



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, July 19, 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 1S-16HU
47-051-02028-00-00

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

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

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

James A. Martin
Chief

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

Operator's Well Number: TEN HIGH 1S-16HU
Farm Name: LAWRENCE & SHIRLEY CON.
U.S. WELL NUMBER: 47-051-02028-00-00
Horizontal 6A New Drill
Date Issued: 7/19/2018

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

June 21, 2018

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

RE: Application for Deep Well Permit – API #47-051-02028

COMPANY: Tug Hill Operating, LLC

FARM: Tug Hill Operating, LLC Ten High 1S-16HU

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: Heaven Hill 3-8HU 47-051-01967; Ten High 1N-11HU 47-051-01960; Ten High 1N-12HU 47-051-01961; Ten High 1N-13HU 47-051-01965
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.

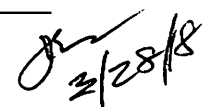
Sincerely,

Susan Rose
Administrator

WW-6B
(04/15)

API NO. 47-051 - _____
OPERATOR WELL NO. Ten High 1S-16HU
Well Pad Name: Ten High

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 1S-16HU 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: 1310' 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 
- 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: 21,511'
- 11) Proposed Horizontal Leg Length: 9,325'
- 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.

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WW-6B
(04/15)

API NO. 47- 051
OPERATOR WELL NO. Ten High 1S-16HU
Well Pad Name: Ten High

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120'	259FT^3(CTS)
Fresh Water	20"	NEW	J55	106.5#	1,086'	1,086'	1,743ft^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#	10,612'	10,612'	3,462ft^3(CTS)
Production	5 1/2"	NEW	HCP110	23#	21,511'	21,511'	5,108ft^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		12,304'	
Liners							

Ju
3/28/18

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"			11,385	11,624		
Liners							

PACKERS

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

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Page 2 of 3

WW-6B
(10/14)

API NO. 47-051 - _____

OPERATOR WELL NO. Ten High 1S-16HU

Well Pad Name: Ten High

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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 23,312,500 lb proppant and 360,428 bbl of water. Max rate = 80 bpm; max psi = 10,000#.

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

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*Note: Attach additional sheets as needed.



WELL NAME: Ten High 15-16HU
STATE: West Virginia **COUNTY:** Marshall
DISTRICT: Meade
DF Elev: 1,310' **GL Elev:** 1,310'
ID: 21,511'
TH Latitude: 39.80678565
TH Longitude: -80.68088005
BH Latitude: 39.785901
BH Longitude: 80.658471



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	11,641'
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	120'	120'	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	10,612'	10,450'	47	HPP110	Surface
Production	8 1/2	5 1/2	21,511'	11,804'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,880	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,140	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,816	A	14.5	Air	1 Centralizer every other jt
Production	4,401	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: 3/28/18

Pilot Hole
PH TD @
11,878'

Landing Point @ 12,186' MD / 11,641' TVD
PH TVD = 150' below Trenton Top

Lateral TD @ 21,511' ft MD
11,804' ft TVD

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4705102028



Tug Hill Operating, LLC Casing and Cement Program

Ten High 1S-16HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30'	BW	36"	120'	CTS
Surface	20'	J55	26"	1,086'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,300'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,612'	CTS
Production	5 1/2"	HCP110	8 1/2"	21,511'	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 + 80lb/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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Area of Review**Sources of information to Support 35CSR8 - 5.11: 9.3 et seq.**

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

Data Sources Reviewed:

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

Contacted Devin Ducoeur 724-705-0444, dducoeur@dpslandservices.com DPS GIS (12/19/2016) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

Request maps for:

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

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

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

Permit well - Ten High 1S-16HU

Wells within 500' Buffer

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

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101934	Tug Hill Operating	6737' TVD planned	None	None	No, Permitted Marcellus well	Permitted Marcellus well. Not yet drilled
4705101944	Tug Hill Operating	6737' TVD planned	None	None	No, Permit submitted Marcellus well	Permitted Marcellus well. Not yet drilled
4705101945	Tug Hill Operating	6737' TVD planned	None	None	No, Permit submitted Marcellus well	Permitted Marcellus well. Not yet drilled
4705100834	McElroy Coal Co	Unknown	Unknown	Unknown	Unknown but unlikely, most likely an old shallow well. Well has been plugged.	Well was plugged 8/6/1998
4705100837	McElroy Coal Co	Unknown	Unknown	Unknown	Unknown but unlikely, most likely an old shallow well. Well has been plugged.	Well was plugged 9/16/1998
4705100845	McElroy Coal Co	Unknown	Unknown	Unknown	Unknown but unlikely, most likely an old shallow well or Pittsburgh coal test bore	Well was plugged 9/27/1999

WVGES
"Pipeline"

Select County: (051) Marshall
Enter Permit #: 00834
Get Data Reset

Select datatypes: (Check All)
 Location Production Plugging
 Owner/Completion Stratigraphy Sample
 Pay/Stone/Water Logs Bit/How Log

Table Definitions
[County Data Tables/Views](#)
[Event/Production Tables](#)
[Event Tables](#)
[Event Information](#)
[Wellbore](#)
[WVGS Maps](#)
[WVGS Data](#)

WV Geological & Economic Survey
Well: County = 51 Permit = 00834

Well Reassignment Information: Reassigned From
 OLD_COUNTY OLD_PERMIT NEW_COUNTY NEW_PERMIT
 51 00834 51 834

Location Information: [View Map](#)
 API COUNTY PERMIT TAX DISTRICT QUAD_78 QUAD_18 LAT_DD LONG_DD UTM_E UTM_N
 4705100834 Marshall 51 00834 Meigs Owen Boston Cameron 35 859775 -82 819258 227454.3 4420003.7

There is no Bottom Hole Location data for this well

Owner Information
 API CMP_ID SUFFIX STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR/PLAT_COMPLETION
 4705100834 8-5-1924 Original Lease Completed Norma Wilson/Panicon 1 CField 51 83451 Oper in Min owner for no rods assign(Drillman well) (reg)
 4705100834 8-5-1924 Puyoson Completed Ronald S. Thomas/Moore 25.7 (M-33) Royal/Moore McElroy Coal Company

Completion Information
 API CMP_ID SPND_DT ECLY_DATE FIELD DEEPEST_FTH DEEPEST_FHT INITIAL_CLASS FINAL_CLASS TYPE REG CMP_MTHD TVD THD NEW_FTH D_BEF_C
 4705100834 8-5-1924 1102 Original Lease
 4705100834 8-5-1924 728-1208 1102 Original Lease

There is no Pay data for this well
 There is no Production Gas data for this well
 There is no Production Oil data for this well ** some operators may have reported NGL under Oil
 There is no Production NGL data for this well ** some operators may have reported NGL Under Oil
 There is no Production Water data for this well
 There is no Stratigraphy data for this well
 There is no Wireline (E-Log) data for this well

Plugging Information
 API PUG_DT DEPTH_FTH
 4705100834 11-2-1924 0
 4705100834 8-5-1924 0

There is no Sample data for this well

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WVGES
"Pipeline"

Select County: (051) Marshall
Enter Permit #: 00837
Get Data Reset

Select datatypes: (Check All)
 Location Production Plugging
 Owner/Completion Stratigraphy Sample
 Pay/ShowWater Logs Btm Hole Log

[Table Descriptions](#)
[County Code Translations](#)
[Permit Numbers Series](#)
[Maps](#)
[Notes](#)
[Contact Information](#)
[Queries](#)
[Who's Who](#)
[Pipeline Page](#) **New**

WV Geological & Economic Survey: **Well: County = 51 Permit = 00837**

Well Reassignment Information: Reassigned From
 OLD_COUNTY OLD_PERMIT NEW_COUNTY NEW_PERMIT
 51 70642 51 837

Location Information: [View Map](#)
 API COUNTY PERMIT TAX_DISTRICT QUAD_75 QUAD_15 LAY_CD LGN_CD UTM_E UTM_N
 4705100837 Marshall 837 Meade Glen Station Cameron 20 80978 -80 874745 827341 4402862.4

There is no Bottom Hole Location data for this well

Owner Information:
 API CMP_DT SUFFIX STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_AT_COMPLETION PROP_1
 4705100837 9-15-1999 Plugging Completed James L. Rhies 90-5 (M-37) McEnery Coal Company
 4705100837 unknown Empty Map O. Cameron

Completion Information:
 API CMP_DT SPUID_DT ELEV DATUM FIELD DEEPEST_FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TVD_TMD
 4705100837 9-15-1999 1287 Ground Level Pittsburgh coal unclassified unclassified not available unknown unknown
 4705100837 unknown unknown unknown unknown unknown unknown unknown unknown

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

Plugging Information:
 API PLO_DT DEPTH_FBT
 4705100837 9-15-1999 9

There is no Sample data for this well

WVGES
"Pipeline"

Select County: (051) Marshall
Enter Permit #: 00845
Get Data Reset

Select datatypes: (Check All)
 Location Production Plugging
 Owner/Completion Stratigraphy Sample
 Pay/ShowWater Logs Btm Hole Log

[Table Descriptions](#)
[County Code Translations](#)
[Permit Numbers Series](#)
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[Notes](#)
[Contact Information](#)
[Queries](#)
[Who's Who](#)
[Pipeline Page](#) **New**

WV Geological & Economic Survey: **Well: County = 51 Permit = 00845**

Well Reassignment Information: Reassigned From
 OLD_COUNTY OLD_PERMIT NEW_COUNTY NEW_PERMIT
 51 70641 51 845

Location Information: [View Map](#)
 API COUNTY PERMIT TAX_DISTRICT QUAD_75 QUAD_15 LAY_CD LGN_CD UTM_E UTM_N
 4705100845 Marshall 845 Meade Glen Station Cameron 20 802787 -80 870968 828185.2 4400920.7

There is no Bottom Hole Location data for this well

Owner Information:
 API CMP_DT SUFFIX STATUS SURFACE_OWNER WELL_NUM CO_NUM LEASE LEASE_NUM MINERAL_OWN OPERATOR_AT_COMPLETION PROP_1
 4705100845 10-13-1999 Plugging Completed Donald & Lusy McCasle M-93 Donald & Lusy McCasle Mazoney Coal Company
 4705100845 unknown Empty Map Donald & Lusy McCasle m-9 793 O.L. McCasle Meade Natural Gas Company

Completion Information:
 API CMP_DT SPUID_DT ELEV DATUM FIELD DEEPEST_FM DEEPEST_FMT INITIAL_CLASS FINAL_CLASS TYPE RIG CMP_MTHD TVD_TMD
 4705100845 10-13-1999 1282 Ground Level Pittsburgh coal unclassified unclassified not available unknown unknown
 4705100845 unknown unknown unknown unknown unknown unknown unknown unknown

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

Stratigraphy Information:
 API SUFFIX_FM FM_QUALITY DEPTH_TOP DEPTH_QUALITY THICKNESS THICKNESS_QUALITY ELEV DATUM
 4705100845 Plugging Pittsburgh coal Well Report 055 Reasonable 8 Reasonable 1282 Ground Level

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

Plugging Information:
 API PLO_DT DEPTH_FBT
 4705100845 9-27-1999 9

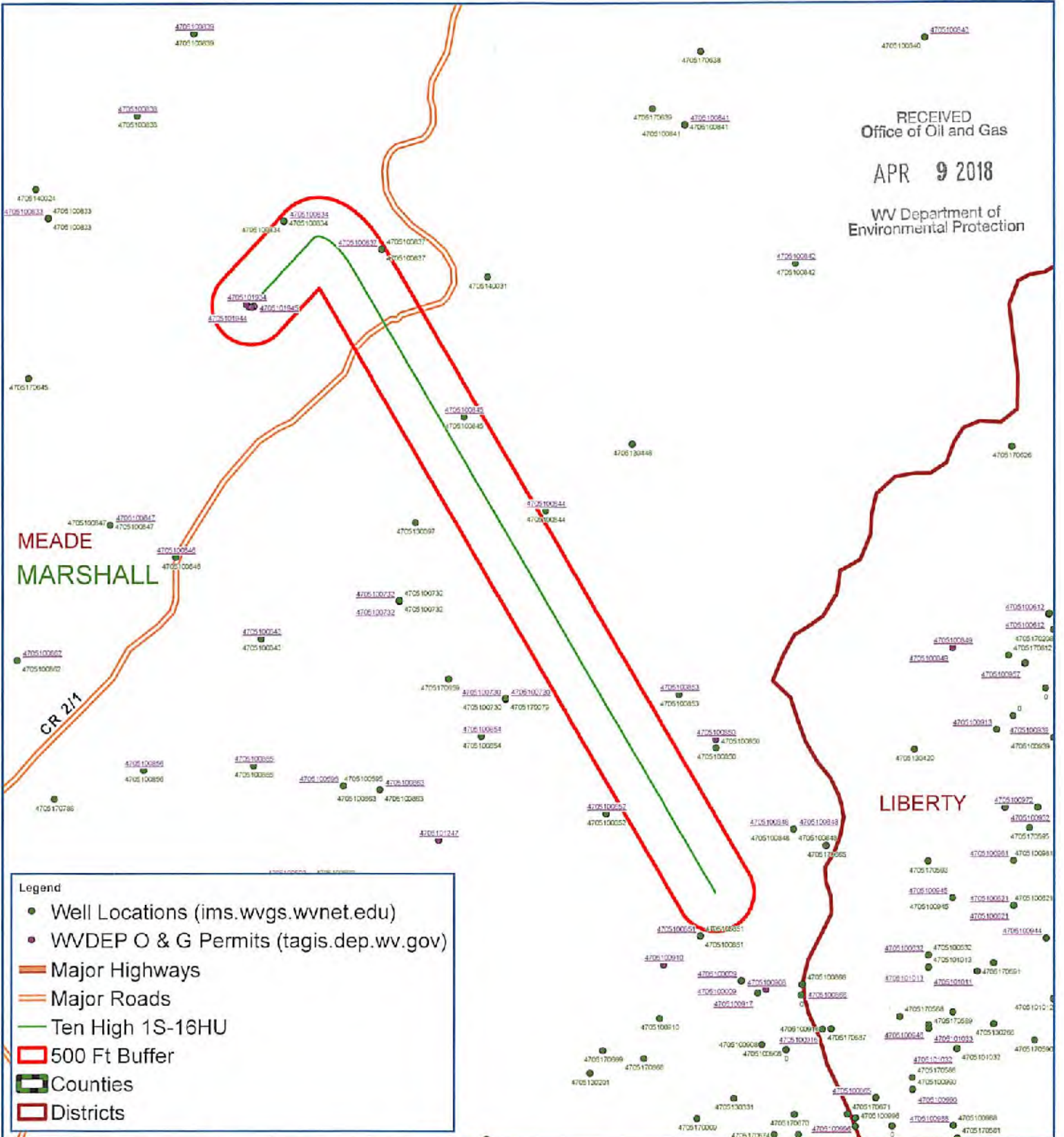
There is no Sample data for this well

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Ten High 1S-16HU Meade District Marshall County, WV



Map Created August 10, 2017
Map Current As Of August 10, 2017

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

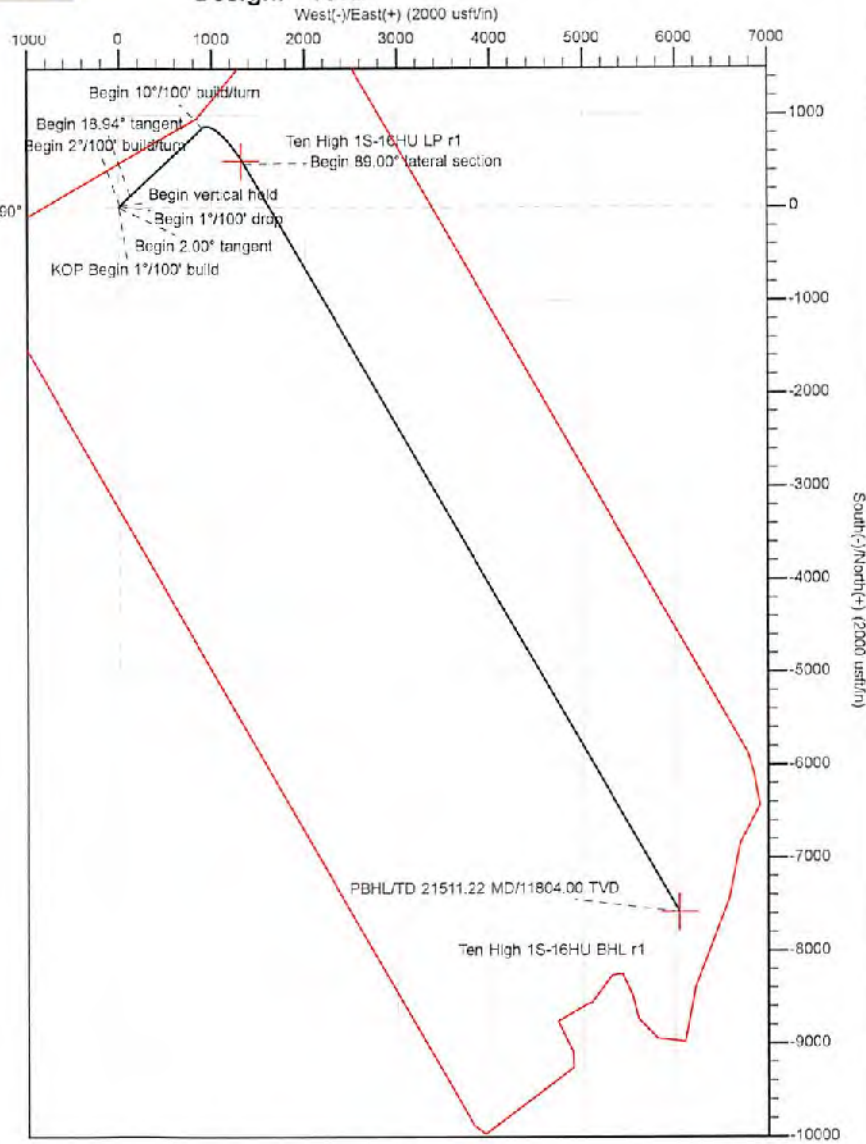


Well: Ten High 1S-16HU (D)
 Site: Ten High
 Project: Marshall County, West Virginia
 Design: rev2

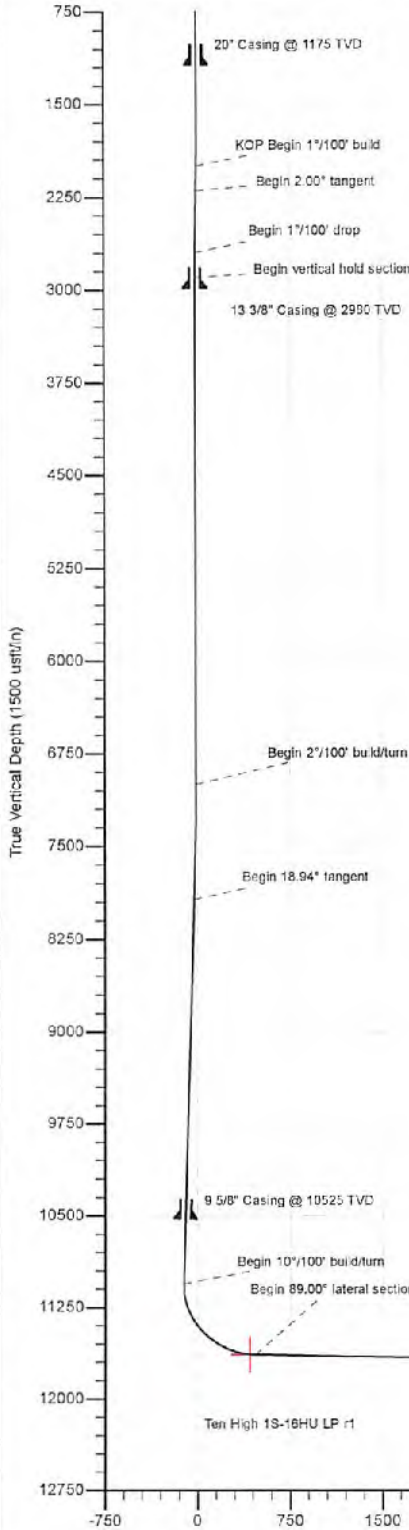
Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD83 West Virginia - HARN
 Ellipsoid: GRS 1980
 Zone: Zone 17N (84 W to 73 W)

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

Northing 14456637.28 Easting 1730037.97 Latitude 39.80678565 Longitude -80.68088005



Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.60°

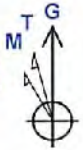


Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 1°/100' build
3	2200.00	2.00	20.00	2199.96	3.28	1.19	1.00	20.00	-1.82	Begin 2.00° tangent
4	2700.00	2.00	20.00	2699.65	19.68	7.16	0.00	0.00	-10.93	Begin 1°/100' drop
5	2900.00	0.00	20.00	2899.61	22.95	8.36	1.00	180.00	-12.75	Begin vertical hold section
6	7000.39	0.00	20.00	7000.00	22.95	8.36	0.00	20.00	-12.75	Begin 2°/100' build/turn
7	7947.59	18.94	-48.74	7930.04	129.29	121.37	2.00	46.74	-25.49	Begin 18.94° tangent
8	11253.65	18.94	-48.74	11057.03	854.75	903.06	0.00	0.00	-113.60	Begin 10°/100' build/turn
9	12186.22	89.00	149.80	11641.26	475.59	1351.49	10.00	102.69	470.22	Begin 89.00° lateral section
10	21511.22	89.00	149.80	11804.00	-7582.54	6041.44	0.00	0.00	9695.05	PBHL/TD 21511.22 MD/11804.00 TVD

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Azimuths to Grid North
 True North: -0.20°
 Magnetic North: -8.90°
 Magnetic Field
 Strength: 52211.5nT
 Dip Angle: 68.99°
 Date: 3/11/2017
 Model: IGRF2015



Planning Report - Geographic



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Wall Ten High 1S-16HU (D)
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 1S-16HU (D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

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:	14,455,545.60 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 1S-16HU (D)					
Well Position	+N-S	0.00 usft	Northing:	14,456,537.28 usft	Latitude:	39.80678565
	+E-W	0.00 usft	Easting:	1,730,037.97 usft	Longitude:	-80.68088006
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	52,211.50847037

Design	rev2			
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	141.45

Plan Survey Tool Program	Date	11/26/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,511.22 rev2 (Original Hole)	MWD MWD - Standard	

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Planning Report - Geographic



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1S-16HU (D)
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 1S-16HU (D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

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	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	2.00	20.00	2,199.96	3.28	1.19	1.00	1.00	0.00	20.00	
2,700.00	2.00	20.00	2,699.65	19.68	7.16	0.00	0.00	0.00	0.00	
2,900.00	0.00	20.00	2,899.61	22.96	8.36	1.00	-1.00	0.00	180.00	
7,000.39	0.00	20.00	7,000.00	22.96	8.36	0.00	0.00	0.00	20.00	
7,947.59	18.94	46.74	7,930.04	129.29	121.37	2.00	2.00	2.82	46.74	
11,253.65	18.94	46.74	11,057.03	864.76	903.06	0.00	0.00	0.00	0.00	
12,186.22	89.00	149.80	11,641.26	475.59	1,351.49	10.00	7.51	11.05	102.69	
21,511.22	69.00	149.80	11,804.00	-7,582.54	8,041.44	0.00	0.00	0.00	0.00	Ten High 1S-16HU B#

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Planning Report - Geographic

WV Department of
Environmental Protection

Database: DB_Jul2216dt_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Ten High
 Well: Ten High 1S-16HU (D)
 Wellbore: Original Hole
 Design: rev2

Local Co-ordinate Reference: Well Ten High 1S-16HU (D)
 TVD Reference: GL=1310 @ 1310.00usft
 MD Reference: GL=1310 @ 1310.00usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

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	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
100.00	0.00	0.00	100.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
200.00	0.00	0.00	200.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
300.00	0.00	0.00	300.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
400.00	0.00	0.00	400.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
500.00	0.00	0.00	500.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
600.00	0.00	0.00	600.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
700.00	0.00	0.00	700.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
800.00	0.00	0.00	800.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
900.00	0.00	0.00	900.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,456,537.28	1,730,037.97	39.80678565	-80.68088006
KOP Begin 1°/100' build									
2,100.00	1.00	20.00	2,099.99	0.82	0.30	14,456,536.10	1,730,038.27	39.80678790	-80.68087899
2,200.00	2.00	20.00	2,199.96	3.28	1.19	14,456,540.56	1,730,039.16	39.80679465	-80.68087577
Begin 2.00° tangent									
2,300.00	2.00	20.00	2,299.90	6.56	2.39	14,456,543.84	1,730,040.36	39.80680364	-80.68087148
2,400.00	2.00	20.00	2,399.84	9.84	3.58	14,456,547.12	1,730,041.55	39.80681284	-80.68086718
2,500.00	2.00	20.00	2,499.78	13.12	4.77	14,456,550.40	1,730,042.74	39.80682163	-80.68086289
2,600.00	2.00	20.00	2,599.72	16.40	5.97	14,456,553.68	1,730,043.94	39.80683063	-80.68085860
2,700.00	2.00	20.00	2,699.65	19.68	7.16	14,456,556.96	1,730,045.13	39.80683962	-80.68085431
Begin 1°/100' drop									
2,800.00	1.00	20.00	2,799.62	22.14	8.06	14,456,559.42	1,730,046.03	39.80684637	-80.68085109
2,900.00	0.00	20.00	2,899.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
Begin vertical hold section									
3,000.00	0.00	20.00	2,999.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
3,100.00	0.00	20.00	3,099.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
3,200.00	0.00	20.00	3,199.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
3,300.00	0.00	20.00	3,299.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
3,400.00	0.00	20.00	3,399.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
3,500.00	0.00	20.00	3,499.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
3,600.00	0.00	20.00	3,599.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
3,700.00	0.00	20.00	3,699.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
3,800.00	0.00	20.00	3,799.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
3,900.00	0.00	20.00	3,899.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
4,000.00	0.00	20.00	3,999.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
4,100.00	0.00	20.00	4,099.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
4,200.00	0.00	20.00	4,199.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
4,300.00	0.00	20.00	4,299.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
4,400.00	0.00	20.00	4,399.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
4,500.00	0.00	20.00	4,499.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
4,600.00	0.00	20.00	4,599.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
4,700.00	0.00	20.00	4,699.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
4,800.00	0.00	20.00	4,799.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
4,900.00	0.00	20.00	4,899.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002

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Planning Report - Geographic

WV Department of
Environmental Protection



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1S-16HU (D)
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 1S-16HU (D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,000.00	0.00	20.00	4,999.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
5,100.00	0.00	20.00	5,099.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
5,200.00	0.00	20.00	5,199.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
5,300.00	0.00	20.00	5,299.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
5,400.00	0.00	20.00	5,399.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
5,500.00	0.00	20.00	5,499.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
5,600.00	0.00	20.00	5,599.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
5,700.00	0.00	20.00	5,699.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
5,800.00	0.00	20.00	5,799.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
5,900.00	0.00	20.00	5,899.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
6,000.00	0.00	20.00	5,999.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
6,100.00	0.00	20.00	6,099.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
6,200.00	0.00	20.00	6,199.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
6,300.00	0.00	20.00	6,299.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
6,400.00	0.00	20.00	6,399.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
6,500.00	0.00	20.00	6,499.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
6,600.00	0.00	20.00	6,599.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
6,700.00	0.00	20.00	6,699.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
6,800.00	0.00	20.00	6,799.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
6,900.00	0.00	20.00	6,899.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
7,000.00	0.00	20.00	6,999.61	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
7,000.39	0.00	20.00	7,000.00	22.96	8.36	14,456,560.24	1,730,046.32	39.80684862	-80.68085002
Begin 2°/100' build/tum									
7,100.00	1.99	46.74	7,099.59	24.14	9.62	14,456,561.43	1,730,047.59	39.80685186	-80.68084551
7,200.00	3.99	46.74	7,199.45	27.72	13.42	14,456,565.01	1,730,051.39	39.80686165	-80.68083193
7,300.00	5.99	46.74	7,299.07	33.68	19.76	14,456,570.87	1,730,057.72	39.80687796	-80.68080929
7,400.00	7.99	46.74	7,398.32	42.02	28.62	14,456,579.31	1,730,066.59	39.80690078	-80.68077761
7,500.00	9.99	46.74	7,497.09	52.73	40.00	14,456,590.02	1,730,077.97	39.80693008	-80.68073695
7,600.00	11.99	46.74	7,595.25	65.00	53.89	14,456,603.08	1,730,091.86	39.80696583	-80.68068733
7,700.00	13.99	46.74	7,692.68	81.21	70.28	14,456,618.49	1,730,108.23	39.80700797	-80.68062884
7,800.00	15.99	46.74	7,789.27	98.93	89.10	14,456,636.22	1,730,127.07	39.80705647	-80.68056153
7,900.00	17.99	46.74	7,884.90	118.96	110.39	14,456,656.24	1,730,148.36	39.80711125	-80.68048549
7,947.59	18.94	46.74	7,930.04	129.29	121.37	14,456,666.57	1,730,159.34	39.80713952	-80.68044626
Begin 18.94° tangent									
8,000.00	18.94	46.74	7,979.61	140.95	133.76	14,456,678.23	1,730,171.73	39.80717141	-80.68040199
8,100.00	18.94	46.74	8,074.20	163.19	157.40	14,456,700.48	1,730,195.37	39.80723227	-80.68031752
8,200.00	18.94	46.74	8,168.78	185.44	181.05	14,456,722.72	1,730,219.02	39.80729314	-80.68023304
8,300.00	18.94	46.74	8,263.36	207.68	204.69	14,456,744.97	1,730,242.66	39.80735400	-80.68014857
8,400.00	18.94	46.74	8,357.95	229.93	228.34	14,456,767.22	1,730,266.30	39.80741486	-80.68006410
8,500.00	18.94	46.74	8,452.53	252.18	251.98	14,456,789.46	1,730,289.95	39.80747572	-80.67997962
8,600.00	18.94	46.74	8,547.11	274.42	275.62	14,456,811.71	1,730,313.59	39.80753658	-80.67989515
8,700.00	18.94	46.74	8,641.70	296.67	299.27	14,456,833.95	1,730,337.24	39.80759744	-80.67981067
8,800.00	18.94	46.74	8,736.28	318.92	322.91	14,456,856.20	1,730,360.88	39.80765831	-80.67972620
8,900.00	18.94	46.74	8,830.86	341.16	346.56	14,456,878.45	1,730,384.53	39.80771917	-80.67964172
9,000.00	18.94	46.74	8,925.45	363.41	370.20	14,456,900.69	1,730,408.17	39.80778003	-80.67955725
9,100.00	18.94	46.74	9,020.03	385.66	393.85	14,456,922.94	1,730,431.81	39.80784089	-80.67947277
9,200.00	18.94	46.74	9,114.61	407.90	417.49	14,456,945.19	1,730,455.46	39.80790175	-80.67938830
9,300.00	18.94	46.74	9,209.20	430.15	441.13	14,456,967.43	1,730,479.10	39.80796261	-80.67930382
9,400.00	18.94	46.74	9,303.78	452.39	464.78	14,456,989.68	1,730,502.75	39.80802347	-80.67921934
9,500.00	18.94	46.74	9,398.36	474.64	488.42	14,457,011.93	1,730,526.39	39.80808433	-80.67913487
9,600.00	18.94	46.74	9,492.95	496.89	512.07	14,457,034.17	1,730,550.04	39.80814520	-80.67905039
9,700.00	18.94	46.74	9,587.53	519.13	535.71	14,457,056.42	1,730,573.68	39.80820606	-80.67896592
9,800.00	18.94	46.74	9,682.12	541.38	559.36	14,457,078.66	1,730,597.32	39.80826692	-80.67888144
9,900.00	18.94	46.74	9,776.70	563.63	583.00	14,457,100.91	1,730,620.97	39.80832778	-80.67879696

APR 9 2018

51-02028



Planning Report - Geographic

WV Department of
Environmental Protection

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1S-16HU (D)
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 1S-16HU (D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,000.00	18.94	46.74	9,671.28	595.87	606.64	14,457,123.16	1,730,644.61	39.80838864	-80.67871249
10,100.00	18.94	46.74	9,965.87	608.12	630.29	14,457,145.40	1,730,668.26	39.80844950	-80.67882801
10,200.00	18.94	46.74	10,060.45	630.37	653.93	14,457,167.65	1,730,691.90	39.80851036	-80.67854353
10,300.00	18.94	46.74	10,155.03	652.61	677.58	14,457,189.90	1,730,715.55	39.80857122	-80.67845906
10,400.00	18.94	46.74	10,249.62	674.86	701.22	14,457,212.14	1,730,739.19	39.80863208	-80.67837458
10,500.00	18.94	46.74	10,344.20	697.10	724.87	14,457,234.39	1,730,762.83	39.80869294	-80.67829010
10,600.00	18.94	46.74	10,438.78	719.35	748.51	14,457,256.64	1,730,786.48	39.80875380	-80.67820562
10,700.00	18.94	46.74	10,533.37	741.60	772.15	14,457,278.88	1,730,810.12	39.80881466	-80.67812115
10,800.00	18.94	46.74	10,627.95	763.84	795.80	14,457,301.13	1,730,833.77	39.80887552	-80.67803667
10,900.00	18.94	46.74	10,722.53	786.09	819.44	14,457,323.37	1,730,857.41	39.80893638	-80.67795219
11,000.00	18.94	46.74	10,817.12	808.34	843.09	14,457,345.62	1,730,881.06	39.80899724	-80.67786771
11,100.00	18.94	46.74	10,911.70	830.58	866.73	14,457,367.87	1,730,904.70	39.80905810	-80.67778323
11,200.00	18.94	46.74	11,006.29	852.83	890.38	14,457,390.11	1,730,928.34	39.80911896	-80.67769875
11,253.65	18.94	46.74	11,057.03	864.76	903.06	14,457,402.05	1,730,941.03	39.80915182	-80.67765343
Begin 10°/100' build/turn									
11,300.00	18.47	61.15	11,100.95	873.47	914.98	14,457,410.75	1,730,952.95	39.80917539	-80.67761089
11,400.00	21.07	90.04	11,195.28	881.11	946.90	14,457,418.40	1,730,984.87	39.80919608	-80.67749711
11,500.00	27.19	109.60	11,286.64	873.42	986.50	14,457,410.70	1,731,024.47	39.80917456	-80.67735620
11,600.00	35.04	121.70	11,372.27	860.61	1,032.57	14,457,387.90	1,731,070.54	39.80911147	-80.67719245
11,700.00	43.88	129.67	11,449.56	813.39	1,083.71	14,457,350.67	1,731,121.68	39.80900873	-80.67701084
11,800.00	52.73	135.41	11,516.17	762.87	1,138.36	14,457,300.16	1,731,176.33	39.80886947	-80.67681689
11,900.00	61.99	139.90	11,570.06	700.61	1,194.87	14,457,237.90	1,731,232.83	39.80869792	-80.67661648
12,000.00	71.37	143.67	11,609.61	628.49	1,251.51	14,457,165.77	1,731,289.48	39.80849929	-80.67641571
12,100.00	80.83	147.04	11,633.62	548.70	1,306.57	14,457,085.98	1,731,344.54	39.80827961	-80.67622067
12,186.22	89.00	149.60	11,641.26	475.59	1,351.49	14,457,012.66	1,731,389.46	39.80807841	-80.67606166
Begin 89.00° lateral section									
12,200.00	89.00	149.60	11,641.50	463.69	1,358.42	14,457,000.97	1,731,398.39	39.80804564	-80.67603714
12,300.00	89.00	149.80	11,643.24	377.27	1,408.72	14,456,914.56	1,731,446.68	39.80780763	-80.67585917
12,400.00	89.00	149.80	11,644.99	290.86	1,459.01	14,456,828.14	1,731,496.98	39.80757001	-80.67568120
12,500.00	89.00	149.80	11,646.73	204.44	1,509.30	14,456,741.73	1,731,547.27	39.80733220	-80.67550323
12,600.00	89.00	149.80	11,648.48	118.03	1,559.60	14,456,655.31	1,731,597.57	39.80709438	-80.67532526
12,700.00	89.00	149.80	11,650.22	31.61	1,609.89	14,456,568.90	1,731,647.86	39.80685657	-80.67514729
12,800.00	89.00	149.80	11,651.97	-54.80	1,660.19	14,456,482.49	1,731,698.16	39.80661875	-80.67496933
12,900.00	89.00	149.80	11,653.71	-141.21	1,710.48	14,456,396.07	1,731,748.45	39.80638094	-80.67479136
13,000.00	89.00	149.80	11,655.46	-227.63	1,760.78	14,456,309.66	1,731,798.74	39.80614312	-80.67461340
13,100.00	89.00	149.80	11,657.20	-314.04	1,811.07	14,456,223.24	1,731,849.04	39.80590530	-80.67443544
13,200.00	89.00	149.80	11,658.95	-400.46	1,861.37	14,456,136.83	1,731,899.33	39.80566749	-80.67425748
13,300.00	89.00	149.80	11,660.69	-486.87	1,911.66	14,456,050.41	1,731,949.63	39.80542967	-80.67407952
13,400.00	89.00	149.80	11,662.44	-573.29	1,961.96	14,455,964.00	1,731,999.92	39.80519165	-80.67390156
13,500.00	89.00	149.80	11,664.19	-659.70	2,012.25	14,455,877.58	1,732,050.22	39.80495403	-80.67372360
13,600.00	89.00	149.80	11,665.93	-746.11	2,062.54	14,455,791.17	1,732,100.51	39.80471621	-80.67354564
13,700.00	89.00	149.80	11,667.68	-832.53	2,112.84	14,455,704.76	1,732,150.81	39.80447840	-80.67336769
13,800.00	89.00	149.80	11,669.42	-918.94	2,163.13	14,455,618.34	1,732,201.10	39.80424058	-80.67318973
13,900.00	89.00	149.80	11,671.17	-1,005.36	2,213.43	14,455,531.93	1,732,251.39	39.80400276	-80.67301178
14,000.00	89.00	149.80	11,672.91	-1,091.77	2,263.72	14,455,445.51	1,732,301.69	39.80376494	-80.67283383
14,100.00	89.00	149.80	11,674.66	-1,178.19	2,314.01	14,455,359.10	1,732,351.98	39.80352712	-80.67265588
14,200.00	89.00	149.80	11,676.40	-1,264.60	2,364.31	14,455,272.68	1,732,402.28	39.80328930	-80.67247793
14,300.00	89.00	149.80	11,678.15	-1,351.01	2,414.60	14,455,186.27	1,732,452.57	39.80305148	-80.67229996
14,400.00	89.00	149.80	11,679.89	-1,437.43	2,464.90	14,455,099.86	1,732,502.87	39.80281366	-80.67212204
14,500.00	89.00	149.80	11,681.64	-1,523.84	2,515.19	14,455,013.44	1,732,553.16	39.80257584	-80.67194409
14,600.00	89.00	149.80	11,683.38	-1,610.26	2,565.49	14,454,927.03	1,732,603.45	39.80233802	-80.67176615
14,700.00	89.00	149.80	11,685.13	-1,696.67	2,615.78	14,454,840.61	1,732,653.75	39.80210019	-80.67158821
14,800.00	89.00	149.80	11,686.87	-1,783.09	2,666.07	14,454,754.20	1,732,704.04	39.80186237	-80.67141026
14,900.00	89.00	149.80	11,688.62	-1,869.50	2,716.37	14,454,667.78	1,732,754.34	39.80162455	-80.67123232

APR 9 2018

WV Department of
Environmental Protection



Planning Report - Geographic

Database: DB_Jul2216dt_v14
Company: Tug Hill Operating LLC
Project: Marshall County, West Virginia
Site: Ten High
Well: Ten High 1S-16HU (D)
Wellbore: Original Hole
Design: rev2

Local Co-ordinate Reference: Well Ten High 1S-16HU (D)
TVD Reference: GL=1310 @ 1310.00usft
MD Reference: GL=1310 @ 1310.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,000.00	89.00	149.80	11,890.36	-1,955.91	2,766.66	14,454,581.37	1,732,804.63	39.80138673	-80.67105438
15,100.00	89.00	149.80	11,692.11	-2,042.33	2,818.96	14,454,494.96	1,732,854.93	39.80114891	-80.67087645
15,200.00	89.00	149.80	11,693.85	-2,126.74	2,867.25	14,454,408.54	1,732,905.22	39.80091106	-80.67069851
15,300.00	89.00	149.80	11,695.60	-2,215.16	2,917.55	14,454,322.13	1,732,955.51	39.80067326	-80.67052057
15,400.00	89.00	149.80	11,697.34	-2,301.57	2,967.84	14,454,235.71	1,733,005.81	39.80043544	-80.67034264
15,500.00	89.00	149.80	11,699.09	-2,387.99	3,018.13	14,454,149.30	1,733,056.10	39.80019761	-80.67016471
15,600.00	89.00	149.80	11,700.84	-2,474.40	3,068.43	14,454,062.88	1,733,106.40	39.79995979	-80.66998678
15,700.00	89.00	149.80	11,702.58	-2,560.81	3,118.72	14,453,976.47	1,733,156.69	39.79972197	-80.66980884
15,800.00	89.00	149.80	11,704.33	-2,647.23	3,169.02	14,453,890.06	1,733,206.99	39.79948414	-80.66963092
15,900.00	89.00	149.80	11,706.07	-2,733.64	3,219.31	14,453,803.64	1,733,257.28	39.79924632	-80.66945299
16,000.00	89.00	149.80	11,707.82	-2,820.06	3,269.61	14,453,717.23	1,733,307.57	39.79900849	-80.66927506
16,100.00	89.00	149.80	11,709.56	-2,906.47	3,319.90	14,453,630.81	1,733,357.87	39.79877067	-80.66909713
16,200.00	89.00	149.80	11,711.31	-2,992.89	3,370.20	14,453,544.40	1,733,408.16	39.79853284	-80.66891921
16,300.00	89.00	149.80	11,713.05	-3,079.30	3,420.49	14,453,457.98	1,733,458.46	39.79829502	-80.66874129
16,400.00	89.00	149.80	11,714.80	-3,165.71	3,470.78	14,453,371.57	1,733,508.75	39.79805719	-80.66856336
16,500.00	89.00	149.80	11,716.54	-3,252.13	3,521.08	14,453,285.16	1,733,559.05	39.79781936	-80.66838544
16,600.00	89.00	149.80	11,718.29	-3,338.54	3,571.37	14,453,198.74	1,733,609.34	39.79758154	-80.66820752
16,700.00	89.00	149.80	11,720.03	-3,424.96	3,621.67	14,453,112.33	1,733,659.64	39.79734371	-80.66802961
16,800.00	89.00	149.80	11,721.78	-3,511.37	3,671.96	14,453,025.91	1,733,709.93	39.79710588	-80.66785169
16,900.00	89.00	149.80	11,723.52	-3,597.79	3,722.26	14,452,939.50	1,733,760.22	39.79686806	-80.66767377
17,000.00	89.00	149.80	11,725.27	-3,684.20	3,772.55	14,452,853.08	1,733,810.52	39.79663023	-80.66749586
17,100.00	89.00	149.80	11,727.01	-3,770.62	3,822.84	14,452,766.67	1,733,860.81	39.79639240	-80.66731794
17,200.00	89.00	149.80	11,728.76	-3,857.03	3,873.14	14,452,680.26	1,733,911.11	39.79615457	-80.66714003
17,300.00	89.00	149.80	11,730.50	-3,943.44	3,923.43	14,452,593.84	1,733,961.40	39.79591674	-80.66696212
17,400.00	89.00	149.80	11,732.25	-4,029.86	3,973.73	14,452,507.43	1,734,011.70	39.79567891	-80.66678421
17,500.00	89.00	149.80	11,733.99	-4,116.27	4,024.02	14,452,421.01	1,734,061.99	39.79544109	-80.66660630
17,600.00	89.00	149.80	11,735.74	-4,202.69	4,074.32	14,452,334.60	1,734,112.28	39.79520326	-80.66642840
17,700.00	89.00	149.80	11,737.49	-4,289.10	4,124.61	14,452,248.18	1,734,162.58	39.79496543	-80.66625049
17,800.00	89.00	149.80	11,739.23	-4,375.52	4,174.90	14,452,161.77	1,734,212.87	39.79472760	-80.66607256
17,900.00	89.00	149.80	11,740.98	-4,461.93	4,225.20	14,452,075.35	1,734,263.17	39.79448977	-80.66589468
18,000.00	89.00	149.80	11,742.72	-4,548.34	4,275.49	14,451,988.94	1,734,313.46	39.79425194	-80.66571678
18,100.00	89.00	149.80	11,744.47	-4,634.76	4,325.79	14,451,902.53	1,734,363.76	39.79401411	-80.66553888
18,200.00	89.00	149.80	11,746.21	-4,721.17	4,376.08	14,451,816.11	1,734,414.05	39.79377627	-80.66536098
18,300.00	89.00	149.80	11,747.96	-4,807.59	4,426.38	14,451,729.70	1,734,464.34	39.79353844	-80.66518308
18,400.00	89.00	149.80	11,749.70	-4,894.00	4,476.67	14,451,643.28	1,734,514.64	39.79330061	-80.66500518
18,500.00	89.00	149.80	11,751.45	-4,980.42	4,526.96	14,451,556.87	1,734,564.93	39.79306278	-80.66482728
18,600.00	89.00	149.80	11,753.19	-5,066.83	4,577.26	14,451,470.45	1,734,615.23	39.79282495	-80.66464939
18,700.00	89.00	149.80	11,754.94	-5,153.24	4,627.55	14,451,384.04	1,734,665.52	39.79258712	-80.66447150
18,800.00	89.00	149.80	11,756.68	-5,239.66	4,677.85	14,451,297.63	1,734,715.82	39.79234928	-80.66429360
18,900.00	89.00	149.80	11,758.43	-5,326.07	4,728.14	14,451,211.21	1,734,766.11	39.79211145	-80.66411571
19,000.00	89.00	149.80	11,760.17	-5,412.49	4,778.44	14,451,124.80	1,734,816.40	39.79187362	-80.66393782
19,100.00	89.00	149.80	11,761.92	-5,498.90	4,828.73	14,451,038.38	1,734,866.70	39.79163579	-80.66375993
19,200.00	89.00	149.80	11,763.66	-5,585.32	4,879.03	14,450,951.97	1,734,916.99	39.79139795	-80.66358204
19,300.00	89.00	149.80	11,765.41	-5,671.73	4,929.32	14,450,865.55	1,734,967.29	39.79116011	-80.66340416
19,400.00	89.00	149.80	11,767.15	-5,758.14	4,979.61	14,450,779.14	1,735,017.58	39.79092228	-80.66322627
19,500.00	89.00	149.80	11,768.90	-5,844.56	5,029.91	14,450,692.73	1,735,067.88	39.79068445	-80.66304839
19,600.00	89.00	149.80	11,770.64	-5,930.97	5,080.20	14,450,606.31	1,735,118.17	39.79044661	-80.66287051
19,700.00	89.00	149.80	11,772.39	-6,017.39	5,130.50	14,450,519.90	1,735,168.47	39.79020878	-80.66269262
19,800.00	89.00	149.80	11,774.14	-6,103.80	5,180.79	14,450,433.48	1,735,218.76	39.78997094	-80.66251474
19,900.00	89.00	149.80	11,775.88	-6,190.22	5,231.09	14,450,347.07	1,735,269.05	39.78973311	-80.66233686
20,000.00	89.00	149.80	11,777.63	-6,276.63	5,281.38	14,450,260.65	1,735,319.35	39.78949527	-80.66215899
20,100.00	89.00	149.80	11,779.37	-6,363.04	5,331.67	14,450,174.24	1,735,369.64	39.78925743	-80.66198111
20,200.00	89.00	149.80	11,781.12	-6,449.46	5,381.97	14,450,087.83	1,735,419.94	39.78901960	-80.66180323
20,300.00	89.00	149.80	11,782.86	-6,535.87	5,432.26	14,450,001.41	1,735,470.23	39.78878176	-80.66162536
20,400.00	89.00	149.80	11,784.61	-6,622.29	5,482.56	14,449,915.00	1,735,520.53	39.78854392	-80.66144749



Planning Report - Geographic



Database:	DB_Jul2216dt_V14	Local Co-ordinate Reference:	Well Ten High 1S-16HU (D)
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 1S-16HU (D)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,500.00	89.00	149.80	11,786.35	-6,708.70	5,532.85	14,449,828.58	1,735,570.82	39.78830608	-80.66126961
20,600.00	89.00	149.80	11,788.10	-6,795.12	5,583.15	14,449,742.17	1,735,621.11	39.78808825	-80.66109174
20,700.00	89.00	149.80	11,789.84	-6,881.53	5,633.44	14,449,655.75	1,735,671.41	39.78783041	-80.66091387
20,800.00	89.00	149.80	11,791.59	-6,967.94	5,683.73	14,449,569.34	1,735,721.70	39.78759257	-80.66073601
20,900.00	89.00	149.80	11,793.33	-7,054.36	5,734.03	14,449,482.93	1,735,772.00	39.78735473	-80.66055814
21,000.00	89.00	149.80	11,795.08	-7,140.77	5,784.32	14,449,396.51	1,735,822.29	39.78711689	-80.66038027
21,100.00	89.00	149.80	11,796.82	-7,227.19	5,834.62	14,449,310.10	1,735,872.59	39.78687905	-80.66020241
21,200.00	89.00	149.80	11,798.57	-7,313.60	5,884.91	14,449,223.68	1,735,922.88	39.78664121	-80.66002454
21,300.00	89.00	149.80	11,800.31	-7,400.02	5,935.21	14,449,137.27	1,735,973.17	39.78640338	-80.65984668
21,400.00	89.00	149.80	11,802.06	-7,486.43	5,985.50	14,449,050.85	1,736,023.47	39.78616554	-80.65966882
21,500.00	89.00	149.80	11,803.80	-7,572.85	6,035.79	14,448,964.44	1,736,073.76	39.78592770	-80.65949096
21,511.22	89.00	149.80	11,804.00	-7,582.54	6,041.44	14,448,954.74	1,736,079.41	39.78590100	-80.65947100

PBHL/TD 21511.22 MD/11804.00 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 1S-16HU LP r1 - hit/miss target - Shape - Point	0.00	0.00	11,640.00	506.27	1,316.46	14,457,043.55	1,731,354.43	39.80816300	-80.67818600
- plan misses target center by 14.35usft at 12141.77usft MD (11638.85 TVD, 513.67 N, 1326.70 E)									
Ten High 1S-16HU BHL - plan hits target center - Point	0.00	0.01	11,804.00	-7,582.54	6,041.44	14,448,954.74	1,736,079.41	39.78590100	-80.65947100

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
2,980.39	2,980.00	13 3/8" Casing @ 2980 TVD	13-3/8	17-1/2
10,681.15	10,525.00	9 5/8" Casing @ 10525 TVD	9-5/8	12-1/4

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.00	2,000.00	0.00	0.00	KOP Begin 1"/100' build
2,200.00	2,199.96	3.28	1.19	Begin 2.00° tangent
2,700.00	2,699.65	19.68	7.16	Begin 1"/100' drop
2,900.00	2,899.61	22.96	8.36	Begin vertical hold section
7,000.39	7,000.00	22.96	8.36	Begin 2"/100' build/turn
7,947.59	7,930.04	129.29	121.37	Begin 18.94° tangent
11,253.65	11,057.03	864.76	903.06	Begin 10"/100' build/turn
12,186.22	11,641.26	475.59	1,351.49	Begin 89.00° lateral section
21,511.22	11,804.00	-7,582.54	6,041.44	PBHL/TD 21511.22 MD/11804.00 TVD

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WW-9
(4/16)

API Number 47 - 051 - 705102028
Operator's Well No. Ten High 1N-16HU

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

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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 (SWF-1021 / WV0109185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP EC#1386425)

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

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

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

Company Official Signature [Signature]

Company Official (Typed Name) Sean Willis

Company Official Title VP of Engineering & Development Manager

Subscribed and sworn before me this 31st day of August, 2017

Jennifer Lupi

Notary Public **COMMONWEALTH OF PENNSYLVANIA**
NOTARIAL SEAL
Jennifer Lupi, Notary Public
Cecil Twp., Washington County
My Commission Expires March 12, 2018
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

My commission expires March 12, 2018

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
Annual Ryegrass	40
Spring Oats	96

Seed Type	lbs/acre
Orchard Grass	12
Ladino	3
White Clover	2

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Jim Lindholm*

Comments: _____

Title: Oil + Gas Inspector

Date: 8/31/17

Field Reviewed? () Yes () No

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51-02028

PROPOSED TEN HIGH 1S - 15HU

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WV Department of
Environmental Protection



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

LAT: 39.7137712
 LON: -80.8259327
 LOCATED: S 51°03'40" W AT 52.970' FROM TEN HIGH 1S - 15HU SURFACE LOCATION

SLS
 Land & Energy Development
Solutions from the ground up.
 P.O. Box 150 • 12 Vanhook Drive • Glenville, WV 26031 • (304) 462-5634
www.slsurveyors.com

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" = 2000'



TUG HILL
 OPERATING

WW-6A1
(5/13)

Operator's Well No. Ten High 1S-16HU

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

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

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

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

*See attached pages

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WV Department of
Environmental Protection

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

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

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

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

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

51-02028



ju
3/28/18

Well Site Safety Plan

Tug Hill Operating, LLC

Well Name: Ten High 1S-16HU

Pad Location: Ten High

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

NORTHING -4,406,361.38

EASTING -527,316.63

March 2018

51-02028

Lease Name or No.	Tag	Parcel	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Deed Book & Page	Assignment	Assignment	Assignment	Assignment
10*15662	A	9-7-24	LARRY LEE CONKLE	CHEVRON USA 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	THERESA 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 WHETZEL	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*16138	A	9-7-24	LARRY W KUHN AND VICKIE B KUHN, HUSBAND AND WIFE	TH EXPLORATION LLC	1/8+	905 522	N/A	N/A	N/A	N/A
10*16139	A	9-7-24	HUBERT DEAN KUHN AND ANDREA KUHN	TH EXPLORATION LLC	1/8+	905 524	N/A	N/A	N/A	N/A
10*16140	A	9-7-24	ANDY PAUL & JACKIE KUHN	TH EXPLORATION LLC	1/8+	905 526	N/A	N/A	N/A	N/A
10*16141	A	9-7-24	HOWARD L KUHN AND MARY L KUHN	TH EXPLORATION LLC	1/8+	905 528	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+	927 268	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*18256	A	9-7-24	JEFFREY STEPHEN GOODMAN	TH EXPLORATION LLC	1/8+	929 1	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 DOLLYE 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	B	9-7-12.1	RONALD AND EDNA MOORE	TRIENERGY INC	1/8+	661 449	TriEnergy to AB Resources: 20/252	AB Resources to Chief et al: 24/319	Chief et al to Chevron: 25/1	Chevron to Tug Hill: 36/148
10*19117	C	9-7-11	MARK H FOX	TH EXPLORATION LLC	1/8+	864 163	N/A	N/A	Tug Hill to Chevron: 36/168	Chevron to Tug Hill: 40/127
10*19565	D	9-7-11.1	WV DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	TH EXPLORATION LLC	1/8+	947 566	N/A	N/A	N/A	N/A
10*19183	E	9-7-28.1	EVELYN M WILLIAMS	TRIENERGY HOLDINGS LLC	1/8+	720 180	N/A	TRIENERGY TO NPAR: 24/430	NPAR TO Chevron: 756/332	Chevron to Tug Hill: 40/127
10*19135	F	9-7-29	CAROL J ANDERSON ET AL	CHEVRON USA INC	1/8+	772 228	N/A	N/A	N/A	Chevron to Tug Hill: 40/127
10*15481	G	9-7-25.2	DEAN P RIGBY AND SUSAN RIGBY	TH EXPLORATION LLC	1/8+	908 197	N/A	N/A	N/A	N/A
10*15482	G	9-7-25.2	SUSAN NELSON	TH EXPLORATION LLC	1/8+	908 203	N/A	N/A	N/A	N/A
10*15686	G	9-7-25.2	JOHN OMER BOLTZ	TH EXPLORATION LLC	1/8+	908 160	N/A	N/A	N/A	N/A
10*15750	G	9-7-25.2	SANDRA K TRULL	TH EXPLORATION LLC	1/8+	908 229	N/A	N/A	N/A	N/A
10*16058	G	9-7-25.2	MATTIE RUTH JACKSON PRESCOTT	TH EXPLORATION LLC	1/8+	908 231	N/A	N/A	N/A	N/A
10*16118	G	9-7-25.2	RUBY RIDDLE JACKSON	TH EXPLORATION LLC	1/8+	908 233	N/A	N/A	N/A	N/A
10*16297	G	9-7-25.2	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	TH EXPLORATION LLC	1/8+	908 235	N/A	N/A	N/A	N/A
10*16298	G	9-7-25.2	GEOFFREY A SHIEFER AND STEPHANIE L SCHIEFER	TH EXPLORATION LLC	1/8+	908 238	N/A	N/A	N/A	N/A
10*16383	G	9-7-25.2	ROBERT STEPHEN DRIGGERS	TH EXPLORATION LLC	1/8+	908 224	N/A	N/A	N/A	N/A
10*16414	G	9-7-25.2	MARY ELIZABETH DRIGGERS	TH EXPLORATION LLC	1/8+	908 208	N/A	N/A	N/A	N/A
10*16415	G	9-7-25.2	TERENCE J ANDERSON AND NANCY J ANDERSON	TH EXPLORATION LLC	1/8+	908 213	N/A	N/A	N/A	N/A
10*16416	G	9-7-25.2	CYNTHIA HUDSON	TH EXPLORATION LLC	1/8+	908 219	N/A	N/A	N/A	N/A
10*16424	G	9-7-25.2	ROBERT J RIGBY	TH EXPLORATION LLC	1/8+	908 241	N/A	N/A	N/A	N/A
10*16448	G	9-7-25.2	RALPH L AND JUANITA L CRIM	TH EXPLORATION LLC	1/8+	908 584	N/A	N/A	N/A	N/A
10*16478	G	9-7-25.2	MARION L AND EMILY CAMPBELL	TH EXPLORATION LLC	1/8+	908 245	N/A	N/A	N/A	N/A
10*16514	G	9-7-25.2	ALEX RUSSELL AND JOYCE A CAMPBELL	TH EXPLORATION LLC	1/8+	908 248	N/A	N/A	N/A	N/A
10*16515	G	9-7-25.2	ANNA MARIE JACKSON	TH EXPLORATION LLC	1/8+	908 251	N/A	N/A	N/A	N/A
10*16516	G	9-7-25.2	WILSON ANDREW JACKSON	TH EXPLORATION LLC	1/8+	908 253	N/A	N/A	N/A	N/A
10*16545	G	9-7-25.2	ROBERT G & ELLEN FOUNDS	TH EXPLORATION LLC	1/8+	908 260	N/A	N/A	N/A	N/A
10*16662	G	9-7-25.2	RICHARD THOMAS AND VICKI J MIMS	TH EXPLORATION LLC	1/8+	908 863	N/A	N/A	N/A	N/A
10*16666	G	9-7-25.2	MICHAEL P PYLE	TH EXPLORATION LLC	1/8+	908 255	N/A	N/A	N/A	N/A
10*16667	G	9-7-25.2	CHARLES F AND GAIL ANN PYLE	TH EXPLORATION LLC	1/8+	908 266	N/A	N/A	N/A	N/A
10*16668	G	9-7-25.2	JACK I AND MERRILEE PYLE	TH EXPLORATION LLC	1/8+	908 257	N/A	N/A	N/A	N/A
10*16669	G	9-7-25.2	JOHN S AND PATRICIA S DADO	TH EXPLORATION LLC	1/8+	908 269	N/A	N/A	N/A	N/A
10*16686	G	9-7-25.2	CHERYLE M TRACEY	TH EXPLORATION LLC	1/8+	927 475	N/A	N/A	N/A	N/A
10*16688	G	9-7-25.2	SHERRYL PYLE BAIR	TH EXPLORATION LLC	1/8+	927 481	N/A	N/A	N/A	N/A
10*16689	G	9-7-25.2	JOHN C FOUNDS	TH EXPLORATION LLC	1/8+	927 478	N/A	N/A	N/A	N/A
10*16690	G	9-7-25.2	RICARDO ORTIZ	TH EXPLORATION LLC	1/8+	921 352	N/A	N/A	N/A	N/A

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10*16720	G	9-7-25.2	DONNA ELAINE BRASKETT
10*16738	G	9-7-25.2	CHARLES A RINE AND RUTH K RINE
10*16742	G	9-7-25.2	PAUL C WILSON
10*16747	G	9-7-25.2	WILLIAM DALE BRASKETT
10*16798	G	9-7-25.2	PATRICK A RANKIN AND ROBIN A RANKIN
10*16800	G	9-7-25.2	JAMES KENNETH JACKSON AND JULIE JACKSON
10*16802	G	9-7-25.2	CHRISTOPHER AND TAMMY RICHARDSON
10*16804	G	9-7-25.2	WILLIAM N AND SHERRY D TAYLOR
10*16806	G	9-7-25.2	VIRGINIA WHITMAN TRUST DTD 7-25-1984 JON WHITMAN TRUSTEE
10*16807	G	9-7-25.2	DAVID TULLER AND SUSAN STORTS TULLER
10*16808	G	9-7-25.2	MICHAEL L ORTIZ
10*16815	G	9-7-25.2	HAROLD W PYLE
10*16819	G	9-7-25.2	TERESA ORTIZ BIGGS
10*16821	G	9-7-25.2	SHEILA BRASKETT WEICHEY
10*16836	G	9-7-25.2	RICK A AND LENORE A STORTS
10*16837	G	9-7-25.2	TERRY L AND THELMA A POFF
10*16838	G	9-7-25.2	ROBERT G FUNARI
10*16839	G	9-7-25.2	JAMES B FOUNDS AND LYNN M MOWERY
10*16863	G	9-7-25.2	TINA MOORE
10*16868	G	9-7-25.2	MICHAEL W STORTS AND JESSICA M STORTS
10*16879	G	9-7-25.2	MARK E AND LESLEY A STORTS
10*16880	G	9-7-25.2	BEVERLY ANN STORTS
10*16902	G	9-7-25.2	MARY BARCAW DUKE
10*16962	G	9-7-25.2	DENNIS P AND BARBARA EZELL FLORY
10*16976	G	9-7-25.2	LESTER G AND CONSTANCE B NICKOLSON
10*16977	G	9-7-25.2	JEREMY COCHENOUR
10*16987	G	9-7-25.2	LAURIE EZELL PERRY
10*16989	G	9-7-25.2	BRITTANY RICHARDSON
10*16991	G	9-7-25.2	MARYELLEN FOUNDS AND LAUREN FOUNDS
10*16996	G	9-7-25.2	THOMAS RANKIN
10*17130	G	9-7-25.2	CINDY L BARGER
10*17155	G	9-7-25.2	JESSE LEON JR AND TERESA GAIL EZELLE
10*17156	G	9-7-25.2	HENRI NELL JACKSON KENT BARNES
10*17157	G	9-7-25.2	JAMES N REEVES JR AND RITA M REEVES
10*17198	G	9-7-25.2	THOMAS G AND DIANE W BAYLESS
10*17205	G	9-7-25.2	SANDRA JEAN WILSON
10*17208	G	9-7-25.2	PATRICK S GALLAGHER AND JOYCE ANN FOUNDS
10*17274	G	9-7-25.2	DAVID H WILSON
10*17275	G	9-7-25.2	JOHN R REEVES AND MONA G REEVES
10*17276	G	9-7-25.2	BERTHA EZELL WYATT
10*17278	G	9-7-25.2	MICHAEL L EZELLE
10*17339	G	9-7-25.2	JOSEPH W FOUNDS
10*17377	G	9-7-25.2	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE
10*17416	G	9-7-25.2	ANDREW M ORTIZ
10*17438	G	9-7-25.2	DENNIS M WILSON
10*17440	G	9-7-25.2	KENDRA WALISA
10*17441	G	9-7-25.2	RALPH J WILSON
10*17442	G	9-7-25.2	SHANE ALLEN AND MENDY JEAN ALLEN
10*17443	G	9-7-25.2	MICHELLE MORROW-BACK
10*17444	G	9-7-25.2	KELLY FOUNDS CAMPBELL
10*17449	G	9-7-25.2	PHYLLIS J BLAKE
10*17482	G	9-7-25.2	TERESA EZELLE RALYA AND DAVID L RALYA
10*17483	G	9-7-25.2	RICHARD I PYLE
10*17484	G	9-7-25.2	NELDA S JACKSON
10*17485	G	9-7-25.2	MARGIE ANN JACKSON ROBBINS GRAHAM
10*17526	G	9-7-25.2	JEFFREY L REEVES AND JODY L REEVES
10*17527	G	9-7-25.2	JAMES MICHAEL EZELL AND LUCILLE D EZELL

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TH EXPLORATION LLC	1/8+	921	152	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	274	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	927	490	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	96	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	364	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	93	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	495	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	510	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	528	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	513	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	349	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	357	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	147	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	516	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	507	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	927	472	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	82	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	73	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	334	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	504	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	501	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	498	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	105	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	70	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	343	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	102	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	355	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	376	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	79	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	917	75	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	137	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	118	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	139	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	367	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	141	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	524	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	86	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	474	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	373	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	526	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	121	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	76	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	123	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	346	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	476	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	927	484	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	522	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	134	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	337	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	99	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	150	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	927	487	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	359	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	330	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	91	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	370	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	111	N/A	N/A	N/A	N/A

10*17552	G	9-7-25.2	JOHN BEVACQUA AND PATRICIA A BEVACQUA
10*17554	G	9-7-25.2	MICHAEL T RANKIN
10*17561	G	9-7-25.2	ROGER L TYRELL AND KATHRYN L TYRELL
10*17564	G	9-7-25.2	JAMES RONALD NICKOLSON AND TRACEY E NICKOLSON
10*17565	G	9-7-25.2	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON
10*17566	G	9-7-25.2	NATHAN P ERDOSSY AND BARBARA T ERDOSSY
10*17588	G	9-7-25.2	JAMES M JACKSON
10*17589	G	9-7-25.2	MARY CHRISTINE MCKENNA
10*17677	G	9-7-25.2	GEORGE M GONTA JR
10*17744	G	9-7-25.2	SAM PRESLEY EZELL
10*18021	G	9-7-25.2	CHRISTOPHER & JACKIE HANIFAN
10*18022	G	9-7-25.2	DALE P & CYNTHIA J WARD
10*47051.223.12	G	9-7-25.2	ALICE GORBY MARTIN
10*47051.223.13	G	9-7-25.2	JAMES A GORBY
10*47051.223.15	G	9-7-25.2	LARRY D TAUNT AND NANCY L TAUNT
10*47051.223.20	G	9-7-25.2	BARBARA A BUZZARD
10*47051.223.21	G	9-7-25.2	GARY T WARD AND SHARON D WARD
10*47051.223.30	G	9-7-25.2	LAURIE DRIGGERS MANDERSON
10*47051.223.33	G	9-7-25.2	NANCY CIAFFAGLIONE HOUSLEY
10*47051.223.35	G	9-7-25.2	DEBRA L CIAFFAGLIONE
10*47051.223.6	G	9-7-25.2	JOSHUA RINE AND REBECCA RINE
10*47051.223.9	G	9-7-25.2	LINDA DELBERT
10*47051.303.1	G	9-7-25.2	THOMAS R WHITFIELD
10*47051.303.2	G	9-7-25.2	KIMBERLY A WHITFIELD
10*47051.303.1	H	9-7-25.1	THOMAS R WHITFIELD
10*47051.303.2	H	9-7-25.1	KIMBERLY A WHITFIELD
10*47051.303.1	I	9-7-25	THOMAS R WHITFIELD
10*47051.303.2	I	9-7-25	KIMBERLY A WHITFIELD
10*15481	J	9-12-4	DEAN P RIGBY AND SUSAN RIGBY
10*15482	J	9-12-4	SUSAN NELSON
10*15686	J	9-12-4	JOHN OMER BOLTZ
10*15750	J	9-12-4	SANDRA K TRULL
10*16058	J	9-12-4	MATTIE RUTH JACKSON PRESCOTT
10*16118	J	9-12-4	RUBY RIDDLE JACKSON
10*16297	J	9-12-4	ROBERT A LEADBETTER AND M REBECCA LEADBETTER
10*16298	J	9-12-4	GEOFFREY A SHIEFER AND STEPHANIE L SCHIEFER
10*16383	J	9-12-4	ROBERT STEPHEN DRIGGERS
10*16414	J	9-12-4	MARY ELIZABETH DRIGGERS
10*16415	J	9-12-4	TERENCE J ANDERSON AND NANCY J ANDERSON
10*16416	J	9-12-4	CYNTHIA HUDSON
10*16424	J	9-12-4	ROBERT J RIGBY
10*16448	J	9-12-4	RALPH L AND JUANITA L CRIM
10*16478	J	9-12-4	MARION L AND EMILY CAMPBELL
10*16514	J	9-12-4	ALEX RUSSELL AND JOYCE A CAMPBELL
10*16515	J	9-12-4	ANNA MARIE JACKSON
10*16516	J	9-12-4	WILSON ANDREW JACKSON
10*16545	J	9-12-4	ROBERT G & ELLEN FOUNDS
10*16662	J	9-12-4	RICHARD THOMAS AND VICKI J MIMS
10*16666	J	9-12-4	MICHAEL P PYLE
10*16667	J	9-12-4	CHARLES F AND GAIL ANN PYLE
10*16668	J	9-12-4	JACK I AND MERRILEE PYLE
10*16669	J	9-12-4	JOHN S AND PATRICIA S DADO
10*16686	J	9-12-4	CHERYLE M TRACEY
10*16688	J	9-12-4	SHERRYL PYLE BAIR
10*16689	J	9-12-4	JOHN C FOUNDS
10*16690	J	9-12-4	RICARDO ORTIZ
10*16720	J	9-12-4	DONNA ELAINE BRASKETT

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TH EXPLORATION LLC	1/8+	921	144	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	361	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	519	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	340	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	327	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	108	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	325	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	332	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	89	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	116	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	927	267	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	927	264	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	52	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	42	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	14	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	24	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	19	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	165	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	185	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	190	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	634	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	32	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	890	401	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	890	403	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	890	401	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	890	403	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	890	401	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	890	403	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	197	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	203	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	160	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	229	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	231	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	233	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	235	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	238	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	224	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	208	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	213	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	219	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	241	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	584	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	245	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	248	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	251	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	253	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	260	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	863	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	255	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	266	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	257	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	908	269	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	927	475	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	927	481	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	927	478	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	352	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	152	N/A	N/A	N/A	N/A

10*16738	J	9-12-4	CHARLES A RINE AND RUTH K RINE	TH EXPLORATION LLC	1/8+	908	274	N/A	N/A	N/A	N/A
10*16742	J	9-12-4	PAUL C WILSON	TH EXPLORATION LLC	1/8+	924	490	N/A	N/A	N/A	N/A
10*16747	J	9-12-4	WILLIAM DALE BRASKETT	TH EXPLORATION LLC	1/8+	921	96	N/A	N/A	N/A	N/A
10*16787	J	9-12-4	HERBERT B CAMPBELL & DONNA D CAMPBELL	TH EXPLORATION LLC	1/8+	942	451	N/A	N/A	N/A	N/A
10*16798	J	9-12-4	PATRICK A RANKIN AND ROBIN A RANKIN	TH EXPLORATION LLC	1/8+	921	364	N/A	N/A	N/A	N/A
10*16800	J	9-12-4	JAMES KENNETH JACKSON AND JULIE JACKSON	TH EXPLORATION LLC	1/8+	921	93	N/A	N/A	N/A	N/A
10*16802	J	9-12-4	CHRISTOPHER AND TAMMY RICHARDSON	TH EXPLORATION LLC	1/8+	921	495	N/A	N/A	N/A	N/A
10*16804	J	9-12-4	WILLIAM N AND SHERRY D TAYLOR	TH EXPLORATION LLC	1/8+	921	510	N/A	N/A	N/A	N/A
10*16806	J	9-12-4	VIRGINIA WHITMAN TRUST DTD 7-25-1984 JON WHITMAN TRUSTEE	TH EXPLORATION LLC	1/8+	921	528	N/A	N/A	N/A	N/A
10*16807	J	9-12-4	DAVID TULLER AND SUSAN STORTS TULLER	TH EXPLORATION LLC	1/8+	921	513	N/A	N/A	N/A	N/A
10*16808	J	9-12-4	MICHAEL L ORTIZ	TH EXPLORATION LLC	1/8+	921	349	N/A	N/A	N/A	N/A
10*16815	J	9-12-4	HAROLD W PYLE	TH EXPLORATION LLC	1/8+	921	357	N/A	N/A	N/A	N/A
10*16819	J	9-12-4	TERESA ORTIZ BIGGS	TH EXPLORATION LLC	1/8+	921	147	N/A	N/A	N/A	N/A
10*16821	J	9-12-4	SHEILA BRASKETT WEICHEY	TH EXPLORATION LLC	1/8+	921	516	N/A	N/A	N/A	N/A
10*16836	J	9-12-4	RICK A AND LENORE A STORTS	TH EXPLORATION LLC	1/8+	921	507	N/A	N/A	N/A	N/A
10*16837	J	9-12-4	TERRY L AND THELMA A POFF	TH EXPLORATION LLC	1/8+	927	472	N/A	N/A	N/A	N/A
10*16838	J	9-12-4	ROBERT G FUNARI	TH EXPLORATION LLC	1/8+	921	82	N/A	N/A	N/A	N/A
10*16839	J	9-12-4	JAMES B FOUNDS AND LYNN M MOWERY	TH EXPLORATION LLC	1/8+	921	73	N/A	N/A	N/A	N/A
10*16863	J	9-12-4	TINA MOORE	TH EXPLORATION LLC	1/8+	921	334	N/A	N/A	N/A	N/A
10*16868	J	9-12-4	MICHAEL W STORTS AND JESSICA M STORTS	TH EXPLORATION LLC	1/8+	921	504	N/A	N/A	N/A	N/A
10*16879	J	9-12-4	MARK E AND LESLEY A STORTS	TH EXPLORATION LLC	1/8+	921	501	N/A	N/A	N/A	N/A
10*16880	J	9-12-4	BEVERLY ANN STORTS	TH EXPLORATION LLC	1/8+	921	498	N/A	N/A	N/A	N/A
10*16902	J	9-12-4	MARY BARCAW DUKE	TH EXPLORATION LLC	1/8+	921	105	N/A	N/A	N/A	N/A
10*16962	J	9-12-4	DENNIS P AND BARBARA EZELL FLORY	TH EXPLORATION LLC	1/8+	921	70	N/A	N/A	N/A	N/A
10*16976	J	9-12-4	LESTER G AND CONSTANCE B NICKOLSON	TH EXPLORATION LLC	1/8+	921	343	N/A	N/A	N/A	N/A
10*16977	J	9-12-4	JEREMY COCHENOUR	TH EXPLORATION LLC	1/8+	921	102	N/A	N/A	N/A	N/A
10*16987	J	9-12-4	LAURIE EZELL PERRY	TH EXPLORATION LLC	1/8+	921	355	N/A	N/A	N/A	N/A
10*16989	J	9-12-4	BRITTANY RICHARDSON	TH EXPLORATION LLC	1/8+	916	135	N/A	N/A	N/A	N/A
10*16991	J	9-12-4	MARYELLEN FOUNDS AND LAUREN FOUNDS	TH EXPLORATION LLC	1/8+	921	79	N/A	N/A	N/A	N/A
10*16996	J	9-12-4	THOMAS RANKIN	TH EXPLORATION LLC	1/8+	917	75	N/A	N/A	N/A	N/A
10*17130	J	9-12-4	CINDY L BARGER	TH EXPLORATION LLC	1/8+	921	137	N/A	N/A	N/A	N/A
10*17155	J	9-12-4	JESSE LEON JR AND TERESA GAIL EZELLE	TH EXPLORATION LLC	1/8+	921	118	N/A	N/A	N/A	N/A
10*17156	J	9-12-4	HENRI NELL JACKSON KENT BARNES	TH EXPLORATION LLC	1/8+	921	139	N/A	N/A	N/A	N/A
10*17157	J	9-12-4	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	J	9-12-4	THOMAS G AND DIANE W BAYLESS	TH EXPLORATION LLC	1/8+	921	141	N/A	N/A	N/A	N/A
10*17205	J	9-12-4	SANDRA JEAN WILSON	TH EXPLORATION LLC	1/8+	921	524	N/A	N/A	N/A	N/A
10*17208	J	9-12-4	PATRICK S GALLAGHER AND JOYCE ANN FOUNDS	TH EXPLORATION LLC	1/8+	921	86	N/A	N/A	N/A	N/A
10*17274	J	9-12-4	DAVID H WILSON	TH EXPLORATION LLC	1/8+	921	474	N/A	N/A	N/A	N/A
10*17275	J	9-12-4	JOHN R REEVES AND MONA G REEVES	TH EXPLORATION LLC	1/8+	921	373	N/A	N/A	N/A	N/A
10*17276	J	9-12-4	BERTHA EZELL WYATT	TH EXPLORATION LLC	1/8+	921	526	N/A	N/A	N/A	N/A
10*17278	J	9-12-4	MICHAEL L EZELLE	TH EXPLORATION LLC	1/8+	921	121	N/A	N/A	N/A	N/A
10*17339	J	9-12-4	JOSEPH W FOUNDS	TH EXPLORATION LLC	1/8+	921	76	N/A	N/A	N/A	N/A
10*17377	J	9-12-4	MILTON HOWARD EZELLE JR AND ELIZABETH A EZELLE	TH EXPLORATION LLC	1/8+	921	123	N/A	N/A	N/A	N/A
10*17416	J	9-12-4	ANDREW M ORTIZ	TH EXPLORATION LLC	1/8+	921	346	N/A	N/A	N/A	N/A
10*17438	J	9-12-4	DENNIS M WILSON	TH EXPLORATION LLC	1/8+	921	476	N/A	N/A	N/A	N/A
10*17440	J	9-12-4	KENDRA WALISA	TH EXPLORATION LLC	1/8+	927	484	N/A	N/A	N/A	N/A
10*17441	J	9-12-4	RALPH J WILSON	TH EXPLORATION LLC	1/8+	921	522	N/A	N/A	N/A	N/A
10*17442	J	9-12-4	SHANE ALLEN AND MENDY JEAN ALLEN	TH EXPLORATION LLC	1/8+	921	134	N/A	N/A	N/A	N/A
10*17443	J	9-12-4	MICHELLE MORROW-BACK	TH EXPLORATION LLC	1/8+	921	337	N/A	N/A	N/A	N/A
10*17444	J	9-12-4	KELLY FOUNDS CAMPBELL	TH EXPLORATION LLC	1/8+	921	99	N/A	N/A	N/A	N/A
10*17449	J	9-12-4	PHYLLIS J BLAKE	TH EXPLORATION LLC	1/8+	921	150	N/A	N/A	N/A	N/A
10*17482	J	9-12-4	TERESA EZELLE RALYA AND DAVID L RALYA	TH EXPLORATION LLC	1/8+	927	487	N/A	N/A	N/A	N/A
10*17483	J	9-12-4	RICHARD I PYLE	TH EXPLORATION LLC	1/8+	921	359	N/A	N/A	N/A	N/A
10*17484	J	9-12-4	NELDA S JACKSON	TH EXPLORATION LLC	1/8+	921	330	N/A	N/A	N/A	N/A
10*17485	J	9-12-4	MARGIE ANN JACKSON ROBBINS GRAHAM	TH EXPLORATION LLC	1/8+	921	91	N/A	N/A	N/A	N/A
10*17526	J	9-12-4	JEFFREY L REEVES AND JODY L REEVES	TH EXPLORATION LLC	1/8+	921	370	N/A	N/A	N/A	N/A
10*17527	J	9-12-4	JAMES MICHAEL EZELL AND LUCILLE D EZELL	TH EXPLORATION LLC	1/8+	921	111	N/A	N/A	N/A	N/A

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10*17538	J	9-12-4	CHERYL RANKIN KING	TH EXPLORATION LLC	1/8+	952	160	N/A	N/A	N/A	N/A
10*17552	J	9-12-4	JOHN BEVACQUA AND PATRICIA A BEVACQUA	TH EXPLORATION LLC	1/8+	921	144	N/A	N/A	N/A	N/A
10*17554	J	9-12-4	MICHAEL T RANKIN	TH EXPLORATION LLC	1/8+	921	361	N/A	N/A	N/A	N/A
10*17561	J	9-12-4	ROGER L TYRELL AND KATHRYN L TYRELL	TH EXPLORATION LLC	1/8+	921	519	N/A	N/A	N/A	N/A
10*17564	J	9-12-4	JAMES RONALD NICKOLSON AND TRACEY E NICKOLSON	TH EXPLORATION LLC	1/8+	921	340	N/A	N/A	N/A	N/A
10*17565	J	9-12-4	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	TH EXPLORATION LLC	1/8+	921	327	N/A	N/A	N/A	N/A
10*17566	J	9-12-4	NATHAN P ERDOSSY AND BARBARA T ERDOSSY	TH EXPLORATION LLC	1/8+	921	108	N/A	N/A	N/A	N/A
10*17588	J	9-12-4	JAMES M JACKSON	TH EXPLORATION LLC	1/8+	921	325	N/A	N/A	N/A	N/A
10*17589	J	9-12-4	MARY CHRISTINE MCKENNA	TH EXPLORATION LLC	1/8+	921	332	N/A	N/A	N/A	N/A
10*17677	J	9-12-4	GEORGE M GONTA JR	TH EXPLORATION LLC	1/8+	921	89	N/A	N/A	N/A	N/A
10*17744	J	9-12-4	SAM PRESLEY EZELL	TH EXPLORATION LLC	1/8+	921	116	N/A	N/A	N/A	N/A
10*17983	J	9-12-4	HOLLY SUE CUTHBERT	TH EXPLORATION LLC	1/8+	925	380	N/A	N/A	N/A	N/A
10*18021	J	9-12-4	CHRISTOPHER & JACKIE HANIFAN	TH EXPLORATION LLC	1/8+	927	267	N/A	N/A	N/A	N/A
10*18022	J	9-12-4	DALE P & CYNTHIA J WARD	TH EXPLORATION LLC	1/8+	927	264	N/A	N/A	N/A	N/A
10*19524	J	9-12-4	ESTATE OF AGNES IRENE E CLARK	TH EXPLORATION LLC	1/8+	942	633	N/A	N/A	N/A	N/A
10*19693	J	9-12-4	MARIO R FUNARI BY HIS AIF ROBERT FUNARI	TH EXPLORATION LLC	1/8+	936	145	N/A	N/A	N/A	N/A
10*19695	J	9-12-4	VIRGINIA P FOUNDS KASSERMAN	TH EXPLORATION LLC	1/8+	944	333	N/A	N/A	N/A	N/A
10*19939	J	9-12-4	ROBERT J MILLS & SHERRA SUE MILLS	TH EXPLORATION LLC	1/8+	949	212	N/A	N/A	N/A	N/A
10*47051.223.1	J	9-12-4	JEAN ANNE GORBY STORCH	TH EXPLORATION LLC	1/8+	877	216	N/A	N/A	N/A	N/A
10*47051.223.10	J	9-12-4	ROBERT E GORBY	TH EXPLORATION LLC	1/8+	908	47	N/A	N/A	N/A	N/A
10*47051.223.11	J	9-12-4	ELIZABETH ESTEP	TH EXPLORATION LLC	1/8+	908	37	N/A	N/A	N/A	N/A
10*47051.223.12	J	9-12-4	ALICE GORBY MARTIN	TH EXPLORATION LLC	1/8+	908	52	N/A	N/A	N/A	N/A
10*47051.223.13	J	9-12-4	JAMES A GORBY	TH EXPLORATION LLC	1/8+	908	42	N/A	N/A	N/A	N/A
10*47051.223.14	J	9-12-4	JUSTIN RINE AND BECKY RINE	TH EXPLORATION LLC	1/8+	907	639	N/A	N/A	N/A	N/A
10*47051.223.15	J	9-12-4	LARRY D TAUNT AND NANCY L TAUNT	TH EXPLORATION LLC	1/8+	908	14	N/A	N/A	N/A	N/A
10*47051.223.16	J	9-12-4	BETTY LOU STERN AND WILLIAM KEITH STERN	TH EXPLORATION LLC	1/8+	908	64	N/A	N/A	N/A	N/A
10*47051.223.17	J	9-12-4	RALPH E HUNTER JR AND CHARLOTTE HUNTER	TH EXPLORATION LLC	1/8+	908	9	N/A	N/A	N/A	N/A
10*47051.223.18	J	9-12-4	BRITTNEY MENEAR	TH EXPLORATION LLC	1/8+	908	57	N/A	N/A	N/A	N/A
10*47051.223.19	J	9-12-4	JASON RINE AND HEATHER RINE	TH EXPLORATION LLC	1/8+	907	629	N/A	N/A	N/A	N/A
10*47051.223.20	J	9-12-4	BARBARA A BUZZARD	TH EXPLORATION LLC	1/8+	908	24	N/A	N/A	N/A	N/A
10*47051.223.21	J	9-12-4	GARY T WARD AND SHARON D WARD	TH EXPLORATION LLC	1/8+	908	19	N/A	N/A	N/A	N/A
10*47051.223.22	J	9-12-4	SALLY COLE	TH EXPLORATION LLC	1/8+	908	74	N/A	N/A	N/A	N/A
10*47051.223.23	J	9-12-4	RONALD S CRIM	TH EXPLORATION LLC	1/8+	908	79	N/A	N/A	N/A	N/A
10*47051.223.24	J	9-12-4	JO DEE K DAVIS	TH EXPLORATION LLC	1/8+	908	136	N/A	N/A	N/A	N/A
10*47051.223.25	J	9-12-4	JOANNE WELCH	TH EXPLORATION LLC	1/8+	908	141	N/A	N/A	N/A	N/A
10*47051.223.26	J	9-12-4	WENDY L SMARKEL	TH EXPLORATION LLC	1/8+	908	69	N/A	N/A	N/A	N/A
10*47051.223.27	J	9-12-4	TIMI J HOBBS	TH EXPLORATION LLC	1/8+	908	277	N/A	N/A	N/A	N/A
10*47051.223.28	J	9-12-4	KAREN S GAST	TH EXPLORATION LLC	1/8+	908	150	N/A	N/A	N/A	N/A
10*47051.223.29	J	9-12-4	PATSY JO RAJU	TH EXPLORATION LLC	1/8+	908	155	N/A	N/A	N/A	N/A
10*47051.223.30	J	9-12-4	LAURIE DRIGGERS MANDERSON	TH EXPLORATION LLC	1/8+	908	165	N/A	N/A	N/A	N/A
10*47051.223.31	J	9-12-4	JANICE M GONTA GAVALIK	TH EXPLORATION LLC	1/8+	908	180	N/A	N/A	N/A	N/A
10*47051.223.32	J	9-12-4	JOSEPH GORBY DAKAN	TH EXPLORATION LLC	1/8+	908	175	N/A	N/A	N/A	N/A
10*47051.223.33	J	9-12-4	NANCY CIAFFAGLIONE HOUSLEY	TH EXPLORATION LLC	1/8+	908	185	N/A	N/A	N/A	N/A
10*47051.223.34	J	9-12-4	JOHN CIAFFAGLIONE	TH EXPLORATION LLC	1/8+	927	267	N/A	N/A	N/A	N/A
10*47051.223.35	J	9-12-4	DEBRA L CIAFFAGLIONE	TH EXPLORATION LLC	1/8+	927	264	N/A	N/A	N/A	N/A
10*47051.223.5	J	9-12-4	HAROLD S BROWN II AND MARIA A BROWN	TH EXPLORATION LLC	1/8+	907	641	N/A	N/A	N/A	N/A
10*47051.223.6	J	9-12-4	JOSHUA RINE AND REBECCA RINE	TH EXPLORATION LLC	1/8+	907	634	N/A	N/A	N/A	N/A
10*47051.223.7	J	9-12-4	JACK R WILSON JR AND JANE A WILSON	TH EXPLORATION LLC	1/8+	908	4	N/A	N/A	N/A	N/A
10*47051.223.8	J	9-12-4	DAVID M WILSON	TH EXPLORATION LLC	1/8+	907	649	N/A	N/A	N/A	N/A
10*47051.223.9	J	9-12-4	LINDA DELBERT	TH EXPLORATION LLC	1/8+	908	32	N/A	N/A	N/A	N/A
10*47051.222.1	K	9-12-5	DONALD D MCCARDLE AND LUCY MCCARDLE	TH EXPLORATION LLC	1/8+	879	314	N/A	N/A	N/A	N/A
10*47051.222.1	L	9-12-6.1	DONALD D MCCARDLE AND LUCY MCCARDLE	TH EXPLORATION LLC	1/8+	879	314	N/A	N/A	N/A	N/A
10*47051.222.1	M	9-12-6	DONALD D MCCARDLE AND LUCY MCCARDLE	TH EXPLORATION LLC	1/8+	879	314	N/A	N/A	N/A	N/A
10*47051.222.1	N	9-12-7	DONALD D MCCARDLE AND LUCY MCCARDLE	TH EXPLORATION LLC	1/8+	879	314	N/A	N/A	N/A	N/A
10*47051.222.10	N	9-12-7	CHRISTINA CAIN	TH EXPLORATION LLC	1/8+	905	27	N/A	N/A	N/A	N/A
10*47051.222.11	N	9-12-7	MARK DAVID HUNT	TH EXPLORATION LLC	1/8+	904	451	N/A	N/A	N/A	N/A
10*47051.222.12	N	9-12-7	MELISSA ELAINE SCHROTH	TH EXPLORATION LLC	1/8+	904	453	N/A	N/A	N/A	N/A

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10*47051.222.13	N	9-12-7	BRETT J LAUSIN SR
10*47051.222.14	N	9-12-7	MICHAEL E LAUSIN AND SHARON G LAUSIN
10*47051.222.2	N	9-12-7	PATRICIA A GULUTZ AND THOMAS L GULUTZ
10*47051.222.3	N	9-12-7	SHARON L SMITH
10*47051.222.4	N	9-12-7	KENNETH M MCCARDLE AND DELORES MCCARDLE
10*47051.222.5	N	9-12-7	DONALD B WESLEY AND SUSAN J WESLEY
10*47051.222.6	N	9-12-7	DIANA S GRAFTON AND TIMOTHY A GRAFTON
10*47051.222.7	N	9-12-7	FREDRICK M YEATER AND SHERI C YEATER
10*47051.222.8	N	9-12-7	LEONARD O HABERBOSCH
10*47051.222.9	N	9-12-7	TERRIE L LAUSIN
10*47051.289.1	O	9-12-8	JANICE M HIXSON AND HARRY C HIXSON
10*47051.289.2	O	9-12-8	KENNETH D MCMECHEN
10*15474	P	9-12-22	CLARK C SAMPSON
10*15480	P	9-12-22	DOTTIE HERSMAN
10*15491	P	9-12-22	NORMAN L WOOD
10*15691	P	9-12-22	ALLIETTA J RUCKER AND RONALD R RUCKER
10*15692	P	9-12-22	EVA A COULTER
10*15693	P	9-12-22	EVERETT A WOOD
10*15732	P	9-12-22	JOAN R CUNNINGHAM AND MARK A CUNNINGHAM
10*15745	P	9-12-22	BRENDA L KING
10*16010	P	9-12-22	DONNA M RIGGS AND ROBERT H RIGGS
10*16012	P	9-12-22	PAULA K PAGE AND PHILLIP G PAGE
10*16013	P	9-12-22	HERBERT H BURKHART AND BETTY J BURKHART
10*16014	P	9-12-22	MARY KAY KESSLER AND ROY LEE KESSLER
10*16022	P	9-12-22	ALBERT D BURKHART
10*16023	P	9-12-22	BARBARA J BROWN
10*16057	P	9-12-22	CORA ALICE DAUBE
10*16119	P	9-12-22	JEFFREY L EWASKEY
10*16151	P	9-12-22	JOHN HARRIS AND HELEN VIRGINIA HARRIS
10*16193	P	9-12-22	NANCY L WOLFE
10*16195	P	9-12-22	DAVID P NIERATKO AND JUDY C NIERATKO
10*16245	P	9-12-22	MARGARET D STRAUSSER AND GREGORY L STRAUSSER
10*16293	P	9-12-22	DANIEL LEE AND DIANA M WEST
10*16294	P	9-12-22	DONNA G AND PAUL L CHMELYSKI
10*16296	P	9-12-22	DOUGLAS E COURTWRIGHT AND JESSAMINE L COURTWRIGHT
10*16361	P	9-12-22	ROBERT M WOOD AND CAROL ANN WOOD
10*16371	P	9-12-22	VERA L APPLGARTH
10*16411	P	9-12-22	BONNIE L WOOD
10*16419	P	9-12-22	MELVIN B WOOD
10*16427	P	9-12-22	LURIA ALWANDA COOLEY
10*16430	P	9-12-22	EULELAH V RIDDLE
10*16449	P	9-12-22	BILLIE ALBERTA MIDDLETON
10*16450	P	9-12-22	JAMES D RAYNER AND PATRICIA ANN RAYNER
10*16451	P	9-12-22	JAMIE A SMITH AND JOSHUA C SMITH
10*16466	P	9-12-22	KAREN J AND MICHAEL E BRUGGEMAN
10*16467	P	9-12-22	CHARLES A AND GARY LYNN ECKHARDT
10*16542	P	9-12-22	CAROL ANN YEATER AND RICKEY A YEATER
10*16543	P	9-12-22	JERRY R AND JACQUELYNN E RUTHERS
10*16544	P	9-12-22	NORMA JEAN ROGERS AND DONALD L ROGERS SR
10*16681	P	9-12-22	BRENDA S THOMPSON
10*16682	P	9-12-22	CYNTHIA A AND WILLIAM D FETTY
10*16683	P	9-12-22	FRANKLIN CLARK PATRICIA FENSTERMACHER
10*16846	P	9-12-22	PAMELA SUE BURGE
10*16847	P	9-12-22	WILLIAM L AND JENNIFER R EWASKEY
10*16889	P	9-12-22	HAROLD H CLARK JR
10*16921	P	9-12-22	HAZEL CLARK ROSEN LUND
10*16974	P	9-12-22	BRANDY L WOOD

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TH EXPLORATION LLC	1/8+	907	205	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	913	526	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	888	640	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	894	487	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	888	642	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	895	76	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	898	571	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	898	626	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	902	442	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	904	591	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	898	461	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	898	463	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	495	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	497	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	507	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	509	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	511	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	513	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	515	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	517	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	519	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	522	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	524	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	526	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	528	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	530	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	532	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	569	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	573	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	575	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	344	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	577	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	579	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	581	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	583	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	499	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	503	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	501	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	505	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	585	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	587	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	613	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	615	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	617	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	619	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	621	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	623	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	625	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	627	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	350	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	616	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	346	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	348	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	352	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	354	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	356	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	360	N/A	N/A	N/A	N/A

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10*16975	P	9-12-22	TIMOTHY J WOOD
10*16988	P	9-12-22	CHAD ERIC BENNETT AND MARY A BENNETT
10*16998	P	9-12-22	MISTY JO WOOD AND GARY A MORRIS
10*17183	P	9-12-22	TARA E BENNETT
10*17277	P	9-12-22	GUY C ANDO AND WENDY PYLES ANDO
10*17280	P	9-12-22	BONNIE M KIDD AND CHARLES R KIDD
10*17281	P	9-12-22	STACY R BENNETT
10*17282	P	9-12-22	CARLIS LEON CLARK
10*17423	P	9-12-22	LORI ANN WEST
10*17424	P	9-12-22	CAROL A CLARK
10*17446	P	9-12-22	GREGORY DEAN CLARK AND MARY ANN CLARK
10*17488	P	9-12-22	SUSANNA M DENIS
10*17495	P	9-12-22	KEVIN R CLARK AND NANCY G CLARK
10*17498	P	9-12-22	MICHAEL R DODD AND LISA M DODD
10*17521	P	9-12-22	BETTY LOU MCMILLAN AND WILLIAM A MCMILLAN
10*17522	P	9-12-22	RONALD D CLARK AND TAMMY C CLARK
10*17523	P	9-12-22	ROBERT R CLARK II
10*17529	P	9-12-22	HARRY C BURGE JR AND CAROL S BURGE
10*17558	P	9-12-22	SHIRLEY IRENE VANOVER
10*17585	P	9-12-22	DEBORAH L LUGO AND RONALD J LUGO
10*17587	P	9-12-22	DONNA SUE BEVERIDGE AND EARL P BEVERIDGE
10*17624	P	9-12-22	SHIRLEY E ELKINS
10*17704	P	9-12-22	BETTY L & ROY S PEARCE
10*17714	P	9-12-22	RUSSELL A CLARK AND CATHERINE CLARK
10*18106	P	9-12-22	TIMOTHY HEWITT
10*18237	P	9-12-22	CLARENCE LEE CLARK
10*18238	P	9-12-22	KATHRYN L ATWELL
10*18239	P	9-12-22	VERA S CAIN
10*18240	P	9-12-22	JODY CLARK ELLIOTT
10*18241	P	9-12-22	VENCON E DAVIS
10*18242	P	9-12-22	WILLIAM R DODD AND NANCY DODD
10*47051.289.1	P	9-12-22	JANICE M HIXSON AND HARRY C HIXSON
10*47051.289.2	P	9-12-22	KENNETH D MCMECHEN
10*47051.289.3	P	9-12-22	NELLIE JOANN CLARK
10*19724	Q	9-12-24	VENABLE ROYALTY LTD AND VENRO LTD
10*15484	R	9-12-29	LISA R IMHOFF AND CHAD IMHOFF
10*15681	R	9-12-29	THELMA W BIRDWELL
10*15685	R	9-12-29	TRACY RAND
10*16033	R	9-12-29	MELINDA M GREENOUGH AND DOUGLAS CORWIN GREENOUGH
10*16036	R	9-12-29	CLARISSA MALONE
10*16111	R	9-12-29	KATHLEEN D AND STEVEN MONIGOLD
10*16283	R	9-12-29	RHONDA L PALASOTA AND SAM A PALASOTA
10*16334	R	9-12-29	LOLA F BLEVINS
10*16364	R	9-12-29	STEVEN P ROBERTS
10*16380	R	9-12-29	DONNA BURNS
10*16525	R	9-12-29	THE JENNIFER TEACHNOR GAFFEY LIVING TRUST DATED OCTOBER 30TH 2013
10*16527	R	9-12-29	ROSELLA M HARR AND WILLARD L HARR
10*16606	R	9-12-29	WILLIAM T AND BARBARA W PAUL
10*16607	R	9-12-29	LOUISE M AND WILSON D MCELHINNY
10*16748	R	9-12-29	KATHRYN BROWN AND BRUCE G BROWN
10*17815	R	9-12-29	THE TESTAMENTARY TRUST OF CAREY B PAUL III
10*17882	R	9-12-29	MARY E HAMM
10*17890	R	9-12-29	JANICE MEDER TRST MEDER LIVING
10*17893	R	9-12-29	ERIC D & AMANDA N PETRUCCI
10*17978	R	9-12-29	MARGARET INGALLS SCHICK
10*18018	R	9-12-29	KATHARINE & WILLIAM BUCKHAM

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TH EXPLORATION LLC	1/8+	929	358	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	584	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	362	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	586	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	594	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	592	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	590	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	588	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	596	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	598	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	600	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	604	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	608	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	614	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	610	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	612	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	620	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	602	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	618	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	622	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	626	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	928	557	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	628	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	630	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	628	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	930	3	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	930	1	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	649	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	647	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	934	596	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	645	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	898	461	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	898	463	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	493	N/A	N/A	N/A	N/A
AMERICAN PETROLEUM PARTNERS OPERATING LLC	1/8+	935	216	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	913	552	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	482	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	4	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	926	616	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	926	614	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	926	619	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	913	583	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	914	416	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	914	418	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	926	611	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	926	637	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	927	4	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	919	252	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	909	72	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	926	639	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	919	252	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	552	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	545	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	545	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	925	366	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	927	280	N/A	N/A	N/A	N/A

APP to Tug Hill: 40/408

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10*18171	R	9-12-29	MARYANNE I & HOWARD R BAUM
10*47051.318.1	R	9-12-29	JOSEPH PAUL FOX AND MARGARET H FOX
10*47051.318.25	R	9-12-29	MARIANN T DARGUSCH AND JONATHON DARGUSCH
10*47051.318.30	R	9-12-29	CYNTHIA TEACHNOR GRAHAM
10*47051.318.31	R	9-12-29	WILLIAM RICHARD FOX
10*47051.318.33	R	9-12-29	J RONALD FOX
10*47051.318.35	R	9-12-29	ANNA MAE PATTERSON
10*47051.318.36	R	9-12-29	DANNY CARMICHAEL III
10*47051.318.4	R	9-12-29	MARY ELISE CAMP
10*47051.318.56	R	9-12-29	SALLY MERRICK
10*47051.318.9	R	9-12-29	JANICE M MEDER
10*47051.311.0	S	9-12-23	MICHAEL J GUNTO AND ROSEMARY GUNTO
10*47051.140.1	T	9-12-32	DAVID P CHAPMAN & DEBORAH BORCK-CHAPMAN
10*47051.140.2	T	9-12-32	DOROTHY SULLIVAN POA JAMES REID SULLIVAN
10*47051.140.1	U	9-12-21	DAVID P CHAPMAN & DEBORAH BORCK-CHAPMAN
10*47051.140.2	U	9-12-21	DOROTHY SULLIVAN POA JAMES REID SULLIVAN
10*47051.140.1	V	9-12-33	DAVID P CHAPMAN & DEBORAH BORCK-CHAPMAN
10*47051.140.2	V	9-12-33	DOROTHY SULLIVAN POA JAMES REID SULLIVAN
10*16402	W	9-15-4	VALIE L WAGNER
10*16421	W	9-15-4	SAMUEL EDGAR LEWIS AND ELIZABETH LEWIS
10*16491	W	9-15-4	BELA N WELLENREITER
10*17325	W	9-15-4	PHYLLIS ADAMS AND JOSEPH ADAMS
10*17341	W	9-15-4	JUDITH V RICHARDSON AND DENNIS L ROBICHAUD
10*17412	W	9-15-4	CHARLES L SHILLITO
10*17439	W	9-15-4	WILLARD D MCCALL JR AND ADELE HUEY MCCALL
10*17509	W	9-15-4	BRIAN A MCCALL
10*17525	W	9-15-4	PAUL W STIFEL AND MARY M GROVER-STIFEL
10*18294	W	9-15-4	MARY M AND WINFRED K MARTIN
10*22089	W	9-15-4	MARCIA A LUKE
10*22108	W	9-15-4	KATHLEEN A MCNEILL AND MICHAEL MCNEILL
10*22124	W	9-15-4	WILLIAM B EVENS JR AND PENNY EVENS
10*22257	W	9-15-4	CHARLES F ALLEY TRUST
10*22380	W	9-15-4	JUDITH S KNIGHT
10*47051.318.46	W	9-15-4	CAROL L BOBBY AND DONALD J BOBBY
10*47051.318.48	W	9-15-4	DEBORAH SUE KYLE 231 EAST 24TH AVENUE
10*15752	X	9-15-3	KIM O CHAMBERS AND DEBRA CHAMBERS
10*16017	X	9-15-3	FLOYD A MCFADDEN
10*16018	X	9-15-3	BARBARA MCFADDEN ALBRIGHT
10*16143	X	9-15-3	MARY LOU CHAMBERS
10*16144	X	9-15-3	PATTIE S MADRID
10*16180	X	9-15-3	LARRY L CHAMBERS
10*16181	X	9-15-3	NORMA CHRISTINE WHIPP AND GERALD WAYNE BLACK
10*16182	X	9-15-3	FIRST CHRISTIAN CHURCH OF MOUNDSVILLE BY ROGER FRANCIS AND ROBERT ALBERT TRUSTEES
10*16239	X	9-15-3	ANGELA L OLDFIELD AND KENNETH W OLDFIELD
10*16285	X	9-15-3	JOHN A SHUTZ AND CYNTHIA J SHUTZ
10*16441	X	9-15-3	GEORGE FRANKLIN AND NANCY ANN REED
10*16442	X	9-15-3	FRED T AND JERRY L CHAMBERS
10*16443	X	9-15-3	BARBARA BROWN CHAMBERS
10*16444	X	9-15-3	CATHERINE ELLEN CHAMBERS
10*16445	X	9-15-3	DOUGLAS C AND GWENDLYN D LEWTON
10*16483	X	9-15-3	JOHN C AND BARBARA H WINTER
10*16486	X	9-15-3	DAVID ALAN WILKINSON AND PATRICIA LYNN WILKINSON
10*16490	X	9-15-3	WILLIAM H AND MERRY C COTTON
10*16540	X	9-15-3	JAMES A WINTER AND CONNIE G WINTER
10*16580	X	9-15-3	HAROLD C MCFADDEN
10*16680	X	9-15-3	RONALD J AND JENNIFER CHAMBERS FICCA
10*16726	X	9-15-3	LESLEY K WHITE

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TH EXPLORATION LLC	1/8+	928	74	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	569	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	549	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	553	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	561	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	565	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	573	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	576	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	557	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	614	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	545	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	16	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	866	318	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	873	501	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	866	318	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	873	501	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	866	318	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	873	501	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	464	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	449	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	467	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	909	520	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	456	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	458	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	454	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	451	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	921	460	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	342	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	961	333	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	961	511	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	PENDING		N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	PENDING		N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	962	276	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	603	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	600	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	258	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	260	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	262	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	276	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	278	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	280	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	281	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	283	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	287	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	291	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	619	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	174	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	621	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	623	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	925	123	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	178	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	180	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	176	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	184	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	907	480	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	186	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	182	N/A	N/A	N/A	N/A

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10*16733	X	9-15-3	SARAH L BISHOP
10*16835	X	9-15-3	ERNEST CARL AUGUSTINE JR
10*16948	X	9-15-3	FREDERICK M LEWTON
10*16949	X	9-15-3	STEVEN R AND BRIANNE L UTT
10*16950	X	9-15-3	JAY E AND CECILIA E LEWTON
10*16952	X	9-15-3	RUSSELL D HERVEY
10*16953	X	9-15-3	DONALD T AND JEAN K HOGAN
10*16990	X	9-15-3	ROSEMARY H BEAVERS
10*16992	X	9-15-3	LINDA C ABRAHAM
10*16993	X	9-15-3	JULIA HOOVER
10*16995	X	9-15-3	DIANE ELSIE RAMSEY
10*17129	X	9-15-3	ROBERTA JANE PARKINSON
10*17131	X	9-15-3	LAURA E TOTTEN AND LONNIE R TOTTEN
10*17134	X	9-15-3	UNITED CHRISTIAN MISSIONARY SOCIETY
10*17209	X	9-15-3	GAYLE S SHANNON
10*17289	X	9-15-3	HAROLD R HUNT JR AND ELIZABETH A HUNT
10*17396	X	9-15-3	CHRISTINE L KIDD
10*17413	X	9-15-3	ROBERT M CHAMBERS AND CHARLOTTE A CHAMBERS
10*17436	X	9-15-3	ANDREW M HOOVER AND DINAH R HOOVER
10*17448	X	9-15-3	FREDERICK L HERVEY AND CATHY J HERVEY
10*17452	X	9-15-3	ALAN H & MARY K DEGARMO
10*17486	X	9-15-3	JOSELYN M KEELY
10*17487	X	9-15-3	DEBORAH R MOKOSH
10*17563	X	9-15-3	DONALD L WOOD
10*17617	X	9-15-3	UNITED DISCIPLES OF CHRIST CHURCH
10*17674	X	9-15-3	HOWARD L WOOD AND BETH E WOOD
10*17675	X	9-15-3	GREGORY DEANE WIBLE AND CAROLYN JEAN WIBLE
10*17701	X	9-15-3	SUE ANN WORD
10*17702	X	9-15-3	TAMMY BETH RAMSEY
10*18416	X	9-15-3	BETH W WISHARD & GREG WISHARD
10*19523	X	9-15-3	CHRISTIAN CHURCH DISCIPLES OF CHRIST
10*19539	X	9-15-3	SUSAN VAN DYNE NKA SUSAN ASTON
10*19946	X	9-15-3	THE ESTATE OF CHARLIN GUDGEL
10*19952	X	9-15-3	THE JOHN C BURNS SUPPLEMENTAL NEEDS TRUST
10*21109	X	9-15-3	WILLIAM JUDSON HERVEY III AND THERESA HERVEY
10*21110	X	9-15-3	JAMES ROBERT HERVEY AND KAREN HERVEY
10*21869	X	9-15-3	DAVID A WEBER AND JUDITH V WEBER
10*21931	X	9-15-3	DONALD M BURNS SUPPLEMENT NEEDS TRUST
10*21932	X	9-15-3	VAUGHN D BURNS SUPPLEMENT NEEDS TRUST
10*22192	X	9-15-3	WILLIAM SHEPHERD AND JERRY LEA SHEPHERD
10*47051.325.1	X	9-15-3	JUDITH A LEWANDOSKY AND ALAN A LEWANDOSKY
10*47051.325.3	X	9-15-3	NICHOLAS D PAVLIK AND GLORIA K PAVLIK
10*47051.325.4	X	9-15-3	JAMES H WHITE AND RITA FRANKS WHITE
10*47051.325.5	X	9-15-3	SAMUEL ALAN MCCORD AND WINIFRED A MCKEE
10*47051.325.6	X	9-15-3	THOMAS O MCCORD
10*47051.325.7	X	9-15-3	SHERON JONES
10*47051.325.8	X	9-15-3	RICK PAVLIK

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Office of Oil and Gas

APR 9 2018

WV Department of
Environmental Protection

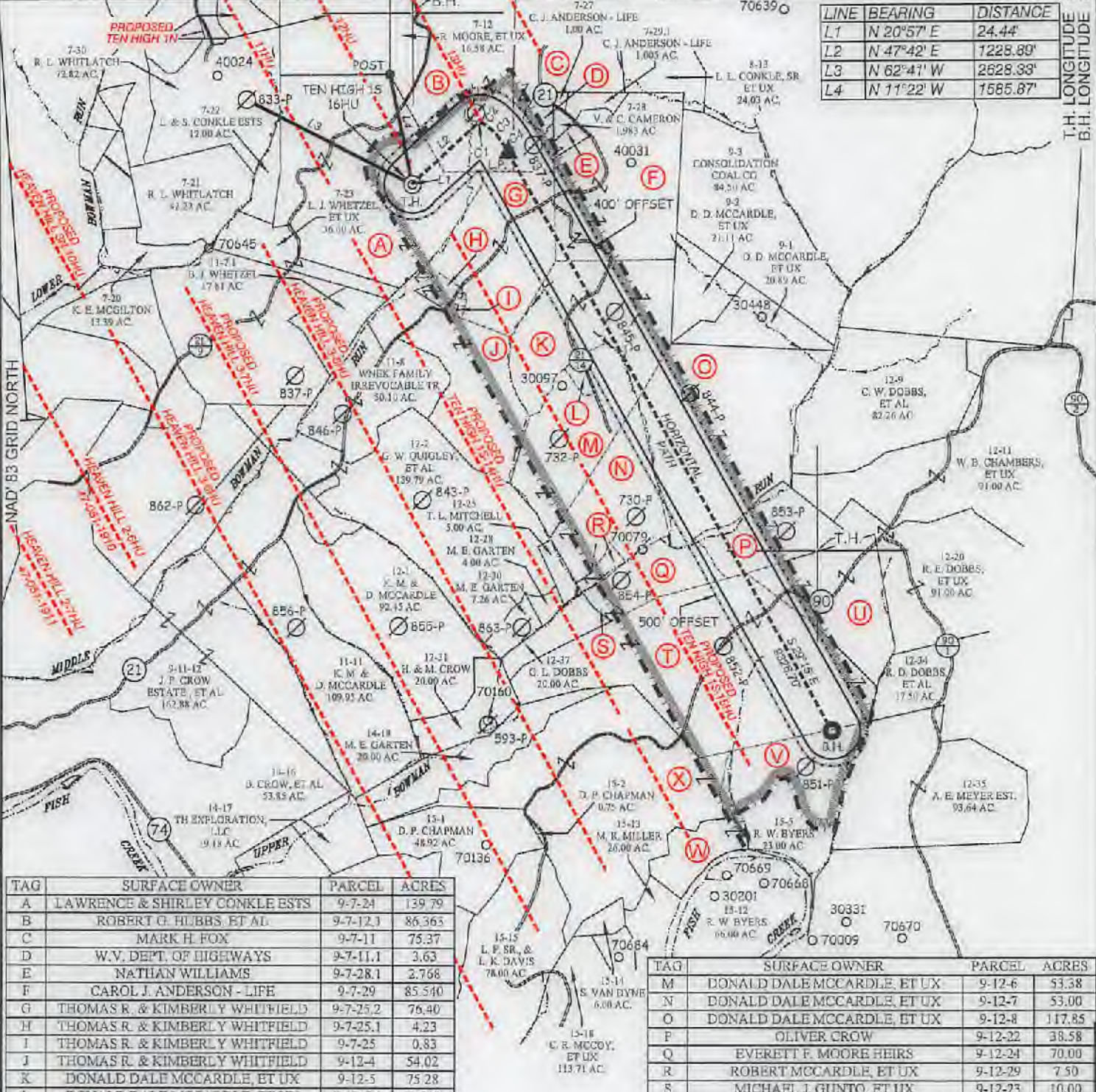
TH EXPLORATION LLC	1/8+	924	172	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	188	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	136	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	138	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	134	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	132	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	140	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	152	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	148	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	150	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	146	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	142	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	154	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	14	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	168	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	170	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	158	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	160	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	156	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	162	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	164	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	929	364	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	166	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	923	523	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	129	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	923	505	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	923	507	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	923	470	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	925	500	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	932	584	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	943	6	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	936	505	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	948	301	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	948	212	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	953	98	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	953	100	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	953	495	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	953	491	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	953	487	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	954	347	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	225	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	228	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	230	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	232	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	235	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	237	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	906	239	N/A	N/A	N/A	N/A

**TEN HIGH 1S LEASE
UTICA UNIT - 623.86 AC. ±
WELL 16HU
TUG HILL OPERATING**

T.H. LATITUDE 39°50'00"
B.H. LATITUDE 39°47'30"

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	67.23'	66.59'	N 78°01' E	64.41'
C2	103.12'	262.09'	S 62°42' E	102.45'
C3	233.35'	915.93'	S 43°43' E	232.72'
C4	232.90'	1728.43'	S 33°07' E	232.72'

LINE	BEARING	DISTANCE
L1	N 20°57' E	24.44'
L2	N 47°42' E	1228.89'
L3	N 62°41' W	2628.33'
L4	N 11°22' W	1665.87'



TAG	SURFACE OWNER	PARCEL	ACRES
A	LAWRENCE & SHIRLEY CONKLE ESTS	9-7-24	139.79
B	ROBERT G. HUBBS, ET AL.	9-7-12.1	86.363
C	MARK H. FOX	9-7-11	75.37
D	W.V. DEPT. OF HIGHWAYS	9-7-11.1	3.63
E	NATHAN WILLIAMS	9-7-28.1	2.768
F	CAROL J. ANDERSON - LIFE	9-7-29	85.540
G	THOMAS R. & KIMBERLY WHITFIELD	9-7-25.2	76.40
H	THOMAS R. & KIMBERLY WHITFIELD	9-7-25.1	4.23
I	THOMAS R. & KIMBERLY WHITFIELD	9-7-25	0.83
J	THOMAS R. & KIMBERLY WHITFIELD	9-12-4	54.02
K	DONALD DALE MCCARDLE, ET UX	9-12-5	75.28
L	DONALD DALE MCCARDLE, ET UX	9-12-6.1	2.620

TAG	SURFACE OWNER	PARCEL	ACRES
M	DONALD DALE MCCARDLE, ET UX	9-12-6	53.38
N	DONALD DALE MCCARDLE, ET UX	9-12-7	53.00
O	DONALD DALE MCCARDLE, ET UX	9-12-8	117.85
P	OLIVER CROW	9-12-22	38.58
Q	EVERETT F. MOORE HEIRS	9-12-24	70.00
R	ROBERT MCCARDLE, ET UX	9-12-29	7.50
S	MICHAEL J. GUNTO, ET UX	9-12-23	10.00
T	DAVID P. CHAPMAN	9-12-32	150.00
U	DAVID P. CHAPMAN	9-12-21	50.00
V	DAVID P. CHAPMAN	9-12-33	32.00
W	ROBERT FRANK ROTSON, ET AL.	9-15-4	26.40
X	SUSAN VAN DYNE	9-15-3	167.00

SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 159 • 12 Vanhorn Drive • Glenview, WV 26035 • (304) 422-5934
www.slsurvey.com

P.S.
677

Gregory A. Smith

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



LEGEND

UNIT BOUNDARY	— — — — —
LEASED TRACTS INSIDE	— — — — —
UNIT BOUNDARY	— — — — —
SURFACE LINE	— — — — —
WELL LATERAL	— — — — —
400' OFFSET LINE	— — — — —
500' OFFSET LINE	— — — — —
TIE LINE	— — — — —
CREEK	— — — — —
ROAD	— — — — —
COUNTY ROUTE	⊙
PROPOSED WELL	⊙
EXISTING WELL	⊙
PERMITTED WELL	⊙
TAX MAP-PARCEL	00-00-00
SURFACE OWNER (SEE TABLE)	(A)
LEASE # (SEE SHEETS 3 & 4)	

SCALE 1" = 2000' FILE NO. 8655P16HUR3.dwg
DATE AUGUST 29, 20 17
REVISED 09-01-2017, 01-12-2018 & 03-22-18
OPERATORS WELL NO. TEN HIGH 1S-16HU
API WELL NO. 47 — 051 — 02028 H0A
NO. STATE COUNTY PERMIT

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

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

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

COUNTY NAME PERMIT

TEN HIGH 1S LEASE
 UTICA UNIT - 623.86 AC. ±
 WELL 16HU
 TUG HILL OPERATING

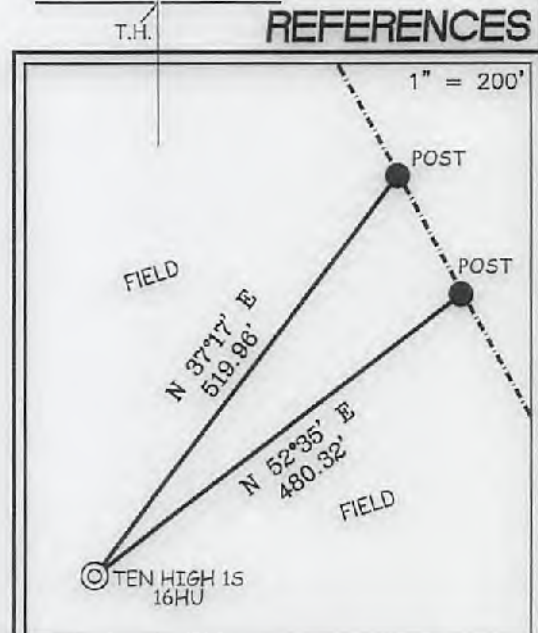
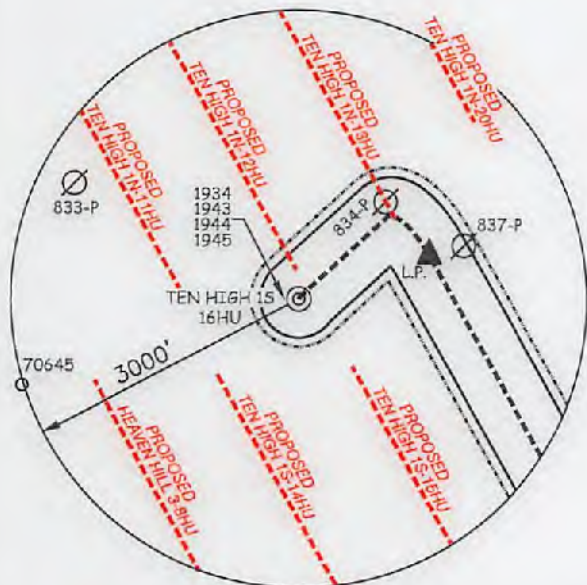
T.H. LATITUDE 39°50'00"
 B.H. LATITUDE 39°47'30"

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

NAD'83 S.P.C.(FT)	N. 478,152.80	E. 1,838,758.08
NAD'83 GEO.	LAT-(N) 39.806786	LONG-(W) 80.680880
NAD'83 UTM (M)	N. 4,406,361.38	E. 627,316.63
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 478,605.9	E. 1,938,117.8
NAD'83 GEO.	LAT-(N) 39.808078	LONG-(W) 80.676062
NAD'83 UTM (M)	N. 4,406,506.3	E. 527,728.6
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 470,467.8	E. 1,642,674.0
NAD'83 GEO.	LAT-(N) 39.785901	LONG-(W) 80.659471
NAD'83 UTM (M)	N. 4,404,050.2	E. 529,156.1

T.H. LONGITUDE 80°40'00"
 B.H. LONGITUDE 80°37'30"

9,687' B.H.
 3,993' T.H.
 2,101' B.H.
 9,671' T.H.



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'



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 29, 20 17
 REVISED 09-01-2017, 01-12-2018 & 03-22-18
 OPERATORS WELL NO. TEN HIGH 1S-16HU
 API WELL NO. 47 - OSI - HGA 02028
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8655P16HUR3.dwg
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)
 SCALE 1" = 2000'

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 = 1,322.90' 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 SHEETS 3 & 4 ACREAGE 139.79±

PROPOSED WORK: LEASE NO. SEE SHEETS 3 & 4
 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: 21,511'

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

COUNTY NAME
 PERMIT

TEN HIGH 1S LEASE
UTICA UNIT - 623.86 AC. ±
WELL 16HU
TUG HILL OPERATING



Table with columns: No., Lease Name or No., Ac., Permit, Oil & Gas Royalty Owner, Deed Book Page. Lists lease details for various owners including Larryette Conkle, Roy A Conkle Sr, Theresa Anne Hughes, Brenda J Whizick, etc.

Table with columns: No., Lease Name or No., Ac., Permit, Oil & Gas Royalty Owner (Continued), Deed Book Page. Continuation of lease details for owners like Alice Gobry Martin, James A Gobry, Larry D Talun and Nancy Ltaunt, etc.

FILE NO. 8655P16HUR3.dwg
DATE AUGUST 29, 2017
REVISED 09-01-2017, 01-12-2018 & 03-22-18
OPERATORS WELL NO. TEN HIGH 1S-16HU
API WELL NO. 47-051-02828H6A
STATE COUNTY PERMIT



STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
P.S. 677
Signature: 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 NAME PERMIT

TEN HIGH 1S LEASE
UTICA UNIT - 623.86 AC. ±
WELL 16HU
TUG HILL OPERATING



Table with columns: No., Lease Name or No., Trg, Parcel, Oil & Gas Property Owner - Contained, Parcel Area/Page. Lists numerous lease parcels and their respective owners.

Table with columns: No., Lease Name or No., Trg, Parcel, Oil & Gas Property Owner - Contained, Parcel Area/Page. Continuation of lease parcels and owners from the previous table.

DATE AUGUST 29, 20 17
REVISED 09-01-2017, 01-12-2018 & 03-22-18
OPERATORS WELL NO. TEN HIGH 1S-16HU
API WELL NO. 47
STATE WV COUNTY DEWITT PERMIT D2028144



STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
P.S. 677
Signature: 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

4705102028



July 18, 2017

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

RE: Ten High 1S-16HU

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 1S-16HU 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

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WV Department of
Environmental Protection

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

Date of Notice Certification: 04/04/2018

API No. 47- 051 - _____
Operator's Well No. Ten High 1S-16HU
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>527,316.63</u>
County: <u>Marshall</u>		Northing: <u>4,406,361.38</u>
District: <u>Meade</u>	Public Road Access: <u>Shepherd Ridge Lane (Co. Rt. 21/9)</u>	
Quadrangle: <u>Glen 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		RECEIVED Office of Oil and Gas APR 9 2018 WV Department of Environmental Protection	OOG OFFICE USE ONLY <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED
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Required Attachments:

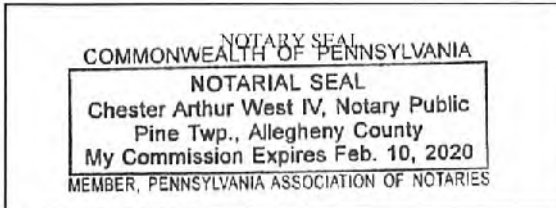
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

WW-6AC
(1/12)

Certification of Notice is hereby given:

THEREFORE, I Amy L. Miller amyk 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>amiller@tug-hillop.com</u>



Subscribed and sworn before me this 4th day of April 2018.

[Signature] Notary Public
My Commission Expires 2-10-2020

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 deprivacyofficer@wv.gov.

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Office of Oil and Gas

APR 9 2018

WV Department of
Environmental Protection

WW-6A
(9-13)

API NO. 47- 051 -
OPERATOR WELL NO. Ten High 1S-16HU
Well Pad Name: Ten High

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: 3/29/2018 **Date Permit Application Filed:** 4/3/2018

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: _____

Address: _____

SURFACE OWNER(S) (Impoundments or Pits)

Name: None

Address: _____

COAL OWNER OR LESSEE

Name: Murray Energy Corporation

Address: 46225 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: *See supplement page 1A attached

Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: None

Address: _____

*Please attach additional forms if necessary

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API NO. 47- 051 -
OPERATOR WELL NO. Ten High 1S-16HU
Well Pad Name: Ten High

WV 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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Environmental ProtectionAPI NO. 47-051 -
OPERATOR WELL NO. Ten High 1S-16HU
Well Pad Name: Ten High

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

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.**

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API NO. 47-051 -
OPERATOR WELL NO. Ten High 1S-16HU
Well Pad Name: Ten HighWV Department of
Environmental Protection**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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(8-13)

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API NO. 47-051 -
OPERATOR WELL NO. Ten High 1S-16HU
Well Pad Name: Ten High

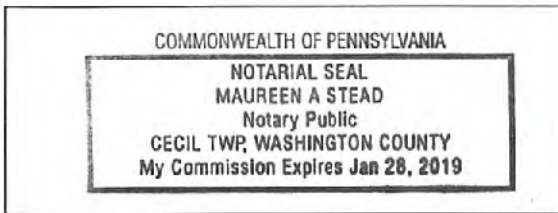
Notice is hereby given by:

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 3 day of APRIL 2018.
Maureen A Stead Notary Public
My Commission Expires 1/28/19

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WV Department of
Environmental Protection

Operator Well Nos. TEN HIGH 1S-16HU

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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Exhibit WW-6A

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

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

Well: Ten High 1S – 16HU
District: Meade (House #'s 1-3)
State: WV

There are three (3) residences, no businesses, no churches, no schools or no emergency facilities within two-thousand feet (2,000') of the above referenced well location.

<p>House 1 TM 7 Pcl. 24 Lawrence & Shirley Conkle Ests. ✓ Phone: 304-845-1808; 304-848-1808 Physical Address: 77B Shepards Lane 932 Shepherd Ridge Ln. Glen Easton, WV 26039 Tax Address: 75 Arlington Ave. Moundsville, WV 26041</p>	<p>House 2 TM 7 Pcl. 25 Thomas R. & Kimberly Whitfield ✓ Phone: 304-843-1753 Physical Address: 53 Sallys Backbone Rd. 1834 Sally's Backbone Rd. Glen Easton, WV 26039 Tax Address: 1838 Sallys Backbone Rd. Glen Easton, WV 26039</p>	<p>House 3 TM 7 Pcl. 25 Thomas R. & Kimberly Whitfield ✓ Phone: 304-843-1753 Physical Address: 53 Sallys Backbone Rd. 1838 Sally's Backbone Rd. Glen Easton, WV 26039 Tax Address: Same</p>
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WW-6A

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PROPOSED

SUPPLEMENT PG. 1B

WV Department of
Environmental Protection

TEN HIGH 1S - 16HU



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

SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26351 • (304) 462-5834
www.slsurveys.com

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	08-29-17	1" = 1000'



TUG HILL
OPERATING

WW-6A3
(1/12)

Operator Well No. TEN HIGH 1S-16HU

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: December 9, 2016 **Date of Planned Entry:** December 20, 2016

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 d/o Roy Conkle

Address: 75 ARLINGTON AVENUE
MOUNDSVILLE, WV 26041

Name: ROY A CONKLE, SR.

Address: 75 ARLINGTON AVENUE
MOUNDSVILLE, WV 26041

Name: LARRY CONKLE

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

MINERAL OWNER(s)

Name: ESTATE OF LAWRENCE & SHIRLEY MAE CONKLE d/o Roy Conkle

Address: 75 ARLINGTON AVENUE
MOUNDSVILLE, WV 26041 ****SEE ATTACHED****

*please attach additional forms if necessary

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WV Department of
Environmental Protection

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 39.8057775 LONG -90.6809192</u>
County:	<u>MARSHALL</u>	Public Road Access:	<u>SHEPHERD RIDGE LANE (Co. RT. 21/9)</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, PA15317</u>
Email:	<u>jwhite@tug-hillop.com</u>	Facsimile:	<u>(724) 388-2030</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.

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

Surface Owner(s):

Name: Teresa Hughes
Address: 252 Conkle Drive
Glen Easton, WV 26039

Brenda Joyce Wetzel
RD 1, Box 79
Glen Easton, WV 26039

Surface Owner(s) Access Road:

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

Mineral Owner(s):

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

Larry Conkle
154 Conkle Drive
Glen Easton, WV 26039

Teresa Hughes
252 Conkle Drive
Glen Easton, WV 26039

Brenda Joyce Wetzel
RD 1, Box 79
Glen Easton, WV 26039

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WV Department of
Environmental Protection

WW-6A5
(1/12)

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

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

Date of Notice: 04/03/2018 **Date Permit Application Filed:** 04/04/2018

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

CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED DELIVERY

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

Notice is hereby provided to the SURFACE OWNER(s)

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

Name: 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****

Notice is hereby given:

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>527,316.63</u>
County:	<u>Marshall</u>		Northing:	<u>4,406,351.38</u>
District:	<u>Meade</u>	Public Road Access:	<u>Shepherd Ridge Lane (Co. Rt. 21/9)</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>LAWRENCE & SHIRLEY CONKLE, ESTS</u>	
Watershed:	<u>(HUC 10) Fish Creek</u>			

This Notice Shall Include:

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

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

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.

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Environmental Protection

Operator Well Nos. TEN HIGH 1S-16HU

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 1S Unit-16HU 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
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PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Well No. Ten High 1S-16HU

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

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