



west virginia department of environmental protection

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

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

Friday, July 13, 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-15HU
47-051-02027-00-00

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

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

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

James A. Martin
Chief

Operator's Well Number: TEN HIGH 1S-15HU
Farm Name: LAWRENCE & SHIRLEY CON.
U.S. WELL NUMBER: 47-051-02027-00-00
Horizontal 6A New Drill
Date Issued: 7/13/2018

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 #47-051-02027

COMPANY: Tug Hill Operating, LLC

FARM: Tug Hill Operating, LLC Ten High 1S-15HU

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,

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

Susan Rose
Administrator

WW-6B
(04/15)

API NO. 47-051 - -
OPERATOR WELL NO. Ten High 1S-15HU
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-15HU 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 X Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow _____ Deep X

Horizontal X

Handwritten signature and date: 3/28/18

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: 21,188'

11) Proposed Horizontal Leg Length: 8,568'

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 X 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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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'	1,877ft^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#	10,463'	10,463'	3,416ft^3(CTS)
Production	5 1/2"	NEW	P110	23#	21,187'	21,187'	5,032ft^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,488'	
Liners							

ju
5/22/18

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	16,510	10,864	SEE#24	1.18
Tubing	2 7/8"			14,530	11,624		
Liners							

PACKERS

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

WW-6B
(10/14)

API NO. 47-051 -

OPERATOR WELL NO. Ten High 1S-15HU

Well Pad Name: Ten High

JW
3/28/18

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

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

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

Well to be completed with approximately 21,420,000 lb proppant and 331,169 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

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.

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WW6B Attachment to #24

Conductor and Fresh Water Casing Cement:

Premium NE-1 + 2% CaCl

- Premium NE-1 – Class A Portland API Spec
- CaCl – Calcium Chloride

Coal Casing Cement:

Premium NE-1 + 1.5% CaCl + Flake

- Premium NE-1 – Class A Portland API spec
- CaCl – Calcium Chloride
- CelloFlake

Intermediate Casing Cement:

Lead: *Premium NE-1 + 5% BA-90 + .85% R-3 + 3% KCl + .75 gals/100sk FP-13L + 1% MPA-170*

Tail: *Premium NE-1 + .1% R-3 + 5% KCl + 1% CD-32 + .4% FL-52 + .2% ASA-301 + .6% Sodium Metasilicate*

- Premium NE-1 – Class A Portland API spec
- BA-90 – Gas Migration Mitigator
- R-3 – Cement Retarder
- KCl – Potassium Chloride
- FP-13L – Anti-Foaming Agent
- MPA-170 – Gelling Agent
- CD-32 – Dispersant
- FL-52 – Fluid Loss Agent
- ASA-301 – Free Water Control Agent
- Sodium Metasilicate – Extending Agent

Kick Off Plug:

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

- CD-32 – Dispersant
- Sodium Metasilicate – Extending Agent
- R-3 – Cement Retarder
- FP-13L – Anti-Foaming Agent

Production Casing Cement:

Lead: *50:50 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .75 gal/100sk FP-13L*

Tail: *25:75 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .375 gal/100sk FP-13L*

- R-3 – Cement Retarder
- MPA-250 – Gelling Agent
- FP-13L – Anti-Foaming Agent

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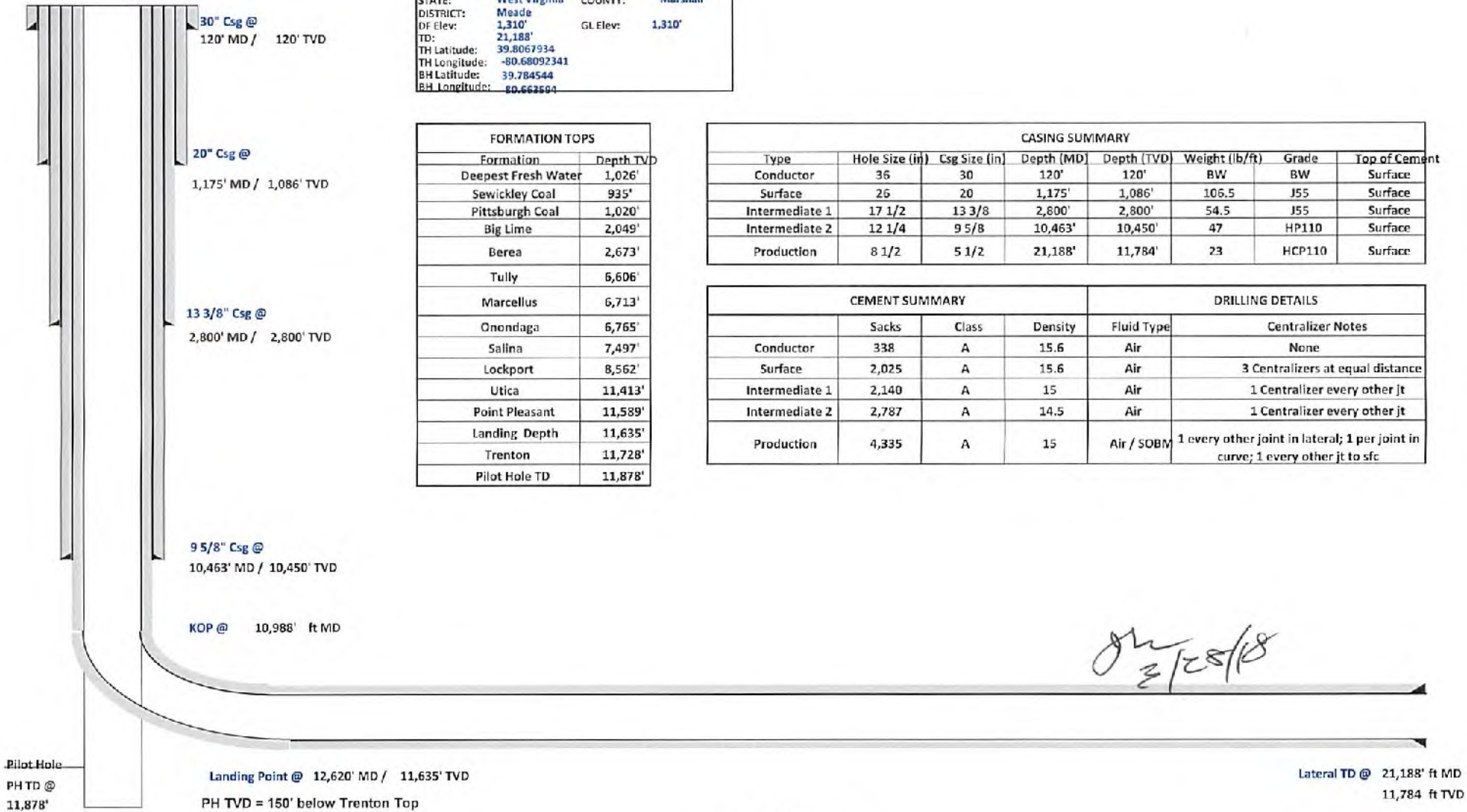


WELL NAME: Ten High 15-15HU
 STATE: West Virginia COUNTY: Marshall
 DISTRICT: Meade
 DF Elev: 1,310' GL Elev: 1,310'
 TD: 21,188'
 TH Latitude: 39.8067934
 TH Longitude: -80.68092341
 BH Latitude: 39.784544
 BH Longitude: -80.662594

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	5,606'
Marcellus	6,713'
Onondaga	6,765'
Salina	7,497'
Lockport	8,562'
Utica	11,413'
Point Pleasant	11,589'
Landing Depth	11,635'
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	1,175'	1,086'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,600'	2,800'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,463'	10,450'	47	HP110	Surface
Production	8 1/2	5 1/2	21,188'	11,784'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	2,025	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,140	A	15	Air	1 Centralizer every other jt
Intermediate 2	2,787	A	14.5	Air	1 Centralizer every other jt
Production	4,335	A	15	Air / SOB	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc



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4700102027



Tug Hill Operating, LLC Casing and Cement Program

Ten High 1S-15HU

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"	2,800'	CTS
Intermediate 2	9 5/8"	HP110	12 1/4"	10,483'	CTS
Production	5 1/2"	HCP110	8 1/2"	21,188'	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 15.8 ppg, Y=1.2

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

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

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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 15-15HU

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
4705130097	I.H. Beren	3018	Gordon SS	Unknown	No, TVD of 3018' means that this well is not within the range of fracture propagation from a Marcellus well	Well was plugged 5/28/1939
4705100732	Consolidated Coal Company	2973	Gordon SS	Unknown	No, TVD of 2973' means that this well is not within the range of fracture propagation from a Marcellus well	Well was plugged 1/9/2002
4705170659	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely, most likely an old shallow well	State well records are incomplete
4705100730	Consolidated Coal Company	2821	Gordon SS	Unknown	No, TVD of 2821' means that this well is not within the range of fracture propagation from a Marcellus well	Well was plugged 2/7/2002
4705100854	Consolidated Coal Company	3645	Gordon SS	Unknown	No, TVD of 2645' means that this well is not within the range of fracture propagation from a Marcellus well	Well was plugged 9/12/2000



Well: County = 51 Permit = 30097

Location Information

API: 4705100854 COUNTY: 51 PERMIT: 30097 TAX DISTRICT: GORDON QUAD: E6 QUAD: E6 LAT: 66 LONG: 80 UTM: 18SNA UTM: 4705100854 UTM: 8227 UTM: 4428024.9

Owner Information

API: 4705100854 STATUS: SURFACE_OWNER: WELL_NUM: 00 LEASE: LEASE_NUM: MINERAL_OWN: OPERATOR: COMPLETION: PROP: 150 (A.C. State (New Mine)) State (A.C. State) Mine: 1 11

Completion Information

API	COMP	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FTH	DEEPEST_FTH	INITIAL CLASS	FINAL CLASS	TYPE	RIG	COMP_MTH	TVD	TMD	NEW_FTH
4705100854					1200	Ground Level	Carbonyl-Gordon	Gordon						3645

Pay/Show/Well Information

API	COMP	DEPT	IDENTITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOTTOM	FM_BOTTOM	O_REF	O_APT	O_REF	O_APT	WATER_QNTY
4705100854				Water	Set Water	Vertical		1400	Set Water (Liner)					
4705100854				Oil	Oil	Vertical		2400	Oil					

Stratigraphy Information

API	SURF	FB	FM	QUALITY	DEPTH_TOP	DEPTH_BOTTOM	THICKNESS	THICKNESS	QUALITY	ELEV DATUM
4705100854	Original Log	Seawater	See	Well Record	1200	Reasonable	0	Reasonable	1200	Ground Level
4705100854	Original Log	Reasoning	See	Well Record	1218	Reasonable	0	Reasonable	1200	Ground Level
4705100854	Original Log	Reasoning	See	Well Record	1040	Reasonable	25	Reasonable	1200	Ground Level
4705100854	Original Log	Reasoning	See	Well Record	1000	Reasonable	40	Reasonable	1200	Ground Level
4705100854	Original Log	Reasoning	See	Well Record	2018	Reasonable			1200	Ground Level
4705100854	Original Log	Reasoning	See	Well Record	2000	Reasonable			1200	Ground Level
4705100854	Original Log	Reasoning	See	Well Record	2118	Reasonable	200	Reasonable	1200	Ground Level
4705100854	Original Log	Reasoning	See	Well Record	2017	Reasonable	20	Reasonable	1200	Ground Level

Plugging Information

API: 4705100854 FLS_DT: DEPTH_FTH: 0

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WV Geological & Economic Survey | Well: County = 51 Permit = 00732

Well Reassignment Information: Reassigned From
 OLD_COUNTY: 51, OLD_PERMIT: 00732, NEW_COUNTY: 51, NEW_PERMIT: 00732

Location Information
 API: 4705100702 | COUNTY: Marshall | PERMIT: 732 | TAX_DISTRICT: Meade | QUAD: 75 | QUAD_16: LAY_00 | LOW_OD: 070M | UTMN: 070M

Owner Information
 API: 4705100702 | CMP_DT: 14-2002 | SUFFIX: Pugging | STATUS: Completed | SURFACE_OWNER: Gansel & Lucy McDevine | WELL_NUM: 1 | CO_NUM: 1 | LEASE_NUM: 1 | LEASE_NUM_MINERAL_OWN: 1 | OPERATOR_AT_COMPLETION: Carabonator Gas Co. | OPERATOR_AT_COMPLETION_PROP_VD: Carabonator Gas Co.

Completion Information
 API: 4705100702 | CMP_DT: 14-2002 | SPUD_DT: 12-19-2001 | ELEV DATUM: 1200 | SURFACE: Carabonator Gas Co. | DEEPEST_FM: 2400 | DEEPEST_FMT: 2400 | INITIAL_CLASS: Development Well | FINAL_CLASS: Development Well | RIG: No Rigs | CMP_MTHD: Unknown | TVD: Unknown | TMD: 2073

Pay/Show/Water Information
 API: 4705100702 | CMP_DT: 14-2002 | ACTIVITY: Pay | PRODUCT: Gas | SECTION: Vertical | DEPTH_TOP_FM_TOT: 2415 | DEPTH_BOTTOM_FM_TOT: 2415 | G_BEP: 0 | S_BEP: 0 | C_BEP: 0 | WATER_CRTY: 0

Production Gas Information (Volumes in Mcf)

PRODUCTION_OPERATOR	PRO_YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Perkins Oil and Gas, Inc.	1990	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1991	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1992	2,983	324	190	404	328	381	271	151	228	418	242	284
Perkins Oil and Gas, Inc.	1993	1,953	324	325	373	337	84	8	101	125	85	122	63

Production Oil Information (Volumes in Bbl)

PRODUCTION_OPERATOR	PRO_YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Perkins Oil and Gas, Inc.	1990	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1991	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1992	14	0	0	0	0	14	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1993	18	0	0	0	0	18	0	0	0	0	0	0

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: 4705100702 | PUG_DT: 14-2002 | 0

There is no Sample data for this well.

WV Geological & Economic Survey | Well: County = 51 Permit = 00659

Well Reassignment Information: Reassigned From
 OLD_COUNTY: 51, OLD_PERMIT: 00659, NEW_COUNTY: 51, NEW_PERMIT: 00659

Location Information
 API: 4705100250 | COUNTY: Marshall | PERMIT: 659 | TAX_DISTRICT: Franklin | QUAD: 75 | QUAD_16: LAY_00 | LOW_OD: 070M | UTMN: 070M

Owner Information
 API: 4705100250 | CMP_DT: 14-2002 | SUFFIX: Original Les | STATUS: Completed | SURFACE_OWNER: PPO Industries Inc. | WELL_NUM: 1 | CO_NUM: 1 | LEASE_NUM: 1 | LEASE_NUM_MINERAL_OWN: 1 | OPERATOR_AT_COMPLETION: PPO Industries Inc.

Completion Information
 API: 4705100250 | CMP_DT: 14-2002 | SPUD_DT: 14-2002 | ELEV DATUM: 1200 | SURFACE: Unspecified | DEEPEST_FM: Unspecified | DEEPEST_FMT: Unspecified | INITIAL_CLASS: Unspecified | FINAL_CLASS: Unspecified | RIG: Not Available | CMP_MTHD: Unknown | TVD: Unknown | TMD: Unknown

Pay/Show/Water Information
 API: 4705100250 | CMP_DT: 14-2002 | ACTIVITY: Pay | PRODUCT: Gas | SECTION: Vertical | DEPTH_TOP_FM_TOT: 2415 | DEPTH_BOTTOM_FM_TOT: 2415 | G_BEP: 0 | S_BEP: 0 | C_BEP: 0 | WATER_CRTY: 0

Production Gas Information (Volumes in Mcf)

PRODUCTION_OPERATOR	PRO_YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Perkins Oil and Gas, Inc.	1990	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1991	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1992	2,983	324	190	404	328	381	271	151	228	418	242	284
Perkins Oil and Gas, Inc.	1993	1,953	324	325	373	337	84	8	101	125	85	122	63

Production Oil Information (Volumes in Bbl)

PRODUCTION_OPERATOR	PRO_YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Perkins Oil and Gas, Inc.	1990	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1991	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1992	14	0	0	0	0	14	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1993	18	0	0	0	0	18	0	0	0	0	0	0

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.

There is no Plugging data for this well.

There is no Sample data for this well.

WV Geological & Economic Survey | Well: County = 51 Permit = 00730

Well Reassignment Information: Reassigned From
 OLD_COUNTY: 51, OLD_PERMIT: 00730, NEW_COUNTY: 51, NEW_PERMIT: 00730

Location Information
 API: 4705100700 | COUNTY: Marshall | PERMIT: 730 | TAX_DISTRICT: Meade | QUAD: 75 | QUAD_16: LAY_00 | LOW_OD: 070M | UTMN: 070M

Owner Information
 API: 4705100700 | CMP_DT: 27-2002 | SUFFIX: Pugging | STATUS: Completed | SURFACE_OWNER: Gansel & Lucy McDevine | WELL_NUM: 1 | CO_NUM: 1 | LEASE_NUM: 1 | LEASE_NUM_MINERAL_OWN: 1 | OPERATOR_AT_COMPLETION: Carabonator Gas Co. | OPERATOR_AT_COMPLETION_PROP_VD: Carabonator Gas Co.

Completion Information
 API: 4705100700 | CMP_DT: 27-2002 | SPUD_DT: 1-22-2002 | ELEV DATUM: 1200 | SURFACE: Carabonator Gas Co. | DEEPEST_FM: 2400 | DEEPEST_FMT: 2400 | INITIAL_CLASS: Development Well | FINAL_CLASS: Development Well | RIG: No Rigs | CMP_MTHD: Unknown | TVD: Unknown | TMD: 2011

Pay/Show/Water Information
 API: 4705100700 | CMP_DT: 27-2002 | ACTIVITY: Pay | PRODUCT: Gas | SECTION: Vertical | DEPTH_TOP_FM_TOT: 2415 | DEPTH_BOTTOM_FM_TOT: 2415 | G_BEP: 0 | S_BEP: 0 | C_BEP: 0 | WATER_CRTY: 0

Production Gas Information (Volumes in Mcf)

PRODUCTION_OPERATOR	PRO_YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Perkins Oil and Gas, Inc.	1990	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1991	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1992	2,983	324	190	404	328	381	271	151	228	418	242	284
Perkins Oil and Gas, Inc.	1993	1,953	324	325	373	337	84	8	101	125	85	122	63

Production Oil Information (Volumes in Bbl)

PRODUCTION_OPERATOR	PRO_YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Perkins Oil and Gas, Inc.	1990	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1991	0	0	0	0	0	0	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1992	14	0	0	0	0	14	0	0	0	0	0	0
Perkins Oil and Gas, Inc.	1993	18	0	0	0	0	18	0	0	0	0	0	0

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: 4705100700 | PUG_DT: 27-2002 | 0

There is no Sample data for this well.

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Select County: (051) Marshall
 Well Permit: 00854

Select datatypes: (Check All)
 Location Production Plugging
 Owner/Completion Stratigraphy Sample
 Pay/Grow/Water Logs 2m-Hole Log

[View Information](#)
[View Data](#)
[View Maps](#)
[View Data](#)
[View Data](#)
[View Data](#)
[View Data](#)
[View Data](#)

WV Geological & Economic Survey Well: County = 51 Permit = 00854

Well Reassignment Information: Reassigned From

OLD_COUNTY	OLD_PERMIT	NEW_COUNTY	NEW_PERMIT
51	79502	51	854

Location Information [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_79	QUAD_14	LAT_DD	LON_DD	UTME	UTMN
4705100854	Marshall	854	Meade	Green Easton	Cameron	32 791455	-80 070235	228214 3	440465 2

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SURF_CD	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD
4705100854	6-12-2000	Plugging	Completed	Ernest F Moore Hiers	M-73		Ernest F Moore Hiers			Consolidation Coal Co.	
4705100854		Original Log	Completed	C. F. USCA Inc		1	793			Hess Natural Gas Company	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DAYUM	FIELD	DEEPEST_FTM	DEEPEST_FWT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMF_MTHD	TWD	NEW_FTS	G
4705100854	6-12-2000	6-29-2000	954	Drift/Lewis							HO-4-1828	UNKNOWN	UNKNOWN	2545	
4705100854								Drift/Lewis	undiscovered	undiscovered	HO-4-1828	UNKNOWN	UNKNOWN	2545	

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	PLUG_DT	DEPTH_FWT
4705100854	6-12-2000	

There is no Sample data for this well

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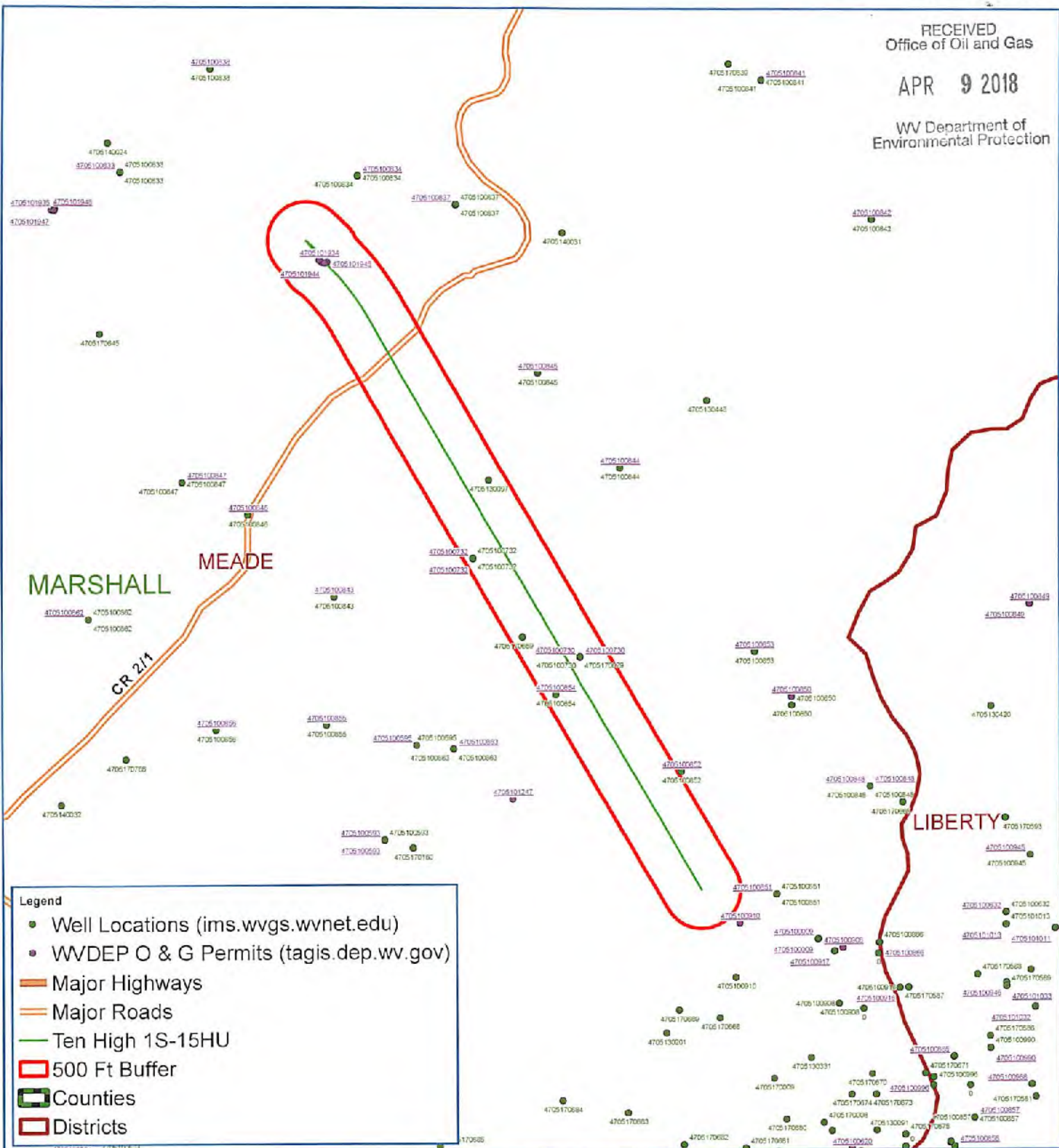
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Legend

- Well Locations (ims.wvgs.wvnet.edu)
- WVDEP O & G Permits (tagis.dep.wv.gov)
- Major Highways
- Major Roads
- Ten High 1S-15HU
- 500 Ft Buffer
- Counties
- Districts



Ten High 1S-15HU 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.

Map Prepared by:

PS
LAND SERVICES

07/13/2018

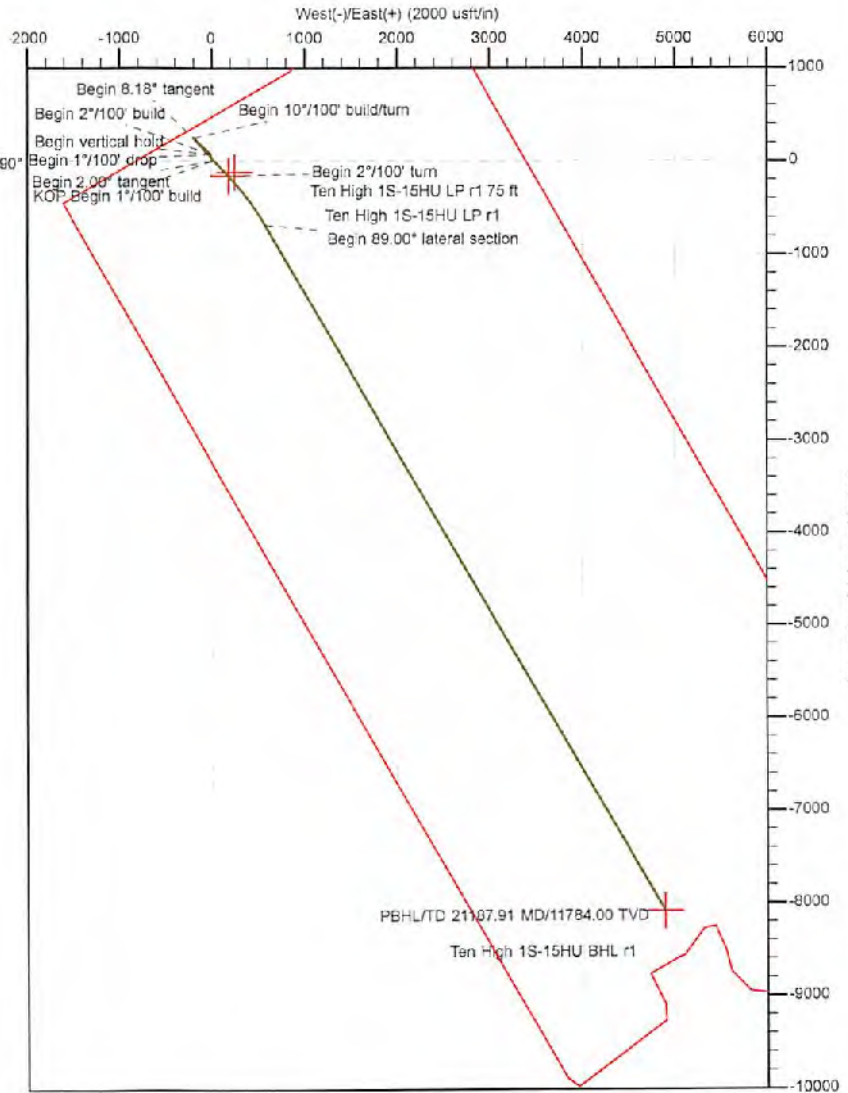


Well: Ten High 1S-15HU (C)
 Site: Ten High
 Project: Marshall County, West Virginia
 Design: rev2

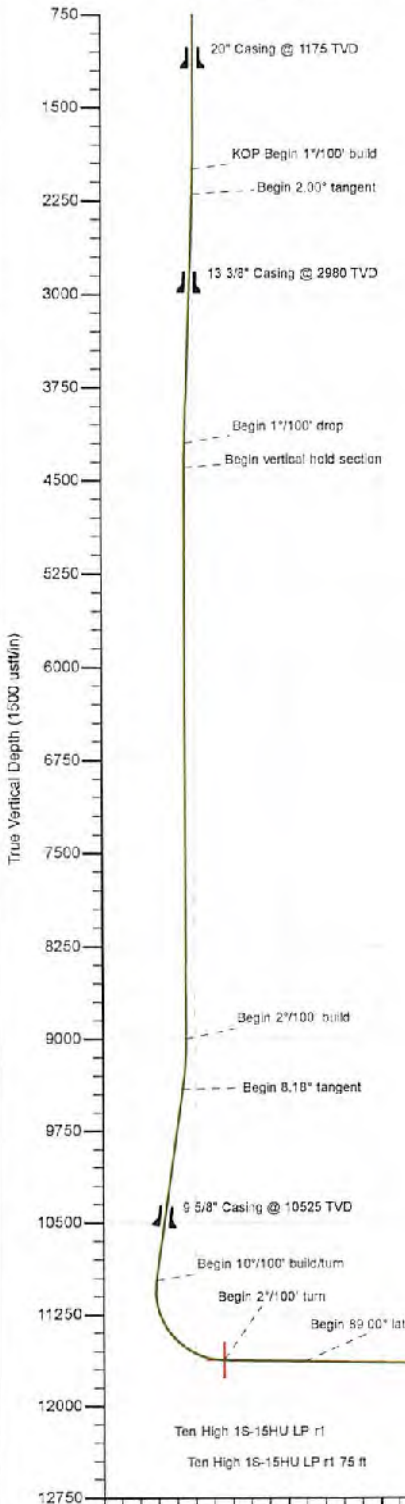
Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD83 West Virginia - HARN
 Ellipsoid: GRS 1990
 Zone: Zone 17N (84 W to 78 W)

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

Northing 14456540.08 Easting 1730025.79 Latitude 39.80679340 Longitude -80.68092341



Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.90°



Sec	MD	Inc	Azi	TVD	+N/S	+E/W	D/leg	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	350.00	2199.96	3.44	-0.61	1.00	360.00	-3.25	Begin 2.00° tangent
4	4200.00	2.00	350.00	4199.74	72.18	-12.73	0.00	0.00	-68.33	Begin 1°/100' drop
5	4400.00	0.00	350.00	4398.70	75.61	-13.33	1.00	180.00	-71.58	Begin vertical hold section
6	9001.30	0.00	350.00	9000.00	75.61	-13.33	0.00	360.00	-71.58	Begin 2°/100' build
7	9410.05	8.18	313.12	9407.37	95.51	-34.58	2.00	313.12	-99.61	Begin 8.18° tangent
8	10987.54	8.18	313.12	10968.62	248.93	-196.32	0.00	0.00	-315.58	Begin 10°/100' build/turn
9	11959.14	89.00	136.50	11623.00	-159.07	191.24	10.00	-176.59	229.96	Begin 2°/100' turn
10	12519.77	89.00	149.71	11634.58	-686.15	576.89	2.00	90.11	885.78	Begin 89.00° lateral section
11	21187.91	89.00	149.71	11784.00	-6093.32	4897.23	0.00	0.00	9451.51	PBHL/TD 21187.91 MD/11784.00 TVD

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Azimuths to Grid North
 True North: -0.26°
 Magnetic North: -8.90°
 Magnetic Field:
 Strength: 52211.5nT
 Dip Angle: 66.99°
 Date: 3/11/2017
 Model: IGRF2015



Planning Report - Geographic



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1S-15HU (C)
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-15HU (C)	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:	14,456,545.60 usft	Latitude:	39.80680885
From:	Lat/Long	Easting:	1,730,001.41 usft	Longitude:	-80.68101011
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.20 °

Well	Ten High 1S-15HU (C)					
Well Position	+N-S	0.00 usft	Northing:	14,456,540.06 usft	Latitude:	39.80679340
	+E-W	0.00 usft	Easting:	1,730,025.78 usft	Longitude:	-80.68092341
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	52,211.51726282

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	148.79

Plan Survey Tool Program	Date	11/26/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	21,187.91 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-15HU (C)
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-15HU (C)	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	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	2.00	350.00	2,199.96	3.44	-0.61	1.00	1.00	0.00	350.00	0.00	
4,200.00	2.00	350.00	4,198.74	72.18	-12.73	0.00	0.00	0.00	0.00	0.00	
4,400.00	0.00	350.00	4,398.70	75.61	-13.33	1.00	-1.00	0.00	180.00	0.00	
9,001.30	0.00	350.00	9,000.00	75.61	-13.33	0.00	0.00	0.00	350.00	0.00	
9,410.05	8.18	313.12	9,407.37	95.51	-34.58	2.00	2.00	-9.02	313.12	0.00	
10,987.54	8.18	313.12	10,968.82	248.83	-198.32	0.00	0.00	0.00	0.00	0.00	
11,959.14	89.00	136.50	11,623.00	-159.07	181.24	10.00	8.32	-18.18	-176.59	Ten High 1S-15HU LF	
12,619.77	89.00	149.71	11,634.58	-686.16	576.89	2.00	0.00	2.00	90.11		
21,187.91	89.00	149.71	11,784.00	-8,083.82	4,897.23	0.00	0.00	0.00	0.00	Ten High 1S-15HU BF	

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Planning Report - Geographic

WV Department of
Environmental Protection



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1S-15HU (C)
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-15HU (C)	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	
0.00	0.00	0.00	0.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
100.00	0.00	0.00	100.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
200.00	0.00	0.00	200.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
300.00	0.00	0.00	300.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
400.00	0.00	0.00	400.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
500.00	0.00	0.00	500.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
600.00	0.00	0.00	600.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
700.00	0.00	0.00	700.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
800.00	0.00	0.00	800.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
900.00	0.00	0.00	900.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,456,540.06	1,730,025.78	39.80679340	-80.68092341	
KOP Begin 1°/100' build										
2,100.00	1.00	350.00	2,099.99	0.86	-0.15	14,456,540.92	1,730,025.63	39.80679576	-80.68092394	
2,200.00	2.00	350.00	2,199.96	3.44	-0.61	14,456,543.50	1,730,025.18	39.80680285	-80.68092552	
Begin 2.00° tangent										
2,300.00	2.00	350.00	2,299.90	6.87	-1.21	14,456,546.94	1,730,024.57	39.80681229	-80.68092764	
2,400.00	2.00	350.00	2,399.84	10.31	-1.02	14,456,550.37	1,730,023.97	39.80682174	-80.68092975	
2,500.00	2.00	350.00	2,499.78	13.75	-2.42	14,456,553.81	1,730,023.36	39.80683118	-80.68093187	
2,600.00	2.00	350.00	2,599.72	17.18	-3.03	14,456,557.25	1,730,022.75	39.80684063	-80.68093398	
2,700.00	2.00	350.00	2,699.65	20.62	-3.64	14,456,560.69	1,730,022.15	39.80685007	-80.68093610	
2,800.00	2.00	350.00	2,799.59	24.06	-4.24	14,456,564.12	1,730,021.54	39.80685951	-80.68093821	
2,900.00	2.00	350.00	2,899.53	27.50	-4.85	14,456,567.56	1,730,020.94	39.80686896	-80.68094032	
3,000.00	2.00	350.00	2,999.47	30.93	-5.45	14,456,571.00	1,730,020.33	39.80687840	-80.68094244	
3,100.00	2.00	350.00	3,099.41	34.37	-6.06	14,456,574.43	1,730,019.72	39.80688785	-80.68094455	
3,200.00	2.00	350.00	3,199.35	37.81	-6.67	14,456,577.87	1,730,019.12	39.80689729	-80.68094667	
3,300.00	2.00	350.00	3,299.29	41.24	-7.27	14,456,581.31	1,730,018.51	39.80690674	-80.68094878	
3,400.00	2.00	350.00	3,399.23	44.68	-7.88	14,456,584.74	1,730,017.91	39.80691618	-80.68095090	
3,500.00	2.00	350.00	3,499.17	48.12	-8.48	14,456,588.18	1,730,017.30	39.80692563	-80.68095301	
3,600.00	2.00	350.00	3,599.11	51.55	-9.09	14,456,591.62	1,730,016.69	39.80693507	-80.68095512	
3,700.00	2.00	350.00	3,699.05	54.99	-9.70	14,456,595.05	1,730,016.09	39.80694452	-80.68095724	
3,800.00	2.00	350.00	3,798.98	58.43	-10.30	14,456,598.49	1,730,015.48	39.80695396	-80.68095935	
3,900.00	2.00	350.00	3,898.92	61.87	-10.91	14,456,601.93	1,730,014.88	39.80696341	-80.68096147	
4,000.00	2.00	350.00	3,998.86	65.30	-11.51	14,456,605.37	1,730,014.27	39.80697285	-80.68096358	
4,100.00	2.00	350.00	4,098.80	68.74	-12.12	14,456,608.80	1,730,013.66	39.80698229	-80.68096570	
4,200.00	2.00	350.00	4,198.74	72.18	-12.73	14,456,612.24	1,730,013.06	39.80699174	-80.68096781	
Begin 1°/100' drop										
4,300.00	1.00	350.00	4,298.71	74.75	-13.18	14,456,614.82	1,730,012.60	39.80699862	-80.68096940	
4,400.00	0.00	350.00	4,398.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
Begin vertical hold section										
4,500.00	0.00	0.00	4,498.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
4,600.00	0.00	350.00	4,598.70	75.61	-13.33	14,456,615.66	1,730,012.45	39.80700118	-80.68096992	
4,700.00	0.00	0.00	4,698.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
4,800.00	0.00	350.00	4,798.70	75.61	-13.33	14,456,615.66	1,730,012.45	39.80700118	-80.68096992	
4,900.00	0.00	0.00	4,898.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	

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Planning Report - Geographic

WV Department of Environmental Protection

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1S-15HU (C)
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-15HU (C)	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	350.00	4,998.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
5,100.00	0.00	350.00	5,098.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
5,200.00	0.00	0.00	5,198.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
5,300.00	0.00	350.00	5,298.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
5,400.00	0.00	0.00	5,398.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
5,500.00	0.00	0.00	5,498.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
5,600.00	0.00	350.00	5,598.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
5,700.00	0.00	350.00	5,698.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
5,800.00	0.00	350.00	5,798.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
5,900.00	0.00	0.00	5,898.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
6,000.00	0.00	350.00	5,998.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
6,100.00	0.00	0.00	6,098.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
6,200.00	0.00	0.00	6,198.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
6,300.00	0.00	350.00	6,298.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
6,400.00	0.00	350.00	6,398.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
6,500.00	0.00	350.00	6,498.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
6,600.00	0.00	0.00	6,598.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
6,700.00	0.00	350.00	6,698.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
6,800.00	0.00	350.00	6,798.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
6,900.00	0.00	0.00	6,898.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
7,000.00	0.00	350.00	6,998.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
7,100.00	0.00	0.00	7,098.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
7,200.00	0.00	0.00	7,198.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
7,300.00	0.00	350.00	7,298.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
7,400.00	0.00	350.00	7,398.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
7,500.00	0.00	350.00	7,498.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
7,600.00	0.00	0.00	7,598.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
7,700.00	0.00	350.00	7,698.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
7,800.00	0.00	350.00	7,798.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
7,900.00	0.00	0.00	7,898.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
8,000.00	0.00	350.00	7,998.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
8,100.00	0.00	350.00	8,098.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
8,200.00	0.00	0.00	8,198.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
8,300.00	0.00	350.00	8,298.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
8,400.00	0.00	350.00	8,398.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
8,500.00	0.00	350.00	8,498.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
8,600.00	0.00	0.00	8,598.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
8,700.00	0.00	350.00	8,698.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
8,800.00	0.00	350.00	8,798.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
8,900.00	0.00	0.00	8,898.70	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
9,000.00	0.00	350.00	8,998.70	75.61	-13.33	14,456,615.68	1,730,012.45	39.80700118	-80.68096992	
9,001.30	0.00	350.00	9,000.00	75.61	-13.33	14,456,615.88	1,730,012.45	39.80700118	-80.68096992	
Begin 2°/100' build										
9,100.00	1.97	313.12	9,098.68	76.78	-14.57	14,456,616.84	1,730,011.21	39.80700439	-80.68097433	
9,200.00	3.97	313.12	9,198.54	80.32	-18.36	14,456,620.38	1,730,007.42	39.80701416	-80.68098777	
9,300.00	5.97	313.12	9,298.16	86.25	-24.69	14,456,626.31	1,730,001.09	39.80703050	-80.68101023	
9,400.00	7.97	313.12	9,397.41	94.55	-33.55	14,456,634.61	1,729,992.23	39.80705337	-80.68104168	
9,410.05	8.18	313.12	9,407.37	95.51	-34.58	14,456,635.57	1,729,991.20	39.80705603	-80.68104534	
Begin 8.18° tangent										
9,500.00	8.18	313.12	9,496.40	104.25	-43.92	14,456,644.32	1,729,981.86	39.80708013	-80.68107847	
9,600.00	8.18	313.12	9,595.38	113.97	-54.30	14,456,654.03	1,729,971.48	39.80710693	-80.68111531	
9,700.00	8.18	313.12	9,694.37	123.69	-64.68	14,456,663.75	1,729,961.10	39.80713372	-80.68115214	
9,800.00	8.18	313.12	9,793.35	133.41	-75.06	14,456,673.47	1,729,950.73	39.80716051	-80.68118898	
9,900.00	8.18	313.12	9,892.34	143.13	-85.44	14,456,683.19	1,729,940.35	39.80718730	-80.68122582	

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WV Department of Environmental Protection



Planning Report - Geographic



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1S-15HU (C)
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-15HU (C)	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	8.18	313.12	9,991.32	152.85	-95.82	14,456,692.91	1,729,929.97	39.80721410	-80.68126265	
10,100.00	8.18	313.12	10,090.30	162.57	-105.20	14,456,702.63	1,729,919.59	39.80724089	-80.68129949	
10,200.00	8.18	313.12	10,189.29	172.29	-116.58	14,456,712.35	1,729,909.21	39.80726766	-80.68133633	
10,300.00	8.18	313.12	10,288.27	182.00	-126.96	14,456,722.07	1,729,898.83	39.80729447	-80.68137316	
10,400.00	8.18	313.12	10,387.26	191.72	-137.34	14,456,731.79	1,729,888.45	39.80732127	-80.68141000	
10,500.00	8.18	313.12	10,486.24	201.44	-147.72	14,456,741.51	1,729,878.07	39.80734806	-80.68144684	
10,600.00	8.18	313.12	10,585.22	211.16	-158.10	14,456,751.23	1,729,867.69	39.80737485	-80.68148367	
10,700.00	8.18	313.12	10,684.21	220.88	-168.48	14,456,760.94	1,729,857.31	39.80740164	-80.68152051	
10,800.00	8.18	313.12	10,783.19	230.60	-178.86	14,456,770.66	1,729,846.93	39.80742843	-80.68155735	
10,900.00	8.18	313.12	10,882.17	240.32	-189.24	14,456,780.38	1,729,836.55	39.80745523	-80.68159418	
10,987.54	8.18	313.12	10,966.82	248.83	-198.32	14,456,788.89	1,729,827.46	39.80747868	-80.68162643	
Begin 10°/100' build/turn										
11,000.00	6.93	312.50	10,981.18	249.94	-199.52	14,456,790.00	1,729,826.26	39.80748175	-80.68163069	
11,100.00	3.12	145.41	11,080.99	251.78	-202.43	14,456,791.84	1,729,823.35	39.80748683	-80.68184103	
11,200.00	13.09	138.56	11,179.87	241.02	-193.37	14,456,781.08	1,729,832.41	39.80745718	-80.68150689	
11,300.00	23.09	137.63	11,274.80	217.98	-172.61	14,456,768.04	1,729,853.18	39.80739370	-80.68153525	
11,400.00	33.09	137.24	11,362.91	183.36	-140.78	14,456,723.42	1,729,885.01	39.80729833	-80.68142235	
11,500.00	43.09	137.01	11,441.52	138.22	-98.84	14,456,678.29	1,729,926.94	39.80717396	-80.68127361	
11,600.00	53.09	136.86	11,508.23	83.93	-48.09	14,456,623.99	1,729,977.70	39.80702437	-80.68109357	
11,700.00	63.09	136.74	11,561.03	22.14	9.95	14,456,562.20	1,730,035.74	39.80685410	-80.68088769	
11,800.00	73.09	136.64	11,598.30	-45.28	73.52	14,456,494.78	1,730,099.30	39.80666833	-80.68066222	
11,900.00	83.09	136.55	11,618.92	-116.27	140.67	14,456,423.79	1,730,166.45	39.80647271	-80.68042401	
11,959.14	89.00	136.50	11,623.00	-159.07	181.24	14,456,380.99	1,730,207.03	39.80635478	-80.68028007	
Begin 2°/100' turn										
12,000.00	89.00	137.32	11,623.71	-188.90	209.15	14,456,351.16	1,730,234.94	39.80627258	-80.68018108	
12,100.00	89.00	139.32	11,625.46	-263.57	275.64	14,456,276.49	1,730,301.42	39.80606687	-80.67994530	
12,200.00	88.99	141.32	11,627.22	-340.52	339.48	14,456,199.55	1,730,365.26	39.80585493	-80.67971896	
12,300.00	88.99	143.32	11,628.97	-419.64	400.59	14,456,120.42	1,730,426.38	39.80563703	-80.67950238	
12,400.00	88.99	145.32	11,630.73	-500.85	458.91	14,456,039.21	1,730,484.69	39.80541344	-80.67929576	
12,500.00	89.00	147.32	11,632.48	-584.05	514.36	14,455,956.01	1,730,540.14	39.80518441	-80.67909939	
12,600.00	89.00	149.32	11,634.23	-669.13	566.86	14,455,870.93	1,730,592.65	39.80495024	-80.67891352	
12,619.77	89.00	149.71	11,634.58	-666.16	576.89	14,455,853.90	1,730,602.67	39.80490337	-80.67887804	
Begin 89.00° lateral section										
12,700.00	89.00	149.71	11,635.98	-755.43	617.35	14,455,784.63	1,730,643.13	39.80471273	-80.67873487	
12,800.00	89.00	149.71	11,637.72	-841.77	667.77	14,455,698.29	1,730,693.55	39.80447513	-80.67855644	
12,900.00	89.00	149.71	11,639.46	-928.11	718.19	14,455,611.95	1,730,743.98	39.80423752	-80.67837801	
13,000.00	89.00	149.71	11,641.21	-1,014.45	768.62	14,455,525.61	1,730,794.40	39.80399991	-80.67819958	
13,100.00	89.00	149.71	11,642.95	-1,100.79	819.04	14,455,439.27	1,730,844.82	39.80376231	-80.67802115	
13,200.00	89.00	149.71	11,644.70	-1,187.13	869.46	14,455,352.93	1,730,895.25	39.80352470	-80.67784272	
13,300.00	89.00	149.71	11,646.44	-1,273.47	919.89	14,455,266.59	1,730,945.67	39.80328709	-80.67766429	
13,400.00	89.00	149.71	11,648.18	-1,359.81	970.31	14,455,180.25	1,730,996.09	39.80304949	-80.67748587	
13,500.00	89.00	149.71	11,649.93	-1,446.15	1,020.73	14,455,093.92	1,731,046.52	39.80281188	-80.67730744	
13,600.00	89.00	149.71	11,651.67	-1,532.49	1,071.16	14,455,007.58	1,731,096.94	39.80257427	-80.67712902	
13,700.00	89.00	149.71	11,653.42	-1,618.83	1,121.58	14,454,921.24	1,731,147.36	39.80233666	-80.67695060	
13,800.00	89.00	149.71	11,655.18	-1,705.17	1,172.00	14,454,834.90	1,731,197.79	39.80209906	-80.67677218	
13,900.00	89.00	149.71	11,656.90	-1,791.50	1,222.43	14,454,748.56	1,731,248.21	39.80186145	-80.67659376	
14,000.00	89.00	149.71	11,658.65	-1,877.84	1,272.85	14,454,662.22	1,731,298.63	39.80162384	-80.67641534	
14,100.00	89.00	149.71	11,660.39	-1,964.18	1,323.27	14,454,575.88	1,731,349.06	39.80138623	-80.67623692	
14,200.00	89.00	149.71	11,662.14	-2,050.52	1,373.70	14,454,489.54	1,731,399.48	39.80114862	-80.67605851	
14,300.00	89.00	149.71	11,663.88	-2,136.86	1,424.12	14,454,403.20	1,731,449.90	39.80091101	-80.67588009	
14,400.00	89.00	149.71	11,665.62	-2,223.20	1,474.54	14,454,316.86	1,731,500.33	39.80067340	-80.67570168	
14,500.00	89.00	149.71	11,667.37	-2,309.54	1,524.97	14,454,230.52	1,731,550.75	39.80043579	-80.67552327	
14,600.00	89.00	149.71	11,669.11	-2,395.88	1,575.39	14,454,144.18	1,731,601.17	39.80019818	-80.67534486	
14,700.00	89.00	149.71	11,670.85	-2,482.22	1,625.81	14,454,057.85	1,731,651.60	39.79996057	-80.67516645	

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WV Department of
Environmental Protection

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1S-15HU (C)
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Project:	Marshall County, West Virginia	MD Reference:	GL=1310 @ 1310.00usft
Site:	Ten High	North Reference:	Grid
Well:	Ten High 1S-15HU (C)	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
14,800.00	89.00	149.71	11,672.60	-2,568.56	1,576.24	14,453,971.51	1,731,702.02	39.79972296	-80.67498804
14,900.00	89.00	149.71	11,674.34	-2,654.90	1,726.68	14,453,885.17	1,731,752.44	39.79948535	-80.67480963
15,000.00	89.00	149.71	11,676.09	-2,741.24	1,777.08	14,453,798.83	1,731,802.87	39.79924773	-80.67463122
15,100.00	89.00	149.71	11,677.83	-2,827.57	1,827.51	14,453,712.49	1,731,853.29	39.79901012	-80.67445282
15,200.00	89.00	149.71	11,679.57	-2,913.91	1,877.93	14,453,626.15	1,731,903.71	39.79877251	-80.67427442
15,300.00	89.00	149.71	11,681.32	-3,000.25	1,928.35	14,453,539.81	1,731,954.14	39.79853490	-80.67409601
15,400.00	89.00	149.71	11,683.06	-3,086.59	1,978.78	14,453,453.47	1,732,004.56	39.79829728	-80.67391761
15,500.00	89.00	149.71	11,684.81	-3,172.93	2,029.20	14,453,367.13	1,732,054.98	39.79805967	-80.67373921
15,600.00	89.00	149.71	11,686.55	-3,259.27	2,079.62	14,453,280.79	1,732,105.41	39.79782206	-80.67356081
15,700.00	89.00	149.71	11,688.29	-3,345.61	2,130.05	14,453,194.45	1,732,155.83	39.79758444	-80.67338242
15,800.00	89.00	149.71	11,690.04	-3,431.95	2,180.47	14,453,108.11	1,732,206.25	39.79734683	-80.67320402
15,900.00	89.00	149.71	11,691.78	-3,518.29	2,230.89	14,453,021.78	1,732,256.68	39.79710922	-80.67302562
16,000.00	89.00	149.71	11,693.53	-3,604.63	2,281.32	14,452,935.44	1,732,307.10	39.79687160	-80.67284723
16,100.00	89.00	149.71	11,695.27	-3,690.97	2,331.74	14,452,849.10	1,732,357.52	39.79663399	-80.67266884
16,200.00	89.00	149.71	11,697.01	-3,777.30	2,382.16	14,452,762.76	1,732,407.95	39.79639637	-80.67249045
16,300.00	89.00	149.71	11,698.76	-3,863.64	2,432.59	14,452,676.42	1,732,458.37	39.79615876	-80.67231206
16,400.00	89.00	149.71	11,700.50	-3,949.98	2,483.01	14,452,590.08	1,732,508.79	39.79592114	-80.67213367
16,500.00	89.00	149.71	11,702.25	-4,036.32	2,533.43	14,452,503.74	1,732,559.22	39.79568353	-80.67195528
16,600.00	89.00	149.71	11,703.99	-4,122.66	2,583.86	14,452,417.40	1,732,609.64	39.79544591	-80.67177689
16,700.00	89.00	149.71	11,705.73	-4,209.00	2,634.28	14,452,331.06	1,732,660.06	39.79520829	-80.67159851
16,800.00	89.00	149.71	11,707.48	-4,295.34	2,684.70	14,452,244.72	1,732,710.49	39.79497068	-80.67142012
16,900.00	89.00	149.71	11,709.22	-4,381.68	2,735.12	14,452,158.38	1,732,760.91	39.79473306	-80.67124174
17,000.00	89.00	149.71	11,710.97	-4,468.02	2,785.55	14,452,072.04	1,732,811.33	39.79449544	-80.67106336
17,100.00	89.00	149.71	11,712.71	-4,554.36	2,835.97	14,451,985.71	1,732,861.76	39.79425782	-80.67088498
17,200.00	89.00	149.71	11,714.45	-4,640.70	2,886.39	14,451,899.37	1,732,912.18	39.79402021	-80.67070660
17,300.00	89.00	149.71	11,716.20	-4,727.04	2,936.82	14,451,813.03	1,732,962.60	39.79378259	-80.67052822
17,400.00	89.00	149.71	11,717.94	-4,813.37	2,987.24	14,451,726.69	1,733,013.03	39.79354497	-80.67034984
17,500.00	89.00	149.71	11,719.69	-4,899.71	3,037.66	14,451,640.35	1,733,063.45	39.79330735	-80.67017147
17,600.00	89.00	149.71	11,721.43	-4,986.05	3,088.09	14,451,554.01	1,733,113.87	39.79306973	-80.66999309
17,700.00	89.00	149.71	11,723.17	-5,072.39	3,138.51	14,451,467.67	1,733,164.30	39.79283211	-80.66981472
17,800.00	89.00	149.71	11,724.92	-5,158.73	3,188.93	14,451,381.33	1,733,214.72	39.79259449	-80.66963635
17,900.00	89.00	149.71	11,726.66	-5,245.07	3,239.36	14,451,294.99	1,733,265.14	39.79235687	-80.66945798
18,000.00	89.00	149.71	11,728.40	-5,331.41	3,289.78	14,451,208.65	1,733,315.56	39.79211925	-80.66927961
18,100.00	89.00	149.71	11,730.15	-5,417.75	3,340.20	14,451,122.31	1,733,365.99	39.79188163	-80.66910124
18,200.00	89.00	149.71	11,731.89	-5,504.09	3,390.63	14,451,035.97	1,733,416.41	39.79164401	-80.66892287
18,300.00	89.00	149.71	11,733.64	-5,590.43	3,441.05	14,450,949.64	1,733,466.83	39.79140639	-80.66874451
18,400.00	89.00	149.71	11,735.38	-5,676.77	3,491.47	14,450,863.30	1,733,517.26	39.79116877	-80.66856614
18,500.00	89.00	149.71	11,737.12	-5,763.11	3,541.90	14,450,776.96	1,733,567.68	39.79093115	-80.66838778
18,600.00	89.00	149.71	11,738.87	-5,849.44	3,592.32	14,450,690.62	1,733,618.10	39.79069353	-80.66820942
18,700.00	89.00	149.71	11,740.61	-5,935.78	3,642.74	14,450,604.28	1,733,668.53	39.79045591	-80.66803106
18,800.00	89.00	149.71	11,742.36	-6,022.12	3,693.17	14,450,517.94	1,733,718.95	39.79021829	-80.66785270
18,900.00	89.00	149.71	11,744.10	-6,108.46	3,743.59	14,450,431.60	1,733,769.37	39.78998068	-80.66767434
19,000.00	89.00	149.71	11,745.84	-6,194.80	3,794.01	14,450,345.26	1,733,819.80	39.78974304	-80.66749598
19,100.00	89.00	149.71	11,747.59	-6,281.14	3,844.44	14,450,258.92	1,733,870.22	39.78950542	-80.66731763
19,200.00	89.00	149.71	11,749.33	-6,367.48	3,894.86	14,450,172.58	1,733,920.64	39.78926779	-80.66713927
19,300.00	89.00	149.71	11,751.08	-6,453.82	3,945.28	14,450,086.24	1,733,971.07	39.78903017	-80.66696092
19,400.00	89.00	149.71	11,752.82	-6,540.16	3,995.71	14,449,999.90	1,734,021.49	39.78879254	-80.66678257
19,500.00	89.00	149.71	11,754.56	-6,626.50	4,046.13	14,449,913.57	1,734,071.91	39.78855492	-80.66660422
19,600.00	89.00	149.71	11,756.31	-6,712.84	4,096.55	14,449,827.23	1,734,122.34	39.78831730	-80.66642587
19,700.00	89.00	149.71	11,758.05	-6,799.18	4,146.98	14,449,740.89	1,734,172.76	39.78807967	-80.66624752
19,800.00	89.00	149.71	11,759.80	-6,885.52	4,197.40	14,449,654.55	1,734,223.18	39.78784205	-80.66606917
19,900.00	89.00	149.71	11,761.54	-6,971.85	4,247.82	14,449,568.21	1,734,273.61	39.78760442	-80.66589082
20,000.00	89.00	149.71	11,763.28	-7,058.19	4,298.25	14,449,481.87	1,734,324.03	39.78736680	-80.66571246
20,100.00	89.00	149.71	11,765.03	-7,144.53	4,348.67	14,449,395.53	1,734,374.45	39.78712917	-80.66553414
20,200.00	89.00	149.71	11,766.77	-7,230.87	4,399.09	14,449,309.19	1,734,424.88	39.78689154	-80.66535579

APR 9 2018



Planning Report - Geographic

WV Department of
Environmental Protection



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Ten High 1S-15HU (C)
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-15HU (C)	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
20,300.00	89.00	149.71	11,768.52	-7,317.21	4,449.52	14,449,222.85	1,734,475.30	39.78665392	-80.66517745
20,400.00	89.00	149.71	11,770.26	-7,403.55	4,499.94	14,449,136.51	1,734,525.72	39.78641629	-80.66499911
20,500.00	89.00	149.71	11,772.00	-7,489.89	4,550.36	14,449,050.17	1,734,576.15	39.78617866	-80.66482077
20,600.00	89.00	149.71	11,773.75	-7,576.23	4,600.78	14,448,963.83	1,734,626.57	39.78594104	-80.66464244
20,700.00	89.00	149.71	11,775.49	-7,662.57	4,651.21	14,448,877.50	1,734,676.99	39.78570341	-80.66448410
20,800.00	89.00	149.71	11,777.24	-7,748.91	4,701.63	14,448,791.16	1,734,727.42	39.78546578	-80.66428576
20,900.00	89.00	149.71	11,778.98	-7,835.25	4,752.06	14,448,704.82	1,734,777.84	39.78522815	-80.66410743
21,000.00	89.00	149.71	11,780.72	-7,921.58	4,802.48	14,448,618.48	1,734,828.26	39.78499052	-80.66392910
21,100.00	89.00	149.71	11,782.47	-8,007.92	4,852.90	14,448,532.14	1,734,878.69	39.78475289	-80.66375077
21,187.91	89.00	149.71	11,784.00	-8,083.82	4,897.23	14,448,456.24	1,734,923.01	39.78454400	-80.66359400

PBHL/TD 21187.91 MD/11784.00 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-15HU LP r1 - hit/miss target - Shape - Point	0.00	0.00	11,623.00	-121.25	248.01	14,456,418.81	1,730,271.79	39.80645800	-80.68004900
- plan misses target center by 73.06usft at 11975.76usft MD (11623.29 TVD, -171.16 N, 192.65 E)									
Ten High 1S-15HU LP r1 - plan hits target center - Point	0.00	0.00	11,623.00	-159.07	181.24	14,456,380.99	1,730,207.03	39.80635478	-80.68028007
Ten High 1S-15HU BHL - plan hits target center - Point	0.00	0.00	11,784.00	-8,083.82	4,897.23	14,448,456.24	1,734,923.01	39.78454400	-80.66359400

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
2,980.52	2,980.00	13 3/8" Casing @ 2980 TVD	13-3/8	17-1/2
10,539.16	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 (+N/-S (usft), +E/-W (usft))	Comment
2,000.00	2,000.00	0.00, 0.00	KOP Begin 1°/100' build
2,200.00	2,199.96	3.44, -0.61	Begin 2.00° tangent
4,200.00	4,198.74	72.18, -12.73	Begin 1°/100' drop
4,400.00	4,398.70	75.81, -13.33	Begin vertical hold section
9,001.30	9,000.00	75.81, -13.33	Begin 2°/100' build
9,410.05	9,407.37	95.51, -34.58	Begin 8.18° tangent
10,987.54	10,968.82	248.83, -198.32	Begin 10°/100' build/turn
11,959.14	11,823.00	-159.07, 181.24	Begin 2°/100' turn
12,619.77	11,834.58	-688.16, 576.89	Begin 89.00° lateral section
21,187.91	11,784.00	-8,083.82, 4,897.23	PBHL/TD 21187.91 MD/11784.00 TVD

WW-9
(4/16)

API Number 47 - 051 - _____
Operator's Well No. Ten High 1N-15HU

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

RECEIVED
Office of Oil and Gas

APR 9 2018

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

WV Department of
Environmental Protection

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 contain

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.

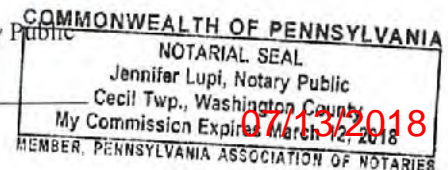
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations 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, 20 17

[Signature] Notary Public
My commission expires March 12, 2018



Form WW-9

Operator's Well No. Ten High 1N-15HU

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 16.20 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

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

Attach:

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: *Justin Tubolski*

Comments: _____

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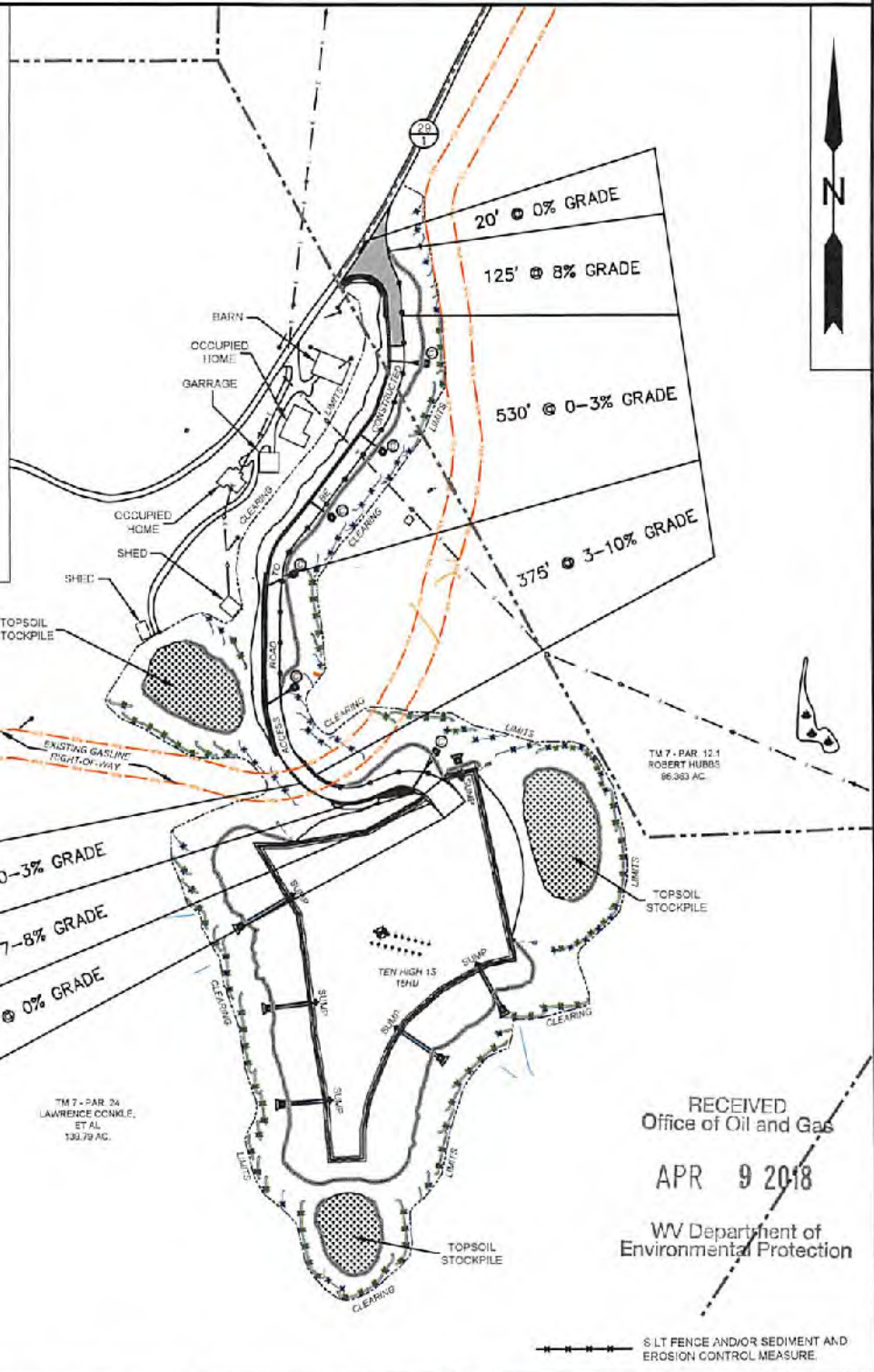
Title: *Oil & Gas Inspector* Date: *8/31/17*

Field Reviewed? () Yes () No

PROPOSED TEN HIGH 1S - 15HU

NOTES:

1. - DENOTES INSTALL 18" PVC CULVERT AND APPLY APPROPRIATE SEDIMENT OUTLET CONTROL (RIP RAP SPLASH PAD)
2. DRAWING NOT TO SCALE
3. REFERENCE IS HEREBY MADE TO THE WV DEP. OFFICE OF OIL & GAS "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.
4. INSTALL CULVERTS AS SHOWN ON RECLAMATION PLAN OR AS FIELD CONDITIONS REQUIRE
5. ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.
6. TEMPORARILY SEED AND MULCH ALL SLOPS UPON CONSTRUCTION OF LOCATION.
7. ALL CUT AND FILL SLOPES ARE 2H : 1V SLOPE.
8. ALL TREES 6 INCHES AND ABOVE ARE TO BE CUT AND STACKED. BRUSH slashings ARE TO BE UTILIZED DOWN SLOPE OF SITE AND STRUCTURES TO ACT AS A CONTROL BARRIER IF AVAILABLE.
9. SEE HEAVEN HILL 3 SITE PLAN PREPARED BY KELLEY SURVEYING, DATED 2/24/2017 FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.



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Solutions from the ground up.
P.O. Box 150 #12 Vanhorn Drive • Glenville, WV 26351 • (304) 452-5634
www.slsurvey.com

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

TUG HILL
OPERATING

07/13/2018

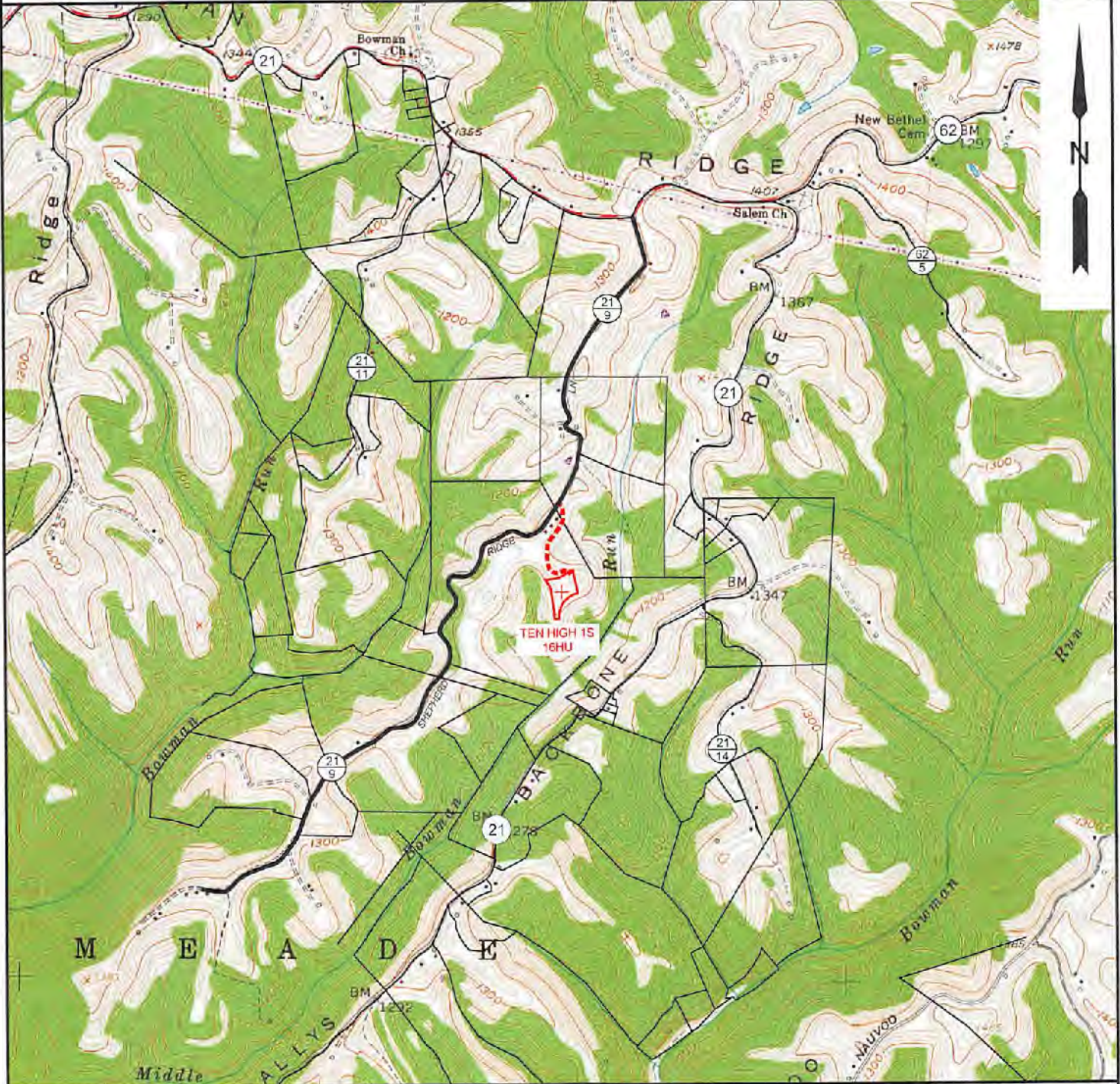
51-02027

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WV Department of
Environmental Protection

PROPOSED TEN HIGH 1S - 16HU



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

LAT: 39.7137712
LON: -80.8258327
LOCATED: S 51°03'40" W AT 52,970' FROM TEN HIGH 1S - 16HU SURFACE LOCATION

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Land & Energy Development
Solutions from the ground up.
P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26351 • (204) 462-5034
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.	B655	08-29-17	1" = 2000'

TUG HILL
OPERATING

07/13/2018



Well Site Safety Plan
Tug Hill Operating, LLC

J. [Signature]
3/28/18

Well Name: Ten High 1S-15HU

Pad Location: Ten High
Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

NORTHING -4,406,362.22

EASTING -527,312.91

March 2018

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APR 9 2018

WV Department of
Environmental Protection

07/13/2018

51-02027

WW-6A1
(5/13)

Operator's Well No. Ten High 1S-15HU

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

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

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

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

*See attached pages

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Office of Oil and Gas

APR 9 2018

WV Department of
Environmental Protection

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

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

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

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

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

51-02027

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	TH EXPLORATION LLC	1/8+	921	152	N/A	N/A	N/A	N/A
10*16738	G	9-7-25.2	CHARLES A RINE AND RUTH K RINE	TH EXPLORATION LLC	1/8+	908	274	N/A	N/A	N/A	N/A
10*16742	G	9-7-25.2	PAUL C WILSON	TH EXPLORATION LLC	1/8+	927	490	N/A	N/A	N/A	N/A
10*16747	G	9-7-25.2	WILLIAM DALE BRASKETT	TH EXPLORATION LLC	1/8+	921	96	N/A	N/A	N/A	N/A
10*16787	G	9-7-25.2	HERBERT B CAMPBELL & DONNA D CAMPBELL	TH EXPLORATION LLC	1/8+	942	451	N/A	N/A	N/A	N/A
10*16798	G	9-7-25.2	PATRICK A RANKIN AND ROBIN A RANKIN	TH EXPLORATION LLC	1/8+	921	364	N/A	N/A	N/A	N/A
10*16800	G	9-7-25.2	JAMES KENNETH JACKSON AND JULIE JACKSON	TH EXPLORATION LLC	1/8+	921	93	N/A	N/A	N/A	N/A
10*16802	G	9-7-25.2	CHRISTOPHER AND TAMMY RICHARDSON	TH EXPLORATION LLC	1/8+	921	495	N/A	N/A	N/A	N/A
10*16804	G	9-7-25.2	WILLIAM N AND SHERRY D TAYLOR	TH EXPLORATION LLC	1/8+	921	510	N/A	N/A	N/A	N/A
10*16806	G	9-7-25.2	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	G	9-7-25.2	DAVID TULLER AND SUSAN STORTS TULLER	TH EXPLORATION LLC	1/8+	921	513	N/A	N/A	N/A	N/A
10*16808	G	9-7-25.2	MICHAEL L ORTIZ	TH EXPLORATION LLC	1/8+	921	349	N/A	N/A	N/A	N/A
10*16815	G	9-7-25.2	HAROLD W PYLE	TH EXPLORATION LLC	1/8+	921	357	N/A	N/A	N/A	N/A
10*16819	G	9-7-25.2	TERESA ORTIZ BIGGS	TH EXPLORATION LLC	1/8+	921	147	N/A	N/A	N/A	N/A
10*16821	G	9-7-25.2	SHEILA BRASKETT WEICHEY	TH EXPLORATION LLC	1/8+	921	516	N/A	N/A	N/A	N/A
10*16836	G	9-7-25.2	RICK A AND LENORE A STORTS	TH EXPLORATION LLC	1/8+	921	507	N/A	N/A	N/A	N/A
10*16837	G	9-7-25.2	TERRY L AND THELMA A POFF	TH EXPLORATION LLC	1/8+	927	472	N/A	N/A	N/A	N/A
10*16838	G	9-7-25.2	ROBERT G FUNARI	TH EXPLORATION LLC	1/8+	921	82	N/A	N/A	N/A	N/A
10*16839	G	9-7-25.2	JAMES B FOUNDS AND LYNN M MOWERY	TH EXPLORATION LLC	1/8+	921	73	N/A	N/A	N/A	N/A
10*16863	G	9-7-25.2	TINA MOORE	TH EXPLORATION LLC	1/8+	921	334	N/A	N/A	N/A	N/A
10*16868	G	9-7-25.2	MICHAEL W STORTS AND JESSICA M STORTS	TH EXPLORATION LLC	1/8+	921	504	N/A	N/A	N/A	N/A
10*16879	G	9-7-25.2	MARK E AND LESLEY A STORTS	TH EXPLORATION LLC	1/8+	921	501	N/A	N/A	N/A	N/A
10*16880	G	9-7-25.2	BEVERLY ANN STORTS	TH EXPLORATION LLC	1/8+	921	498	N/A	N/A	N/A	N/A
10*16902	G	9-7-25.2	MARY BARCAW DUKE	TH EXPLORATION LLC	1/8+	921	105	N/A	N/A	N/A	N/A
10*16962	G	9-7-25.2	DENNIS P AND BARBARA EZELL FLORY	TH EXPLORATION LLC	1/8+	921	70	N/A	N/A	N/A	N/A
10*16976	G	9-7-25.2	LESTER G AND CONSTANCE B NICKOLSON	TH EXPLORATION LLC	1/8+	921	343	N/A	N/A	N/A	N/A
10*16977	G	9-7-25.2	JEREMY COCHENOUR	TH EXPLORATION LLC	1/8+	921	102	N/A	N/A	N/A	N/A
10*16987	G	9-7-25.2	LAURIE EZELL PERRY	TH EXPLORATION LLC	1/8+	921	355	N/A	N/A	N/A	N/A
10*16989	G	9-7-25.2	BRITTANY RICHARDSON	TH EXPLORATION LLC	1/8+	921	376	N/A	N/A	N/A	N/A
10*16991	G	9-7-25.2	MARYELLEN FOUNDS AND LAUREN FOUNDS	TH EXPLORATION LLC	1/8+	921	79	N/A	N/A	N/A	N/A
10*16996	G	9-7-25.2	THOMAS RANKIN	TH EXPLORATION LLC	1/8+	917	75	N/A	N/A	N/A	N/A
10*17130	G	9-7-25.2	CINDY L BARGER	TH EXPLORATION LLC	1/8+	921	137	N/A	N/A	N/A	N/A
10*17155	G	9-7-25.2	JESSE LEON JR AND TERESA GAIL EZELLE	TH EXPLORATION LLC	1/8+	921	118	N/A	N/A	N/A	N/A
10*17156	G	9-7-25.2	HENRI NELL JACKSON KENT BARNES	TH EXPLORATION LLC	1/8+	921	139	N/A	N/A	N/A	N/A
10*17157	G	9-7-25.2	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	G	9-7-25.2	THOMAS G AND DIANE W BAYLESS	TH EXPLORATION LLC	1/8+	921	141	N/A	N/A	N/A	N/A
10*17205	G	9-7-25.2	SANDRA JEAN WILSON	TH EXPLORATION LLC	1/8+	921	524	N/A	N/A	N/A	N/A
10*17208	G	9-7-25.2	PATRICK S GALLAGHER AND JOYCE ANN FOUNDS	TH EXPLORATION LLC	1/8+	921	86	N/A	N/A	N/A	N/A
10*17274	G	9-7-25.2	DAVID H WILSON	TH EXPLORATION LLC	1/8+	921	474	N/A	N/A	N/A	N/A
10*17275	G	9-7-25.2	JOHN R REEVES AND MONA G REEVES	TH EXPLORATION LLC	1/8+	921	373	N/A	N/A	N/A	N/A
10*17276	G	9-7-25.2	BERTHA EZELL WYATT	TH EXPLORATION LLC	1/8+	921	526	N/A	N/A	N/A	N/A
10*17278	G	9-7-25.2	MICHAEL L EZELLE	TH EXPLORATION LLC	1/8+	921	121	N/A	N/A	N/A	N/A
10*17339	G	9-7-25.2	JOSEPH W FOUNDS	TH EXPLORATION LLC	1/8+	921	76	N/A	N/A	N/A	N/A
10*17377	G	9-7-25.2	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	G	9-7-25.2	ANDREW M ORTIZ	TH EXPLORATION LLC	1/8+	921	346	N/A	N/A	N/A	N/A
10*17438	G	9-7-25.2	DENNIS M WILSON	TH EXPLORATION LLC	1/8+	921	476	N/A	N/A	N/A	N/A
10*17440	G	9-7-25.2	KENDRA WALISA	TH EXPLORATION LLC	1/8+	927	484	N/A	N/A	N/A	N/A
10*17441	G	9-7-25.2	RALPH J WILSON	TH EXPLORATION LLC	1/8+	921	522	N/A	N/A	N/A	N/A
10*17442	G	9-7-25.2	SHANE ALLEN AND MENDY JEAN ALLEN	TH EXPLORATION LLC	1/8+	921	134	N/A	N/A	N/A	N/A
10*17443	G	9-7-25.2	MICHELLE MORROW-BACK	TH EXPLORATION LLC	1/8+	921	337	N/A	N/A	N/A	N/A
10*17444	G	9-7-25.2	KELLY FOUNDS CAMPBELL	TH EXPLORATION LLC	1/8+	921	99	N/A	N/A	N/A	N/A
10*17449	G	9-7-25.2	PHYLLIS J BLAKE	TH EXPLORATION LLC	1/8+	921	150	N/A	N/A	N/A	N/A
10*17482	G	9-7-25.2	TERESA EZELLE RALYA AND DAVID L RALYA	TH EXPLORATION LLC	1/8+	927	487	N/A	N/A	N/A	N/A
10*17483	G	9-7-25.2	RICHARD I PYLE	TH EXPLORATION LLC	1/8+	921	359	N/A	N/A	N/A	N/A
10*17484	G	9-7-25.2	NELDA S JACKSON	TH EXPLORATION LLC	1/8+	921	330	N/A	N/A	N/A	N/A
10*17485	G	9-7-25.2	MARGIE ANN JACKSON ROBBINS GRAHAM	TH EXPLORATION LLC	1/8+	921	91	N/A	N/A	N/A	N/A
10*17526	G	9-7-25.2	JEFFREY L REEVES AND JODY L REEVES	TH EXPLORATION LLC	1/8+	921	370	N/A	N/A	N/A	N/A

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10*17527	G	9-7-25.2	JAMES MICHAEL EZELL AND LUCILLE D EZELL
10*17538	G	9-7-25.2	CHERYL RANKIN KING
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*17983	G	9-7-25.2	HOLLY SUE CUTHBERT
10*18021	G	9-7-25.2	CHRISTOPHER & JACKIE HANIFAN
10*18022	G	9-7-25.2	DALE P & CYNTHIA J WARD
10*19524	G	9-7-25.2	ESTATE OF AGNES IRENE E CLARK
10*19692	G	9-7-25.2	KENDRA WALISA
10*19693	G	9-7-25.2	MARIO R FUNARI BY HIS AIF ROBERT FUNARI
10*19695	G	9-7-25.2	VIRGINIA P FOUNDS KASSERMAN
10*19939	G	9-7-25.2	ROBERT J MILLS & SHERRA SUE MILLS
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

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TH EXPLORATION LLC	1/8+	921	111	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	952	160	N/A	N/A	N/A	N/A
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+	925	380	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+	942	633	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	924	484	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	936	145	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	944	333	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	949	212	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

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10*16667	J	9-12-4	CHARLES F AND GAIL ANN PYLE	TH EXPLORATION LLC	1/8+	908	266	N/A	N/A	N/A	N/A
10*16668	J	9-12-4	JACK I AND MERRILEE PYLE	TH EXPLORATION LLC	1/8+	908	257	N/A	N/A	N/A	N/A
10*16669	J	9-12-4	JOHN S AND PATRICIA S DADO	TH EXPLORATION LLC	1/8+	908	269	N/A	N/A	N/A	N/A
10*16686	J	9-12-4	CHERYLE M TRACEY	TH EXPLORATION LLC	1/8+	927	475	N/A	N/A	N/A	N/A
10*16688	J	9-12-4	SHERRYL PYLE BAIR	TH EXPLORATION LLC	1/8+	927	481	N/A	N/A	N/A	N/A
10*16689	J	9-12-4	JOHN C FOUNDS	TH EXPLORATION LLC	1/8+	927	478	N/A	N/A	N/A	N/A
10*16690	J	9-12-4	RICARDO ORTIZ	TH EXPLORATION LLC	1/8+	921	352	N/A	N/A	N/A	N/A
10*16720	J	9-12-4	DONNA ELAINE BRASKETT	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

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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
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

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10*47051.223.9	J	9-12-4	LINDA DELBERT
10*47051.222.1	K	9-12-5	DONALD D MCCARDLE AND LUCY MCCARDLE
10*47051.222.1	L	9-12-6.1	DONALD D MCCARDLE AND LUCY MCCARDLE
10*47051.222.1	M	9-12-6	DONALD D MCCARDLE AND LUCY MCCARDLE
10*47051.222.1	N	9-12-7	DONALD D MCCARDLE AND LUCY MCCARDLE
10*47051.222.10	N	9-12-7	CHRISTINA CAIN
10*47051.222.11	N	9-12-7	MARK DAVID HUNT
10*47051.222.12	N	9-12-7	MELISSA ELAINE SCHROTH
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

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TH EXPLORATION LLC	1/8+	908	32	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	879	314	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	879	314	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	879	314	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	879	314	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	905	27	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	904	451	N/A	N/A	N/A	N/A
TH EXPLORATION LLC	1/8+	904	453	N/A	N/A	N/A	N/A
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

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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 ROSENLUND
10*16974	P	9-12-22	BRANDY L WOOD
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

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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
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	APP to Tug Hill: 40/408
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

10*16607	R	9-12-29	LOUISE M AND WILSON D MCELHINNY	TH EXPLORATION LLC	1/8+	909	72	N/A	N/A	N/A	N/A
10*16748	R	9-12-29	KATHRYN BROWN AND BRUCE G BROWN	TH EXPLORATION LLC	1/8+	926	639	N/A	N/A	N/A	N/A
10*17815	R	9-12-29	THE TESTAMENTARY TRUST OF CAREY B PAUL III	TH EXPLORATION LLC	1/8+	919	252	N/A	N/A	N/A	N/A
10*17890	R	9-12-29	JANICE MEDER TRST MEDER LIVING	TH EXPLORATION LLC	1/8+	905	545	N/A	N/A	N/A	N/A
10*17893	R	9-12-29	ERIC D & AMANDA N PETRUCCI	TH EXPLORATION LLC	1/8+	924	545	N/A	N/A	N/A	N/A
10*17978	R	9-12-29	MARGARET INGALLS SCHICK	TH EXPLORATION LLC	1/8+	925	366	N/A	N/A	N/A	N/A
10*18018	R	9-12-29	KATHARINE & WILLIAM BUCKHAM	TH EXPLORATION LLC	1/8+	927	280	N/A	N/A	N/A	N/A
10*18171	R	9-12-29	MARYANNE I & HOWARD R BAUM	TH EXPLORATION LLC	1/8+	928	74	N/A	N/A	N/A	N/A
10*18422	R	9-12-29	MARY E HAMM	TH EXPLORATION LLC	1/8+	928	567	N/A	N/A	N/A	N/A
10*19412	R	9-12-29	WILLIAM ROY BLACK AND BRENDA F BLACK	TH EXPLORATION LLC	1/8+	939	381	N/A	N/A	N/A	N/A
10*19944	R	9-12-29	JACK H LIVINGSTON	TH EXPLORATION LLC	1/8+	948	258	N/A	N/A	N/A	N/A
10*21025	R	9-12-29	GRACE ELAINE FRANCIS	TH EXPLORATION LLC	1/8+	945	481	N/A	N/A	N/A	N/A
10*21090	R	9-12-29	CARLENE D SMALLWOOD	TH EXPLORATION LLC	1/8+	949	353	N/A	N/A	N/A	N/A
10*21091	R	9-12-29	RONALD R LIVINGSTON AND SANDRA LIVINGSTON	TH EXPLORATION LLC	1/8+	949	349	N/A	N/A	N/A	N/A
10*21102	R	9-12-29	MARK PETRUCCI AND KIMBERLY PETRUCCI	TH EXPLORATION LLC	1/8+	951	191	N/A	N/A	N/A	N/A
10*21185	R	9-12-29	CARL F PETRUCCI JR AND CATHY J PETRUCCI	TH EXPLORATION LLC	1/8+	939	598	N/A	N/A	N/A	N/A
10*21191	R	9-12-29	MELANIE ANN HOUGH AND THOMAS R HOUGH	TH EXPLORATION LLC	1/8+	939	267	N/A	N/A	N/A	N/A
10*21444	R	9-12-29	KAREN CALFEE	TH EXPLORATION LLC	1/8+	956	622	N/A	N/A	N/A	N/A
10*21445	R	9-12-29	ROBERT AND LOLA DODDS	TH EXPLORATION LLC	1/8+	956	619	N/A	N/A	N/A	N/A
10*21496	R	9-12-29	WILLIAM DODDS AND SYLVIA D DODDS	TH EXPLORATION LLC	1/8+	957	150	N/A	N/A	N/A	N/A
10*21524	R	9-12-29	DAVID A DODDS	TH EXPLORATION LLC	1/8+	958	459	N/A	N/A	N/A	N/A
10*21525	R	9-12-29	BRYCE A DODDS AND LILLIAN DODDS	TH EXPLORATION LLC	1/8+	958	463	N/A	N/A	N/A	N/A
10*21529	R	9-12-29	PAMELA A ALEXANDER	TH EXPLORATION LLC	1/8+	948	560	N/A	N/A	N/A	N/A
10*22021	R	9-12-29	ROBERT M MCCARDLE & NANCY R MCCARDLE	TH EXPLORATION LLC	1/8+	951	167	N/A	N/A	N/A	N/A
10*22099	R	9-12-29	DAVID S INGALLS AND PATRICIA A INGALLS	TH EXPLORATION LLC	1/8+	954	349	N/A	N/A	N/A	N/A
10*22101	R	9-12-29	ALEXANDRA R DODDS	TH EXPLORATION LLC	1/8+	961	420	N/A	N/A	N/A	N/A
10*47051.318.1	R	9-12-29	JOSEPH PAUL FOX AND MARGARET H FOX	TH EXPLORATION LLC	1/8+	905	569	N/A	N/A	N/A	N/A
10*47051.318.25	R	9-12-29	MARIANN T DARGUSCH AND JONATHON DARGUSCH	TH EXPLORATION LLC	1/8+	905	549	N/A	N/A	N/A	N/A
10*47051.318.30	R	9-12-29	CYNTHIA TEACHNOR GRAHAM	TH EXPLORATION LLC	1/8+	905	553	N/A	N/A	N/A	N/A
10*47051.318.31	R	9-12-29	WILLIAM RICHARD FOX	TH EXPLORATION LLC	1/8+	905	561	N/A	N/A	N/A	N/A
10*47051.318.33	R	9-12-29	J RONALD FOX	TH EXPLORATION LLC	1/8+	905	565	N/A	N/A	N/A	N/A
10*47051.318.35	R	9-12-29	ANNA MAE PATTERSON	TH EXPLORATION LLC	1/8+	905	573	N/A	N/A	N/A	N/A
10*47051.318.36	R	9-12-29	DANNY CARMICHAEL III	TH EXPLORATION LLC	1/8+	905	576	N/A	N/A	N/A	N/A
10*47051.318.4	R	9-12-29	MARY ELISE CAMP	TH EXPLORATION LLC	1/8+	905	557	N/A	N/A	N/A	N/A
10*47051.318.56	R	9-12-29	SALLY MERRICK	TH EXPLORATION LLC	1/8+	905	614	N/A	N/A	N/A	N/A
10*47051.318.9	R	9-12-29	JANICE M MEDER	TH EXPLORATION LLC	1/8+	905	545	N/A	N/A	N/A	N/A
10*47051.311.0	S	9-12-23	MICHAEL J GUNTO AND ROSEMARY GUNTO	TH EXPLORATION LLC	1/8+	905	16	N/A	N/A	N/A	N/A
10*47051.140.1	T	9-12-32	DAVID P CHAPMAN & DEBORAH BORCK-CHAPMAN	TH EXPLORATION LLC	1/8+	866	318	N/A	N/A	N/A	N/A
10*47051.140.2	T	9-12-32	DOROTHY SULLIVAN POA JAMES REID SULLIVAN	TH EXPLORATION LLC	1/8+	873	501	N/A	N/A	N/A	N/A
10*47051.140.1	U	9-12-21	DAVID P CHAPMAN & DEBORAH BORCK-CHAPMAN	TH EXPLORATION LLC	1/8+	866	318	N/A	N/A	N/A	N/A
10*47051.140.2	U	9-12-21	DOROTHY SULLIVAN POA JAMES REID SULLIVAN	TH EXPLORATION LLC	1/8+	873	501	N/A	N/A	N/A	N/A
10*47051.140.1	V	9-12-33	DAVID P CHAPMAN & DEBORAH BORCK-CHAPMAN	TH EXPLORATION LLC	1/8+	866	318	N/A	N/A	N/A	N/A
10*47051.140.2	V	9-12-33	DOROTHY SULLIVAN POA JAMES REID SULLIVAN	TH EXPLORATION LLC	1/8+	873	501	N/A	N/A	N/A	N/A
10*16402	W	9-15-4	VALIE L WAGNER	TH EXPLORATION LLC	1/8+	921	464	N/A	N/A	N/A	N/A
10*16421	W	9-15-4	SAMUEL EDGAR LEWIS AND ELIZABETH LEWIS	TH EXPLORATION LLC	1/8+	921	449	N/A	N/A	N/A	N/A
10*16491	W	9-15-4	BELA N WELLENREITER	TH EXPLORATION LLC	1/8+	921	467	N/A	N/A	N/A	N/A
10*17325	W	9-15-4	PHYLLIS ADAMS AND JOSEPH ADAMS	TH EXPLORATION LLC	1/8+	909	520	N/A	N/A	N/A	N/A
10*17341	W	9-15-4	JUDITH V RICHARDSON AND DENNIS L ROBICHAUD	TH EXPLORATION LLC	1/8+	921	456	N/A	N/A	N/A	N/A
10*17412	W	9-15-4	CHARLES L SHILLITO	TH EXPLORATION LLC	1/8+	921	458	N/A	N/A	N/A	N/A
10*17439	W	9-15-4	WILLARD D MCCALL JR AND ADELE HUEY MCCALL	TH EXPLORATION LLC	1/8+	921	454	N/A	N/A	N/A	N/A
10*17509	W	9-15-4	BRIAN A MCCALL	TH EXPLORATION LLC	1/8+	921	451	N/A	N/A	N/A	N/A
10*17525	W	9-15-4	PAUL W STIFEL AND MARY M GROVER-STIFEL	TH EXPLORATION LLC	1/8+	921	460	N/A	N/A	N/A	N/A
10*18294	W	9-15-4	MARY M AND WINFRED K MARTIN	TH EXPLORATION LLC	1/8+	929	342	N/A	N/A	N/A	N/A
10*22089	W	9-15-4	MARCIA A LUKE	TH EXPLORATION LLC	1/8+	961	333	N/A	N/A	N/A	N/A
10*22108	W	9-15-4	KATHLEEN A MCNEILL AND MICHAEL MCNEILL	TH EXPLORATION LLC	1/8+	961	511	N/A	N/A	N/A	N/A
10*22124	W	9-15-4	WILLIAM B EVENS JR AND PENNY EVENS	TH EXPLORATION LLC	1/8+	PENDING		N/A	N/A	N/A	N/A
10*22257	W	9-15-4	CHARLES F ALLEY TRUST	TH EXPLORATION LLC	1/8+	PENDING		N/A	N/A	N/A	N/A

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10*22380	W	9-15-4	JUDITH S KNIGHT	TH EXPLORATION LLC	1/8+	962	276	N/A	N/A	N/A	N/A
10*47051.318.46	W	9-15-4	CAROL L BOBBY AND DONALD J BOBBY	TH EXPLORATION LLC	1/8+	905	603	N/A	N/A	N/A	N/A
10*47051.318.48	W	9-15-4	DEBORAH SUE KYLE 231 EAST 24TH AVENUE	TH EXPLORATION LLC	1/8+	905	600	N/A	N/A	N/A	N/A
10*15752	X	9-15-3	KIM O CHAMBERS AND DEBRA CHAMBERS	TH EXPLORATION LLC	1/8+	906	258	N/A	N/A	N/A	N/A
10*16017	X	9-15-3	FLOYD A MCFADDEN	TH EXPLORATION LLC	1/8+	906	260	N/A	N/A	N/A	N/A
10*16018	X	9-15-3	BARBARA MCFADDEN ALBRIGHT	TH EXPLORATION LLC	1/8+	906	262	N/A	N/A	N/A	N/A
10*16143	X	9-15-3	MARY LOU CHAMBERS	TH EXPLORATION LLC	1/8+	906	276	N/A	N/A	N/A	N/A
10*16144	X	9-15-3	PATTIE S MADRID	TH EXPLORATION LLC	1/8+	906	278	N/A	N/A	N/A	N/A
10*16180	X	9-15-3	LARRY L CHAMBERS	TH EXPLORATION LLC	1/8+	906	280	N/A	N/A	N/A	N/A
10*16181	X	9-15-3	NORMA CHRISTINE WHIPP AND GERALD WAYNE BLACK	TH EXPLORATION LLC	1/8+	906	281	N/A	N/A	N/A	N/A
10*16182	X	9-15-3	FIRST CHRISTIAN CHURCH OF MOUNDSVILLE BY ROGER FRANCIS AND ROBERT ALBERT TRUSTEES	TH EXPLORATION LLC	1/8+	906	283	N/A	N/A	N/A	N/A
10*16239	X	9-15-3	ANGELA L OLDFIELD AND KENNETH W OLDFIELD	TH EXPLORATION LLC	1/8+	906	287	N/A	N/A	N/A	N/A
10*16285	X	9-15-3	JOHN A SHUTZ AND CYNTHIA J SHUTZ	TH EXPLORATION LLC	1/8+	906	291	N/A	N/A	N/A	N/A
10*16441	X	9-15-3	GEORGE FRANKLIN AND NANCY ANN REED	TH EXPLORATION LLC	1/8+	924	619	N/A	N/A	N/A	N/A
10*16442	X	9-15-3	FRED T AND JERRY L CHAMBERS	TH EXPLORATION LLC	1/8+	924	174	N/A	N/A	N/A	N/A
10*16443	X	9-15-3	BARBARA BROWN CHAMBERS	TH EXPLORATION LLC	1/8+	924	621	N/A	N/A	N/A	N/A
10*16444	X	9-15-3	CATHERINE ELLEN CHAMBERS	TH EXPLORATION LLC	1/8+	924	623	N/A	N/A	N/A	N/A
10*16445	X	9-15-3	DOUGLAS C AND GWENDLYN D LEWTON	TH EXPLORATION LLC	1/8+	925	123	N/A	N/A	N/A	N/A
10*16483	X	9-15-3	JOHN C AND BARBARA H WINTER	TH EXPLORATION LLC	1/8+	924	178	N/A	N/A	N/A	N/A
10*16486	X	9-15-3	DAVID ALAN WILKINSON AND PATRICIA LYNN WILKINSON	TH EXPLORATION LLC	1/8+	924	180	N/A	N/A	N/A	N/A
10*16490	X	9-15-3	WILLIAM H AND MERRY C COTTON	TH EXPLORATION LLC	1/8+	924	176	N/A	N/A	N/A	N/A
10*16540	X	9-15-3	JAMES A WINTER AND CONNIE G WINTER	TH EXPLORATION LLC	1/8+	924	184	N/A	N/A	N/A	N/A
10*16580	X	9-15-3	HAROLD C MCFADDEN	TH EXPLORATION LLC	1/8+	907	480	N/A	N/A	N/A	N/A
10*16680	X	9-15-3	RONALD J AND JENNIFER CHAMBERS FICCA	TH EXPLORATION LLC	1/8+	924	186	N/A	N/A	N/A	N/A
10*16726	X	9-15-3	LESLEY K WHITE	TH EXPLORATION LLC	1/8+	924	182	N/A	N/A	N/A	N/A
10*16733	X	9-15-3	SARAH L BISHOP	TH EXPLORATION LLC	1/8+	924	172	N/A	N/A	N/A	N/A
10*16835	X	9-15-3	ERNEST CARL AUGUSTINE JR	TH EXPLORATION LLC	1/8+	924	188	N/A	N/A	N/A	N/A
10*16948	X	9-15-3	FREDERICK M LEWTON	TH EXPLORATION LLC	1/8+	924	136	N/A	N/A	N/A	N/A
10*16949	X	9-15-3	STEVEN R AND BRIANNE L UTT	TH EXPLORATION LLC	1/8+	924	138	N/A	N/A	N/A	N/A
10*16950	X	9-15-3	JAY E AND CECILIA E LEWTON	TH EXPLORATION LLC	1/8+	924	134	N/A	N/A	N/A	N/A
10*16952	X	9-15-3	RUSSELL D HERVEY	TH EXPLORATION LLC	1/8+	924	132	N/A	N/A	N/A	N/A
10*16953	X	9-15-3	DONALD T AND JEAN K HOGAN	TH EXPLORATION LLC	1/8+	924	140	N/A	N/A	N/A	N/A
10*16990	X	9-15-3	ROSEMARY H BEAVERS	TH EXPLORATION LLC	1/8+	924	152	N/A	N/A	N/A	N/A
10*16992	X	9-15-3	LINDA C ABRAHAM	TH EXPLORATION LLC	1/8+	924	148	N/A	N/A	N/A	N/A
10*16993	X	9-15-3	JULIA HOOVER	TH EXPLORATION LLC	1/8+	924	150	N/A	N/A	N/A	N/A
10*16995	X	9-15-3	DIANE ELSIE RAMSEY	TH EXPLORATION LLC	1/8+	924	146	N/A	N/A	N/A	N/A
10*17129	X	9-15-3	ROBERTA JANE PARKINSON	TH EXPLORATION LLC	1/8+	924	142	N/A	N/A	N/A	N/A
10*17131	X	9-15-3	LAURA E TOTTEN AND LONNIE R TOTTEN	TH EXPLORATION LLC	1/8+	924	154	N/A	N/A	N/A	N/A
10*17134	X	9-15-3	UNITED CHRISTIAN MISSIONARY SOCIETY	TH EXPLORATION LLC	1/8+	924	14	N/A	N/A	N/A	N/A
10*17209	X	9-15-3	GAYLE S SHANNON	TH EXPLORATION LLC	1/8+	924	168	N/A	N/A	N/A	N/A
10*17289	X	9-15-3	HAROLD R HUNT JR AND ELIZABETH A HUNT	TH EXPLORATION LLC	1/8+	924	170	N/A	N/A	N/A	N/A
10*17396	X	9-15-3	CHRISTINE L KIDD	TH EXPLORATION LLC	1/8+	924	158	N/A	N/A	N/A	N/A
10*17413	X	9-15-3	ROBERT M CHAMBERS AND CHARLOTTE A CHAMBERS	TH EXPLORATION LLC	1/8+	924	160	N/A	N/A	N/A	N/A
10*17436	X	9-15-3	ANDREW M HOOVER AND DINAH R HOOVER	TH EXPLORATION LLC	1/8+	924	156	N/A	N/A	N/A	N/A
10*17448	X	9-15-3	FREDERICK L HERVEY AND CATHY J HERVEY	TH EXPLORATION LLC	1/8+	924	162	N/A	N/A	N/A	N/A
10*17452	X	9-15-3	ALAN H & MARY K DEGARMO	TH EXPLORATION LLC	1/8+	924	164	N/A	N/A	N/A	N/A
10*17486	X	9-15-3	JOSELYN M KEELY	TH EXPLORATION LLC	1/8+	929	364	N/A	N/A	N/A	N/A
10*17487	X	9-15-3	DEBORAH R MOKOSH	TH EXPLORATION LLC	1/8+	924	166	N/A	N/A	N/A	N/A
10*17563	X	9-15-3	DONALD L WOOD	TH EXPLORATION LLC	1/8+	923	523	N/A	N/A	N/A	N/A
10*17617	X	9-15-3	UNITED DISCIPLES OF CHRIST CHURCH	TH EXPLORATION LLC	1/8+	924	129	N/A	N/A	N/A	N/A
10*17674	X	9-15-3	HOWARD L WOOD AND BETH E WOOD	TH EXPLORATION LLC	1/8+	923	505	N/A	N/A	N/A	N/A
10*17675	X	9-15-3	GREGORY DEANE WIBLE AND CAROLYN JEAN WIBLE	TH EXPLORATION LLC	1/8+	923	507	N/A	N/A	N/A	N/A
10*17701	X	9-15-3	SUE ANN WORD	TH EXPLORATION LLC	1/8+	923	470	N/A	N/A	N/A	N/A
10*17702	X	9-15-3	TAMMY BETH RAMSEY	TH EXPLORATION LLC	1/8+	925	500	N/A	N/A	N/A	N/A
10*18416	X	9-15-3	BETH W WISHARD & GREG WISHARD	TH EXPLORATION LLC	1/8+	932	584	N/A	N/A	N/A	N/A
10*19523	X	9-15-3	CHRISTIAN CHURCH DISCIPLES OF CHRIST	TH EXPLORATION LLC	1/8+	943	6	N/A	N/A	N/A	N/A
10*19539	X	9-15-3	SUSAN VAN DYNE NKA SUSAN ASTON	TH EXPLORATION LLC	1/8+	936	505	N/A	N/A	N/A	N/A

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10*19946	X	9-15-3	THE ESTATE OF CHARLIN GUDGEL	TH EXPLORATION LLC	1/8+	948	301	N/A	N/A	N/A	N/A
10*19952	X	9-15-3	THE JOHN C BURNS SUPPLEMENTAL NEEDS TRUST	TH EXPLORATION LLC	1/8+	948	212	N/A	N/A	N/A	N/A
10*21109	X	9-15-3	WILLIAM JUDSON HERVEY III AND THERESA HERVEY	TH EXPLORATION LLC	1/8+	953	98	N/A	N/A	N/A	N/A
10*21110	X	9-15-3	JAMES ROBERT HERVEY AND KAREN HERVEY	TH EXPLORATION LLC	1/8+	953	100	N/A	N/A	N/A	N/A
10*21869	X	9-15-3	DAVID A WEBER AND JUDITH V WEBER	TH EXPLORATION LLC	1/8+	953	495	N/A	N/A	N/A	N/A
10*21931	X	9-15-3	DONALD M BURNS SUPPLEMENT NEEDS TRUST	TH EXPLORATION LLC	1/8+	953	491	N/A	N/A	N/A	N/A
10*21932	X	9-15-3	VAUGHN D BURNS SUPPLEMENT NEEDS TRUST	TH EXPLORATION LLC	1/8+	953	487	N/A	N/A	N/A	N/A
10*22192	X	9-15-3	WILLIAM SHEPHERD AND JERRY LEA SHEPHERD	TH EXPLORATION LLC	1/8+	954	347	N/A	N/A	N/A	N/A
10*47051.325.1	X	9-15-3	JUDITH A LEWANDOSKY AND ALAN E LEWANDOSKY	TH EXPLORATION LLC	1/8+	906	225	N/A	N/A	N/A	N/A
10*47051.325.3	X	9-15-3	NICHOLAS D PAVLIK AND GLORIA K PAVLIK	TH EXPLORATION LLC	1/8+	906	228	N/A	N/A	N/A	N/A
10*47051.325.4	X	9-15-3	JAMES H WHITE AND RITA FRANKS WHITE	TH EXPLORATION LLC	1/8+	906	230	N/A	N/A	N/A	N/A
10*47051.325.5	X	9-15-3	SAMUEL ALAN MCCORD AND WINIFRED A MCKEE	TH EXPLORATION LLC	1/8+	906	232	N/A	N/A	N/A	N/A
10*47051.325.6	X	9-15-3	THOMAS O MCCORD	TH EXPLORATION LLC	1/8+	906	235	N/A	N/A	N/A	N/A
10*47051.325.7	X	9-15-3	SHERON JONES	TH EXPLORATION LLC	1/8+	906	237	N/A	N/A	N/A	N/A
10*47051.325.8	X	9-15-3	RICK PAVLIK	TH EXPLORATION LLC	1/8+	906	239	N/A	N/A	N/A	N/A

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4,005' T.H.

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 WELL 15HU
 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. 478,155.79	E. 1,636,745.94
NAD'83 GEO.	LAT-(N) 39.806793	LONG-(W) 80.680923
NAD'83 UTM (M)	N. 4,408,362.22	E. 627,312.91

LANDING POINT

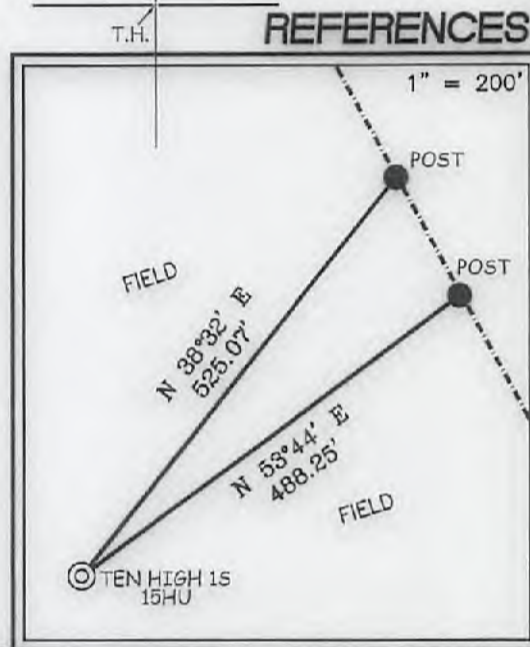
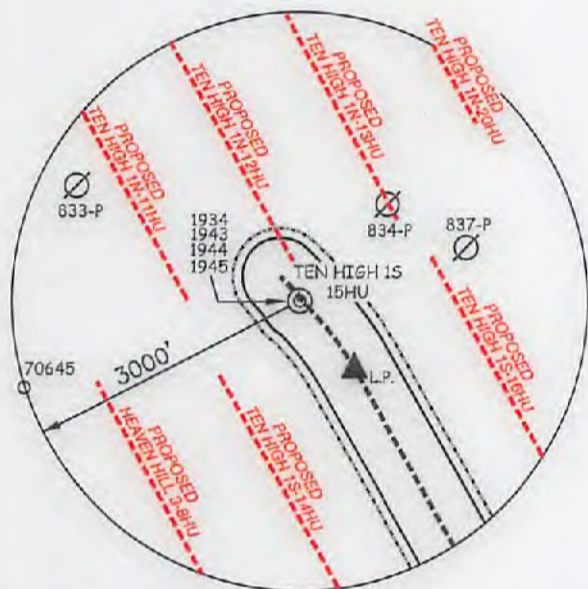
NAD'83 S.P.C.(FT)	N. 477,459.9	E. 1,637,311.5
NAD'83 GEO.	LAT-(N) 39.804903	LONG-(W) 80.678878
NAD'83 UTM (M)	N. 4,408,153.1	E. 627,488.8

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 489,988.5	E. 1,641,509.0
NAD'83 GEO.	LAT-(N) 39.784544	LONG-(W) 80.683594
NAD'83 UTM (M)	N. 4,403,898.3	E. 528,805.6

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

2,595' B.H.
 9,668' T.H.



NOTES ON SURVEY

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

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 www.slsurveyors.com

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-15HU
 API WELL NO. 47-051-02027 HGA
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8655P15HUR3.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 = 1,323.00' 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: 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: 21,188'

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

COUNTY NAME
 PERMIT

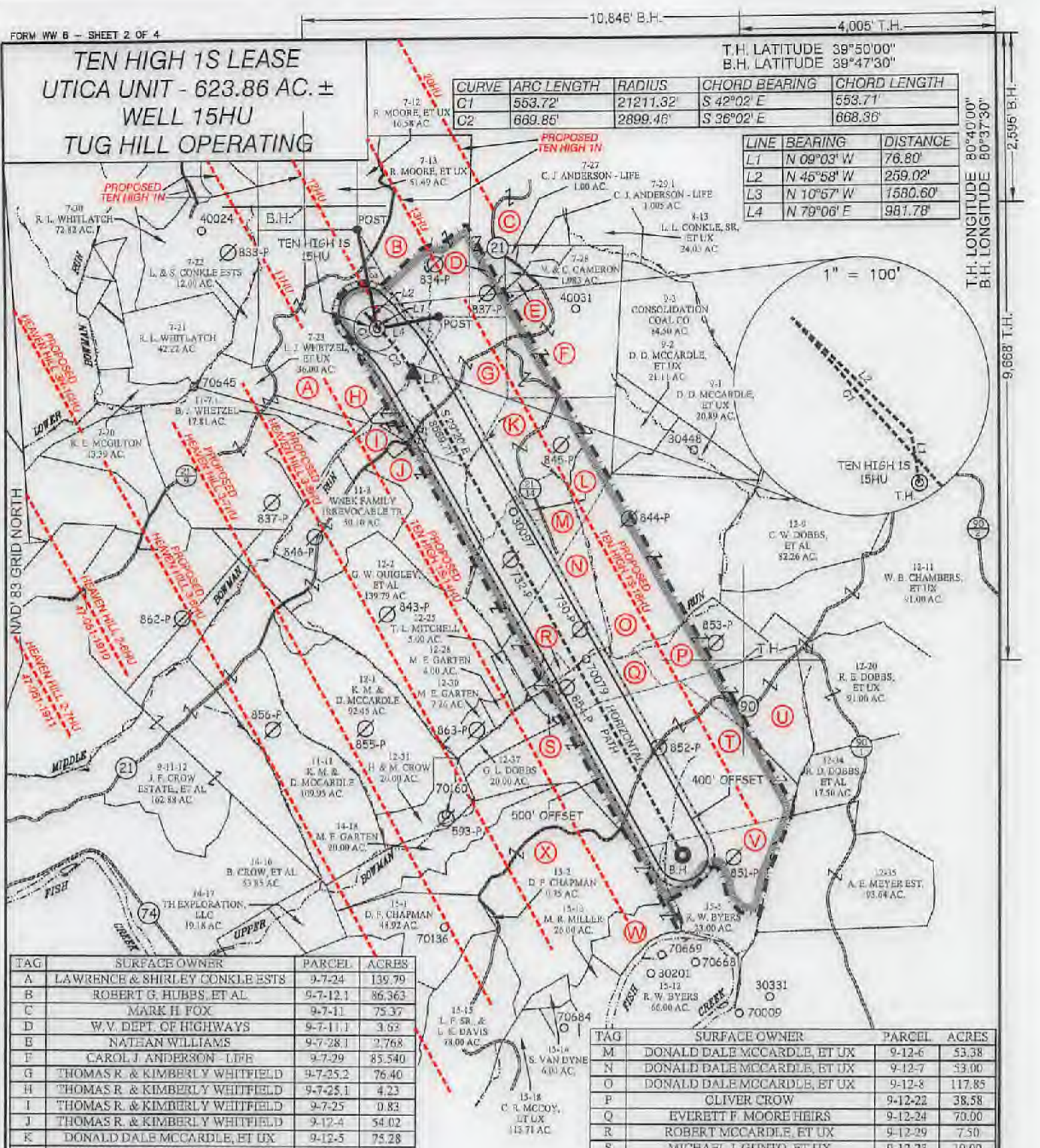
07/13/2018

**TEN HIGH 1S LEASE
UTICA UNIT - 623.86 AC. ±
WELL 15HU
TUG HILL OPERATING**

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

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	553.72'	21211.32'	S 42°02' E	553.71'
C2	669.85'	2899.46'	S 36°02' E	668.36'

LINE	BEARING	DISTANCE
L1	N 09°03' W	76.80'
L2	N 45°58' W	259.02'
L3	N 10°57' W	1580.60'
L4	N 79°06' E	981.78'



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	33.00
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 KOTSON, ET AL	9-15-4	26.40
X	SUSAN VAN DYNE	9-15-3	167.00

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www.slsenergy.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
- DEED WELL LATERAL WITHIN 300'
- WELL LATERAL
- 400' OFFSET LINE
- 500' OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- SURFACE OWNER (SEE TABLE - SHEET 2)
- LEASE # (SEE SHEETS 3 & 4)

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

NAD'83 S.P.C.(FT)	N. 478,155.79	E. 1,826,745.94
NAD'83 GEO.	LAT-(N) 39.806793	LONG-(W) 80.680923
NAD'83 UTM (M)	N. 4,406,362.22	E. 527,912.91

LANDING POINT

NAD'83 S.P.C.(FT)	N. 477,489.8	E. 1,637,311.5
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NAD'83 GEO.	LAT-(N) 39.764544	LONG-(W) 80.663584
NAD'83 UTM (M)	N. 4,403,698.3	E. 528,805.6

SCALE 1" = 2000' FILE NO. 8655P15HUR3.dwg

DATE AUGUST 29, 2017

REVISED 09-01-2017, 01-12-2018 & 03-22-18

OPERATORS WELL NO. TEN HIGH 1S-15HU

API WELL 47 - 051 - D2027 HGA

NO. STATE COUNTY PERMIT

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

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

T.H. LONGITUDE 80°40'00"
 B.H. LONGITUDE 80°37'30"
 2,595' B.H.
 COUNTY NAME
 PERMIT

07/13/2018

TEN HIGH 1S LEASE
UTICA UNIT - 623.86 AC. ±
WELL 15HU
TUG HILL OPERATING



Table with columns: No., Lease Name or No., Tag, Period, Oil & Gas Royalty Owners, Deed Book / Page. Lists lease details for various owners including ARRYLEE COVILE, BOB A CONWELL, TERESA ANN HIGGINS, etc.

Table with columns: No., Lease Name or No., Tag, Period, Oil & Gas Royalty Owner - Continue, Deed Book / Page. Continuation of lease details for owners such as ALICE SOBRY/MARTIN, JAMES A GORRY, LARRY D TAUNT AND NANCY L TAUNT, etc.

FILE NO. 8655P15HU3.dwg
DATE AUGUST 29, 20 17
REVISED 09-01-2017, 01-12-2018 & 03-22-18
OPERATORS WELL NO. TEN HIGH 1S-15HU
API WELL NO. 47 STATE 051 COUNTY PERMIT 02027Hbk



STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
07/13/2018
P.S. 677
Signature: Gregory A. Smith

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

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

COUNTY NAME PERMIT

TEN HIGH 1S LEASE UTICA UNIT - 623.86 AC. ± WELL 15HU TUG HILL OPERATING



No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Contained	Deed Book/Page
251	10*47051-223-21	J	9-12-4	GARY T WARD AND SHARON D WARD	908 19
252	10*47051-223-22	J	9-12-4	SALLY COLE	908 74
253	10*47051-223-23	J	9-12-4	RONALD R CRIM	908 79
254	10*47051-223-24	J	9-12-4	BO DILL & DAVID	908 126
255	10*47051-223-25	J	9-12-4	JOHANN WELCH	908 141
256	10*47051-223-26	J	9-12-4	WYNNE SHANKEL	908 85
257	10*47051-223-27	J	9-12-4	TIM THIBERT	908 177
258	10*47051-223-28	J	9-12-4	KAREN SWANT	908 250
259	10*47051-223-29	J	9-12-4	PATY JOHNSON	908 255
260	10*47051-223-30	J	9-12-4	LARRY DIGGER MANDERSON	908 269
261	10*47051-223-31	J	9-12-4	JANICE M SONTAGAVAIK	908 280
262	10*47051-223-32	J	9-12-4	ROSEMARY BEAMAN	908 173
263	10*47051-223-33	J	9-12-4	NANCY C GAFFAGNONE HOUSEY	908 189
264	10*47051-223-34	J	9-12-4	JOHN C GAFFAGNONE	907 287
265	10*47051-223-35	J	9-12-4	DEBRA L GAFFAGNONE	907 284
266	10*47051-223-36	J	9-12-4	HAROLD R BROWN AND MARIA A BROWN	907 541
267	10*47051-223-37	J	9-12-4	JOSEPHINE AND REBECCA WINE	907 014
268	10*47051-223-38	J	9-12-4	JACK R WILSON JR AND JANE A WILSON	906 4
269	10*47051-223-39	J	9-12-4	DAVID M WILSON	907 649
270	10*47051-223-40	J	9-12-4	LEON J DUBERT	908 32
271	10*47051-223-41	K	9-12-4	RONALD D MCCABE AND LUCY MCCABE	907 314
272	10*47051-223-42	K	9-12-4	RONALD D MCCABE AND LUCY MCCABE	907 314
273	10*47051-223-43	M	9-12-4	RONALD D MCCABE AND LUCY MCCABE	907 314
274	10*47051-223-44	M	9-12-4	RONALD D MCCABE AND LUCY MCCABE	907 314
275	10*47051-223-45	K	9-12-4	CHRISTINA CARL	908 32
276	10*47051-223-46	N	9-12-7	MARK DAVID HUNT	904 451
277	10*47051-223-47	N	9-12-7	MELISSA LANE SMOOTH	904 451
278	10*47051-223-48	N	9-12-7	BRETT J LAUGH SR	902 795
279	10*47051-223-49	N	9-12-7	MCMALE E LAUSIN AND SHARON G LAUSIN	913 526
280	10*47051-223-50	N	9-12-7	PATRICIA A GURTZ AND THOMAS J GURTZ	908 640
281	10*47051-223-51	N	9-12-7	SHARON L SMITH	894 487
282	10*47051-223-52	N	9-12-7	KENNETH MCCABE AND DEBORAH MCCABE	895 74
283	10*47051-223-53	N	9-12-7	RONALD B WELSH AND SUSAN F WELSH	895 76
284	10*47051-223-54	N	9-12-7	DANIEL GRANTON AND THIRY A GRANTON	894 571
285	10*47051-223-55	N	9-12-7	FREDRICK A TEATER AND SHERIE TEATER	894 626
286	10*47051-223-56	N	9-12-7	LEONARD H HAMBROCH	902 442
287	10*47051-223-57	N	9-12-7	TERRILL LAUGH	908 591
288	10*47051-223-58	O	9-12-8	JANICE CLARKSON AND HARRY C WILSON	898 463
289	10*47051-223-59	O	9-12-8	KENNETH D MCCABE	898 463
290	10*47051-223-60	P	9-12-23	CLARK S SAMSON	907 498
291	10*47051-223-61	P	9-12-23	DOTTIE L HERMAN	907 492
292	10*47051-223-62	P	9-12-23	WILLIAM L WOOD	907 507
293	10*47051-223-63	P	9-12-23	ALBERTA J BURCKHARD AND RONALD R BURCKHARD	907 509
294	10*47051-223-64	P	9-12-23	EVA A COLETER	907 511
295	10*47051-223-65	P	9-12-23	EVERETT A WOOD	907 513
296	10*47051-223-66	P	9-12-23	JOAN R CURRIN SHAM AND MARK A CURRIN SHAM	907 515
297	10*47051-223-67	P	9-12-23	BRUNDA L KING	907 517
298	10*47051-223-68	P	9-12-23	DONNA MUGGER AND ROBERT H MUGGER	907 519
299	10*47051-223-69	P	9-12-23	PAULA K PAGE AND PHILIP K PAGE	907 522
300	10*47051-223-70	P	9-12-23	HEBEROTH BURMAN AND BETTY E BURKHART	907 524
301	10*47051-223-71	P	9-12-23	MARY BAYNESSER AND ROY LETT KESSEN	907 536
302	10*47051-223-72	P	9-12-23	ALBERT D BURKHART	907 538
303	10*47051-223-73	P	9-12-23	BARBARA J BRONKHORST	907 539
304	10*47051-223-74	P	9-12-23	KOBY ALICE DUBIE	907 539
305	10*47051-223-75	P	9-12-23	LENN ELYS EWASKEY	907 539
306	10*47051-223-76	P	9-12-23	LORRY HARRIS AND HELEN V HARRIS	907 571
307	10*47051-223-77	P	9-12-23	DAVID L WOOD	907 575
308	10*47051-223-78	P	9-12-23	DAVID P BURKARD AND JUDY C BURKARD	907 584
309	10*47051-223-79	P	9-12-23	MARGARET S STRAUSSER AND GREGORY S STRAUSSER	907 572
310	10*47051-223-80	P	9-12-23	DANIEL LEE AND DIANA M WEST	907 570
311	10*47051-223-81	P	9-12-23	DOMINIC AND PAUL C DIMESTYNSKI	907 581
312	10*47051-223-82	P	9-12-23	DOUGLAS COURTWRIGHT AND JESSAMINE COURTWRIGHT	907 583
313	10*47051-223-83	P	9-12-23	ROBERT M WOOD AND CAROL ANN WOOD	907 589
314	10*47051-223-84	P	9-12-23	VERA L APPELBAERTH	907 593
315	10*47051-223-85	P	9-12-23	BONNIE L WOOD	907 593
316	10*47051-223-86	P	9-12-23	MELVIN W WOOD	907 595
317	10*47051-223-87	P	9-12-23	LUREL A WANDA COOLEY	907 598
318	10*47051-223-88	P	9-12-23	FLETAH V BODOL	907 597
319	10*47051-223-89	P	9-12-23	BILLY ALBERTA MIDDLETON	907 613
320	10*47051-223-90	P	9-12-23	JAMES TRAPP AND PATRICIA ANN BAYNER	907 615
321	10*47051-223-91	P	9-12-23	JAMES A SMITH AND JORHA C SMITH	907 617
322	10*47051-223-92	P	9-12-23	KAISIN J AND MICHAEL BIRGEMAN	907 613
323	10*47051-223-93	P	9-12-23	CHARLES A AND GARY LYNN BORNHART	907 631
324	10*47051-223-94	P	9-12-23	CAROL ANN YEATER AND RICKY A YEATER	907 622
325	10*47051-223-95	P	9-12-23	JERRY R AND JACQUELYNE H RUTHERS	907 638
326	10*47051-223-96	P	9-12-23	NORMA JEAN ROGERS AND DONALD L ROGERS SR	907 637
327	10*47051-223-97	P	9-12-23	BRUNDA S THOMPSON	907 630
328	10*47051-223-98	P	9-12-23	CYNTHIA A AND WILLIAM D PETTY	907 610
329	10*47051-223-99	P	9-12-23	FRANKLIN CLARK PATRICIA FENSTERMACHER	907 346
330	10*47051-223-100	P	9-12-23	PAMELA SUE DUBOIS	907 348
331	10*47051-223-101	P	9-12-23	WILLIAM AND JENNIFER B EWASKEY	907 354
332	10*47051-223-102	P	9-12-23	HAROLD HELMKE JR	907 354
333	10*47051-223-103	P	9-12-23	HAZEL CLARK ROSENBLOND	907 356
334	10*47051-223-104	P	9-12-23	BRANDY L WOOD	907 350
335	10*47051-223-105	P	9-12-23	TRACY M WOOD	907 358
336	10*47051-223-106	P	9-12-23	CHAD LEO BENNETT AND MARY A BENNETT	907 384
337	10*47051-223-107	P	9-12-23	METTY J WOOD AND GARY A MORIS	907 382
338	10*47051-223-108	P	9-12-23	TANIA C BENNETT	907 386
339	10*47051-223-109	P	9-12-23	GUY C ANDO AND WINDY PILES ANDO	907 394
340	10*47051-223-110	P	9-12-23	BONNIE M RIDO AND CHARLES B RIDO	907 390
341	10*47051-223-111	P	9-12-23	STACY B BENNETT	907 390
342	10*47051-223-112	P	9-12-23	CAROL LEON CLARK	907 388
343	10*47051-223-113	P	9-12-23	LORRY ANN WEST	907 386
344	10*47051-223-114	P	9-12-23	CAROL A CLARK	907 390
345	10*47051-223-115	P	9-12-23	GREGORY DEAN CLARK AND BARBARA ANN CLARK	907 608
346	10*47051-223-116	P	9-12-23	SUSANNA M DENIS	907 604
347	10*47051-223-117	P	9-12-23	KEVIN R CLARK AND BRACY G CLARK	907 608
348	10*47051-223-118	P	9-12-23	MICHAEL D BOGO AND USA M BOGO	907 614
349	10*47051-223-119	P	9-12-23	BETTY LOU MEMMLAN AND WILLIAM A MEMMLAN	907 610
350	10*47051-223-120	P	9-12-23	RONALD D CLARK AND TAMMY C CLARK	907 612
351	10*47051-223-121	P	9-12-23	ROBERT C CLARK II	907 610
352	10*47051-223-122	P	9-12-23	HARRY RUMBER JR AND CAROL S RUMBER	907 622
353	10*47051-223-123	P	9-12-23	BIRLEY BENE VANHOUTE	907 618
354	10*47051-223-124	P	9-12-23	CELESTE L LUGG AND RICHARD J LUGG	907 622
355	10*47051-223-125	P	9-12-23	DOWNA BUE BEVERIDGE AND LARA P BEVERIDGE	907 626
356	10*47051-223-126	P	9-12-23	SHIRLEY E DENNIS	907 627
357	10*47051-223-127	P	9-12-23	BETTY L & BOY S PEARCE	907 628
358	10*47051-223-128	P	9-12-23	RUSSELL A CLARK AND CATHERINE CLARK	907 628
359	10*47051-223-129	P	9-12-23	TIMOTHY HENWITT	907 628
360	10*47051-223-130	P	9-12-23	CLARENCE LEE CLARK	907 630
361	10*47051-223-131	P	9-12-23	KATHRYN L ATWELL	907 630
362	10*47051-223-132	P	9-12-23	VETRA S CAIN	907 648
363	10*47051-223-133	P	9-12-23	JODY CLARK TIGOTT	907 647
364	10*47051-223-134	P	9-12-23	VENON E DAVIS	907 656
365	10*47051-223-135	P	9-12-23	WILLIAM B BOGO AND NAN O BOGO	907 645
366	10*47051-223-136	P	9-12-23	JARUCE M HIXSON AND HARRY C HIXSON	907 661
367	10*47051-223-137	P	9-12-23	KENNETH D MEMBERTH	907 663
368	10*47051-223-138	P	9-12-23	MELVILLE CLARK	907 681
369	10*47051-223-139	P	9-12-23	ROYALE E ROYALTY LTD AND VENRO LTD	907 610
370	10*47051-223-140	P	9-12-23	DEA R HYNNE AND CHAD HYNNE	907 612
371	10*47051-223-141	P	9-12-23	THE MA W BROWDS	907 618
372	10*47051-223-142	P	9-12-23	TRACY R AND	907 618
373	10*47051-223-143	P	9-12-23	MOLINDA M GREENE-JOSH AND DOUGLAS CORWIN GREENE-JOSH	907 618
374	10*47051-223-144	P	9-12-23	CLAIRBA MAKOE	907 614
375	10*47051-223-145	P	9-12-23	KATHLEEN D AND STEVEN MCNIBOLD	907 619

No.	Lease Name or No.	Tag	Parcel	Oil & Gas Royalty Owner - Contained	Deed Book/Page
376	10*47051-223-146	R	9-12-29	RHONDA PALASOTA AND SAMIA PALASOTA	907 581
377	10*47051-223-147	R	9-12-29	IDOLA F REVINS	914 418
378	10*47051-223-148	R	9-12-29	STEVEN P ROBERTS	914 418
379	10*47051-223-149	R	9-12-29	DIANNA BLUMS	926 611
380	10*47051-223-150	R	9-12-29	THE JENNIFER TEACHERS GAFFEY LIVING TRUST DATED OCTOBER 30TH 2003	926 637
381	10*47051-223-151	R	9-12-29	ROSEMARY HOBBS AND WILLARD L HOBBS	907 4
382	10*47051-223-152	R	9-12-29	WILLIAM M AND BARBARA W WALA	919 210
383	10*47051-223-153	R	9-12-29	LOUISE M AND WILSON D MCLENNAN	908 77
384	10*47051-223-154	R	9-12-29	KATHRYN BROWN AND BRUCE G BROWN	926 630
385	10*47051-223-155	R	9-12-29	THE TESTAMETARY TRUST OF CAREY R PAUL III	929 232
386	10*47051-223-156	R	9-12-29	JANICE MCDER TEST MCDER LIVING	904 332
387	10*47051-223-157	R	9-12-29	ERIC D AND ANNA G N PETRUCCI	904 543
388	10*47051-223-158	R	9-12-29	MARGARET INGRAMS SCHICE	905 346
389	10*47051-223-159	R	9-12-29	KATHRYN E WILLIAM BUCHANAN	907 740
390	10*47051-223-160	R	9-12-29	MARVIANNE E & HOWARD S BAUM	924 74
391	10*47051-223-161	R	9-12-29	JOSEPH PAUL FOX AND MARGARET J FOX	905 569
392	10*47051-223-162	R	9-12-29	MARILYN T DARGOSCH AND JONATHAN DARGOSCH	905 549
393	10*47051-223-163	R	9-12-29	CYNTHIA TECHONER GUJAHAM	905 561
394	10*47051-223-164	R	9-12-29	WILLIAM RICHARD FOX	905 561
395	10*47051-223-165	R	9-12-29	J RICHARD FOX	905 565
396	10*47051-223-166	R	9-12-29	ANNA MAE PATTERSON	905 573
397	10*47051-223-167	R	9-12-29	DANNY CARMECHAL III	905 576
398	10*47051-223-168	R	9-12-29	MARY ELISE CAMP	905 557
399	10*47051-223-169	R	9-12-29	GALEY MEDRICK	905 614
400	10*47051-223-170	R	9-12-29	JANICE M WEBER	905 543
401	10*47051-223-171	R	9-12-29	MICHAEL LOUREN AND ROSEMARY CUNTO	905 516
402	10*47051-223-172	R	9-12-29	DAVID P CHAFFMAN & DEBRA H BORKER CHAFFMAN	895 318
403	10*47051-223-173	T	9-12-24	DOROTHY SULLIVAN FOR JAMES RED SULLIVAN	873 391
404	10*47051-223-174	T	9-12-24	DAVID P CHAFFMAN & DEBRA H BORKER CHAFFMAN	866 318
405	10*47051-223-175	U	9-12-24	DOROTHY SULLIVAN FOR JAMES RED SULLIVAN	873 391
406	10*47051-223-176	V	9-12-24		

STATE OF WEST VIRGINIA §
 §
COUNTY OF MARSHALL §

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "**Assignment**") is made and entered into this 16th day of October, 2017 (the "**Effective Date**"), by and between **AMERICAN PETROLEUM PARTNERS OPERATING, LLC**, (hereinafter "**Assignor**") and **TH EXPLORATION, LLC** (hereinafter "**Assignee**") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated August 4, 2017 (the "**Acreage Trade Agreement**"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

WITNESSETH:

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

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

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

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

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

2. **Special Warranty.** Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered (other than Permitted Encumbrances) its interest in the

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07/13/2018



51-02027

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-15HU

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-15HU 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-hilop.com.

Sincerely,

Amy L. Miller
Permit Specialist – Appalachia

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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-15HU

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>527,312.91</u>
County:	<u>Marshall</u>		Northing:	<u>4,406,362.22</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		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.

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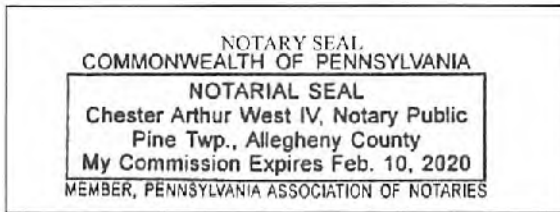
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Certification of Notice is hereby given:

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

Well Operator:	<u>Tug Hill Operating, LLC</u>	Address:	<u>380 Southpointe Blvd, Southpointe Plaza II, Suite 200</u>
By:	<u>Amy Miller</u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Permit Specialist - Appalachia</u>	Facsimile:	<u>724-338-2030</u>
Telephone:	<u>724-749-8388</u>	Email:	<u>amiller@tug-hilltop.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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WV Department of
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07/13/2018

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(9-13)

API NO. 47-051 -
OPERATOR WELL NO. Ten High 1S-15HU
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: 3/28/2018 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: 46226 National Road
St. Clairsville, OH 43950
- COAL OPERATOR
 - Name: Same as above coal owner
 - Address: _____
- SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
 - Name: *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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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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(8-13)

API NO. 47-051 -
OPERATOR WELL NO. Ten High 1S-15HU
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

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Environmental Protection

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

07/13/2018

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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07/13/2018

4705102027

WW-6A
(8-13)

API NO. 47-051 -
OPERATOR WELL NO. Ten High 1S-15HU
Well Pad Name: Ten High

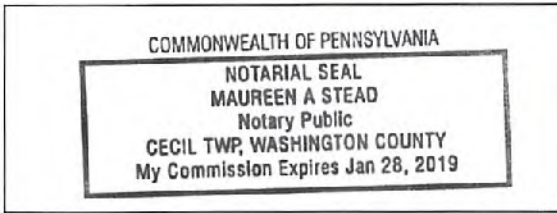
Notice is hereby given by:

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

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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Operator Well Nos. TEN HIGH 1S-15HU

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 – 15HU
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.

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	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	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
--	---	--

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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 • Grenville, WV 26331 • (304) 462-5634
www.slsurveys.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
DRAWN BY		DATE	SCALE
K.G.M.		08-14-17	1" = 1000'
JOB NO.		CANONSBURG, PA 15317	
8655			



TUG HILL
OPERATING

07/13/2018

WW-6A3
(1/12)Operator Well No. TEN HIGH 1S-15HU

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 o/a 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 o/a Roy Conkle
 Address: 75 ARLINGTON AVENUE
MOUNDSVILLE, WV 26041 ****SEE ATTACHED****

*please attach additional forms if necessary

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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 39.6067775 LONG -80.6609192</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: TUG HILL OPERATING, LLC
 Telephone: (724) 749-8368
 Email: jwhite@tug-hill-op.com

Address: 380 SOUTHPOINTE BLVD., SOUTHPOINTE PLAZA II, SUITE 200
CANONSBURG, PA 15317
 Facsimile: (724) 388-2030

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.

07/13/2018

Operator Well No. TEN HIGH 1S-15HU

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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WW-6A5
(1/12)

Operator Well No. Ten High 1S-15HU

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>527,312.91</u>
County:	<u>Marshall</u>		Northing:	<u>4,408,362.22</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: 724-749-8386
Email: amiller@tug-hillcp.com

Address: 330 Southpointe Blvd, Southpointe Plaza II, Suite 200
Canonsburg, PA 15317
Facsimile: 724-338-2630

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Operator Well Nos. TEN HIGH 1S-15HM

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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07/13/2018

4705102027



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-15HU 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,

A handwritten signature in blue ink that reads "Gary K. Clayton".

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

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

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PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Well No. Ten High 1S-15HU

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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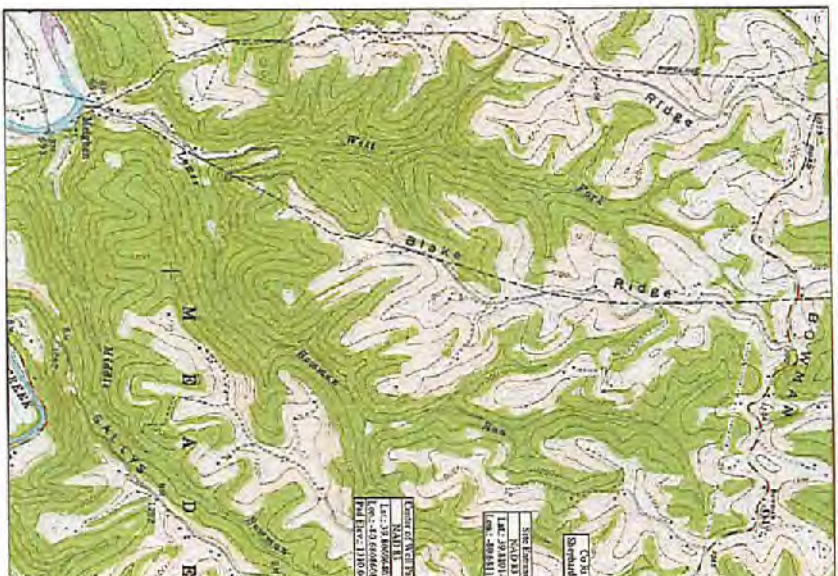
WV Department of
Environmental Protection

WEST VIRGINIA
COUNTY MAP



SECTION	SECTION	SECTION
WV-N-S-ND 18 E-103502.41 WV-N-S-ND 27 N-49941.22 WV-N-S-ND 27 E-164492.28 LA-ND E-364811.98 LA-ND 27-30 E10002.01 LA-ND 27-30 A4041.92 WV-N-S-ND E-82931.39	WV-N-S-ND 18 E-103502.41 WV-N-S-ND 27 N-49941.22 WV-N-S-ND 27 E-164492.28 LA-ND E-364811.98 LA-ND 27-30 E10002.01 LA-ND 27-30 A4041.92 WV-N-S-ND E-82931.39	WV-N-S-ND 18 E-103502.41 WV-N-S-ND 27 N-49941.22 WV-N-S-ND 27 E-164492.28 LA-ND E-364811.98 LA-ND 27-30 E10002.01 LA-ND 27-30 A4041.92 WV-N-S-ND E-82931.39

TEN HIGH 15 WEST	TEN HIGH 15 EAST	TEN HIGH 16 WEST	TEN HIGH 16 EAST
WV-N-S-ND 18 E-103502.41 WV-N-S-ND 27 N-49941.22 WV-N-S-ND 27 E-164492.28 LA-ND E-364811.98 LA-ND 27-30 E10002.01 LA-ND 27-30 A4041.92 WV-N-S-ND E-82931.39	WV-N-S-ND 18 E-103502.41 WV-N-S-ND 27 N-49941.22 WV-N-S-ND 27 E-164492.28 LA-ND E-364811.98 LA-ND 27-30 E10002.01 LA-ND 27-30 A4041.92 WV-N-S-ND E-82931.39	WV-N-S-ND 18 E-103502.41 WV-N-S-ND 27 N-49941.22 WV-N-S-ND 27 E-164492.28 LA-ND E-364811.98 LA-ND 27-30 E10002.01 LA-ND 27-30 A4041.92 WV-N-S-ND E-82931.39	WV-N-S-ND 18 E-103502.41 WV-N-S-ND 27 N-49941.22 WV-N-S-ND 27 E-164492.28 LA-ND E-364811.98 LA-ND 27-30 E10002.01 LA-ND 27-30 A4041.92 WV-N-S-ND E-82931.39



Symbol	Label	Symbol	Label
(Symbol)	Site Location (NAD 27)	(Symbol)	Latitude (NAD 83)
(Symbol)	Site Elevation (ASL)	(Symbol)	Longitude (NAD 83)
(Symbol)	Corner of West Field	(Symbol)	Universal



Approach Route.

From the intersection of WV Rt. 2 and OH Rt. 7 near Row Mountain, WV, Travel North on WV Rt. 2 for 13.8 mi., Turn Right onto Co. Rt. 704 (Crack Creek, Folsom Co. Rt. 774 for 702 ft. Turn Left onto Co. Rt. 217 (Tobacco Ridge Rd.), Follow Co. Rt. 217 for 2.7 mi., Turn Left to continue on Co. Rt. 217, Turn Right onto Rt. 217 for 1.2 mi., Turn Right onto Co. Rt. 111 (Ten High Ridge, St. Clairsville, Boone Co. Rt. 111), Turn Right onto Co. Rt. 217 (Tobacco Ridge, Folsom Co. Rt. 217) for 0.9 mi., The site location will be on the left (grass) side of the road.

Floodplain Conditions

Symbol	Description	Symbol	Description
(Symbol)	No river construction as water will flow in a ditch/levee	(Symbol)	NO
(Symbol)	Minimal natural flow channel floodplain construction	(Symbol)	NO
(Symbol)	Minimal natural flow channel floodplain construction	(Symbol)	NO
(Symbol)	Minimal natural flow channel floodplain construction	(Symbol)	NO
(Symbol)	Minimal natural flow channel floodplain construction	(Symbol)	NO
(Symbol)	Minimal natural flow channel floodplain construction	(Symbol)	NO

Project Contacts

Technical Description	Source and Reference
Asst. Utility - Regulatory, Andrew 724-595-0808 FAX: 724-595-0809 Cell 814-425-2309 OIE	Scott Koltz 304-519-9791 OIE John F. Sisk 304-425-2320 OIE Zakary Somerville 304-425-2490 OIE
The Hill Operating, LLC 300 Front Street, Suite 200 Southport, West VA, New 200 Charleston, VA 25317	Geotechnical Engineer Adam as Geotech. Inc. 2614 19-3271 OIE
Westwood Development as project lead, Albert Eckert, 4001 University Ln, 26117	

The appropriate indication shown herein is based on what is displayed by this Mountain Area Map, Boone, WV

MISS UTILITY OF WEST VIRGINIA
1601 HILLTOP DRIVE
SOUTHPORT, WEST VIRGINIA 26117
800-444-6464
WWW.MISSUTILITY.COM

Keep what's Under, Call before you dig.

The Hill Operating will obtain an Erectionment Permit (Form MHV-107) from the WV Department of Transportation, Division of Highways, prior to the commencement of any construction activities

The WV Mines Weibler was consulted. Parties (Current) mining activities are within the AOE

VANDER Weibler files show that there are no active under abandoned gas wells within the AOE

Ten Hig
Site Design, C
Erosion and Sed
Tug Hi
Marsh
Meat
Latitude
Longitude
Middle Fish
Exhibit

Well Site

Construction Plan, &
 Permit Control Plans

Operating
 Marshall County

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 APR 9 2018

WV Department of
 Environmental Protection

Meade District
 39, 80696402
 80.68086081
 Creek Watershed

A: As-Built

Pertinent Site Information
 Ten High Well Site
 Emergency Number: 304-845-1920
 Meade District, Marshall County, WV
 Watershed: Middle Fish Creek Watershed
 Tug Hill Contact Number: 1-817-632-3400

WVDEP OOG
ACCEPTED AS-BUILT
 1/9/2018

WV State Plane Coordinate System
 North Carolina AD 83
 Projection: NAD 83
 Published By: Geary O'Leary, PE
 and OGS Print Purchase



Property Owner Information - Ten High Well Site
 Meade District - Marshall County

Owner	Tax Parcel	Parcel Area	Acres
Robert Hubert et al	14121	0.09	0.09
Lawrence O'Leary, et al	743	3.82	3.82
Sub Total (Ac)	532	3.91	3.91

Access Road

Access Road	Tax Parcel	Parcel Area	Acres
NEW ACCESS ROAD	7-24	1.0927	1.0927

Disturbed Area

Disturbance	Area
Well Pad Excavation	1,597.66
Access Road Excavation	1,172.00
Grassland Clearing	7,418.46
Field Draining Area	16,250.45

Additional Information:
 TUG WELLS ARE LOCATED 1,200' AWAY FROM THE NEARBY RESIDENTS.

Ten High Well Site Quantities

Description	Quantity	Unit	Notes
Well Pad	1	SQ FT	
Well Pad Access Road	15,538.18	SQ FT	
Excavation	9,292.14	CY	
Grassland Clearing	12,212.00	SQ FT	
Field Draining Area	16,250.45	SQ FT	
Grassland Clearing	1,172.00	SQ FT	
Well Pad Excavation	1,597.66	SQ FT	
Access Road Excavation	1,172.00	SQ FT	
Grassland Clearing	7,418.46	SQ FT	
Field Draining Area	16,250.45	SQ FT	
Total Spill (CY)	13,892.14		

Handwritten signature and date: 1/9/2018

Site Locations (NAD 83)

Station	Latitude (DD)	Longitude (DD)
Well Pad	39.113011	-80.681119
Center of Well Pad	39.113000	-80.681000



EXISTING API NUMBERS
 4705101934
 4705101943
 4705101944
 4705101945
 4705101964

Well Location Restrictions
 All Pad construction complies with the following restrictions:
 *25' from existing well or developed ground for bottom of domestic annular.
 *25' from an occupied dwelling or barn greater than 2,500 SF roof for poultry or dairy structure from the center of the pad.
 *100' from the edge of subsurface to wetlands, personal streams, natural or artificial lake, pond or reservoir.
 *100' from the edge of subsurface to a publicly-traveling road or way.
 *2,000' of a surface or ground water table to a public water supply.
 (Well Location Restrictions at 15V Code 22-2A-13)



This is a final engineering version that has been reviewed and approved by the State of West Virginia. It is intended for use as a permit application and for construction purposes. It is not to be used for any other purpose without the written consent of the Engineer. The Engineer is not responsible for any errors or omissions in this drawing or for any consequences that may result from its use.

Zachary C. Sumner
 Professional Engineer
 License No. 22214
 State of West Virginia

Sheet	Description
1	Cover Sheet
VI	Schedule of Quantities
VI-N3	Site Notes
2	Site Location Site Conditions
3	Site Soil Maps
4	Cleaning Exhibit
5	Overall Plan View
6-7	EAS Plan View
8	Tree Key Exhibit
9-10	Plan View
11-12	Cross Sections - Well Pad
13	Cross Sections - Access Road
Q1-Q2	Topography Disturbed Area Exhibit
SI	Site Demarcation
MI-NB	Production Exhibit
DI-D2	Erosion and Sediment Control Details
PI	Access Road Details

TUG HILL OPERATING

THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

Kyle S. Succorina
 Professional Engineer
 License No. 22214
 State of West Virginia

Cover Sheet
 Ten High Well Site
 Meade District
 Marshall County, WV

Date: 02-17-2017
 12-06-2017

Revision: Design
 As-Built

Drawn: 02/17/2017
 Scale: As Shown
 Designed By: ZS
 The No.
 Sheet 1 of 13