY BARGAW DUKE	921 105
69	10*16962	B	9-7-25.2	DENNIS P AND BARBARA EZELL FLORY	921 70
70	10*16976	B	9-7-25.2	LESTER G AND CONSTANCE B NICKOLSON	921 343
71	10*16977	B	9-7-25.2	JEREMY COCHENOUR	921 102
72	10*16987	B	9-7-25.2	LAURIE EZELL PERRY	921 355
73	10*16989	B	9-7-25.2	BRITTAN Y RICHARDSON	921 376
74	10*16991	B	9-7-25.2	MARVELLEN FOUNDS AND LAUREN FOUNDS	921 79
75	10*16996	B	9-7-25.2	THOMAS RANKIN	921 75
76	10*17130	B	9-7-25.2	CINDY L BARGER	921 137
77	10*17155	B	9-7-25.2	JESSE LEON JII AND TERESA GAIL EZELLE	921 118
78	10*17156	B	9-7-25.2	HENRI NELL JACKSON KENT BARNES	921 139
79	10*17157	B	9-7-25.2	JAMES N REEVES JR AND RITA M REEVES	921 357
80	10*17198	B	9-7-25.2	THOMAS G AND DIANE W BAYLESS	921 141
81	10*17206	B	9-7-25.2	SANDRA JEAN WILSON	921 524
82	10*17208	B	9-7-25.2	PATRICK S GALLAGHER AND JOYCE ANN FOUNDS	921 86
83	10*17274	B	9-7-25.2	DAVID H WILSON	921 474
84	10*17275	B	9-7-25.2	JOHN R REEVES AND MONA G REEVES	921 373
85	10*17276	B	9-7-25.2	BERTHA EZELL WYATT	921 526
86	10*17278	B	9-7-25.2	MICHAEL L EZELLE	921 121
87	10*17389	B	9-7-25.2	JOSEPH W FOUNDS	921 76
88	10*17377	B	9-7-25.2	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	921 123
89	10*17415	B	9-7-25.2	ANDREW M. ORTIZ	921 346
90	10*17438	B	9-7-25.2	DENNIS M WILSON	921 476
91	10*17440	B	9-7-25.2	KENDRA WILSON	927 484
92	10*17441	B	9-7-25.2	RALPH J WILSON	921 522
93	10*17442	B	9-7-25.2	SHANE ALLEN AND MENDY JEAN ALLEN	921 134
94	10*17443	B	9-7-25.2	MICHELLE MORROW-BACK	921 337
95	10*17444	B	9-7-25.2	KELLY FOUNDS CAMPBELL	921 99
96	10*17449	B	9-7-25.2	PHYLLIS J BLAKE	921 150
97	10*17482	B	9-7-25.2	TERESA EZELLE RALYA AND DAVID L RALYA	927 487
98	10*17483	B	9-7-25.2	RICHARD J PYLE	921 359
99	10*17484	B	9-7-25.2	NELDA S JACKSON	921 330
100	10*17485	B	9-7-25.2	MARGIE ANN JACKSON ROBBINS GRAHAM	921 91

051-01965
H6A

FILE NO. 8856P13HUR2.dwg

DATE AUGUST 14, 20 17

REVISED JANUARY 10 & FEBRUARY 8, 20 18

OPERATORS WELL NO. TEN HIGH 1N-13HU

API WELL NO. 47 STATE COUNTY PERMIT



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



P.S. 677

Gregory A. Smith

WELL OPERATOR TUG HILL OPERATING, LLC
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
FORT WORTH, TX 76107

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

COUNTY ME PERMIT

TEN HIGH 1N LEASE
WELL 13HU
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
101	10*17526	B	9-7-25.2	JEFFREY L REEVES AND JODY L REEVES	921 370
102	10*17527	B	9-7-25.2	JAMES MICHAEL EZELL AND LUCILLE D EZELL	921 111
103	10*17552	B	9-7-25.2	JOHN BEVACQUA AND PATRICIA A BEVACQUA	921 144
104	10*17554	B	9-7-25.2	MICHAEL T RANKIN	921 361
105	10*17561	B	9-7-25.2	KATHRYN L & ROGER L TYRELL	921 519
106	10*17564	B	9-7-25.2	JAMES R & TRACEY E NICKOLSON	921 340
107	10*17565	B	9-7-25.2	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	921 327
108	10*17566	B	9-7-25.2	NATHAN P & BARBARA T ERDOSSY	921 108
109	10*17588	B	9-7-25.2	JAMES M JACKSON	921 325
110	10*17589	B	9-7-25.2	MARY CHRISTINE MCKENNA	921 332
111	10*17677	B	9-7-25.2	GEORGE M GONTA JR	921 89
112	10*17744	B	9-7-25.2	SAM PRESLEY EZELL	921 116
113	10*47051.223.12	B	9-7-25.2	ALICE GORBY MARTIN	908 52
114	10*47051.223.13	B	9-7-25.2	JAMES A GORBY	908 42
115	10*47051.223.15	B	9-7-25.2	LARRY D TAUNT AND NANCY L TAUNT	908 14
116	10*47051.223.20	B	9-7-25.2	BARBARA A BUZZARD	908 24
117	10*47051.223.21	B	9-7-25.2	GARY T WARD AND SHARON D WARD	908 19
118	10*47051.223.30	B	9-7-25.2	LAURIE DRIGGERS MANDERSON	908 165
119	10*47051.223.6	B	9-7-25.2	JOSHUA RINE AND REBECCA RINE	907 634
120	10*47051.223.9	B	9-7-25.2	LUNDA DELBERT	908 32
121	10*47051.303.1	B	9-7-25.2	THOMAS R WHITFIELD	850 401
122	10*47051.303.2	B	9-7-25.2	KIMBERLY A WHITFIELD	850 403
123		C	9-7-11	MARK H FOX	854 163
124	10*15901	E	9-7-12	RONALD AND EDNA MOORE	661 449
125	10*15901	D	9-7-12.1	RONALD AND EDNA MOORE	661 449
126	10*15901	F	9-7-13	RONALD AND EDNA MOORE	661 449
127	10*15903	G	9-7-7	ROBERT HUBBS	677 521
128	10*15903	G	9-7-7	ROBERT HUBBS	677 521
129	10*15900	H	9-7-6	JERRY FLETCHER AND CAROLYN FLETCHER, HUSBAND AND WIFE	661 154
130	10*15902	H	9-7-6	SHERWOOD YEATER	661 454
131		I	9-5-14	DAVID L HOLMES AND TERRI L HOLMES	859 204
132		J	9-5-14.2	DAVID L HOLMES AND TERRI L HOLMES	859 204
133		K	9-5-14.5	DAVID L HOLMES AND TERRI L HOLMES	859 204
134	10*15906	L	9-5-14.4	BETTY R. OTT	667 804
135	10*15481	M	9-5-17	DEAN P RIGBY AND SUSAN RIGBY	908 197
136	10*15482	M	9-5-17	SUSAN NELSON	908 203
137	10*15522	M	9-5-17	CARLA S CROW	728 412
138	10*15686	M	9-5-17	JOHN OMER BOLTZ	908 160
139	10*15750	M	9-5-17	SANDRA K TRULL	908 229
140	10*16058	M	9-5-17	MATTIE RUTH JACKSON PRESCOTT	908 231
141	10*16118	M	9-5-17	RUBY RIDDLE JACKSON	908 233
142	10*16383	M	9-5-17	ROBERT STEPHEN DRIGGERS	908 224
143	10*16414	M	9-5-17	MARY ELIZABETH DRIGGERS	908 208
144	10*16416	M	9-5-17	CYNTHIA HUDSON	908 219
145	10*16434	M	9-5-17	ROBERT J RIGBY	908 241
146	10*16448	M	9-5-17	RALPH LAND JUANITA L CRIM	908 584
147	10*16478	M	9-5-17	MARION LAND EMILY CAMPBELL	908 245
148	10*16514	M	9-5-17	ALEX RUSSELL AND JOYCE A CAMPBELL	908 248
149	10*16515	M	9-5-17	ANNA MARIE JACKSON	908 251
150	10*16516	M	9-5-17	WILSON ANDREW JACKSON	908 253
151	10*16652	M	9-5-17	RICHARD THOMAS AND VICKI J MIMS	908 863
152	10*16800	M	9-5-17	JAMES KENNETH JACKSON AND JULIE JACKSON	921 93
153	10*16806	M	9-5-17	VIRGINIA I WHITMAN	921 528
154	10*16952	M	9-5-17	DENNIS P AND BARBARA EZELL FLORY	921 70
155	10*16976	M	9-5-17	LESTER G AND CONSTANCE B NICKOLSON	921 343
156	10*16987	M	9-5-17	LAURIE EZELL PERRY	921 355
157	10*17130	M	9-5-17	CINDY L BARGER	921 137
158	10*17155	M	9-5-17	JESSE LEON JR AND TERESA GAIL EZELLE	921 118
159	10*17156	M	9-5-17	HENRI NELL JACKSON KENT BARNES	921 139
160	10*17157	M	9-5-17	JAMES N REEVES JR AND RITA M REEVES	921 367
161	10*17193	M	9-5-17	THOMAS G AND DIANE W BAYLESS	921 141
162	10*17205	M	9-5-17	SANDRA JEAN WILSON	921 524
163	10*17274	M	9-5-17	DAVID H WILSON	921 474
164	10*17275	M	9-5-17	JOHN R REEVES AND MONA G REEVES	921 373
165	10*17276	M	9-5-17	BERTHA EZELL WYATT	921 526
166	10*17278	M	9-5-17	MICHAEL L EZELLE	921 121
167	10*17377	M	9-5-17	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	921 123
168	10*17438	M	9-5-17	DENNIS M WILSON	921 475
169	10*17441	M	9-5-17	RALPH J WILSON	921 522
170	10*17449	M	9-5-17	PHYLLIS J BLAKE	921 150
171	10*17482	M	9-5-17	TERESA EZELLE BALVA AND DAVID L BALVA	927 482
172	10*17484	M	9-5-17	NELDA S JACKSON	921 330
173	10*17485	M	9-5-17	MARGIE ANN JACKSON ROBBINS GRAHAM	921 91
174	10*17526	M	9-5-17	JEFFREY L REEVES AND JODY L REEVES	921 370
175	10*17527	M	9-5-17	JAMES MICHAEL EZELL AND LUCILLE D EZELL	921 111
176	10*17561	M	9-5-17	KATHRYN L & ROGER L TYRELL	921 519
177	10*17564	M	9-5-17	JAMES R & TRACEY E NICKOLSON	921 340
178	10*17565	M	9-5-17	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	921 327
179	10*17566	M	9-5-17	NATHAN P & BARBARA T ERDOSSY	921 108
180	10*17588	M	9-5-17	JAMES M JACKSON	921 325
181	10*17589	M	9-5-17	MARY CHRISTINE MCKENNA	921 332
182	10*17744	M	9-5-17	SAM PRESLEY EZELL	921 116
183	10*47051.223.1	M	9-5-17	JEAN ANNE GORBY STORCH	877 216
184	10*47051.223.15	M	9-5-17	LARRY D TAUNT AND NANCY L TAUNT	908 14
185	10*47051.223.20	M	9-5-17	BARBARA A BUZZARD	908 24
186	10*47051.223.21	M	9-5-17	GARY T WARD AND SHARON D WARD	908 19
187	10*47051.223.2	M	9-5-17	STEPHANIE SCHIEFER AND GEOFFREY SCHIEFER	885 821
188	10*47051.223.30	M	9-5-17	LAURIE DRIGGERS MANDERSON	908 165
189	10*47051.223.3	M	9-5-17	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	885 324
190	10*47051.223.6	M	9-5-17	JOSHUA RINE AND REBECCA RINE	907 634
191	10*15481	N	9-5-18	DEAN P RIGBY AND SUSAN RIGBY	908 197
192	10*15482	N	9-5-18	SUSAN NELSON	908 203
193	10*15674	N	9-5-18	DONALD E LEACH ET AL	882 209
194	10*15685	N	9-5-18	JOHN OMER BOLTZ	908 160
195	10*15750	N	9-5-18	SANDRA K TRULL	908 229
196	10*16058	N	9-5-18	MATTIE RUTH JACKSON PRESCOTT	908 231
197	10*16118	N	9-5-18	RUBY RIDDLE JACKSON	908 233
198	10*16383	N	9-5-18	ROBERT STEPHEN DRIGGERS	908 224
199	10*16414	N	9-5-18	MARY ELIZABETH DRIGGERS	908 208
200	10*16416	N	9-5-18	CYNTHIA HUDSON	908 219

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OPERATORS WELL NO. TEN HIGH 1N-13HU
API WELL NO. 47
STATE COUNTY PERMIT



STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
06/15/2018

P.S. 677
Gregory A. Smith

WELL OPERATOR TUG HILL OPERATING, LLC
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
FORT WORTH, TX 76107

DESIGNATED AGENT DIANNA STAMPER
ADDRESS 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

COUNTY NAME PERMIT

TEN HIGH 1N LEASE
WELL 13HU
TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Continued	Deed Book/Page
201	10*16424	N	9-5-18	ROBERT J RIGBY	906 241
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208	10*16800	N	9-5-18	JAMES KENNETH JACKSON AND JULIE JACKSON	921 93
209	10*16806	N	9-5-18	VIRGINIA I WHITMAN	921 528
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232	10*17561	N	9-5-18	KATHRYN L & ROGER L TYRELL	921 519
233	10*17564	N	9-5-18	JAMES R & TRACEY E NICKOLSON	921 340
234	10*17565	N	9-5-18	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	921 327
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OPERATORS WELL NO. TEN HIGH 1N-13HU

API WELL NO. 47 STATE COUNTY PERMIT



STATE OF WEST VIRGINIA
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OFFICE OF OIL AND GAS



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303	10*15506	P	9-5-19	BETTY R. OTT	687 604
304		Q	9-5-16	JERRY L RUSH JR AND JILL RUSH	700 239
305		R	9-5-15	MARK H FOX AND RETTA J FOX	667 598
306		S	9-5-16.1	SCOTT A. HOSTUTLER	731 355
307		T	9-5-8	SCOTT A. HOSTUTLER	724 208
308	10*15481	U	9-5-5.4	DEAN P RIGBY AND SUSAN RIGBY	908 197
309	10*15482	U	9-5-5.4	SUSAN NELSON	908 203
310	10*15668	U	9-5-5.4	MICHAEL J SNYDER	865 186
311	10*15686	U	9-5-5.4	JOHN OMER BOLTZ	908 100
312	10*15750	U	9-5-5.4	SANDRA K TRULL	908 229
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319	10*16448	U	9-5-5.4	RALPH L AND JUANITA L CRIM	908 564
320	10*16478	U	9-5-5.4	MARION L AND EMILY CAMPBELL	908 245
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350	10*17554	U	9-5-5.4	JAMES R & TRACEY E NICKOLSON	921 340
351	10*17555	U	9-5-5.4	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	921 327
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DESIGNATED AGENT DIANNA STAMPER
ADDRESS CT CORPORATION SYSTEM
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CHARLESTON, WV 25313

COUNTY NAME PERMIT



August 24, 2017

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

RE: Ten High 1N-13HU; Ten High 1S-14HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Cindy:

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

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 724-749-8388, or by email at ddelallo@tug-hillop.com.

Sincerely,

David G. DeLallo
Landman
Tug Hill Operating

RECEIVED
Office of Oil and Gas
AUG 25 2017
WV Department of
Environmental Protection

**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
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*See attached pages

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

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

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

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

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

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



August 17, 2017

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

RE: Ten High 1N-13HU

Dear Laura:

Tug Hill Operating, LLC (THO) hereby submits this letter as confirmation that THO has obtained the right to drill, extract and produce the minerals under Marshall County Route 21/9 and 21/11 in the area reflected on the Ten High 1N-13HU well plat. THO has conducted a full title search in the relevant Court House to confirm its' ownership under said County Routes and is not currently aware of any recorded document that would suggest an ownership other than THO.

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me at 304-376-0111 or by email at amiller@tug-hillop.com.

Sincerely,

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

Amy L. Miller
Permit Specialist – Appalachia

382 SOUTHPOINTE BLVD-SUITE 200, CANONSBURG, PA 15317 T 724.485.2000 F 724.338.2030

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Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

06/15/2018

WW - 6A1 Supplement

Operator's Well No. Ten High 1N - 13HU

Lease Name or No	Tag	Percol	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Used Book/Pag	Assignment	Assignment	Assignment	Assignment
10*15662	A	9-7-24	LARRY LEE CONKLE	CHEVRON U.S.A. INC.	1/8+	863 354	N/A	N/A	N/A	Chevron to Tug Hill: 36/148
10*15663	A	9-7-24	ROY A CONKLE SR	CHEVRON USA INC	1/8+	863 311	N/A	N/A	N/A	Chevron to Tug Hill: 36/148
10*15664	A	9-7-24	TERESA ANNE HUGHES	CHEVRON USA INC	1/8+	863 343	N/A	N/A	N/A	Chevron to Tug Hill: 36/148
10*15666	A	9-7-24	BRENDA J WRETZEL	CHEVRON USA INC	1/8+	863 635	N/A	N/A	N/A	Chevron to Tug Hill: 36/148
10*16049	A	9-7-24	DANNY SHAWN KERNS AND AMY LYNN KERNS	TH EXPLORATION LLC	1/8+	905 518	N/A	N/A	N/A	N/A
10*16820	A	9-7-24	ROBERTA ANN AND DAVID S GIBB	TH EXPLORATION LLC	1/8+	919 237	N/A	N/A	N/A	N/A
10*17365	A	9-7-24	MYSTI JOANNE GOODMAN	TH EXPLORATION LLC	1/8+	927 468	N/A	N/A	N/A	N/A
10*17370	A	9-7-24	KELLY JUNE GOODMAN	TH EXPLORATION LLC	1/8+	927 470	N/A	N/A	N/A	N/A
10*47051.295.10	A	9-7-24	DEENA J PALOMO	TH EXPLORATION LLC	1/8+	905 470	N/A	N/A	N/A	N/A
10*47051.295.11	A	9-7-24	REGINA D FIGUEROA AND DAVID FIGUEROA	TH EXPLORATION LLC	1/8+	905 435	N/A	N/A	N/A	N/A
10*47051.295.12	A	9-7-24	EARL D WELLMAN	TH EXPLORATION LLC	1/8+	905 432	N/A	N/A	N/A	N/A
10*47051.295.13	A	9-7-24	THE DOLLY F WOOD REVOCABLE TRUST BY NICHOLAS CHARLES WOOD AS TRUSTEE	TH EXPLORATION LLC	1/8+	904 641	N/A	N/A	N/A	N/A
10*47051.295.3	A	9-7-24	HAZEL ARIZONA MOORE REYNOLDS	TH EXPLORATION LLC	1/8+	904 632	N/A	N/A	N/A	N/A
10*47051.295.4	A	9-7-24	LLOYD D MOORE	TH EXPLORATION LLC	1/8+	904 459	N/A	N/A	N/A	N/A
10*47051.295.5	A	9-7-24	DALE R MOORE	TH EXPLORATION LLC	1/8+	904 635	N/A	N/A	N/A	N/A
10*47051.295.6	A	9-7-24	MARY I BURKHART	TH EXPLORATION LLC	1/8+	904 638	N/A	N/A	N/A	N/A
10*47051.295.7	A	9-7-24	JEANNE V MELCHIORI	TH EXPLORATION LLC	1/8+	904 462	N/A	N/A	N/A	N/A
10*47051.295.9	A	9-7-24	JAMES E HIMELRICK JR AND KAREN HIMELRICK	TH EXPLORATION LLC	1/8+	904 465	N/A	N/A	N/A	N/A
10*15501	D	9-7-12.1	RONALD AND EDNA MOORE	TRIENERGY INC	1/8+	661 449	TriEnergy to AB Resources: 20/252	AB Resources to Chevron: 756/379	Chevron to Tug Hill: 36/148	Chevron to Tug Hill: 40/127
	D	9-7-12.1	RONALD AND EDNA MOORE	TRIENERGY INC	1/8+	661 449	N/A	TriEnergy to AB Resources: 20/252	AB Resources to Chevron: 756/379	Chevron to Tug Hill: 960/409
10*15501	E	9-7-12	RONALD AND EDNA MOORE	TRIENERGY INC	1/8+	661 449	N/A	TriEnergy to AB Resources: 20/252	AB Resources to Chevron: 756/379	Chevron to Tug Hill: 36/148
10*15503	G	9-7-7	ROBERT HUBBS	CHIEF EXPLORATION & DEVELOPMENT	1/8+	677 521	N/A	N/A	Chief Expl. to Chevron: 25/1	Chevron to Tug Hill: 36/148
10*15503	G	9-7-7	ROBERT HUBBS	CHIEF EXPLORATION & DEVELOPMENT	1/8+	677 521	N/A	N/A	Chief Expl. to Chevron: 25/1	Chevron to Tug Hill: 960/409
10*15500	H	9-7-6	JERRY FLETCHER AND CAROLYN FLETCHER, HUSBAND AND WIFE	TRIENERGY INC	1/8+	661 154	TriEnergy to AB Resources: 20/252	AB Resources to Chevron: 756/379	Chevron to Tug Hill: 36/148	Chevron to Tug Hill: 40/127
10*15502	H	9-7-6	SHERWOOD YEATER	TRIENERGY INC	1/8+	661 454	N/A	TriEnergy to AB Resources: 20/252	AB Resources to Chevron: 756/379	Chevron to Tug Hill: 960/409
	H	9-7-6	JERRY FLETCHER AND CAROLYN FLETCHER, HUSBAND AND WIFE	TRIENERGY INC	1/8+	661 154	TriEnergy to AB Resources: 20/252	AB Resources to Chevron: 756/379	Chevron to Tug Hill: 36/148	Chevron to Tug Hill: 40/127
	H	9-7-6	SHERWOOD YEATER	TRIENERGY INC	1/8+	661 454	N/A	TriEnergy to AB Resources: 20/252	AB Resources to Chevron: 756/379	Chevron to Tug Hill: 960/409
10*47051.075.0	I	9-5-14	DAVID L HOLMES AND TERRI L HOLMES	TH EXPLORATION LLC	1/8+	869 204	N/A	Tug Hill to Chevron: 36/168	Chevron to Tug Hill: 40/127	Chevron to Tug Hill: 960/409
10*15506	L	9-5-14.4	BETTY R. OTT	TRIENERGY HOLDINGS LLC	1/8+	687 604	TriEnergy to NPAR: 23/74	NPAR to Chevron: 756/332	Chevron to Tug Hill: 36/148	Chevron to Tug Hill: 40/127
	L	9-5-14.4	BETTY R. OTT	TRIENERGY HOLDINGS LLC	1/8+	687 604	N/A	TriEnergy to NPAR: 23/74	NPAR to Chevron: 756/332	Chevron to Tug Hill: 960/409
10*15481	M	9-5-17	DEAN P RIGBY AND SUSAN RIGBY	TH EXPLORATION LLC	1/8+	908 197	N/A	N/A	N/A	N/A
10*15482	M	9-5-17	SUSAN NELSON	TH EXPLORATION LLC	1/8+	908 203	N/A	N/A	N/A	N/A
10*15522	M	9-5-17	CARLA S CROW	TRIENERGY HOLDINGS, LLC	1/8+	728 412	N/A	TriEnergy to NPAR: 25/463	NPAR to Chevron: 26/269	Chevron to Tug Hill: 36/148
10*15686	M	9-5-17	JOHN OMER BOLTZ	TH EXPLORATION LLC	1/8+	908 160	N/A	N/A	N/A	N/A
10*15750	M	9-5-17	SANDRA K TRULL	TH EXPLORATION LLC	1/8+	908 229	N/A	N/A	N/A	N/A
10*16058	M	9-5-17	MATTIE RUTH JACKSON PRESCOTT	TH EXPLORATION LLC	1/8+	908 231	N/A	N/A	N/A	N/A
10*16118	M	9-5-17	RUBY RIDDLER JACKSON	TH EXPLORATION LLC	1/8+	908 233	N/A	N/A	N/A	N/A
10*16383	M	9-5-17	ROBERT STEPHEN DRIGGERS	TH EXPLORATION LLC	1/8+	908 224	N/A	N/A	N/A	N/A
10*16414	M	9-5-17	MARY ELIZABETH DRIGGERS	TH EXPLORATION LLC	1/8+	908 208	N/A	N/A	N/A	N/A
10*16416	M	9-5-17	CYNTHIA HUDSON	TH EXPLORATION LLC	1/8+	908 219	N/A	N/A	N/A	N/A
10*16424	M	9-5-17	ROBERT J RIGBY	TH EXPLORATION, LLC	1/8+	908 241	N/A	N/A	N/A	N/A
10*16448	M	9-5-17	RALPH L AND JUANITA L CRIM	TH EXPLORATION LLC	1/8+	908 584	N/A	N/A	N/A	N/A
10*16478	M	9-5-17	MARION L AND EMILY CAMPBELL	TH EXPLORATION LLC	1/8+	908 245	N/A	N/A	N/A	N/A
10*16514	M	9-5-17	ALEX RUSSELL AND JOYCE A CAMPBELL	TH EXPLORATION LLC	1/8+	908 248	N/A	N/A	N/A	N/A
10*16515	M	9-5-17	ARNA MARIE JACKSON	TH EXPLORATION LLC	1/8+	908 251	N/A	N/A	N/A	N/A
10*16516	M	9-5-17	WILSON ANDREW JACKSON	TH EXPLORATION LLC	1/8+	908 253	N/A	N/A	N/A	N/A
10*16662	M	9-5-17	RICHARD THOMAS AND VICKI J MIMS	TH EXPLORATION LLC	1/8+	908 863	N/A	N/A	N/A	N/A
10*16800	M	9-5-17	JAMES KENNETH JACKSON AND JULIE JACKSON	TH EXPLORATION LLC	1/8+	921 93	N/A	N/A	N/A	N/A
10*16806	M	9-5-17	VIRGINIA I WHITMAN	TH EXPLORATION LLC	1/8+	921 528	N/A	N/A	N/A	N/A
10*16962	M	9-5-17	DENNIS P AND BARBARA EZELL FLORY	TH EXPLORATION LLC	1/8+	921 70	N/A	N/A	N/A	N/A
10*16976	M	9-5-17	LESTER G AND CONSTANCE B NICKOLSON	TH EXPLORATION LLC	1/8+	921 343	N/A	N/A	N/A	N/A

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Lease Name or No	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Leed Book/Pag	Assignment	Assignment		
10*16987	M	9-5-17	LAURIE EZELL PERRY	TH EXPLORATION LLC	1/8+	921 355	N/A	N/A	N/A	N/A
10*17130	M	9-5-17	CINDY L BARGER	TH EXPLORATION LLC	1/8+	921 137	N/A	N/A	N/A	N/A
10*17155	M	9-5-17	JESSE LEON JR AND TERESA GAIL EZELLE	TH EXPLORATION LLC	1/8+	921 118	N/A	N/A	N/A	N/A
10*17156	M	9-5-17	HENRI NELL JACKSON KENT BARNES	TH EXPLORATION LLC	1/8+	921 139	N/A	N/A	N/A	N/A
10*17157	M	9-5-17	JAMES N REEVES JR AND RITA M REEVES	TH EXPLORATION LLC	1/8+	921 367	N/A	N/A	N/A	N/A
10*17198	M	9-5-17	THOMAS G AND DIANE W BAYLESS	TH EXPLORATION LLC	1/8+	921 141	N/A	N/A	N/A	N/A
10*17205	M	9-5-17	SANDRA JEAN WILSON	TH EXPLORATION LLC	1/8+	921 524	N/A	N/A	N/A	N/A
10*17274	M	9-5-17	DAVID H WILSON	TH EXPLORATION LLC	1/8+	921 474	N/A	N/A	N/A	N/A
10*17275	M	9-5-17	JOHN R REEVES AND MONA G REEVES	TH EXPLORATION LLC	1/8+	921 373	N/A	N/A	N/A	N/A
10*17276	M	9-5-17	BERTHA EZELL WYATT	TH EXPLORATION LLC	1/8+	921 526	N/A	N/A	N/A	N/A
10*17278	M	9-5-17	MICHAEL L EZELLE	TH EXPLORATION LLC	1/8+	921 121	N/A	N/A	N/A	N/A
10*17377	M	9-5-17	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	TH EXPLORATION LLC	1/8+	921 123	N/A	N/A	N/A	N/A
10*17438	M	9-5-17	DENNIS M WILSON	TH EXPLORATION LLC	1/8+	921 476	N/A	N/A	N/A	N/A
10*17441	M	9-5-17	RALPH J WILSON	TH EXPLORATION LLC	1/8+	921 522	N/A	N/A	N/A	N/A
10*17449	M	9-5-17	PHYLLIS J BLAKE	TH EXPLORATION LLC	1/8+	921 150	N/A	N/A	N/A	N/A
10*17482	M	9-5-17	TERESA EZELLE RALYA AND DAVID L RALYA	TH EXPLORATION LLC	1/8+	927 487	N/A	N/A	N/A	N/A
10*17484	M	9-5-17	NELDA S JACKSON	TH EXPLORATION LLC	1/8+	921 330	N/A	N/A	N/A	N/A
10*17485	M	9-5-17	MARGIE ANN JACKSON ROBBINS GRAHAM	TH EXPLORATION LLC	1/8+	921 91	N/A	N/A	N/A	N/A
10*17526	M	9-5-17	JEFFREY L REEVES AND JODY L REEVES	TH EXPLORATION LLC	1/8+	921 370	N/A	N/A	N/A	N/A
10*17527	M	9-5-17	JAMES MICHAEL EZELL AND LUCILLE D EZELL	TH EXPLORATION LLC	1/8+	921 111	N/A	N/A	N/A	N/A
10*17561	M	9-5-17	KATHRYN L & ROGER L TYRELL	TH EXPLORATION, LLC	1/8+	921 519	N/A	N/A	N/A	N/A
10*17564	M	9-5-17	JAMES R & TRACEY E NICKOLSON	TH EXPLORATION, LLC	1/8+	921 340	N/A	N/A	N/A	N/A
10*17565	M	9-5-17	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	TH EXPLORATION LLC	1/8+	921 327	N/A	N/A	N/A	N/A
10*17566	M	9-5-17	NATHAN P & BARBARA T EDOSSY	TH EXPLORATION, LLC	1/8+	921 108	N/A	N/A	N/A	N/A
10*17588	M	9-5-17	JAMES M JACKSON	TH EXPLORATION LLC	1/8+	921 325	N/A	N/A	N/A	N/A
10*17589	M	9-5-17	MARY CHRISTINE MCKENNA	TH EXPLORATION, LLC	1/8+	921 332	N/A	N/A	N/A	N/A
10*17744	M	9-5-17	SAM PRESLEY EZELL	TH EXPLORATION LLC	1/8+	921 116	N/A	N/A	N/A	N/A
10*47051.223.1	M	9-5-17	JEAN ANNE GORBY STORCH	TH EXPLORATION LLC	1/8+	877 216	N/A	N/A	N/A	N/A
10*47051.223.15	M	9-5-17	LARRY D TAUNT AND NANCY L TAUNT	TH EXPLORATION LLC	1/8+	908 14	N/A	N/A	N/A	N/A
10*47051.223.20	M	9-5-17	BARBARA A BUZZARD	TH EXPLORATION LLC	1/8+	908 24	N/A	N/A	N/A	N/A
10*47051.223.21	M	9-5-17	GARY T WARD AND SHARON D WARD	TH EXPLORATION LLC	1/8+	908 19	N/A	N/A	N/A	N/A
10*47051.223.2	M	9-5-17	STEPHANIE SCHIEFER AND GEOFFREY SCHIEFER	TH EXPLORATION LLC	1/8+	885 321	N/A	N/A	N/A	N/A
10*47051.223.30	M	9-5-17	LAURIE DRIGGERS MANDERSON	TH EXPLORATION LLC	1/8+	908 165	N/A	N/A	N/A	N/A
10*47051.223.3	M	9-5-17	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	TH EXPLORATION LLC	1/8+	885 324	N/A	N/A	N/A	N/A
10*47051.223.6	M	9-5-17	JOSHUA RINE AND REBECCA RINE	TH EXPLORATION LLC	1/8+	907 634	N/A	N/A	N/A	N/A
10*15481	O	9-5-20	DEAN P RIGBY AND SUSAN RIGBY	TH EXPLORATION LLC	1/8+	908 197	N/A	N/A	N/A	N/A
10*15482	O	9-5-20	SUSAN NELSON	TH EXPLORATION LLC	1/8+	908 203	N/A	N/A	N/A	N/A
10*15674	O	9-5-20	DONALD E LEACH ET AL	CHEVRON U.S.A. INC.	1/8+	882 209	N/A	N/A	N/A	Chevron to Tag Hill: 36/148
10*15686	O	9-5-20	JOHN OMER BOLTZ	TH EXPLORATION LLC	1/8+	908 160	N/A	N/A	N/A	N/A
10*15750	O	9-5-20	SANDRA K TRULL	TH EXPLORATION LLC	1/8+	908 229	N/A	N/A	N/A	N/A
10*16058	O	9-5-20	MATTIE RUTH JACKSON PRESCOTT	TH EXPLORATION LLC	1/8+	908 231	N/A	N/A	N/A	N/A
10*16118	O	9-5-20	RUBY RIDOLE JACKSON	TH EXPLORATION LLC	1/8+	908 233	N/A	N/A	N/A	N/A
10*16383	O	9-5-20	ROBERT STEPHEN DRIGGERS	TH EXPLORATION LLC	1/8+	908 224	N/A	N/A	N/A	N/A
10*16414	O	9-5-20	MARY ELIZABETH DRIGGERS	TH EXPLORATION LLC	1/8+	908 208	N/A	N/A	N/A	N/A
10*16416	O	9-5-20	CYNTHIA HUDSON	TH EXPLORATION LLC	1/8+	908 219	N/A	N/A	N/A	N/A
10*16424	O	9-5-20	ROBERT J RIGBY	TH EXPLORATION, LLC	1/8+	908 241	N/A	N/A	N/A	N/A
10*16448	O	9-5-20	RALPH L AND JUANITA L CRIM	TH EXPLORATION LLC	1/8+	908 584	N/A	N/A	N/A	N/A
10*16478	O	9-5-20	MARION L AND EMILY CAMPBELL	TH EXPLORATION LLC	1/8+	908 245	N/A	N/A	N/A	N/A
10*16514	O	9-5-20	ALEX RUSSELL AND JOYCE A CAMPBELL	TH EXPLORATION LLC	1/8+	908 248	N/A	N/A	N/A	N/A
10*16515	O	9-5-20	ANNA MARIE JACKSON	TH EXPLORATION LLC	1/8+	908 251	N/A	N/A	N/A	N/A
10*16516	O	9-5-20	WILSON ANDREW JACKSON	TH EXPLORATION LLC	1/8+	908 253	N/A	N/A	N/A	N/A

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10*16662	O	9-5-20	RICHARD THOMAS AND VICKI J MIMS	TH EXPLORATION LLC	1/8+	908 863	N/A	N/A	N/A	N/A
10*16800	O	9-5-20	JAMES KENNETH JACKSON AND JULIE JACKSON	TH EXPLORATION LLC	1/8+	921 93	N/A	N/A	N/A	N/A
10*16806	O	9-5-20	VIRGINIA I WHITMAN	TH EXPLORATION LLC	1/8+	921 528	N/A	N/A	N/A	N/A
10*16962	O	9-5-20	DENNIS P AND BARBARA EZELL FLORY	TH EXPLORATION LLC	1/8+	921 70	N/A	N/A	N/A	N/A
10*16976	O	9-5-20	LESTER G AND CONSTANCE B NICKOLSON	TH EXPLORATION LLC	1/8+	921 343	N/A	N/A	N/A	N/A
10*16987	O	9-5-20	LAURIE EZELL PERRY	TH EXPLORATION LLC	1/8+	921 355	N/A	N/A	N/A	N/A
10*17130	O	9-5-20	CINDY L BARGER	TH EXPLORATION LLC	1/8+	921 137	N/A	N/A	N/A	N/A
10*17155	O	9-5-20	JESSE LEON JR AND TERESA GAIL EZELLE	TH EXPLORATION LLC	1/8+	921 118	N/A	N/A	N/A	N/A
10*17156	O	9-5-20	HENRI NELL JACKSON KENT BARNES	TH EXPLORATION LLC	1/8+	921 139	N/A	N/A	N/A	N/A
10*17157	O	9-5-20	JAMES N REEVES JR AND RITA M REEVES	TH EXPLORATION LLC	1/8+	921 367	N/A	N/A	N/A	N/A
10*17198	O	9-5-20	THOMAS G AND DIANE W BAYLESS	TH EXPLORATION LLC	1/8+	921 141	N/A	N/A	N/A	N/A
10*17205	O	9-5-20	SANDRA JEAN WILSON	TH EXPLORATION LLC	1/8+	921 524	N/A	N/A	N/A	N/A
10*17274	O	9-5-20	DAVID H WILSON	TH EXPLORATION LLC	1/8+	921 474	N/A	N/A	N/A	N/A
10*17275	O	9-5-20	JOHN R REEVES AND MONA G REEVES	TH EXPLORATION LLC	1/8+	921 373	N/A	N/A	N/A	N/A
10*17276	O	9-5-20	BERTHA EZELL WYATT	TH EXPLORATION LLC	1/8+	921 526	N/A	N/A	N/A	N/A
10*17278	O	9-5-20	MICHAEL I EZELLE	TH EXPLORATION LLC	1/8+	921 121	N/A	N/A	N/A	N/A
10*17377	O	9-5-20	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	TH EXPLORATION LLC	1/8+	921 123	N/A	N/A	N/A	N/A
10*17438	O	9-5-20	DENNIS M WILSON	TH EXPLORATION LLC	1/8+	921 476	N/A	N/A	N/A	N/A
10*17441	O	9-5-20	RALPH J WILSON	TH EXPLORATION LLC	1/8+	921 522	N/A	N/A	N/A	N/A
10*17449	O	9-5-20	PHYLLIS J BLAKE	TH EXPLORATION LLC	1/8+	921 150	N/A	N/A	N/A	N/A
10*17482	O	9-5-20	TERESA EZELLE RALYA AND DAVID L RALYA	TH EXPLORATION LLC	1/8+	927 487	N/A	N/A	N/A	N/A
10*17484	O	9-5-20	NELDA S JACKSON	TH EXPLORATION LLC	1/8+	921 330	N/A	N/A	N/A	N/A
10*17485	O	9-5-20	MARGIE ANN JACKSON ROBBINS GRAHAM	TH EXPLORATION LLC	1/8+	921 91	N/A	N/A	N/A	N/A
10*17526	O	9-5-20	JEFFREY L REEVES AND JODY L REEVES	TH EXPLORATION LLC	1/8+	921 370	N/A	N/A	N/A	N/A
10*17527	O	9-5-20	JAMES MICHAEL EZELL AND LUCILLE O EZELL	TH EXPLORATION LLC	1/8+	921 111	N/A	N/A	N/A	N/A
10*17561	O	9-5-20	KATHRYN L & ROGER L TYRELL	TH EXPLORATION, LLC	1/8+	921 519	N/A	N/A	N/A	N/A
10*17564	O	9-5-20	JAMES R & TRACEY E NICKOLSON	TH EXPLORATION, LLC	1/8+	921 340	N/A	N/A	N/A	N/A
10*17565	O	9-5-20	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	TH EXPLORATION LLC	1/8+	921 327	N/A	N/A	N/A	N/A
10*17566	O	9-5-20	NATHAN P & BARBARA T ERDOSSY	TH EXPLORATION, LLC	1/8+	921 108	N/A	N/A	N/A	N/A
10*17588	O	9-5-20	JAMES M JACKSON	TH EXPLORATION LLC	1/8+	921 325	N/A	N/A	N/A	N/A
10*17589	O	9-5-20	MARY CHRISTINE MCKENNA	TH EXPLORATION, LLC	1/8+	921 332	N/A	N/A	N/A	N/A
10*17744	O	9-5-20	SAM PRESLEY EZELL	TH EXPLORATION LLC	1/8+	921 115	N/A	N/A	N/A	N/A
10*47051.223.1	O	9-5-20	JEAN ANNE GORBY STORCH	TH EXPLORATION LLC	1/8+	877 216	N/A	N/A	N/A	N/A
10*47051.223.15	O	9-5-20	LARRY D TAUNT AND NANCY L TAUNT	TH EXPLORATION LLC	1/8+	908 14	N/A	N/A	N/A	N/A
10*47051.223.20	O	9-5-20	BARBARA A BUZZARD	TH EXPLORATION LLC	1/8+	908 24	N/A	N/A	N/A	N/A
10*47051.223.21	O	9-5-20	GARY T WARD AND SHARON D WARD	TH EXPLORATION LLC	1/8+	908 19	N/A	N/A	N/A	N/A
10*47051.223.2	O	9-5-20	STEPHANE SCHIEFER AND GEOFFREY SCHIEFER	TH EXPLORATION LLC	1/8+	885 321	N/A	N/A	N/A	N/A
10*47051.223.30	O	9-5-20	LAURIE DRIGGERS MANDERSON	TH EXPLORATION LLC	1/8+	908 165	N/A	N/A	N/A	N/A
10*47051.223.3	O	9-5-20	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	TH EXPLORATION LLC	1/8+	885 324	N/A	N/A	N/A	N/A
10*47051.223.6	O	9-5-20	JOSHUA RINE AND REBECCA RINE	TH EXPLORATION LLC	1/8+	907 634	N/A	N/A	N/A	N/A
10*15505	P	9-5-19	BETTY R OTT	TRIENERGY HOLDINGS LLC	1/8+	687 604	N/A	TriEnergy to NPAR: 23/74	NPAR to Chevron: 756/332	Chevron to Tug Hill: 36/148
10*15481	U	9-5-54	DEAN P RIGBY AND SUSAN RIGBY	TH EXPLORATION LLC	1/8+	908 197	N/A	N/A	N/A	N/A
10*15482	U	9-5-54	SUSAN NELSON	TH EXPLORATION LLC	1/8+	908 203	N/A	N/A	N/A	N/A
10*15668	U	9-5-54	MICHAEL J SNYDER	CHEVRON U.S.A. INC.	1/8+	855 186	N/A	N/A	Chevron to Tug Hill: 36/148	Chevron to Tug Hill: 960/409
10*15686	U	9-5-54	JOHN OMER BOLTZ	TH EXPLORATION LLC	1/8+	908 160	N/A	N/A	N/A	N/A
10*15750	U	9-5-54	SANDRA K TRULL	TH EXPLORATION LLC	1/8+	908 229	N/A	N/A	N/A	N/A
10*16058	U	9-5-54	MATTIE RUTH JACKSON PRESCOTT	TH EXPLORATION LLC	1/8+	908 231	N/A	N/A	N/A	N/A
10*16118	U	9-5-54	RUBY RIDDLE JACKSON	TH EXPLORATION LLC	1/8+	908 233	N/A	N/A	N/A	N/A
10*16383	U	9-5-54	ROBERT STEPHEN DRIGGERS	TH EXPLORATION LLC	1/8+	908 224	N/A	N/A	N/A	N/A
10*16414	U	9-5-54	MARY ELIZABETH DRIGGERS	TH EXPLORATION LLC	1/8+	908 208	N/A	N/A	N/A	N/A
10*16416	U	9-5-54	CYNTHIA HUDSON	TH EXPLORATION LLC	1/8+	908 219	N/A	N/A	N/A	N/A

Lease Name or No	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Lead Book/Pag	Assignment	Assignment		
10*16424	U	9-5-5.4	ROBERT J RIGBY	TH EXPLORATION, LLC	1/8+	908 241	N/A	N/A	N/A	N/A
10*16448	U	9-5-5.4	RALPH L AND JUANITA L CRIM	TH EXPLORATION LLC	1/8+	908 584	N/A	N/A	N/A	N/A
10*16478	U	9-5-5.4	MAIRION L AND EMILY CAMPBELL	TH EXPLORATION LLC	1/8+	908 245	N/A	N/A	N/A	N/A
10*16514	U	9-5-5.4	ALEX RUSSELL AND JOYCE A CAMPBELL	TH EXPLORATION LLC	1/8+	908 248	N/A	N/A	N/A	N/A
10*16515	U	9-5-5.4	ANNA MARIE JACKSON	TH EXPLORATION LLC	1/8+	908 251	N/A	N/A	N/A	N/A
10*16516	U	9-5-5.4	WILSON ANDREW JACKSON	TH EXPLORATION LLC	1/8+	908 253	N/A	N/A	N/A	N/A
10*16662	U	9-5-5.4	RICHARD THOMAS AND VICKI J MIMS	TH EXPLORATION LLC	1/8+	908 863	N/A	N/A	N/A	N/A
10*16800	U	9-5-5.4	JAMES KENNETH JACKSON AND JULIE JACKSON	TH EXPLORATION LLC	1/8+	921 93	N/A	N/A	N/A	N/A
10*16806	U	9-5-5.4	VIRGINIA I WHITMAN	TH EXPLORATION LLC	1/8+	921 528	N/A	N/A	N/A	N/A
10*16952	U	9-5-5.4	DENNIS P AND BARBARA EZELL FLORY	TH EXPLORATION LLC	1/8+	921 70	N/A	N/A	N/A	N/A
10*16976	U	9-5-5.4	LESTER G AND CONSTANCE B NICKOLSON	TH EXPLORATION LLC	1/8+	921 343	N/A	N/A	N/A	N/A
10*16987	U	9-5-5.4	LAURIE EZELL PERRY	TH EXPLORATION LLC	1/8+	921 355	N/A	N/A	N/A	N/A
10*17130	U	9-5-5.4	CINDY L BARGER	TH EXPLORATION LLC	1/8+	921 137	N/A	N/A	N/A	N/A
10*17155	U	9-5-5.4	JESSE LEON JR AND TERESA GAIL EZELLE	TH EXPLORATION LLC	1/8+	921 118	N/A	N/A	N/A	N/A
10*17156	U	9-5-5.4	HENRI NELL JACKSON KENT BARNES	TH EXPLORATION LLC	1/8+	921 139	N/A	N/A	N/A	N/A
10*17157	U	9-5-5.4	JAMES N REEVES JR AND RITA M REEVES	TH EXPLORATION LLC	1/8+	921 367	N/A	N/A	N/A	N/A
10*17198	U	9-5-5.4	THOMAS G AND DIANE W BAYLESS	TH EXPLORATION LLC	1/8+	921 141	N/A	N/A	N/A	N/A
10*17205	U	9-5-5.4	SANDRA JEAN WILSON	TH EXPLORATION LLC	1/8+	921 524	N/A	N/A	N/A	N/A
10*17274	U	9-5-5.4	DAVID H WILSON	TH EXPLORATION LLC	1/8+	921 474	N/A	N/A	N/A	N/A
10*17275	U	9-5-5.4	JOHN R REEVES AND MONA G REEVES	TH EXPLORATION LLC	1/8+	921 373	N/A	N/A	N/A	N/A
10*17276	U	9-5-5.4	BERTHA EZELL WYATT	TH EXPLORATION LLC	1/8+	921 526	N/A	N/A	N/A	N/A
10*17278	U	9-5-5.4	MICHAEL L EZELLE	TH EXPLORATION LLC	1/8+	921 121	N/A	N/A	N/A	N/A
10*17377	U	9-5-5.4	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	TH EXPLORATION LLC	1/8+	921 123	N/A	N/A	N/A	N/A
10*17438	U	9-5-5.4	DENNIS M WILSON	TH EXPLORATION LLC	1/8+	921 476	N/A	N/A	N/A	N/A
10*17441	U	9-5-5.4	RALPH J WILSON	TH EXPLORATION LLC	1/8+	921 522	N/A	N/A	N/A	N/A
10*17449	U	9-5-5.4	PHYLLIS J BLAKE	TH EXPLORATION LLC	1/8+	921 150	N/A	N/A	N/A	N/A
10*17482	U	9-5-5.4	TERESA EZELLE RALVA AND DAVID L RALVA	TH EXPLORATION LLC	1/8+	927 487	N/A	N/A	N/A	N/A
10*17484	U	9-5-5.4	NELDA S JACKSON	TH EXPLORATION LLC	1/8+	921 330	N/A	N/A	N/A	N/A
10*17485	U	9-5-5.4	MARGIE ANN JACKSON ROBBINS GRAHAM	TH EXPLORATION LLC	1/8+	921 91	N/A	N/A	N/A	N/A
10*17526	U	9-5-5.4	JEFFREY L REEVES AND JOEY L REEVES	TH EXPLORATION LLC	1/8+	921 370	N/A	N/A	N/A	N/A
10*17527	U	9-5-5.4	JAMES MICHAEL EZELL AND LUCILLE D EZELL	TH EXPLORATION LLC	1/8+	921 111	N/A	N/A	N/A	N/A
10*17561	U	9-5-5.4	KATHRYN L & ROGER L TYRELL	TH EXPLORATION, LLC	1/8+	921 519	N/A	N/A	N/A	N/A
10*17564	U	9-5-5.4	JAMES R & TRACEY E NICKOLSON	TH EXPLORATION, LLC	1/8+	921 340	N/A	N/A	N/A	N/A
10*17565	U	9-5-5.4	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	TH EXPLORATION LLC	1/8+	921 327	N/A	N/A	N/A	N/A
10*17566	U	9-5-5.4	NATHAN P & BARBARA T ERDOSSY	TH EXPLORATION, LLC	1/8+	921 108	N/A	N/A	N/A	N/A
10*17588	U	9-5-5.4	JAMES M JACKSON	TH EXPLORATION LLC	1/8+	921 325	N/A	N/A	N/A	N/A
10*17589	U	9-5-5.4	MARY CHRISTINE MCKENNA	TH EXPLORATION, LLC	1/8+	921 332	N/A	N/A	N/A	N/A
10*17744	U	9-5-5.4	SAM PRESLEY EZELL	TH EXPLORATION LLC	1/8+	921 116	N/A	N/A	N/A	N/A
10*47051.223.1	U	9-5-5.4	JEAN ANNE GORBY STORCH	TH EXPLORATION LLC	1/8+	877 216	N/A	N/A	N/A	N/A
10*47051.223.15	U	9-5-5.4	LARRY D TAUNT AND NANCY L TAUNT	TH EXPLORATION LLC	1/8+	908 24	N/A	N/A	N/A	N/A
10*47051.223.2	U	9-5-5.4	STEPHANIE SCHIEFER AND GEOFFREY SCHIEFER	TH EXPLORATION LLC	1/8+	885 321	N/A	N/A	N/A	N/A
10*47051.223.20	U	9-5-5.4	BARBARA A BUZZARD	TH EXPLORATION LLC	1/8+	908 24	N/A	N/A	N/A	N/A
10*47051.223.21	U	9-5-5.4	GARY T WARD AND SHARON D WARD	TH EXPLORATION LLC	1/8+	908 19	N/A	N/A	N/A	N/A
10*47051.223.3	U	9-5-5.4	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	TH EXPLORATION LLC	1/8+	885 324	N/A	N/A	N/A	N/A
10*47051.223.30	U	9-5-5.4	LAURIE DRIGGERS MANDERSON	TH EXPLORATION LLC	1/8+	908 165	N/A	N/A	N/A	N/A
10*47051.223.6	U	9-5-5.4	JOSHUA RINE AND REBECCA RINE	TH EXPLORATION LLC	1/8+	907 634	N/A	N/A	N/A	N/A

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

Date of Notice Certification: 08/17/2017

API No. 47- 051 - 01965
Operator's Well No. Ten High 1W-13HU
Well Pad Name: Ten High

Notice has been given:

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>527,331.48</u>
County:	<u>Marshall</u>		Northing:	<u>4,408,358.00</u>
District:	<u>Meade</u>	Public Road Access:	<u>Shepherd Ridge Lane (Co. Rt. 21/8)</u>	
Quadrangle:	<u>Glenn Easton 7.5'</u>	Generally used farm name:	<u>LAWRENCE & SHIRLEY CONKLE, ESTS</u>	
Watershed:	<u>(HUC 10) Fish Creek</u>			

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

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

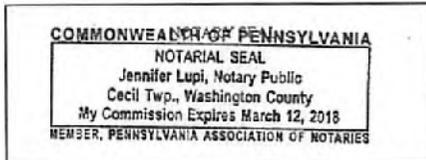
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

RECEIVED
Office of Oil and Gas
JAN 23 2018
WV Department of
Environmental Protection

Certification of Notice is hereby given:

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

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



Subscribed and sworn before me this 14th day of August 2017
Jennifer Lupi Notary Public
 My Commission Expires March 12, 2018

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.

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

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

Date of Notice: 1/19/2018 **Date Permit Application Filed:** 1/19/2018

Notice of:

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

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

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

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

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

SURFACE OWNER(s)

Name: Estate of Lawrence & Shirley Mae Conkle c/o Roy Conkle

Address: 75 Arlington Avenue
Moundsville, WV 26041

Name: Roy A. Conkle, Sr., and Lorie A.

Address: 75 Arlington Avenue
Moundsville, WV 26041 *See Attached*

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

Name: Robert G. Hubbs and Scarlett E. Otte

Address: 132 Shepherds Ridge Lane
Glen Easton, WV 26039

Name: None

Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: None

Address: _____

COAL OWNER OR LESSEE

Name: Murray Energy Corporation

Address: 46226 National Road
St. Clairsville, OH 43950

COAL OPERATOR

Name: Same as above coal owner

Address: _____

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

Name: _____

Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: None

Address: _____

*Please attach additional forms if necessary

RECEIVED
Office of Oil and Gas
JAN 21 2018
WV Department of
Environmental Protection

WW-6A
(8-13)

JAN 23 2018

API NO. 47-051 - 01905
OPERATOR WELL NO. Ten High 1N-13HU
Well Pad Name: Ten HighWV Department of
Environmental Protection**Notice is hereby given:**

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WW-6A
(8-13)

API NO. 47-051 - 01945
OPERATOR WELL NO. Ten High 1N-13HU
Well Pad Name: Ten High

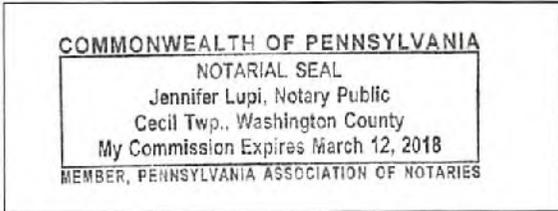
Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 19th day of Jan, 2018.
Jennifer Lupi Notary Public
My Commission Expires March 12, 2018

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Operator Well Nos. TEN HIGH 1N-13HU

WW-6A Notice of Application Attachment 1 of 1

Surface Owner(s):

Name: Teresa Anne Hughes and Michael J.
Address: 252 Conkle Drive
Glen Easton, WV 26039

Brenda Joyce Whetzel
1863 Shepherds Ridge Lane
Glen Easton, WV 26039

Larry Lee Conkle and Donna D.
154 Conkle Drive
Glen Easton, WV 26039

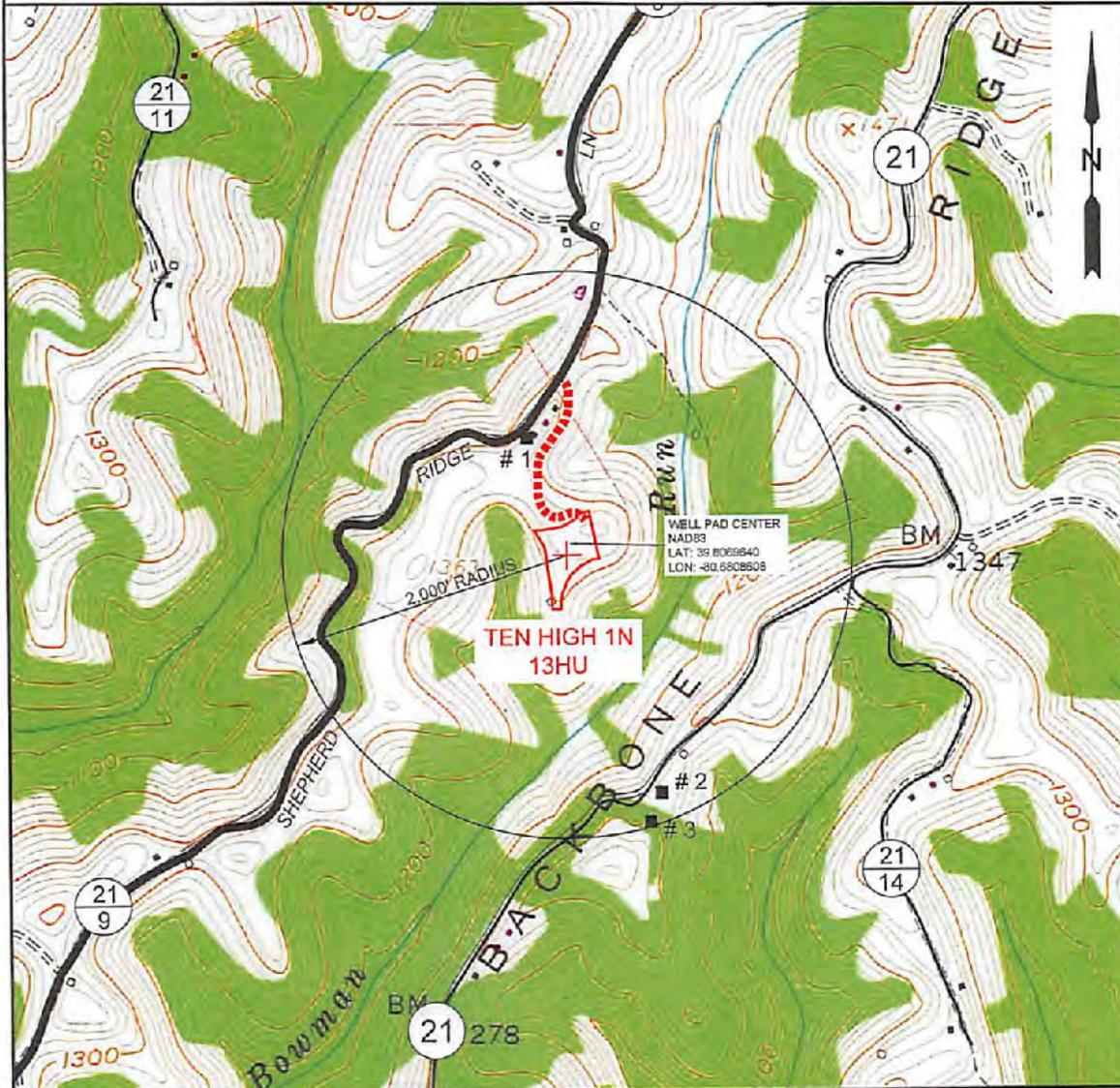
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PROPOSED TEN HIGH 1N - 13HU



NOTE: THERE APPEARS TO BE THREE (3) POSSIBLE WATER SOURCES WITHIN 2,000'.

 <p>SLS Land & Energy Development <i>Solutions from the ground up.</i> P.O. Box 150 • 12 Verrill Drive • Glenville, WV 26031 • (304) 402-6024 www.slsurveyors.com</p>	TOPO SECTION:		OPERATOR:	
	GLEN EASTON 7.5'		PREPARED FOR:	
	COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
	MARSHALL	MEADE	380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
DRAWN BY	JOB NO.	DATE	SCALE	
K.G.M.	8655	08-14-17	1" = 1000'	

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

Notice Time Requirement: Notice shall be provided at least SEVEN (7) days but no more than FORTY-FIVE (45) days prior to entry

Date of Notice: February 9, 2017 Date of Planned Entry: February 17, 2017

Delivery method pursuant to West Virginia Code § 22-6A-10a

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

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

SURFACE OWNER(s)

Name: Estate of Lawrence & Shirley Mae Conkle c/o Roy Conkle
 Address: 75 Arlington Avenue
Moundsville, WV 26041

Name: Roy A. Conkle, Sr., and Lorle A.
 Address: 75 Arlington Avenue
Moundsville, WV 26041

Name: Larry Lee Conkle and Donna D.
 Address: 154 Conkle Drive
Glen Easton, WV 26039 *See Attached

COAL OWNER OR LESSEE

Name: Murray Energy Corporation
 Address: 46226 National Road
St. Clairsville, OH 43950 *See Attached

MINERAL OWNER(s)

Name: Estate of Lawrence & Shirley Mae Conkle c/o Roy Conkle
 Address: 75 Arlington Avenue
Glen Easton, WV 26039 *See Attached

*please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>WEST VIRGINIA</u>	Approx. Latitude & Longitude: <u>LAT 39.8087775 LONG -80.6809192</u>
County: <u>MARSHALL</u>	Public Road Access: <u>SHEPHERD RIDGE LANE (Co. RT. 2178)</u>
District: <u>MEADE</u>	Watershed: <u>HUC-10 FISH CREEK</u>
Quadrangle: <u>GLEN EASTON 7.5'</u>	Generally used farm name: <u>LAWRENCE CONKLE, SR.</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: <u>TUG HILL OPERATING, LLC</u>	Address: <u>380 SOUTHPOINTE BLVD, SOUTHPOINTE PLAZA II, SUITE 200</u>
Telephone: <u>724-749-8388</u>	<u>CANONSBURG, PA 15317</u>
Email: <u>JWHITE@TUG-HILL.OPERATING.COM</u>	Facsimile: <u>724-338-2030</u>

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-6A3 Notice of Entry for Plat Survey Attachment 1 of 1

Surface Owner(s):

Name: Teresa Anne Hughes and Michael J.
Address: 252 Conkle Drive
Glen Easton, WV 26039

Brenda Joyce Whetzel
1863 Shepherds Ridge Lane
Glen Easton, WV 26039

Robert G. Hubbs and Scarlett E. Otte
132 Shepherds Ridge Lane
Glen Easton, WV 26039

Mineral Owner(s):

Name: Roy A. Conkle, Sr. and Lorie A.
75 Arlington Avenue
Moundsville, WV 26041

Larry Lee Conkle and Donna D.
154 Conkle Drive
Glen Easton, WV 26039

Teresa Anne Hughes and Michael J.
252 Conkle Drive
Glen Easton, WV 26039

Brenda Joyce Whetzel
1863 Shepherds Ridge Lane
Glen Easton, WV 26039

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51-01965

Operator Well Nos. TEN HIGH 1N-13HU

WW-6A5 Notice of Planned Operation..... Attachment 1 of 1

Surface Owner(s):

Name: Teresa Anne Hughes and Michael J.
Address: 252 Conkle Drive
Glen Easton, WV 26039

Brenda Joyce Whetzel
1863 Shepherds Ridge Lane
Glen Easton, WV 26039

Larry Lee Conkle and Donna D.
154 Conkle Drive
Glen Easton, WV 26039

Robert G. Hubbs and Scarlett E. Otte
132 Shepherds Ridge Lane
Glen Easton, WV 26039

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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

Jim Justice
 Governor

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

May 16, 2017

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 Ten High 1N Pad, Marshall County
 Ten High 1N Unit-13HU Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2017-0127 which has been issued to Tug Hill Operating, LLC for access to the State Road for a well site located off of Marshall County Route 21/9 SLS.

The 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 January 3, 2012.

Very Truly Yours,

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

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

E.E.O. AFFIRMATIVE ACTION EMPLOYER

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PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Well No. Ten High 1N-13HU

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

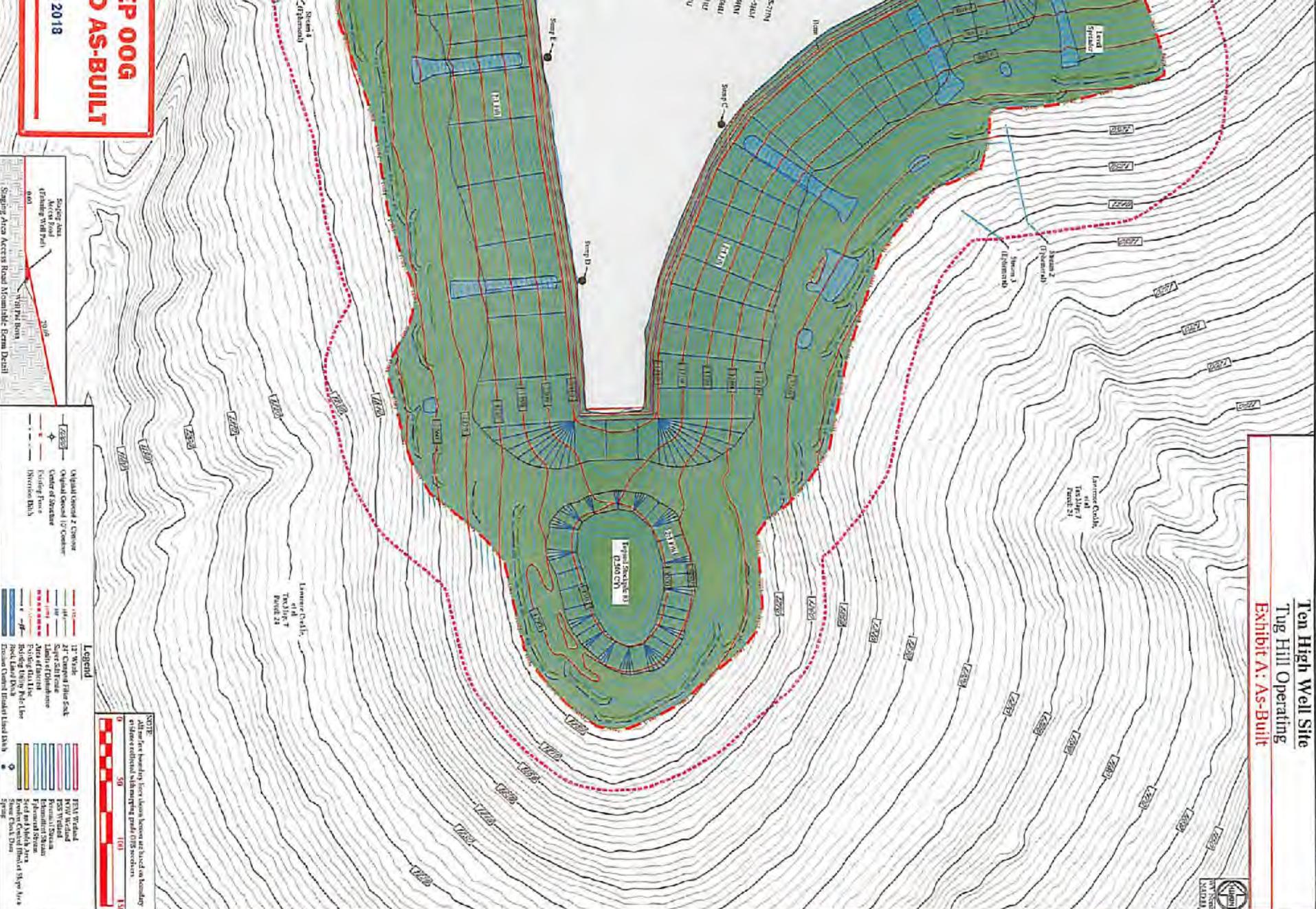
380 SOUTHPOINTE BLVD • SUITE 200 • CANONSBURG, PA 15317 • T 724.485-2000 • F 724.338.2030

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SI-01965

Ten High Well Site
Tug Hill Operating
Exhibit A: As-Built



Revision
Design
As-Built

Date
02-17-2017
12-06-2017

TUG HILL
OPERATING



THIS DOCUMENT
PREPARED FOR
TUG HILL
OPERATING

K&S Environmental
Engineering and Gas

JAN 23 2018

WV Department of
Environmental Protection

Erosion and Sediment Control Plan
Ten High Well Site
Meade District
Marshall County, WV

Date: 02/17/2017
Scale: As Shown
Designed By: ZS
File No:
Sheet 7 of 13

AS-BUILT
2018