



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

Wednesday, August 26, 2020
WELL WORK PERMIT
Horizontal 6A / New Drill

TUG HILL OPERATING, LLC
380 SOUTHPOINTE BLVD

CANONSBURG, PA 15317

Re: Permit approval for HEAVEN HILL 3N-15HU
47-051-02306-00-00

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: HEAVEN HILL 3N-15HU
Farm Name: RICKY L. WHITLATCH
U.S. WELL NUMBER: 47-051-02306-00-00
Horizontal 6A New Drill
Date Issued: 8/26/2020

PERMIT CONDITIONS⁴⁷⁰⁵¹⁰²³⁰⁶

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 ⁴⁷⁰⁵¹⁰²³⁰⁶

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
304-414-1239

Randall M. Albert, Chairman
dep.wv.gov

July 20, 2020

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

RE: Application for Deep Well Permit – API #47-051-02306

COMPANY: Tug Hill Operating, LLC

FARM: Ricky L. Whitlatch Heaven Hill 3N-15HU

COUNTY: Marshall DISTRICT: Meade QUAD: Glen Easton

The deep well review of the application for the above company is **Approved to drill to Point Pleasant for 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? Yes; withdrawn April 22, 2020
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: **yes
4. Provided a plat showing that the productive interval of the well meets the requirements of the Rules of the Commission W. Va. C.S.R. § 39-1-4.2.

Sincerely,

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

Susan Rose
Administrator

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

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

2) Operator's Well Number: Heaven Hill 3N-15HU Well Pad Name: Heaven Hill 3

3) Farm Name/Surface Owner: Ricky L. Whitlatch Public Road Access: Yeater Land CR 21/11

4) Elevation, current ground: 1326' Elevation, proposed post-construction: 1326'

5) Well Type (a) Gas Oil Underground Storage

Other

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No Yes *JM*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,634' - 11,768' thickness of 134' and anticipated pressure of approx. 7500 psi

8) Proposed Total Vertical Depth: 11,684'

9) Formation at Total Vertical Depth: Point Pleasant

10) Proposed Total Measured Depth: 18,940'

11) Proposed Horizontal Leg Length: 6,443.38'

12) Approximate Fresh Water Strata Depths: 70', 1038'

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 - 946' and Pittsburgh Coal - 1031'

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

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

(a) If Yes, provide Mine Info: Name: Marshall County Coal Co. / Marshall County Mine
Depth: 1031' TVD and 308' subsea level
Seam: Pittsburgh #8
Owner: Murray Energy / Consolidated Coal Co.

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120'	259FT^3(CTS)
Fresh Water	20"	NEW	J55	106.5#	1,130'	1,130'	1809ft^3(CTS)
Coal	13 3/8"	NEW	J55	54.5#	2,850'	2,850'	2016ft^3(CTS)
Intermediate	9 5/8"	NEW	J55	47#	10,930'	10,930'	3565ft^3(CTS)
Production	5 1/2"	NEW	P110	23#	18,940'	18,940'	4525ft^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,607'	
Liners							

JM 3/24/2020

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	9,440	7,552	SEE#24	1.99
Production	5 1/2"	8 1/2"	.415	16,510	10,864	SEE#24	1.18
Tubing	2 3/8"			14,530	11,480		
Liners							

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

JN

3/24/2020

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

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 16,105,000 lb proppant and 248,995 bbl of water. Max rate = 80 bpm; max psi = 12,000#.

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21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 18.43

22) Area to be disturbed for well pad only, less access road (acres): 7.15

23) Describe centralizer placement for each casing string:

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

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

*See Attachment

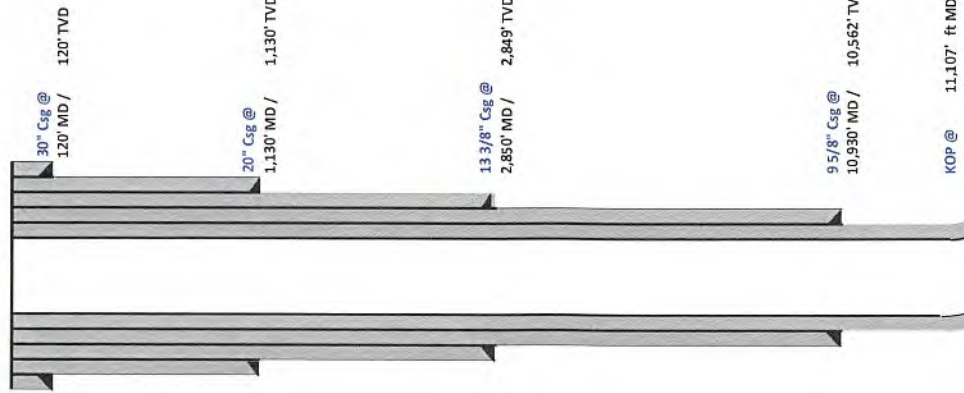
25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.



WELL NAME: Heaven Hill 3N-15HU
STATE: West Virginia **COUNTY:** Marshall
DISTRICT: Meade **GL Elev:** 1,326'
DE Elev: 1,326'
TD: 18,940'
TH Latitude: 39.808679
TH Longitude: -80.693434
BH Latitude: 39.81932299
BH Longitude: -80.70473301



FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	1,038'
Swickley Coal	946'
Pittsburgh Coal	1,031'
Big Line	2,149'
Berea	2,773'
Tully	6,706'
Marcellus	6,813'
Onondaga	6,865'
Salina	7,582'
Lockport	8,642'
Utica	11,442'
Point Pleasant	11,634'
Landing Depth	11,684'
Trenton	11,768'
Pilot Hole TD	

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	1,130'	1,130'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,850'	2,849'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,930'	10,562'	47	HP110	Surface
Production	8 1/2	5 1/2	18,940'	11,572'	23	P110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Sacks	Class	Density	Fluid Type	Centralizer Notes	
338	A	15.6	Air	None	
1,953	A	15.6	Air	3 Centralizers at equal distance	
2,183	A	15	Air	1 Centralizer every other jt	
2,962	A	14.5	Air	1 Centralizer every other jt	
3,960	A	15	Air / SOBM	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc	

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Lateral TD @ 18,940' ft MD
 11,572' ft TVD

Landing Point @ 12,498' MD / 11,684' TVD
 PH TVD = 150' below Trenton Top

4705102306



Tug Hill Operating, LLC Casing and Cement Program
Heaven Hill 3N-15HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	1,130'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,850'	CTS
Intermediate 2	9 5/8"	HP110	12 1/4"	10,930'	CTS
Production	5 1/2"	P110	8 1/2"	18,940'	CTS

Cement

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

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

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

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

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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 (09/12/2019) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it as the best publicly available. See attached map he provided.

Request maps for:

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

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

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

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Permit well - Heaven Hill 3N-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
4705101935	Tug Hill	6876' TVD planned	None	None	No, Marcellus well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Drilled not completed
4705101947	Tug Hill	6876' TVD planned	None	None	No, Marcellus well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Drilled not completed
4705101948	Tug Hill	6878' TVD planned	None	None	No, Marcellus well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Drilled not completed
4705101962	Tug Hill	6876' TVD planned	None	None	No, Marcellus well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Drilled not completed
4705101963	Tug Hill	6876' TVD planned	None	None	No, Marcellus well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Drilled not completed
4705101967	Tug Hill	11829' TVD planned	None	None	Yes, Point Pleasant well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Drilled not completed
4705101968	Tug Hill	11829' TVD planned	None	None	Yes, Point Pleasant well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Drilled not completed
4705101969	Tug Hill	11829' TVD planned	None	None	Yes, Point Pleasant well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Drilled not completed
4705102015	Tug Hill	6876' TVD planned	None	None	No, Marcellus well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Drilled not completed
4705102016	Tug Hill	11898' TVD planned	None	None	Yes, Point Pleasant well. Proper casing and cement should prevent migration of fluids from new wellbore to existing wellbore	Drilled not completed
4705140025	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete
4705170645	Oper in Min. owner fid, no code assign(Orphan well proj)	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete
4705170645	Unknown	Unknown	Unknown	Unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be effected by fracturing in the planned Point Pleasant well.	State records are incomplete

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Well: County = 51 Permit = 001835

Location Information View Log

API#	COUNTY	PERMIT	TAX DISTRICT	QUAD/16	QUAD/36	1/4 SEC	1/4 COR	1/4	1/4	1/4	1/4	1/4	1/4
47142245	Wade	001835		18	34	18	34	18	34	18	34	18	34

Bottom Hole Location Information

API#	EP	F104	TIME	ORIG	LOG CD	LAT CD
47142245	Wade	001835	4472462	001835	18 34	18 34

Owner Information

API#	CMP ID#	SRFR#	STATUS	SURFACE	OWNER	WELL_NOM	CO NOM	LEASE	LEASE_NOM	MINERAL	OWN	OPERATOR	ACT	COMPLETION	PROP ID#	PROP TRACT	F104/F104A
47142245					Wade												

Completion Information

API#	CMP ID#	SRFR#	ELEV	SATUM	FIELD	DEEPTST	DEEPTST	DEEPTST	INITIAL	CLASS	FINAL	CLASS	TYPE	RIS	CON	CON	TWO	NEW	HTS	NOE	Q	MRP	Q	MRP	Q	MRP	Q	MRP
47142245																												

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.
 There is no Plugging data for this well.
 There is no Sample data for this well.

Well: County = 51 Permit = 01947

Location Information View Log

API#	COUNTY	PERMIT	TAX DISTRICT	QUAD/16	QUAD/36	1/4 SEC	1/4 COR	1/4	1/4	1/4	1/4	1/4	1/4
47142245	Wade	01947		18	34	18	34	18	34	18	34	18	34

Bottom Hole Location Information

API#	EP	F104	TIME	ORIG	LOG CD	LAT CD
47142245	Wade	01947	4472462	01947	18 34	18 34

Owner Information

API#	CMP ID#	SRFR#	STATUS	SURFACE	OWNER	WELL_NOM	CO NOM	LEASE	LEASE_NOM	MINERAL	OWN	OPERATOR	ACT	COMPLETION	PROP ID#	PROP TRACT	F104/F104A
47142245					Wade												

Completion Information

API#	CMP ID#	SRFR#	ELEV	SATUM	FIELD	DEEPTST	DEEPTST	DEEPTST	INITIAL	CLASS	FINAL	CLASS	TYPE	RIS	CON	CON	TWO	NEW	HTS	NOE	Q	MRP	Q	MRP	Q	MRP	Q	MRP
47142245																												

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.
 There is no Plugging data for this well.
 There is no Sample data for this well.

Well: County = 51 Permit = 01948

Location Information View Log

API#	COUNTY	PERMIT	TAX DISTRICT	QUAD/16	QUAD/36	1/4 SEC	1/4 COR	1/4	1/4	1/4	1/4	1/4	1/4
47142245	Wade	01948		18	34	18	34	18	34	18	34	18	34

Bottom Hole Location Information

API#	EP	F104	TIME	ORIG	LOG CD	LAT CD
47142245	Wade	01948	4472462	01948	18 34	18 34

Owner Information

API#	CMP ID#	SRFR#	STATUS	SURFACE	OWNER	WELL_NOM	CO NOM	LEASE	LEASE_NOM	MINERAL	OWN	OPERATOR	ACT	COMPLETION	PROP ID#	PROP TRACT	F104/F104A
47142245					Wade												

Completion Information

API#	CMP ID#	SRFR#	ELEV	SATUM	FIELD	DEEPTST	DEEPTST	DEEPTST	INITIAL	CLASS	FINAL	CLASS	TYPE	RIS	CON	CON	TWO	NEW	HTS	NOE	Q	MRP	Q	MRP	Q	MRP	Q	MRP
47142245																												

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

Well: County = 51 Permit = 01962

Location Information View Log

API#	COUNTY	PERMIT	TAX DISTRICT	QUAD/16	QUAD/36	1/4 SEC	1/4 COR	1/4	1/4	1/4	1/4	1/4	1/4
47142245	Wade	01962		18	34	18	34	18	34	18	34	18	34

Bottom Hole Location Information

API#	EP	F104	TIME	ORIG	LOG CD	LAT CD
47142245	Wade	01962	4472462	01962	18 34	18 34

Owner Information

API#	CMP ID#	SRFR#	STATUS	SURFACE	OWNER	WELL_NOM	CO NOM	LEASE	LEASE_NOM	MINERAL	OWN	OPERATOR	ACT	COMPLETION	PROP ID#	PROP TRACT	F104/F104A
47142245					Wade												

Completion Information

API#	CMP ID#	SRFR#	ELEV	SATUM	FIELD	DEEPTST	DEEPTST	DEEPTST	INITIAL	CLASS	FINAL	CLASS	TYPE	RIS	CON	CON	TWO	NEW	HTS	NOE	Q	MRP	Q	MRP	Q	MRP	Q	MRP
47142245																												

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.
 There is no Plugging data for this well.
 There is no Sample data for this well.

Well: County = 51 Permit = 01963

Location Information View Log

API#	COUNTY	PERMIT	TAX DISTRICT	QUAD/16	QUAD/36	1/4 SEC	1/4 COR	1/4	1/4	1/4	1/4	1/4	1/4
47142245	Wade	01963		18	34	18	34	18	34	18	34	18	34

Bottom Hole Location Information

API#	EP	F104	TIME	ORIG	LOG CD	LAT CD
47142245	Wade	01963	4472462	01963	18 34	18 34

Owner Information

API#	CMP ID#	SRFR#	STATUS	SURFACE	OWNER	WELL_NOM	CO NOM	LEASE	LEASE_NOM	MINERAL	OWN	OPERATOR	ACT	COMPLETION	PROP ID#	PROP TRACT	F104/F104A
47142245					Wade												

Completion Information

API#	CMP ID#	SRFR#	ELEV	SATUM	FIELD	DEEPTST	DEEPTST	DEEPTST	INITIAL	CLASS	FINAL	CLASS	TYPE	RIS	CON	CON	TWO	NEW	HTS	NOE	Q	MRP	Q	MRP	Q	MRP	Q	MRP
47142245																												

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.
 There is no Plugging data for this well.
 There is no Sample data for this well.



705102306

WV Geological & Economic Survey **Well: County = 51 Permit = 40025**

Location Information: [View Map](#)

WELL	COUNTY	PERMIT	WELL_CATEGORY	COORD_Y1	COORD_Y2	LAY_CD	LOG_CD	UTMS	UTM_ZONE
40025	Wayne	40025	Water	448500	448500	0	0	18N	18N

There is no Bottom Hole Location data for this well

There is no Owner/Completion data for this well

There is no Owner/Completion data for this well

There is no Pay data for this well

There is no Production Gas data for this well

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

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

There is no Production Water data for this well

Stratigraphy Information:

WELL	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_BOTTOM	THICKNESS	THICKNESS_QUALITY	ELEV DATUM
40025								

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 = 70646**

Location Information: [View Map](#)

WELL	COUNTY	PERMIT	WELL_CATEGORY	COORD_Y1	COORD_Y2	LAY_CD	LOG_CD	UTMS	UTM_ZONE
70646	Wayne	70646	Water	448500	448500	0	0	18N	18N

There is no Bottom Hole Location data for this well

Owner Information:

WELL	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VO	PROP_INT_FM	TRAIL_EST_FM
70646												

Completion Information:

WELL	SUFFIX	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FTH	INITIAL_CLASS	FINAL_CLASS	TYPE	RIS	CMP_MTHD	TWD	TRW_FTH	RDD	O_REF	O_APT	O_APT
70646																	

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

There is no Plugging data for this well

There is no Sample data for this well

WV Geological & Economic Survey **Well: County = 51 Permit = 70646**

Location Information: [View Map](#)

WELL	COUNTY	PERMIT	WELL_CATEGORY	COORD_Y1	COORD_Y2	LAY_CD	LOG_CD	UTMS	UTM_ZONE
70646	Wayne	70646	Water	448500	448500	0	0	18N	18N

There is no Bottom Hole Location data for this well

Owner Information:

WELL	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VO	PROP_INT_FM	TRAIL_EST_FM
70646												

Completion Information:

WELL	SUFFIX	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FTH	INITIAL_CLASS	FINAL_CLASS	TYPE	RIS	CMP_MTHD	TWD	TRW_FTH	RDD	O_REF	O_APT	O_APT
70646																	

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

There is no Plugging data for this well

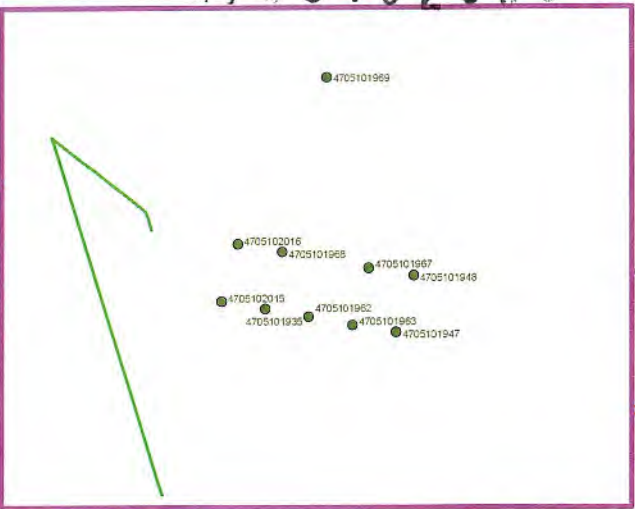
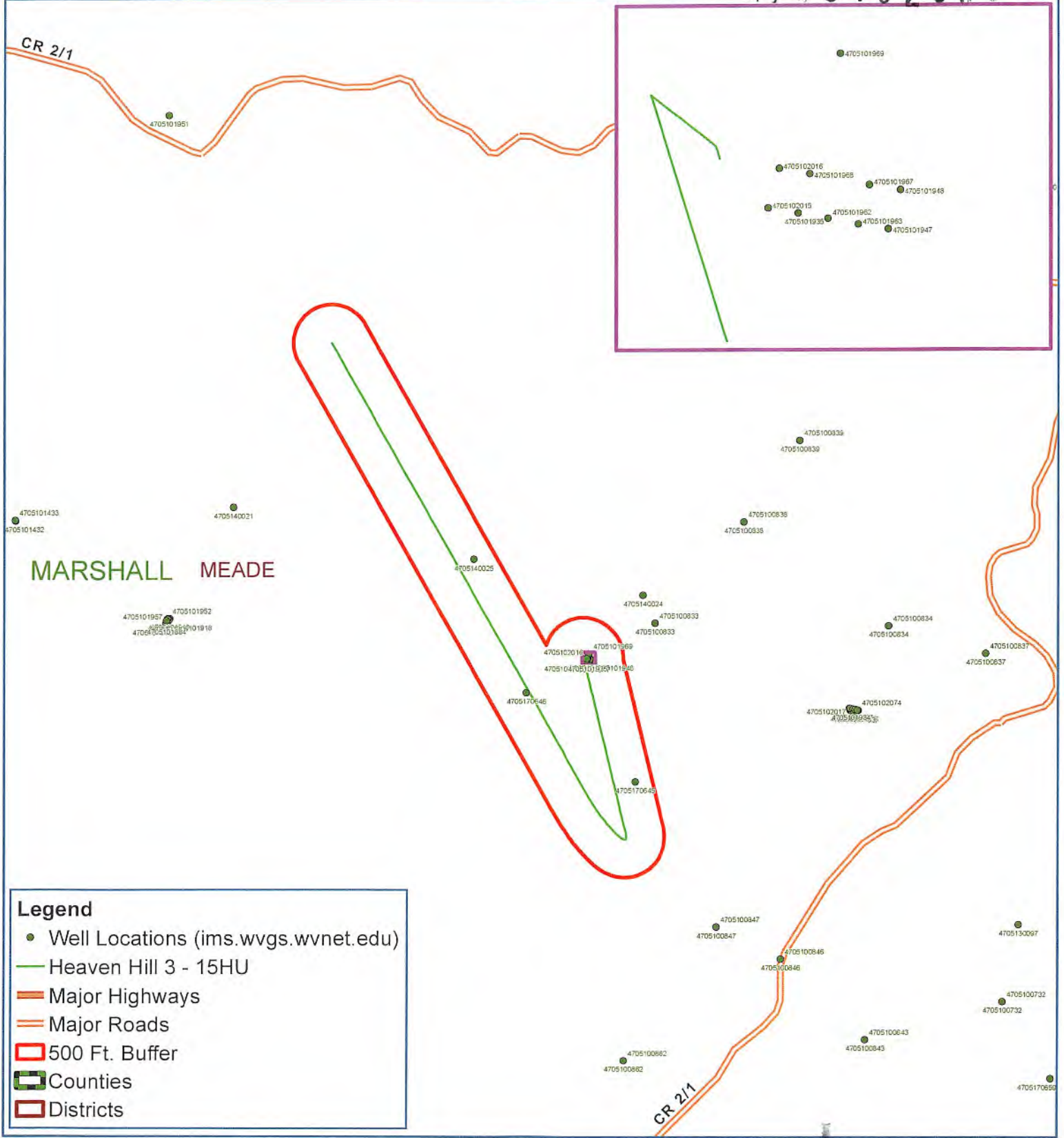
There is no Sample data for this well

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Legend

- Well Locations (ims.wvgs.wvnet.edu)
- Heaven Hill 3 - 15HU
- Major Highways
- Major Roads
- 500 Ft. Buffer
- ▭ Counties
- ▭ Districts



Heaven Hill 3 - 15HU Meade District Marshall County, WV



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

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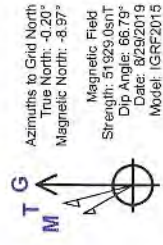
Map Prepared by:



Well: Heaven Hill 3N-15 HU (B)
Site: Heaven Hill 3
Project: Marshall County, West Virginia.
Design: rev6

Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD83 West Virginia - HARN
 Ellipsoid: GRS 1980
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level
 Depth Reference: GL @ 1326.00usft

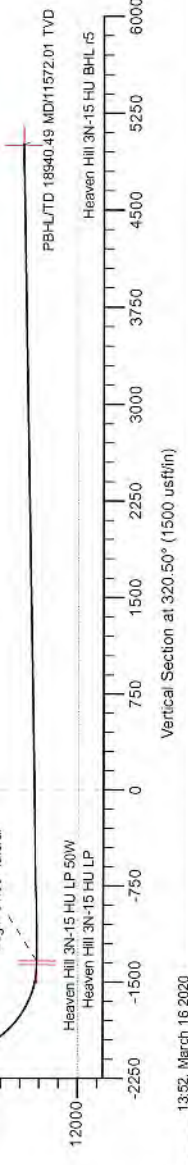
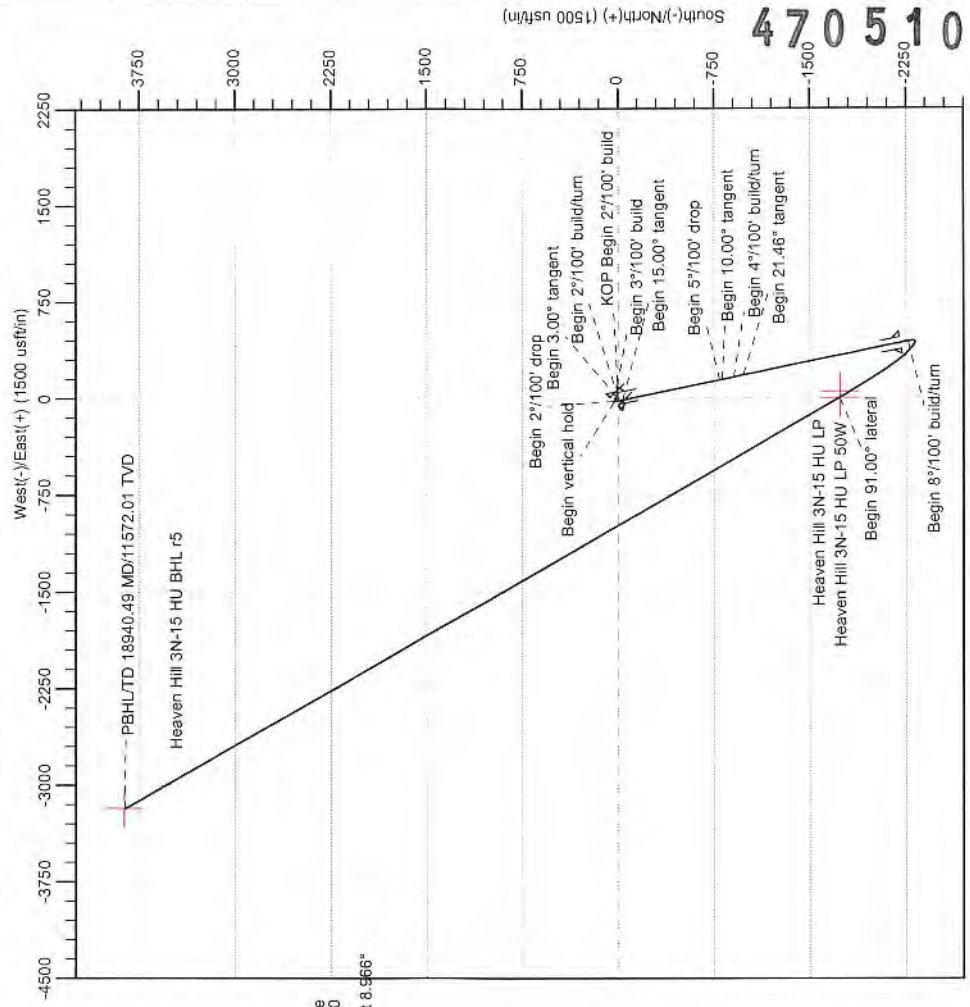
Northing 14457214.38 Easting 39.80867900 Longitude -80.63334300
 Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 6.966°



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SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
2	1230.00	0.00	0.00	1230.00	0.00	0.00	0.00	0.000	0.00	Begin 2°/100' build/turn
3	1380.00	3.00	350.00	1379.93	3.87	-0.68	2.00	350.000	3.42	Begin 3.00° tangent
4	1470.17	3.00	315.00	1469.99	7.86	-2.76	2.00	107.477	7.82	Begin 2°/100' drop
5	2070.17	3.00	315.00	2069.17	30.06	-24.96	0.00	0.000	39.08	Begin vertical hold
6	2220.17	0.00	315.00	2219.10	32.84	-27.74	2.00	180.000	42.99	Begin vertical hold
7	3101.08	0.00	315.00	3100.00	32.84	-27.74	2.00	315.000	42.99	Begin 3°/100' build
8	3601.08	15.00	168.48	3594.31	-30.93	-14.74	3.00	168.480	-14.49	Begin 15.00° tangent
9	6609.27	15.00	168.48	6500.00	-793.82	140.75	0.00	0.000	-702.07	Begin 15.00° drop
10	6709.27	10.00	168.48	6597.60	-815.02	145.07	5.00	180.000	-721.18	Begin 10.00° tangent
11	7219.42	10.00	168.48	7100.00	-901.82	162.76	0.00	0.000	-799.41	Begin 10.00° tangent
12	7506.01	21.46	168.49	7375.40	-977.84	178.24	4.00	0.020	-867.92	Begin 21.46° tangent
13	11106.58	21.46	330.36	10726.26	-2268.83	441.12	0.00	0.000	2031.31	Begin 8°/100' build/turn
14	12498.31	91.00	330.36	11684.00	-1733.47	-0.81	8.00	160.450	1337.12	Begin 91.00° lateral
15	18940.49	91.00	330.36	11572.01	3865.12	-3165.91	0.00	0.000	5008.91	PBHLTD 18940.49 MD/11572.01 TVD



Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Heaven Hill 3N-15 HU (B)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1326.00usft
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1326.00usft
Site:	Heaven Hill 3	North Reference:	Grid
Well:	Heaven Hill 3N-15 HU (B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev6		

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	Heaven Hill 3				
Site Position:		Northing:	14,457,178.77 usft	Latitude:	39.80858060
From:	Lat/Long	Easting:	1,726,571.98 usft	Longitude:	-80.69321360
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.196 °

Well	Heaven Hill 3N-15 HU (B)					
Well Position	+N/-S	0.00 usft	Northing:	14,457,214.38 usft	Latitude:	39.80867900
	+E/-W	0.00 usft	Easting:	1,726,509.97 usft	Longitude:	-80.69343400
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	1,326.00 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/29/2019	-8.770	66.787	51,928.97396487

Design	rev6			
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	320.50

Plan Survey Tool Program	Date 3/16/2020			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,940.49 rev6 (Original Hole)	MWD	
			MWD - Standard	

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Planning Report - Geographic

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Heaven Hill 3N-15 HU (B)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1326.00usft
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1326.00usft
Site:	Heaven Hill 3	North Reference:	Grid
Well:	Heaven Hill 3N-15 HU (B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev6		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,230.00	0.00	0.00	1,230.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,380.00	3.00	350.00	1,379.93	3.87	-0.68	2.00	2.00	0.00	350.000	
1,470.17	3.00	315.00	1,469.99	7.86	-2.76	2.00	0.00	-38.81	-107.477	
2,070.17	3.00	315.00	2,069.17	30.06	-24.96	0.00	0.00	0.00	0.000	
2,220.17	0.00	315.00	2,219.10	32.84	-27.74	2.00	-2.00	0.00	180.000	
3,101.08	0.00	315.00	3,100.00	32.84	-27.74	0.00	0.00	0.00	315.000	
3,601.08	15.00	168.48	3,594.31	-30.93	-14.74	3.00	3.00	0.00	168.480	
6,609.27	15.00	168.48	6,500.00	-793.82	140.75	0.00	0.00	0.00	0.000	
6,709.27	10.00	168.48	6,597.60	-815.02	145.07	5.00	-5.00	0.00	180.000	
7,219.42	10.00	168.48	7,100.00	-901.82	162.76	0.00	0.00	0.00	0.000	
7,506.01	21.46	168.49	7,375.40	-977.84	178.24	4.00	4.00	0.00	0.020	
11,106.58	21.46	168.49	10,726.26	-2,268.83	441.12	0.00	0.00	0.00	0.000	
12,498.31	91.00	330.36	11,684.00	-1,733.47	-0.81	8.00	5.00	11.63	160.490	Heaven Hill 3N-15 HL
18,940.49	91.00	330.36	11,572.01	3,865.12	-3,185.91	0.00	0.00	0.00	0.000	Heaven Hill 3N-15 HL

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MAR 30 2020

Database: DB_Aug1919_v14
Company: Tug Hill Operating LLC
Project: Marshall County, West Virginia.
Site: Heaven Hill 3
Well: Heaven Hill 3N-15 HU (B)
Wellbore: Original Hole
Design: rev6

Local Co-ordinate Reference: Well Heaven Hill 3N-15 HU (B)
TVD Reference: GL @ 1326.00usft
MD Reference: GL @ 1326.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

 WV Department of
Environmental Protection

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	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
100.00	0.00	0.00	100.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
120.00	0.00	0.00	120.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
200.00	0.00	0.00	200.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
300.00	0.00	0.00	300.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
400.00	0.00	0.00	400.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
500.00	0.00	0.00	500.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
600.00	0.00	0.00	600.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
700.00	0.00	0.00	700.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
800.00	0.00	0.00	800.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
900.00	0.00	0.00	900.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
1,130.00	0.00	0.00	1,130.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
1,230.00	0.00	0.00	1,230.00	0.00	0.00	14,457,214.38	1,726,509.97	39.80867900	-80.69343400
KOP Begin 2°/100' build									
1,300.00	1.40	350.00	1,299.99	0.84	-0.15	14,457,215.23	1,726,509.82	39.80868132	-80.69343452
1,380.00	3.00	350.00	1,379.93	3.87	-0.68	14,457,218.25	1,726,509.28	39.80868963	-80.69343638
Begin 2°/100' build/turn									
1,400.00	2.91	342.45	1,399.91	4.87	-0.93	14,457,219.25	1,726,509.04	39.80869237	-80.69343724
1,470.17	3.00	315.00	1,469.99	7.86	-2.76	14,457,222.24	1,726,507.21	39.80870061	-80.69344373
Begin 3.00° tangent									
1,500.00	3.00	315.00	1,499.77	8.96	-3.86	14,457,223.35	1,726,506.10	39.80870365	-80.69344765
1,600.00	3.00	315.00	1,599.64	12.66	-7.56	14,457,227.05	1,726,502.40	39.80871385	-80.69346078
1,700.00	3.00	315.00	1,699.50	16.36	-11.27	14,457,230.75	1,726,498.70	39.80872405	-80.69347391
1,800.00	3.00	315.00	1,799.36	20.07	-14.97	14,457,234.45	1,726,495.00	39.80873425	-80.69348705
1,900.00	3.00	315.00	1,899.23	23.77	-18.67	14,457,238.15	1,726,491.30	39.80874444	-80.69350018
2,000.00	3.00	315.00	1,999.09	27.47	-22.37	14,457,241.85	1,726,487.60	39.80875464	-80.69351331
2,070.17	3.00	315.00	2,069.16	30.06	-24.96	14,457,244.45	1,726,485.00	39.80876180	-80.69352253
Begin 2°/100' drop									
2,100.00	2.40	315.00	2,098.96	31.06	-25.96	14,457,245.44	1,726,484.01	39.80876454	-80.69352606
2,200.00	0.40	315.00	2,198.92	32.79	-27.69	14,457,247.17	1,726,482.27	39.80876931	-80.69353220
2,220.17	0.00	315.00	2,219.09	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
Begin vertical hold									
2,300.00	0.00	315.00	2,298.92	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
2,400.00	0.00	315.00	2,398.92	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
2,500.00	0.00	315.00	2,498.92	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
2,600.00	0.00	315.00	2,598.92	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
2,700.00	0.00	315.00	2,698.92	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
2,800.00	0.00	315.00	2,798.92	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
2,851.08	0.00	315.00	2,850.00	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
2,900.00	0.00	315.00	2,898.92	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
3,000.00	0.00	315.00	2,998.92	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
3,100.00	0.00	315.00	3,098.92	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
3,101.08	0.00	315.00	3,100.00	32.84	-27.74	14,457,247.22	1,726,482.22	39.80876945	-80.69353238
Begin 3°/100' build									
3,200.00	2.97	168.48	3,198.88	30.33	-27.23	14,457,244.71	1,726,482.74	39.80876255	-80.69353059
3,300.00	5.97	168.48	3,298.57	22.70	-25.67	14,457,237.08	1,726,484.29	39.80874158	-80.69352514
3,400.00	8.97	168.48	3,397.71	9.96	-23.08	14,457,224.35	1,726,486.89	39.80870658	-80.69351606
3,500.00	11.97	168.48	3,496.03	-7.84	-19.45	14,457,206.55	1,726,490.51	39.80865767	-80.69350336
3,600.00	14.97	168.48	3,593.27	-30.65	-14.80	14,457,183.73	1,726,495.17	39.80859496	-80.69348707
3,601.08	15.00	168.48	3,594.31	-30.93	-14.74	14,457,183.46	1,726,495.22	39.80859421	-80.69348688
Begin 15.00° tangent									

Database: DB_Aug1919_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia.
 Site: Heaven Hill 3
 Well: Heaven Hill 3N-15 HU (B)
 Wellbore: Original Hole
 Design: rev6

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

Well Heaven Hill 3N-15 HU (B)
 GL @ 1326.00usft
 GL @ 1326.00usft
 Grid
 Minimum Curvature

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WV Department of
 Environmental Protection

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
3,700.00	15.00	168.48	3,689.86	-56.01	-9.63	14,457,158.37	1,726,500.33	39.80852526	-80.69346898	
3,800.00	15.00	168.48	3,786.45	-81.37	-4.46	14,457,133.01	1,726,505.50	39.80845557	-80.69345088	
3,900.00	15.00	168.48	3,883.05	-106.74	0.71	14,457,107.65	1,726,510.67	39.80838587	-80.69343279	
4,000.00	15.00	168.48	3,979.64	-132.10	5.88	14,457,082.29	1,726,515.84	39.80831618	-80.69341469	
4,100.00	15.00	168.48	4,076.23	-157.46	11.04	14,457,056.93	1,726,521.01	39.80824648	-80.69339659	
4,200.00	15.00	168.48	4,172.82	-182.82	16.21	14,457,031.57	1,726,526.18	39.80817679	-80.69337850	
4,300.00	15.00	168.48	4,269.42	-208.18	21.38	14,457,006.21	1,726,531.35	39.80810710	-80.69336040	
4,400.00	15.00	168.48	4,366.01	-233.54	26.55	14,456,980.85	1,726,536.52	39.80803740	-80.69334231	
4,500.00	15.00	168.48	4,462.60	-258.90	31.72	14,456,955.49	1,726,541.69	39.80796771	-80.69332421	
4,600.00	15.00	168.48	4,559.20	-284.26	36.89	14,456,930.13	1,726,546.85	39.80789801	-80.69330611	
4,700.00	15.00	168.48	4,655.79	-309.62	42.06	14,456,904.77	1,726,552.02	39.80782832	-80.69328802	
4,800.00	15.00	168.48	4,752.38	-334.98	47.23	14,456,879.40	1,726,557.19	39.80775862	-80.69326992	
4,900.00	15.00	168.48	4,848.97	-360.34	52.40	14,456,854.04	1,726,562.36	39.80768893	-80.69325183	
5,000.00	15.00	168.48	4,945.57	-385.70	57.56	14,456,828.68	1,726,567.53	39.80761923	-80.69323373	
5,100.00	15.00	168.48	5,042.16	-411.06	62.73	14,456,803.32	1,726,572.70	39.80754954	-80.69321564	
5,200.00	15.00	168.48	5,138.75	-436.42	67.90	14,456,777.96	1,726,577.87	39.80747984	-80.69319754	
5,300.00	15.00	168.48	5,235.34	-461.78	73.07	14,456,752.60	1,726,583.04	39.80741015	-80.69317945	
5,400.00	15.00	168.48	5,331.94	-487.14	78.24	14,456,727.24	1,726,588.21	39.80734045	-80.69316135	
5,500.00	15.00	168.48	5,428.53	-512.50	83.41	14,456,701.88	1,726,593.37	39.80727076	-80.69314325	
5,600.00	15.00	168.48	5,525.12	-537.86	88.58	14,456,676.52	1,726,598.54	39.80720106	-80.69312516	
5,700.00	15.00	168.48	5,621.71	-563.22	93.75	14,456,651.16	1,726,603.71	39.80713137	-80.69310706	
5,800.00	15.00	168.48	5,718.31	-588.58	98.92	14,456,625.80	1,726,608.88	39.80706167	-80.69308897	
5,900.00	15.00	168.48	5,814.90	-613.95	104.08	14,456,600.44	1,726,614.05	39.80699198	-80.69307087	
6,000.00	15.00	168.48	5,911.49	-639.31	109.25	14,456,575.08	1,726,619.22	39.80692228	-80.69305278	
6,100.00	15.00	168.48	6,008.08	-664.67	114.42	14,456,549.72	1,726,624.39	39.80685259	-80.69303468	
6,200.00	15.00	168.48	6,104.68	-690.03	119.59	14,456,524.36	1,726,629.56	39.80678289	-80.69301659	
6,300.00	15.00	168.48	6,201.27	-715.39	124.76	14,456,499.00	1,726,634.73	39.80671320	-80.69299849	
6,400.00	15.00	168.48	6,297.86	-740.75	129.93	14,456,473.64	1,726,639.89	39.80664350	-80.69298040	
6,500.00	15.00	168.48	6,394.45	-766.11	135.10	14,456,448.28	1,726,645.06	39.80657381	-80.69296230	
6,600.00	15.00	168.48	6,491.05	-791.47	140.27	14,456,422.92	1,726,650.23	39.80650411	-80.69294421	
6,609.27	15.00	168.48	6,500.00	-793.82	140.75	14,456,420.56	1,726,650.71	39.80649765	-80.69294253	
Begin 5°/100' drop										
6,700.00	10.46	168.48	6,588.48	-813.41	144.74	14,456,400.98	1,726,654.70	39.80644382	-80.69292855	
6,709.27	10.00	168.48	6,597.60	-815.02	145.07	14,456,399.36	1,726,655.03	39.80643939	-80.69292740	
Begin 10.00° tangent										
6,800.00	10.00	168.48	6,686.95	-830.46	148.21	14,456,383.93	1,726,658.18	39.80639696	-80.69291639	
6,900.00	10.00	168.48	6,785.43	-847.47	151.68	14,456,366.91	1,726,661.65	39.80635020	-80.69290425	
7,000.00	10.00	168.48	6,883.91	-864.49	155.15	14,456,349.90	1,726,665.11	39.80630344	-80.69289211	
7,100.00	10.00	168.48	6,982.39	-881.50	158.62	14,456,332.88	1,726,668.58	39.80625668	-80.69287997	
7,200.00	10.00	168.48	7,080.87	-898.52	162.08	14,456,315.87	1,726,672.05	39.80620992	-80.69286783	
7,219.42	10.00	168.48	7,100.00	-901.82	162.76	14,456,312.56	1,726,672.72	39.80620084	-80.69286547	
Begin 4°/100' build/turn										
7,300.00	13.22	168.48	7,178.92	-917.71	166.00	14,456,296.67	1,726,675.96	39.80615717	-80.69285413	
7,400.00	17.22	168.49	7,275.39	-943.44	171.24	14,456,270.95	1,726,681.20	39.80608648	-80.69283579	
7,500.00	21.22	168.49	7,369.80	-975.69	177.80	14,456,238.69	1,726,687.77	39.80599783	-80.69281280	
7,506.01	21.46	168.49	7,375.39	-977.84	178.24	14,456,236.55	1,726,688.21	39.80599194	-80.69281127	
Begin 21.46° tangent										
7,600.00	21.46	168.49	7,462.87	-1,011.54	185.10	14,456,202.85	1,726,695.07	39.80589933	-80.69278725	
7,700.00	21.46	168.49	7,555.93	-1,047.39	192.40	14,456,166.99	1,726,702.37	39.80580079	-80.69276169	
7,800.00	21.46	168.49	7,649.00	-1,083.25	199.71	14,456,131.14	1,726,709.67	39.80570226	-80.69273613	
7,900.00	21.46	168.49	7,742.06	-1,119.10	207.01	14,456,095.28	1,726,716.97	39.80560372	-80.69271057	
8,000.00	21.46	168.49	7,835.13	-1,154.96	214.31	14,456,059.43	1,726,724.27	39.80550518	-80.69268502	
8,100.00	21.46	168.49	7,928.19	-1,190.81	221.61	14,456,023.57	1,726,731.57	39.80540665	-80.69265946	
8,200.00	21.46	168.49	8,021.26	-1,226.67	228.91	14,455,987.72	1,726,738.87	39.80530811	-80.69263390	

Database: DB_Aug1919_v14
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia.
 Site: Heaven Hill 3
 Well: Heaven Hill 3N-15 HU (B)
 Wellbore: Original Hole
 Design: rev6

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

Well Heaven Hill 3N-15 HU (B)
 GL @ 1326.00usft
 GL @ 1326.00usft
 Grid
 Minimum Curvature

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 Office of Oil and Gas
 MAR 30 2020
 WV Department of
 Environmental Protection

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
8,300.00	21.46	168.49	8,114.32	-1,262.52	236.21	14,455,951.86	1,726,746.17	39.80520957	-80.69260834	
8,400.00	21.46	168.49	8,207.39	-1,298.38	243.51	14,455,916.00	1,726,753.48	39.80511104	-80.69258279	
8,500.00	21.46	168.49	8,300.45	-1,334.23	250.81	14,455,880.15	1,726,760.78	39.80501250	-80.69255723	
8,600.00	21.46	168.49	8,393.52	-1,370.09	258.11	14,455,844.29	1,726,768.08	39.80491397	-80.69253167	
8,700.00	21.46	168.49	8,486.58	-1,405.95	265.41	14,455,808.44	1,726,775.38	39.80481543	-80.69250612	
8,800.00	21.46	168.49	8,579.65	-1,441.80	272.71	14,455,772.58	1,726,782.68	39.80471689	-80.69248056	
8,900.00	21.46	168.49	8,672.71	-1,477.66	280.02	14,455,736.73	1,726,789.98	39.80461836	-80.69245500	
9,000.00	21.46	168.49	8,765.78	-1,513.51	287.32	14,455,700.87	1,726,797.28	39.80451982	-80.69242944	
9,100.00	21.46	168.49	8,858.84	-1,549.37	294.62	14,455,665.02	1,726,804.58	39.80442128	-80.69240389	
9,200.00	21.46	168.49	8,951.91	-1,585.22	301.92	14,455,629.16	1,726,811.88	39.80432275	-80.69237833	
9,300.00	21.46	168.49	9,044.97	-1,621.08	309.22	14,455,593.31	1,726,819.18	39.80422421	-80.69235277	
9,400.00	21.46	168.49	9,138.04	-1,656.93	316.52	14,455,557.45	1,726,826.48	39.80412568	-80.69232722	
9,500.00	21.46	168.49	9,231.10	-1,692.79	323.82	14,455,521.60	1,726,833.79	39.80402714	-80.69230166	
9,600.00	21.46	168.49	9,324.17	-1,728.64	331.12	14,455,485.74	1,726,841.09	39.80392860	-80.69227610	
9,700.00	21.46	168.49	9,417.23	-1,764.50	338.42	14,455,449.89	1,726,848.39	39.80383007	-80.69225055	
9,800.00	21.46	168.49	9,510.30	-1,800.35	345.72	14,455,414.03	1,726,855.69	39.80373153	-80.69222499	
9,900.00	21.46	168.49	9,603.36	-1,836.21	353.02	14,455,378.18	1,726,862.99	39.80363299	-80.69219944	
10,000.00	21.46	168.49	9,696.43	-1,872.06	360.33	14,455,342.32	1,726,870.29	39.80353446	-80.69217388	
10,100.00	21.46	168.49	9,789.49	-1,907.92	367.63	14,455,306.46	1,726,877.59	39.80343592	-80.69214832	
10,200.00	21.46	168.49	9,882.56	-1,943.77	374.93	14,455,270.61	1,726,884.89	39.80333738	-80.69212277	
10,300.00	21.46	168.49	9,975.62	-1,979.63	382.23	14,455,234.75	1,726,892.19	39.80323885	-80.69209721	
10,400.00	21.46	168.49	10,068.69	-2,015.49	389.53	14,455,198.90	1,726,899.49	39.80314031	-80.69207166	
10,500.00	21.46	168.49	10,161.75	-2,051.34	396.83	14,455,163.04	1,726,906.79	39.80304177	-80.69204610	
10,600.00	21.46	168.49	10,254.82	-2,087.20	404.13	14,455,127.19	1,726,914.10	39.80294324	-80.69202054	
10,700.00	21.46	168.49	10,347.88	-2,123.05	411.43	14,455,091.33	1,726,921.40	39.80284470	-80.69199499	
10,800.00	21.46	168.49	10,440.95	-2,158.91	418.73	14,455,055.48	1,726,928.70	39.80274617	-80.69196943	
10,900.00	21.46	168.49	10,534.01	-2,194.76	426.03	14,455,019.62	1,726,936.00	39.80264763	-80.69194388	
10,927.93	21.46	168.49	10,560.00	-2,204.77	428.07	14,455,009.61	1,726,938.04	39.80262011	-80.69193674	
11,000.00	21.46	168.49	10,627.08	-2,230.62	433.33	14,454,983.77	1,726,943.30	39.80254909	-80.69191832	
11,100.00	21.46	168.49	10,720.14	-2,266.47	440.64	14,454,947.91	1,726,950.60	39.80245056	-80.69189277	
11,106.58	21.46	168.49	10,726.27	-2,268.83	441.12	14,454,945.55	1,726,951.08	39.80244407	-80.69189109	
Begin 8°/100' build/turn										
11,200.00	14.62	178.40	10,815.06	-2,297.41	444.86	14,454,916.98	1,726,954.83	39.80236556	-80.69187810	
11,300.00	8.53	205.41	10,913.04	-2,316.76	442.03	14,454,897.63	1,726,951.99	39.80231245	-80.69188843	
11,400.00	7.69	264.41	11,012.20	-2,324.12	432.17	14,454,890.26	1,726,942.14	39.80229232	-80.69192360	
11,500.00	13.14	298.42	11,110.60	-2,319.35	415.49	14,454,895.03	1,726,925.46	39.80230557	-80.69198294	
11,600.00	20.34	310.84	11,206.33	-2,302.55	392.31	14,454,911.83	1,726,902.27	39.80235193	-80.69206528	
11,700.00	27.97	316.83	11,297.53	-2,274.04	363.07	14,454,940.35	1,726,873.04	39.80243051	-80.69216902	
11,800.00	35.74	320.39	11,382.41	-2,234.37	328.35	14,454,980.02	1,726,838.32	39.80253978	-80.69229216	
11,900.00	43.60	322.81	11,459.32	-2,184.32	288.83	14,455,030.07	1,726,798.79	39.80267761	-80.69243227	
12,000.00	51.48	324.62	11,526.78	-2,124.86	245.26	14,455,089.53	1,726,755.23	39.80284131	-80.69258665	
12,100.00	59.40	326.06	11,583.47	-2,057.15	198.51	14,455,157.24	1,726,708.48	39.80302770	-80.69275229	
12,200.00	67.32	327.29	11,628.27	-1,982.50	149.48	14,455,231.88	1,726,659.44	39.80323315	-80.69292596	
12,300.00	75.25	328.38	11,660.33	-1,902.38	99.12	14,455,312.01	1,726,609.08	39.80345367	-80.69310429	
12,400.00	83.19	329.40	11,679.02	-1,818.33	48.42	14,455,396.05	1,726,558.38	39.80368496	-80.69328379	
12,498.31	91.00	330.36	11,684.00	-1,733.47	-0.81	14,455,480.92	1,726,509.15	39.80391848	-80.69345803	
Begin 91.00° lateral										
12,500.00	91.00	330.36	11,683.97	-1,732.00	-1.65	14,455,482.38	1,726,508.32	39.80392252	-80.69346099	
12,600.00	91.00	330.36	11,682.23	-1,645.10	-51.09	14,455,569.29	1,726,458.88	39.80416165	-80.69363597	
12,700.00	91.00	330.36	11,680.49	-1,558.19	-100.53	14,455,656.19	1,726,409.44	39.80440077	-80.69381095	
12,800.00	91.00	330.36	11,678.76	-1,471.28	-149.97	14,455,743.10	1,726,359.99	39.80463990	-80.69398593	
12,900.00	91.00	330.36	11,677.02	-1,384.38	-199.41	14,455,830.01	1,726,310.55	39.80487903	-80.69416091	
13,000.00	91.00	330.36	11,675.28	-1,297.47	-248.85	14,455,916.91	1,726,261.11	39.80511816	-80.69433590	
13,100.00	91.00	330.36	11,673.54	-1,210.57	-298.29	14,456,003.82	1,726,211.67	39.80535728	-80.69451089	

Database: DB_Aug1919_v14
Company: Tug Hill Operating LLC
Project: Marshall County, West Virginia.
Site: Heaven Hill 3
Well: Heaven Hill 3N-15 HU (B)
Wellbore: Original Hole
Design: rev6

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

Well Heaven Hill 3N-15 HU (B)
 GL @ 1326.00usft
 GL @ 1326.00usft
 Grid
 Minimum Curvature

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 Office of Oil and Gas
MAR 30 2020
 WV Department of
 Environmental Protection

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,200.00	91.00	330.36	11,671.80	-1,123.66	-347.74	14,456,090.72	1,726,162.23	39.80559641	-80.69468587
13,300.00	91.00	330.36	11,670.06	-1,036.76	-397.18	14,456,177.63	1,726,112.79	39.80583554	-80.69486086
13,400.00	91.00	330.36	11,668.32	-949.85	-446.62	14,456,264.53	1,726,063.35	39.80607466	-80.69503585
13,500.00	91.00	330.36	11,666.59	-862.95	-496.06	14,456,351.44	1,726,013.90	39.80631379	-80.69521084
13,600.00	91.00	330.36	11,664.85	-776.04	-545.50	14,456,438.34	1,725,964.46	39.80655291	-80.69538583
13,700.00	91.00	330.36	11,663.11	-689.14	-594.94	14,456,525.25	1,725,915.02	39.80679204	-80.69556083
13,800.00	91.00	330.36	11,661.37	-602.23	-644.38	14,456,612.15	1,725,865.58	39.80703117	-80.69573582
13,900.00	91.00	330.36	11,659.63	-515.33	-693.83	14,456,699.06	1,725,816.14	39.80727029	-80.69591082
14,000.00	91.00	330.36	11,657.89	-428.42	-743.27	14,456,785.96	1,725,766.70	39.80750941	-80.69608581
14,100.00	91.00	330.36	11,656.16	-341.52	-792.71	14,456,872.87	1,725,717.26	39.80774854	-80.69626081
14,200.00	91.00	330.36	11,654.42	-254.61	-842.15	14,456,959.77	1,725,667.82	39.80798766	-80.69643581
14,300.00	91.00	330.36	11,652.68	-167.71	-891.59	14,457,046.68	1,725,618.37	39.80822679	-80.69661081
14,400.00	91.00	330.36	11,650.94	-80.80	-941.03	14,457,133.58	1,725,568.93	39.80846591	-80.69678581
14,500.00	91.00	330.36	11,649.20	6.11	-990.47	14,457,220.49	1,725,519.49	39.80870503	-80.69696082
14,600.00	91.00	330.36	11,647.46	93.01	-1,039.92	14,457,307.40	1,725,470.05	39.80894416	-80.69713582
14,700.00	91.00	330.36	11,645.72	179.92	-1,089.36	14,457,394.30	1,725,420.61	39.80918328	-80.69731083
14,800.00	91.00	330.36	11,643.99	266.82	-1,138.80	14,457,481.21	1,725,371.17	39.80942240	-80.69748583
14,900.00	91.00	330.36	11,642.25	353.73	-1,188.24	14,457,568.11	1,725,321.73	39.80966152	-80.69766084
15,000.00	91.00	330.36	11,640.51	440.63	-1,237.68	14,457,655.02	1,725,272.28	39.80990065	-80.69783585
15,100.00	91.00	330.36	11,638.77	527.54	-1,287.12	14,457,741.92	1,725,222.84	39.81013977	-80.69801086
15,200.00	91.00	330.36	11,637.03	614.44	-1,336.56	14,457,828.83	1,725,173.40	39.81037889	-80.69818587
15,300.00	91.00	330.36	11,635.29	701.35	-1,386.00	14,457,915.73	1,725,123.96	39.81061801	-80.69836088
15,400.00	91.00	330.36	11,633.56	788.25	-1,435.45	14,458,002.64	1,725,074.52	39.81085713	-80.69853590
15,500.00	91.00	330.36	11,631.82	875.16	-1,484.89	14,458,089.54	1,725,025.08	39.81109625	-80.69871091
15,600.00	91.00	330.36	11,630.08	962.06	-1,534.33	14,458,176.45	1,724,975.64	39.81133537	-80.69888593
15,700.00	91.00	330.36	11,628.34	1,048.97	-1,583.77	14,458,263.35	1,724,926.19	39.81157449	-80.69906095
15,800.00	91.00	330.36	11,626.60	1,135.87	-1,633.21	14,458,350.26	1,724,876.75	39.81181361	-80.69923596
15,900.00	91.00	330.36	11,624.86	1,222.78	-1,682.65	14,458,437.16	1,724,827.31	39.81205273	-80.69941098
16,000.00	91.00	330.36	11,623.13	1,309.68	-1,732.09	14,458,524.07	1,724,777.87	39.81229185	-80.69958601
16,100.00	91.00	330.36	11,621.39	1,396.59	-1,781.54	14,458,610.97	1,724,728.43	39.81253097	-80.69976103
16,200.00	91.00	330.36	11,619.65	1,483.50	-1,830.98	14,458,697.88	1,724,678.99	39.81277009	-80.69993605
16,300.00	91.00	330.36	11,617.91	1,570.40	-1,880.42	14,458,784.79	1,724,629.55	39.81300921	-80.70011108
16,400.00	91.00	330.36	11,616.17	1,657.31	-1,929.86	14,458,871.69	1,724,580.11	39.81324832	-80.70028610
16,500.00	91.00	330.36	11,614.43	1,744.21	-1,979.30	14,458,958.60	1,724,530.66	39.81348744	-80.70046113
16,600.00	91.00	330.36	11,612.69	1,831.12	-2,028.74	14,459,045.50	1,724,481.22	39.81372656	-80.70063616
16,700.00	91.00	330.36	11,610.96	1,918.02	-2,078.18	14,459,132.41	1,724,431.78	39.81396568	-80.70081119
16,800.00	91.00	330.36	11,609.22	2,004.93	-2,127.63	14,459,219.31	1,724,382.34	39.81420479	-80.70098622
16,900.00	91.00	330.36	11,607.48	2,091.83	-2,177.07	14,459,306.22	1,724,332.90	39.81444391	-80.70116125
17,000.00	91.00	330.36	11,605.74	2,178.74	-2,226.51	14,459,393.12	1,724,283.46	39.81468303	-80.70133628
17,100.00	91.00	330.36	11,604.00	2,265.64	-2,275.95	14,459,480.03	1,724,234.02	39.81492214	-80.70151132
17,200.00	91.00	330.36	11,602.26	2,352.55	-2,325.39	14,459,566.93	1,724,184.57	39.81516126	-80.70168635
17,300.00	91.00	330.36	11,600.53	2,439.45	-2,374.83	14,459,653.84	1,724,135.13	39.81540037	-80.70186139
17,400.00	91.00	330.36	11,598.79	2,526.36	-2,424.27	14,459,740.74	1,724,085.69	39.81563949	-80.70203643
17,500.00	91.00	330.36	11,597.05	2,613.26	-2,473.71	14,459,827.65	1,724,036.25	39.81587860	-80.70221147
17,600.00	91.00	330.36	11,595.31	2,700.17	-2,523.16	14,459,914.55	1,723,986.81	39.81611772	-80.70238651
17,700.00	91.00	330.36	11,593.57	2,787.07	-2,572.60	14,460,001.46	1,723,937.37	39.81635683	-80.70256155
17,800.00	91.00	330.36	11,591.83	2,873.98	-2,622.04	14,460,088.36	1,723,887.93	39.81659595	-80.70273659
17,900.00	91.00	330.36	11,590.09	2,960.89	-2,671.48	14,460,175.27	1,723,838.48	39.81683506	-80.70291164
18,000.00	91.00	330.36	11,588.36	3,047.79	-2,720.92	14,460,262.18	1,723,789.04	39.81707418	-80.70308668
18,100.00	91.00	330.36	11,586.62	3,134.70	-2,770.36	14,460,349.08	1,723,739.60	39.81731329	-80.70326173
18,200.00	91.00	330.36	11,584.88	3,221.60	-2,819.80	14,460,435.99	1,723,690.16	39.81755240	-80.70343678
18,300.00	91.00	330.36	11,583.14	3,308.51	-2,869.25	14,460,522.89	1,723,640.72	39.81779152	-80.70361182
18,400.00	91.00	330.36	11,581.40	3,395.41	-2,918.69	14,460,609.80	1,723,591.28	39.81803063	-80.70378687
18,500.00	91.00	330.36	11,579.66	3,482.32	-2,968.13	14,460,696.70	1,723,541.84	39.81826974	-80.70396193
18,600.00	91.00	330.36	11,577.93	3,569.22	-3,017.57	14,460,783.61	1,723,492.40	39.81850885	-80.70413698

Database:	DB_Aug1919_v14	Local Co-ordinate Reference:	Well Heaven Hill 3N-15 HU (B)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1326.00usft
Project:	Marshall County, West Virginia.	MD Reference:	GL @ 1326.00usft
Site:	Heaven Hill 3	North Reference:	Grid
Well:	Heaven Hill 3N-15 HU (B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev6		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
18,700.00	91.00	330.36	11,576.19	3,656.13	-3,067.01	14,460,870.51	1,723,442.95	39.81874796	-80.70431203	
18,800.00	91.00	330.36	11,574.45	3,743.03	-3,116.45	14,460,957.42	1,723,393.51	39.81898708	-80.70448709	
18,900.00	91.00	330.36	11,572.71	3,829.94	-3,165.89	14,461,044.32	1,723,344.07	39.81922619	-80.70466214	
18,940.49	91.00	330.36	11,572.01	3,865.12	-3,185.91	14,461,079.51	1,723,324.05	39.81932299	-80.70473302	
PBHL/TD 18940.49 MD/11572.01 TVD										

Design Targets											
Target Name	- hit/miss target	- Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Heaven Hill 3N-15 HU B			0.00	0.01	11,572.00	3,865.13	-3,185.91	14,461,079.51	1,723,324.06	39.81932300	-80.70473300
- plan misses target center by 0.01usft at 18940.49usft MD (11572.01 TVD, 3865.12 N, -3185.91 E)											
- Point											
Heaven Hill 3N-15 HU LI			0.00	0.00	11,684.00	-1,733.47	49.19	14,455,480.91	1,726,559.15	39.80391800	-80.69328000
- plan misses target center by 43.41usft at 12473.23usft MD (11684.00 TVD, -1755.24 N, 11.64 E)											
- Point											
Heaven Hill 3N-15 HU LI			0.00	0.00	11,684.00	-1,733.47	-0.81	14,455,480.91	1,726,509.16	39.80391847	-80.69345803
- plan hits target center											
- Point											

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")		
120.00	120.00		24	26		
1,130.00	1,130.00		13-3/8	17-1/2		
2,851.08	2,850.00		9-5/8	12-1/4		
10,927.93	10,560.00		7-5/8	8-1/2		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,230.00	1,230.00	0.00	0.00	KOP Begin 2°/100' build	<div style="text-align: center;"> <p>RECEIVED</p> <p>Office of Oil and Gas</p> <p>MAR 30 2020</p> <p>WV Department of Environmental Protection</p> </div>
1,380.00	1,379.93	3.87	-0.68	Begin 2°/100' build/turn	
1,470.17	1,469.99	7.86	-2.76	Begin 3.00° tangent	
2,070.17	2,069.16	30.06	-24.96	Begin 2°/100' drop	
2,220.17	2,219.09	32.84	-27.74	Begin vertical hold	
3,101.08	3,100.00	32.84	-27.74	Begin 3°/100' build	
3,601.08	3,594.31	-30.93	-14.74	Begin 15.00° tangent	
6,609.27	6,500.00	-793.82	140.75	Begin 5°/100' drop	
6,709.27	6,597.60	-815.02	145.07	Begin 10.00° tangent	
7,219.42	7,100.00	-901.82	162.76	Begin 4°/100' build/turn	
7,506.01	7,375.39	-977.84	178.24	Begin 21.46° tangent	
11,106.58	10,726.27	-2,268.83	441.12	Begin 8°/100' build/turn	
12,498.31	11,684.00	-1,733.47	-0.81	Begin 91.00° lateral	
18,940.49	11,572.01	3,865.12	-3,185.91	PBHL/TD 18940.49 MD/11572.01 TVD	

WW-9
(4/16)

API Number 47 - 051 -
Operator's Well No. Heaven Hill 3N-15HU

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

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

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

Will a pit be used? Yes No

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

Will a synthetic liner be used in the pit? Yes No If so, what ml.? AST Tanks will be used with proper 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 / WVD109185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP EC#1386426)

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 *Jim Pancake*

Company Official (Typed Name) Jim Pancake

Company Official Title Vice President, Geoscience

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NOV 14 2020

West Virginia Department of
Environmental Protection

Subscribed and sworn before me this 18 day of DECEMBER, 20 19

Maureen Stead

Notary Public

Commonwealth of Pennsylvania - Notary Seal
MAUREEN A STEAD - Notary Public
Washington County
My Commission Expires Jan 28, 2023
Commission Number 1259926

My commission expires 1/28/23

4705 02306

Form WW-9

Operator's Well No. Heaven Hill 3N-15HU

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 18.43 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: Jain Kulkarni

Comments: _____

Title: Oil and Gas Inspector

Date: 11/7/18

Field Reviewed? Yes No

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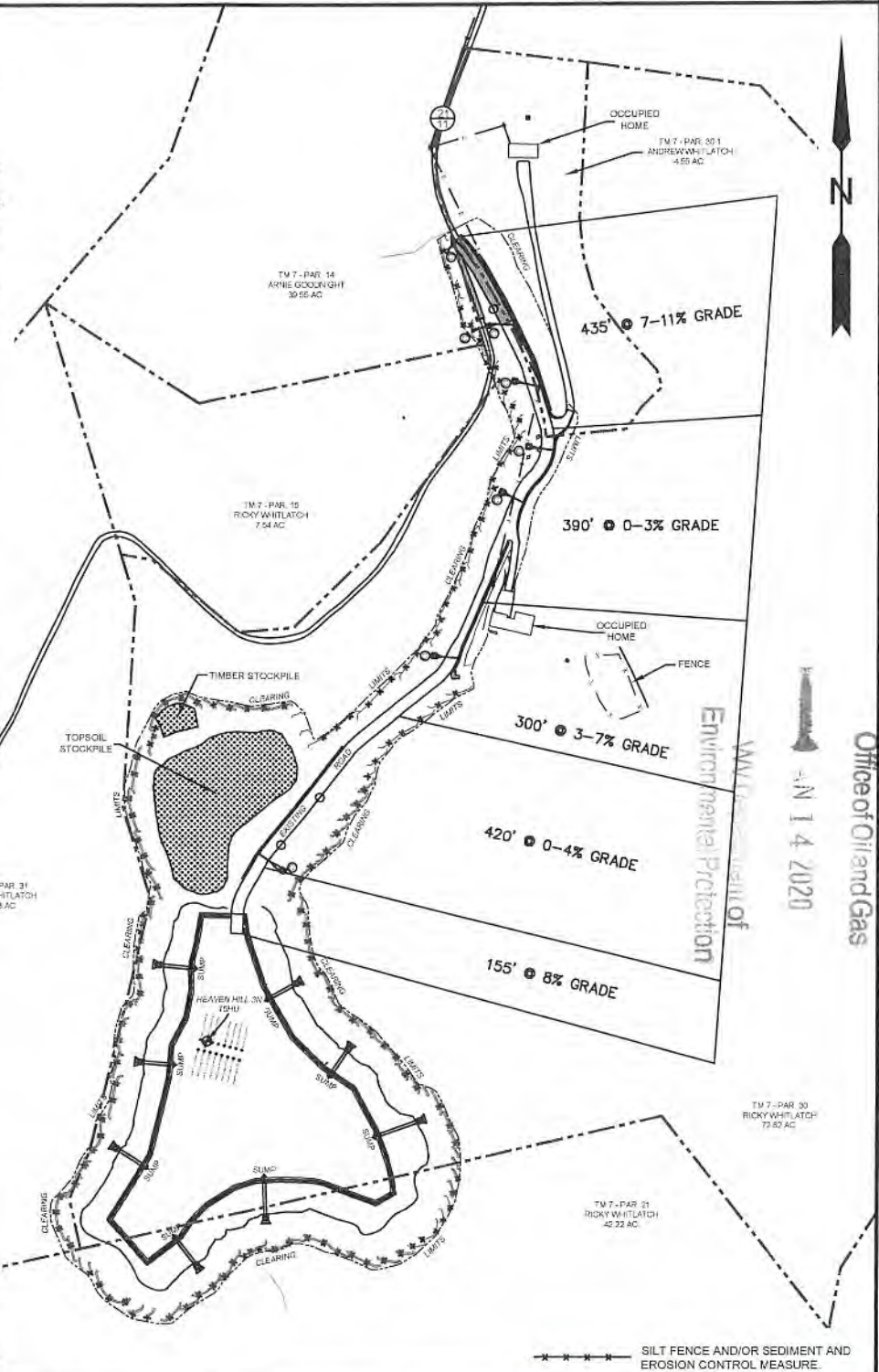
NOV 14 2018

WV Department of
Environmental Protection

PROPOSED HEAVEN HILL 3N - 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 D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.
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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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.	8654	06/21/2019	NONE

TUG HILL
OPERATING

4705102306



Well Site Safety Plan

Tug Hill Operating, LLC

Well Name: Heaven Hill 3N-15HU


Pad Location: Heaven Hill 3

Marshall County, West Virginia

UTM (meters), NAD83, Zone 17:

Northing: 4,406,567.76

Easting: 526,241.29

 3/24/2020

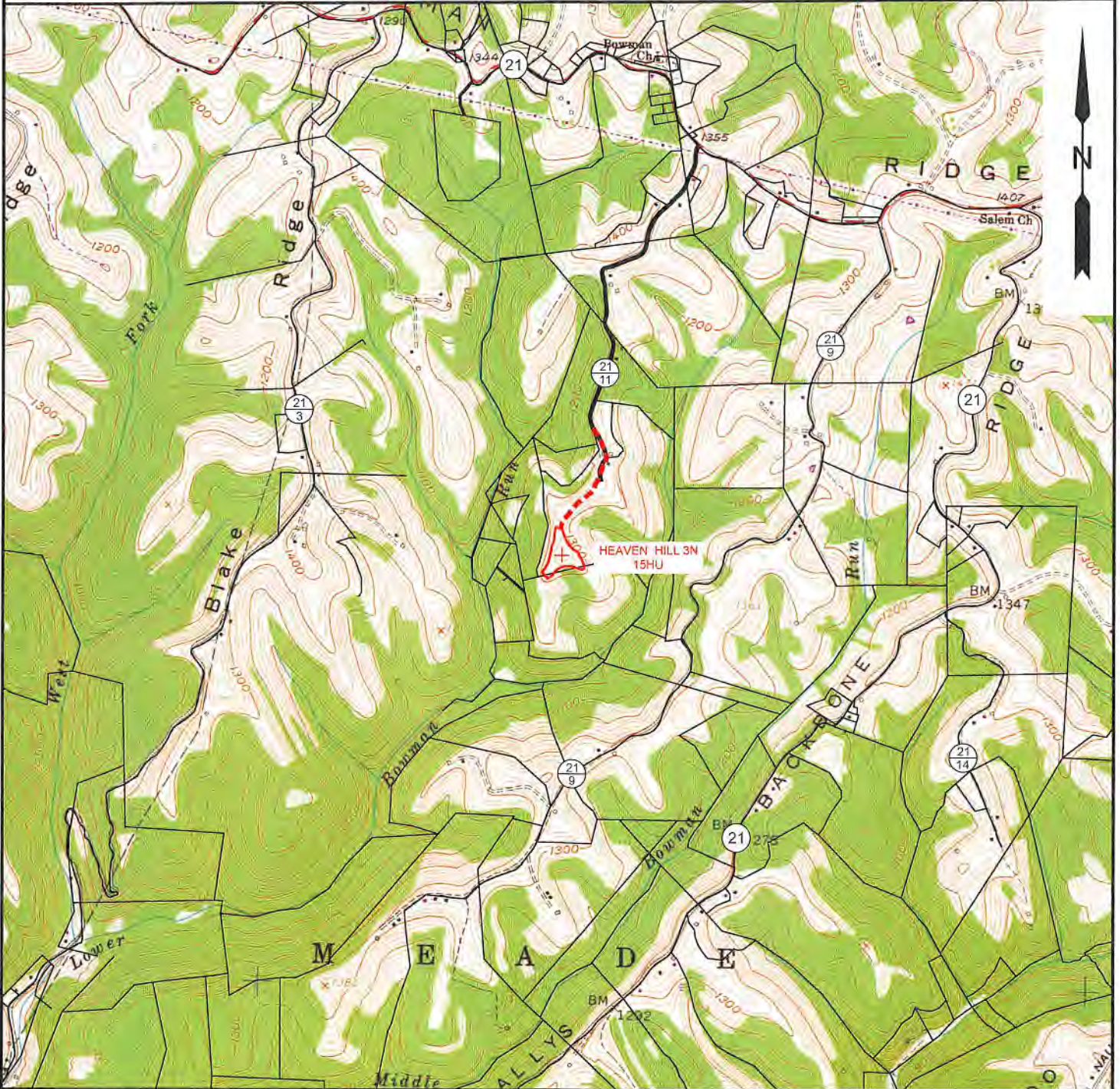
March 2020

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MAR 30 2020

WV Department of
Environmental Protection

PROPOSED HEAVEN HILL 3N - 15HU



NOTE: CLOSEST WATER PURVEYOR
CITY OF CAMERON - FRANK WALKER RESERVOIR
CAMDEN, WV

LAT: 39.829865
LON: -80.573724
LOCATED: N 77°44'18" E AT 34,474.56' FROM THE CENTER OF HEAVEN HILL 3N WELL PAD LOCATION.



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www.slsurveys.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	MEADE	380 SOUTHPOINTE BLVD	
DRAWN BY		DATE	SCALE
K.G.M.		06/21/2019	1" - 2000'

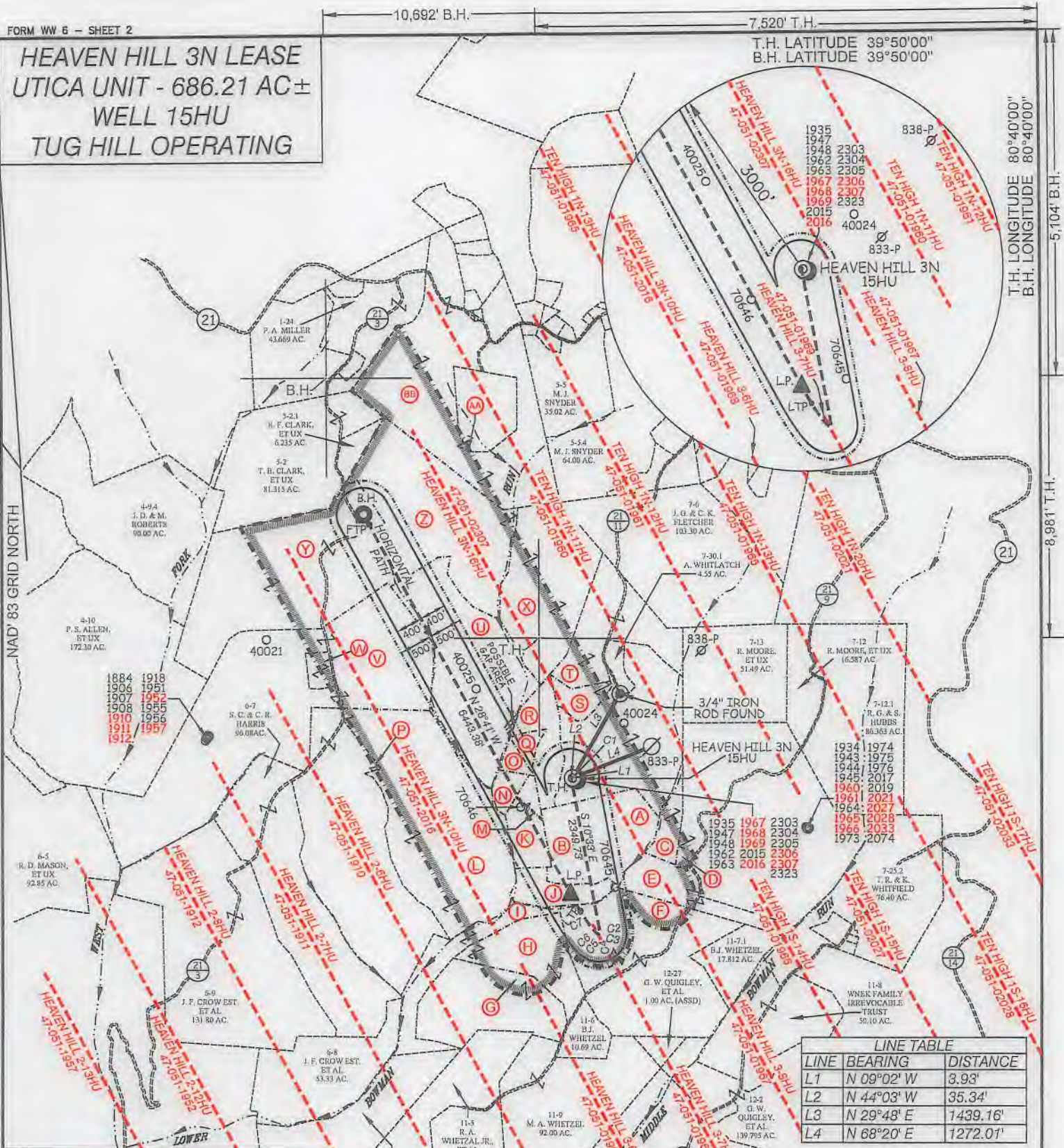


TUG HILL
OPERATING

**HEAVEN HILL 3N LEASE
UTICA UNIT - 686.21 AC±
WELL 15HU
TUG HILL OPERATING**

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

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



LINE	BEARING	DISTANCE
L1	N 09°02' W	3.93'
L2	N 44°03' W	35.34'
L3	N 29°48' E	1439.16'
L4	N 68°20' E	1272.01'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	4.57'	7.38'	N 26°33' W	4.50'
C2	28.87'	168.84'	S 06°30' E	28.83'
C3	19.68'	52.01'	S 09°17' W	19.56'
C4	20.21'	14.16'	S 70°27' W	18.54'
C5	38.62'	111.93'	N 56°26' W	38.43'
C6	124.18'	752.26'	N 41°10' W	124.04'
C7	569.57'	4226.31'	N 32°03' W	569.14'

SLS
FROM THE GROUND UP

12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slswv.com

P.S. 849 *C. Victor Moyers*

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)		
NAD'83 S.P.C.(FT)	N. 478,889.01	E. 1,633,240.70
NAD'83 GEO.	LAT-(N) 39.808679	LONG-(W) 80.693434
NAD'83 UTM (M)	N. 4,406,567.76	E. 526,241.29
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 477,155.2	E. 1,633,210.9
NAD'83 GEO.	LAT-(N) 39.803918	LONG-(W) 80.693458
NAD'83 UTM (M)	N. 4,406,039.4	E. 526,241.0
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 482,808.1	E. 1,630,118.8
NAD'83 GEO.	LAT-(N) 39.819323	LONG-(W) 80.704733
NAD'83 UTM (M)	N. 4,407,745.8	E. 525,270.2



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

UNIT BOUNDARY	
LEASED TRACTS INSIDE UNIT BOUNDARY	
SURFACE LINE	
PROPOSED UTICA	
WELL LATERAL	
400' OFFSET LINE	
500' OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
PROPOSED FIRST TAKE POINT	
PROPOSED LAST TAKE POINT	
COUNTY ROUTE	
PROPOSED WELL	
EXISTING WELL	
PERMITTED WELL	
SURFACE OWNER (SEE TABLE)	
LEASE # (SEE ADDITIONAL SHEETS)	

SCALE 1" = 2000' FILE NO. 8654P15HUR4.dwg
HEAVEN HILL 3-15HU REV6
DATE AUGUST 26, 2019
REVISED 10/23/19, 03/25/20, 07/08/20
OPERATORS WELL NO. HEAVEN HILL 3N-15HU
API WELL 47 - 051 - 02306
NO. STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
H6A

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

10,692' B.H.

7,520' T.H.

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

**HEAVEN HILL 3N LEASE
UTICA UNIT - 686.21 AC±
WELL 15HU
TUG HILL OPERATING**

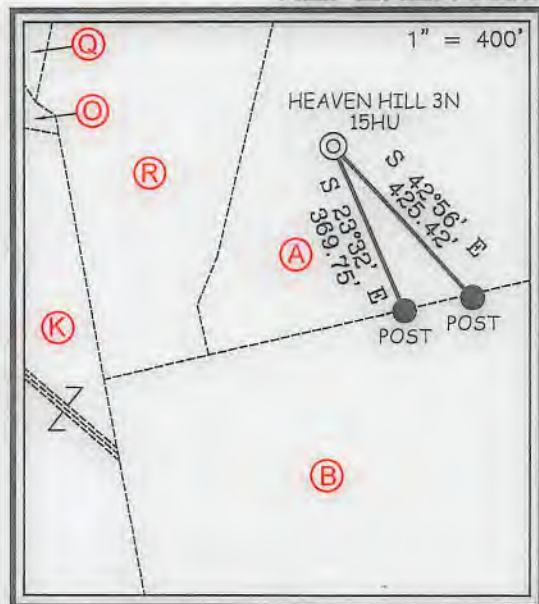
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BOTTOM HOLE
 NAD'83 S.P.C.(FT) N. 482,808.1 E. 1,630,118.8
 NAD'83 GEO. LAT-(N) 39.819323 LONG-(W) 80.704733
 NAD'83 UTM (M) N. 4,407,745.8 E. 525,270.2

T.H. LONGITUDE 80°40'00"
B.H. LONGITUDE 80°40'00"
5,104' B.H.
8,981' T.H.

NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'
- PROPOSED LATERAL OR TOP HOLE OF HEAVEN HILL 3N-15HU (47-051-02306) IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF EXISTING WELLS
 HEAVEN HILL 2-6HU (47-051-01910),
 HEAVEN HILL 3-6HU (47-051-01968),
 HEAVEN HILL 3-7HU (47-051-01969),
 HEAVEN HILL 3-8HU (47-051-01967),
 TEN HIGH 1S-14HU (47-051-01966),
 TEN HIGH 1N-11HU (47-051-01960),
 TEN HIGH 1N-12HU (47-051-01961),
 HEAVEN HILL 3N-10HU (47-051-02016) &
 PROPOSED HEAVEN HILL 3N-16HU (47-051-2307).

REFERENCES



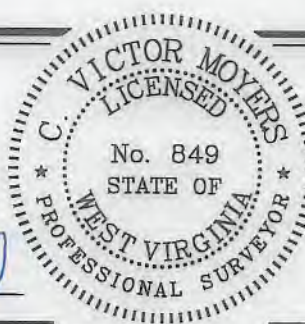
TAG	SURFACE OWNER	PARCEL	ACRES
A	RICKY L. WHITLATCH	9-7-30	72.82
B	RICKY L. WHITLATCH	9-7-21	42.22
C	LAWRENCE & SHIRLEY CONKLE ESTS.	9-7-22	12.00
D	LAWRENCE & SHIRLEY CONKLE ESTS.	9-7-24	139.79
E	LARRY J. WHETZEL, ET UX	9-7-23	36.00
F	BRENDA J. WHETZEL	9-11-7	82.858
G	WILLIAM F. & JULIA A. KERNS	9-11-6.2	46.47
H	BRENDA J. WHETZEL	9-11-6.1	30.24
I	KEVIN E. MCGILTON	9-7-19	23.00
J	KEVIN E. MCGILTON	9-7-20	13.39
K	KEVIN E. MCGILTON	9-7-18	14.00
L	CONSOL MINING COMPANY LLC	9-7-2	116.12
M	RICKY L. WHITLATCH	NOT ASSD.	16' X 32P
N	KEVIN E. MCGILTON	9-7-17	5.12
O	RICKY L. WHITLATCH	NOT ASSD.	2.75
P	MICHAEL PINE, ET UX	9-7-1	107.46
Q	KEVIN E. MCGILTON	9-7-16	8.00
R	RICKY L. WHITLATCH	9-7-31	16.53
S	RICKY L. WHITLATCH	9-7-15	7.54
T	ARNIE GOODNIGHT, ET UX	9-7-14	39.55
U	HELEN ROBERTSON PAYNE	9-7-4	78.95
V	CHARLES R. JR. & ANNA MARIE HAGEDORN	9-7-3	203.074
W	CHARLES R. JR. & ANNA MARIE HAGEDORN	9-7-3.1	4.579
X	ARNIE GOODNIGHT, ET UX	9-7-5	62.18
Y	TERRI L. & HARIKLIA SAMPSON	9-5-1	111.71
Z	HELEN ROBERTSON PAYNE	9-5-3	85.26
AA	CONSOLIDATION COAL COMPANY	9-5-4.1	22.775
BB	ELMER L. ASTON	9-5-4	108.225



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
 slaw.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. 849 *C. Victor Moyers*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE AUGUST 26, 20 19
 REVISED 10/23/19, 03/25/20, 07/08/20
 OPERATORS WELL NO. HEAVEN HILL 3N-15HU
 API WELL NO. 47 - 051 - 02306
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8654P15HUR4.dwg
 HEAVEN HILL 3N-15HU REV6
 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 X LIQUID INJECTION ___ WASTE DISPOSAL ___ IF "GAS" PRODUCTION X STORAGE ___ DEEP X SHALLOW ___
 LOCATION: GROUND = 1,332.50' ELEVATION PROPOSED = 1,326.35' WATERSHED LOWER BOWMAN RUN OF FISH CREEK (HUC 10)
 DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'
 SURFACE OWNER RICKY L. WHITLATCH ACREAGE 72.82±
 ROYALTY OWNER RICKY L. WHITLATCH, ET AL - SEE ADDITIONAL SHEETS ACREAGE 72.82±
 PROPOSED WORK: LEASE NO. SEE ADDITIONAL SHEETS
 DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X 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: 11,684' / TMD: 18,940'

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

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

COUNTY NAME PERMIT

HEAVEN HILL 3N LEASE
UTICA UNIT - 686.21 AC ±
WELL 15HU
TUG HILL OPERATING

4705102306



12 Vanhorne Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5834
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3982
354 East Backley Bypass | Beckley, WV 25801 | 304.255.6296
slsw.com

Table with columns: No., Lease Name or No., Tag, Parcel, Lessee, Grantor, etc., Used Rock/225, Deed Book/Page. Contains lease data for various parcels and lessees.

Table with columns: No., Lease Name or No., Tag, Parcel, Lessee, Grantor, etc., Used Rock/225, Deed Book/Page. Continuation of lease data from the previous table.

FILE NO. 8654P15HUR4.dwg
HEAVEN HILL 3N-15HU REV6

DATE AUGUST 26, 2019

REVISED 10/23/19, 03/25/20, 07/08/20

OPERATORS WELL NO. HEAVEN HILL 3N-15HU

API WELL NO. 47-051-02306
STATE COUNTY PERMIT



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



P.S. 849

C. Victor Moyers

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

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254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slswv.com

Table with columns: No., Lease Name or No., Tag, Parcel, Lessors, Grantors, etc. - Continued, Deed Book/Page. Lists lease details for various tracts from 254 to 378.

Table with columns: No., Lease Name or No., Tag, Parcel, Lessors, Grantors, etc. - Continued, Deed Book/Page. Lists lease details for various tracts from 379 to 414.

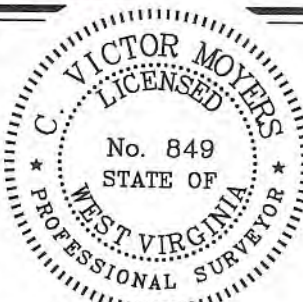
FILE NO. 8654P15HUR4.dwg
HEAVEN HILL 3N-15HU REV6

DATE AUGUST 26, 2019

REVISED 10/23/19, 03/25/20, 07/08/20

OPERATORS WELL NO. HEAVEN HILL 3N-15HU

API WELL NO. 47 STATE 051 COUNTY 02306 PERMIT



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



P.S. 849 [Signature of C. Victor Moyers]

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

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

COUNTY NAME

PERMIT

WW-6A1
(5/13)

Operator's Well No. Heaven Hill 3N-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
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*See attached pages

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

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

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

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

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

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment
10*15557	9-7-30	A	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780 226	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15557	9-7-21	B	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780 226	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15486	9-7-22	C	RICHARD NEAL NORRIS AND CAROL NORRIS	TH EXPLORATION LLC	1/8+	905 430	N/A	N/A	N/A	N/A
10*15487	9-7-22	C	WILLIAM C RUTAN	TH EXPLORATION LLC	1/8+	905 475	N/A	N/A	N/A	N/A
10*15489	9-7-22	C	DONALD T SNODGRASS AND LILA F SNODGRASS	TH EXPLORATION LLC	1/8+	915 189	N/A	N/A	N/A	N/A
10*15492	9-7-22	C	HEATHER WHORTON STILLION AND CHRISTOPHER STILLION	TH EXPLORATION LLC	1/8+	905 473	N/A	N/A	N/A	N/A
10*15609	9-7-22	C	MICHELLE R WILHELM	CHEVRON USA INC	1/8+	834 456	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15610	9-7-22	C	SARAH STEVENS	CHEVRON USA INC	1/8+	834 432	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15611	9-7-22	C	ROBERT S ZEHNDER	CHEVRON USA INC	1/8+	834 437	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15612	9-7-22	C	VERA SHIRENE & ARTHUR WORKMAN	CHEVRON USA INC	1/8+	837 361	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15613	9-7-22	C	THOMAS L STEVENS	CHEVRON USA INC	1/8+	836 290	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15614	9-7-22	C	DAVID F RINE	CHEVRON USA INC	1/8+	837 130	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15615	9-7-22	C	PAUL WAYNE RINE	CHEVRON USA INC	1/8+	837 133	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15616	9-7-22	C	PHILLIP C RINE	CHEVRON USA INC	1/8+	836 332	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15617	9-7-22	C	GLADYS M RINE	CHEVRON USA INC	1/8+	836 329	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15618	9-7-22	C	CHARLES A RINE	CHEVRON USA INC	1/8+	835 22	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15619	9-7-22	C	SHARON M REYNOLDS	CHEVRON USA INC	1/8+	840 322	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15620	9-7-22	C	GLADYS RUCKMAN	CHEVRON USA INC	1/8+	840 319	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15621	9-7-22	C	KATHERINE A STALNAKER	CHEVRON USA INC	1/8+	840 325	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15622	9-7-22	C	JAY LEROY RINE	CHEVRON USA INC	1/8+	840 351	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15623	9-7-22	C	SUSAN JANE WHEELER	CHEVRON USA INC	1/8+	847 473	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15624	9-7-22	C	RONALD A ZEHNDER	CHEVRON USA INC	1/8+	847 213	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15625	9-7-22	C	LAWRENCE W STRILING	CHEVRON USA INC	1/8+	852 384	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment
10*15626	9-7-22	C	ROBERT J SEAVER	CHEVRON USA INC	1/8+	854 77	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15627	9-7-22	C	PAULA R SEAVER	CHEVRON USA INC	1/8+	853 483	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15628	9-7-22	C	JENNIFER SEAVER	CHEVRON USA INC	1/8+	853 272	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15629	9-7-22	C	DANIEL L RINE	CHEVRON USA INC	1/8+	860 86	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15630	9-7-22	C	JANE L HELFER	CHEVRON USA INC	1/8+	836 342	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15631	9-7-22	C	DAVID HEINZEROTH	CHEVRON USA INC	1/8+	836 219	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15632	9-7-22	C	MARIAN D JONES	CHEVRON USA INC	1/8+	835 38	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15633	9-7-22	C	ROGER W GATTS	CHEVRON USA INC	1/8+	835 35	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15634	9-7-22	C	JAMES W DAYTON	CHEVRON USA INC	1/8+	847 567	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15635	9-7-22	C	ELLEN L BETTINAZZI	CHEVRON USA INC	1/8+	847 496	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15636	9-7-22	C	JOSEPH ASTON JR BY HIS ATTORNEY-IN-FACT MELVIN J. ASTON	CHEVRON USA INC	1/8+	848 280	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15637	9-7-22	C	DONALD ASTON	CHEVRON USA INC	1/8+	848 274	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15638	9-7-22	C	PAUL J ASTON A/K/A JACK ASTON	CHEVRON USA INC	1/8+	848 277	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15639	9-7-22	C	DELLA M BURKEY A/K/A MAXINE ASTON	CHEVRON USA INC	1/8+	848 435	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15640	9-7-22	C	EMMA JANE DAVIS A/K/A EMA ASTON	CHEVRON USA INC	1/8+	848 271	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15641	9-7-22	C	HENRY W ASTON	CHEVRON USA INC	1/8+	847 138	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15642	9-7-22	C	KENNETH L DAYTON	CHEVRON USA INC	1/8+	852 366	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15643	9-7-22	C	NORMAN G JOHNSON	CHEVRON USA INC	1/8+	848 363	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15644	9-7-22	C	RONALD BEN LAUGHTON	CHEVRON USA INC	1/8+	852 360	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15645	9-7-22	C	KAREN K OLDFIELD	CHEVRON USA INC	1/8+	854 111	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15646	9-7-22	C	JUDITH A CIRONE	CHEVRON USA INC	1/8+	848 428	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment
10*15647	9-7-22	C	KENNETH WENDELL OLDFIELD	CHEVRON USA INC	1/8+	861 589	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15648	9-7-22	C	MARTHA CRAWFORD	CHEVRON USA INC	1/8+	863 542	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15649	9-7-22	C	MARY JANE DANIEL	CHEVRON USA INC	1/8+	858 28	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15650	9-7-22	C	MARY GLADYS KUHN BY ATTORNEY IN FACT CONNIE LYONS	CHEVRON USA INC	1/8+	860 89	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15651	9-7-22	C	THOMAS G ASTON	CHEVRON USA INC	1/8+	860 83	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15652	9-7-22	C	ISAAC R ASTON A/K/A IKE ASTON	CHEVRON USA INC	1/8+	886 136	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15653	9-7-22	C	EMILY M HENCEROTH	CHEVRON USA INC	1/8+	862 574	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15654	9-7-22	C	GEORGE E HENNIGER	CHEVRON USA INC	1/8+	863 612	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15655	9-7-22	C	ANNA EMERSON A/K/A ANNIE ASTON	CHEVRON USA INC	1/8+	864 603	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15656	9-7-22	C	PATTY L MYERS	CHEVRON USA INC	1/8+	867 100	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15657	9-7-22	C	MARY MARGARET ASTON	CHEVRON USA INC	1/8+	868 283	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15658	9-7-22	C	GLEN MATTHEW LAUGHTON	CHEVRON USA INC	1/8+	873 324	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15659	9-7-22	C	WILLIAM E DAYTON BY HIS AIF	CHEVRON USA INC	1/8+	871 190	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15660	9-7-22	C	DOUGLAS PAUL HENCEROTH BY HIS AIF	CHEVRON USA INC	1/8+	871 193	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15662	9-7-22	C	LARRY LEE CONKLE	CHEVRON USA INC	1/8+	863 354	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15663	9-7-22	C	ROY A CONKLE SR AND LORIE A CONKLE	CHEVRON USA INC	1/8+	863 311	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15664	9-7-22	C	TERESA A HUGHES	CHEVRON USA INC	1/8+	863 343	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15666	9-7-22	C	BRENDA J WHEITZEL	CHEVRON USA INC	1/8+	863 635	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15673	9-7-22	C	DIANE B ASTON	CHEVRON USA INC	1/8+	864 595	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15679	9-7-22	C	CARA BONAR FREESE AND GEORGE H FREESE	TH EXPLORATION LLC	1/8+	905 481	N/A	N/A	N/A	N/A
10*15680	9-7-22	C	ROBERTA JANE CLAYTON	TH EXPLORATION LLC	1/8+	905 485	N/A	N/A	N/A	N/A
10*15688	9-7-22	C	JOSH GARY AND CHRISTINA M GARY	TH EXPLORATION LLC	1/8+	905 487	N/A	N/A	N/A	N/A
10*15689	9-7-22	C	JOHN LEROY BAKER AND CYNTHIA A BAKER	TH EXPLORATION LLC	1/8+	905 491	N/A	N/A	N/A	N/A
10*15690	9-7-22	C	ROBERT WHORTON AND LINDSAY WHORTON	TH EXPLORATION LLC	1/8+	905 489	N/A	N/A	N/A	N/A

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment
10*15728	9-7-22	C	MARY LOU KITTELBERGER AND FREDERICK W KITTELBERGER	TH EXPLORATION LLC	1/8+	905 483	N/A	N/A	N/A	N/A
10*15729	9-7-22	C	DONNA KAY ALLEN AND ROGER ALLEN	TH EXPLORATION LLC	1/8+	905 493	N/A	N/A	N/A	N/A
10*15747	9-7-22	C	WILLIAM H BAKER	TH EXPLORATION LLC	1/8+	905 499	N/A	N/A	N/A	N/A
10*15748	9-7-22	C	CAROLYN LEE FUREY AND MARTIN J FUREY	TH EXPLORATION LLC	1/8+	905 495	N/A	N/A	N/A	N/A
10*15749	9-7-22	C	DIANA SMITH KNIGHT	TH EXPLORATION LLC	1/8+	905 497	N/A	N/A	N/A	N/A
10*16019	9-7-22	C	ROGER E GALLAGHER AND CONIE M GALLAGHER	TH EXPLORATION LLC	1/8+	905 503	N/A	N/A	N/A	N/A
10*16029	9-7-22	C	MARTHA ASHWORTH KNIGHT	TH EXPLORATION LLC	1/8+	905 505	N/A	N/A	N/A	N/A
10*16049	9-7-22	C	DANNY SHAWN KERNS AND AMY LYNN KERNS	TH EXPLORATION LLC	1/8+	905 518	N/A	N/A	N/A	N/A
10*16050	9-7-22	C	WILLIAM L GALLAGHER	TH EXPLORATION LLC	1/8+	905 512	N/A	N/A	N/A	N/A
10*16114	9-7-22	C	ROBERT SANDFORD BLACK AND JOAN BLACK	TH EXPLORATION LLC	1/8+	905 510	N/A	N/A	N/A	N/A
10*16123	9-7-22	C	PHYLLIS R GATTO	TH EXPLORATION LLC	1/8+	905 520	N/A	N/A	N/A	N/A
10*16138	9-7-22	C	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	9-7-22	C	HUBERT DEAN KUHN AND ANDREA KUHN	TH EXPLORATION LLC	1/8+	905 524	N/A	N/A	N/A	N/A
10*16140	9-7-22	C	ANDY PAUL KUHN	TH EXPLORATION LLC	1/8+	905 526	N/A	N/A	N/A	N/A
10*16141	9-7-22	C	HOWARD L KUHN AND MARY L KUHN	TH EXPLORATION LLC	1/8+	905 528	N/A	N/A	N/A	N/A
10*16177	9-7-22	C	JOSEPHINE BROWN	TH EXPLORATION LLC	1/8+	905 530	N/A	N/A	N/A	N/A
10*16179	9-7-22	C	DANA BERRY COPELAND	TH EXPLORATION LLC	1/8+	905 532	N/A	N/A	N/A	N/A
10*16287	9-7-22	C	CHARLINE M ENGLE AND KEVIN E ENGLE	TH EXPLORATION LLC	1/8+	905 534	N/A	N/A	N/A	N/A
10*16384	9-7-22	C	DANIELLE BONAR OSTER AND LOUIS MICHAEL OSTER	TH EXPLORATION LLC	1/8+	905 501	N/A	N/A	N/A	N/A
10*16389	9-7-22	C	CHARLES BERRY	TH EXPLORATION LLC	1/8+	905 508	N/A	N/A	N/A	N/A
10*16423	9-7-22	C	GAIL L VAUGHN AND LARRY VAUGHN	TH EXPLORATION LLC	1/8+	905 536	N/A	N/A	N/A	N/A
10*16426	9-7-22	C	RENE J RUTAN	TH EXPLORATION LLC	1/8+	905 538	N/A	N/A	N/A	N/A
10*16440	9-7-22	C	MELANIE C WILKINS AND ROBERT WILKINS	TH EXPLORATION LLC	1/8+	927 462	N/A	N/A	N/A	N/A
10*16513	9-7-22	C	LOWELL D AND JANICE L KNIGHT	TH EXPLORATION LLC	1/8+	927 458	N/A	N/A	N/A	N/A
10*16546	9-7-22	C	WALTER C RINE AND CHERYL A RINE	TH EXPLORATION LLC	1/8+	927 456	N/A	N/A	N/A	N/A
10*16558	9-7-22	C	PAUL BONAR KNIGHT AND SUZANNE L HOPKINS-KNIGHT	TH EXPLORATION LLC	1/8+	927 460	N/A	N/A	N/A	N/A
10*16820	9-7-22	C	ROBERTA ANN GIBB AND DAVID S GIBB	TH EXPLORATION LLC	1/8+	919 237	N/A	N/A	N/A	N/A
10*16844	9-7-22	C	HOLLY A LONGFELLOW	TH EXPLORATION LLC	1/8+	927 454	N/A	N/A	N/A	N/A
10*16845	9-7-22	C	TRACY L AND KEITH W BARNEY	TH EXPLORATION LLC	1/8+	927 452	N/A	N/A	N/A	N/A
10*16896	9-7-22	C	MARTHA J BLACK	TH EXPLORATION LLC	1/8+	927 450	N/A	N/A	N/A	N/A
10*17365	9-7-22	C	MYSTI JOANNE GOODMAN	TH EXPLORATION LLC	1/8+	927 468	N/A	N/A	N/A	N/A
10*17370	9-7-22	C	KELLY JUNE GOODMAN	TH EXPLORATION LLC	1/8+	927 470	N/A	N/A	N/A	N/A
10*17497	9-7-22	C	SUZANNA DOOLING AND MICHAEL DOOLING	TH EXPLORATION LLC	1/8+	927 464	N/A	N/A	N/A	N/A
10*17584	9-7-22	C	WILLIAM THOMAS BONAR AND MONICA BONAR	TH EXPLORATION LLC	1/8+	927 466	N/A	N/A	N/A	N/A
10*17625	9-7-22	C	CHARLES E BROWN	TH EXPLORATION LLC	1/8+	929 624	N/A	N/A	N/A	N/A
10*18256	9-7-22	C	JEFFREY STEPHEN GOODMAN	TH EXPLORATION LLC	1/8+	929 1	N/A	N/A	N/A	N/A
10*18415	9-7-22	C	CHAD LONGFELLOW	TH EXPLORATION LLC	1/8+	932 575	N/A	N/A	N/A	N/A
10*18514	9-7-22	C	JOHN R BERRY	TH EXPLORATION LLC	1/8+	933 569	N/A	N/A	N/A	N/A
10*18522	9-7-22	C	MARTIN REED BROWN AND DOLORES BROWN	TH EXPLORATION LLC	1/8+	933 558	N/A	N/A	N/A	N/A
10*19391	9-7-22	C	JEFF BERRY AND AMY BERRY	TH EXPLORATION LLC	1/8+	940 340	N/A	N/A	N/A	N/A
10*19406	9-7-22	C	WILLIAM KENT BROWN AND KAYLEEN BROWN	TH EXPLORATION LLC	1/8+	939 289	N/A	N/A	N/A	N/A
10*21960	9-7-22	C	AKRON BAPTIST TEMPLE	TH EXPLORATION LLC	1/8+	960 22	N/A	N/A	N/A	N/A

Release ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment
10*47051.295.3	9-7-22	C	HAZEL ARIZONA MOORE REYNOLDS	TH EXPLORATION LLC	1/8+	904 632	N/A	N/A	N/A	N/A
10*47051.295.4	9-7-22	C	LLOYD D MOORE	TH EXPLORATION LLC	1/8+	904 459	N/A	N/A	N/A	N/A
10*47051.295.5	9-7-22	C	DALE R MOORE	TH EXPLORATION LLC	1/8+	904 635	N/A	N/A	N/A	N/A
10*47051.295.6	9-7-22	C	MARY BURKHART	TH EXPLORATION LLC	1/8+	904 638	N/A	N/A	N/A	N/A
10*47051.295.7	9-7-22	C	JEANNE V MELCHIORI	TH EXPLORATION LLC	1/8+	904 462	N/A	N/A	N/A	N/A
10*47051.295.9	9-7-22	C	JAMES E HIMELRICK JR AND KAREN HIMELRICK	TH EXPLORATION LLC	1/8+	904 465	N/A	N/A	N/A	N/A
10*47051.295.10	9-7-22	C	DEENA J PALOMO	TH EXPLORATION LLC	1/8+	905 470	N/A	N/A	N/A	N/A
10*47051.295.11	9-7-22	C	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	9-7-22	C	EARL D WELLMAN	TH EXPLORATION LLC	1/8+	905 432	N/A	N/A	N/A	N/A
10*47051.295.13	9-7-22	C	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*15662	9-7-24	D	LARRY LEE CONKLE	CHEVRON USA INC	1/8+	863 354	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15663	9-7-24	D	ROY A CONKLE SR AND LORIE A CONKLE	CHEVRON USA INC	1/8+	863 311	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15664	9-7-24	D	TERESA A HUGHES	CHEVRON USA INC	1/8+	863 343	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15666	9-7-24	D	BRENDA J WHEITZEL	CHEVRON USA INC	1/8+	863 635	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*16049	9-7-24	D	DANNY SHAWN KERNS AND AMY LYNN KERNS	TH EXPLORATION LLC	1/8+	905 518	N/A	N/A	N/A	N/A
10*16138	9-7-24	D	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	9-7-24	D	HUBERT DEAN KUHN AND ANDREA KUHN	TH EXPLORATION LLC	1/8+	905 524	N/A	N/A	N/A	N/A
10*16140	9-7-24	D	ANDY PAUL KUHN	TH EXPLORATION LLC	1/8+	905 526	N/A	N/A	N/A	N/A
10*16141	9-7-24	D	HOWARD L KUHN AND MARY L KUHN	TH EXPLORATION LLC	1/8+	905 528	N/A	N/A	N/A	N/A
10*16820	9-7-24	D	ROBERTA ANN GIBB AND DAVID S GIBB	TH EXPLORATION LLC	1/8+	919 237	N/A	N/A	N/A	N/A
10*17365	9-7-24	D	MVSTI JOANNE GOODMAN	TH EXPLORATION LLC	1/8+	927 468	N/A	N/A	N/A	N/A
10*17370	9-7-24	D	KELLY JUNE GOODMAN	TH EXPLORATION LLC	1/8+	927 470	N/A	N/A	N/A	N/A
10*18256	9-7-24	D	JEFFREY STEPHEN GOODMAN	TH EXPLORATION LLC	1/8+	929 1	N/A	N/A	N/A	N/A
10*47051.295.3	9-7-24	D	HAZEL ARIZONA MOORE REYNOLDS	TH EXPLORATION LLC	1/8+	904 632	N/A	N/A	N/A	N/A
10*47051.295.4	9-7-24	D	LLOYD D MOORE	TH EXPLORATION LLC	1/8+	904 459	N/A	N/A	N/A	N/A
10*47051.295.5	9-7-24	D	DALE R MOORE	TH EXPLORATION LLC	1/8+	904 635	N/A	N/A	N/A	N/A
10*47051.295.6	9-7-24	D	MARY I BURKHART	TH EXPLORATION LLC	1/8+	904 638	N/A	N/A	N/A	N/A
10*47051.295.7	9-7-24	D	JEANNE V MELCHIORI	TH EXPLORATION LLC	1/8+	904 462	N/A	N/A	N/A	N/A
10*47051.295.9	9-7-24	D	JAMES E HIMELRICK JR AND KAREN HIMELRICK	TH EXPLORATION LLC	1/8+	904 465	N/A	N/A	N/A	N/A
10*47051.295.10	9-7-24	D	DEENA J PALOMO	TH EXPLORATION LLC	1/8+	905 470	N/A	N/A	N/A	N/A
10*47051.295.11	9-7-24	D	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	9-7-24	D	EARL D WELLMAN	TH EXPLORATION LLC	1/8+	905 432	N/A	N/A	N/A	N/A
10*47051.295.13	9-7-24	D	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*15746	9-7-23	E	BRUCE D SCHURR	TH EXPLORATION LLC	1/8+	921 478	N/A	N/A	N/A	N/A
10*16021	9-7-23	E	TOMMY BONAR AND TANVA S BONAR	TH EXPLORATION LLC	1/8+	925 325	N/A	N/A	N/A	N/A
10*16115	9-7-23	E	EARL W HARRIS	TH EXPLORATION LLC	1/8+	925 329	N/A	N/A	N/A	N/A
10*16121	9-7-23	E	ISALAH BENNETT	TH EXPLORATION LLC	1/8+	933 105	N/A	N/A	N/A	N/A

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10*16247	9-7-23	E	CAROL RIGGLE PARSLEY AND JAMES DENNIS PARSLEY	TH EXPLORATION LLC	1/8+	925 327	N/A	N/A	N/A	N/A
10*17415	9-7-23	E	DILLON PITSENBARGER	TH EXPLORATION LLC	1/8+	919 241	N/A	N/A	N/A	N/A
10*17506	9-7-23	E	CHASKIA F HARRIS AND JAMES M HARRIS	TH EXPLORATION LLC	1/8+	919 239	N/A	N/A	N/A	N/A
10*17507	9-7-23	E	DEZRAY METCALF	TH EXPLORATION LLC	1/8+	919 235	N/A	N/A	N/A	N/A
10*47051.256.1	9-7-23	E	BRENDA J WHEITZEL	TH EXPLORATION LLC	1/8+	881 145	N/A	N/A	N/A	N/A
10*47051.256.7	9-7-23	E	MARILYN SUE BUMER	TH EXPLORATION LLC	1/8+	905 29	N/A	N/A	N/A	N/A
10*47051.256.8	9-7-23	E	PAMELA ANN MASON	TH EXPLORATION LLC	1/8+	905 31	N/A	N/A	N/A	N/A
10*47051.256.9	9-7-23	E	WANDA MASON SUNSHINE	TH EXPLORATION LLC	1/8+	905 33	N/A	N/A	N/A	N/A
10*47051.256.10	9-7-23	E	GRACE LAUBA BONAR	TH EXPLORATION LLC	1/8+	905 35	N/A	N/A	N/A	N/A
10*47051.256.11	9-7-23	E	JOHN L MASON	TH EXPLORATION LLC	1/8+	905 37	N/A	N/A	N/A	N/A
10*47051.256.12	9-7-23	E	STEVEN A BOHRER	TH EXPLORATION LLC	1/8+	905 39	N/A	N/A	N/A	N/A
10*47051.256.13	9-7-23	E	WILLIAM W CRAIG	TH EXPLORATION LLC	1/8+	905 41	N/A	N/A	N/A	N/A
10*47051.256.14	9-11-7	F	HUGH R BUZZARD	TH EXPLORATION LLC	1/8+	905 43	N/A	N/A	N/A	N/A
10*47051.256.15	9-11-7	F	ROY E AND CHARLOTTE J BONAR YOHO	TH EXPLORATION LLC	1/8+	904 455	N/A	N/A	N/A	N/A
10*47051.256.16	9-11-7	F	CHARLOTTE B HUMMELL	TH EXPLORATION LLC	1/8+	905 45	N/A	N/A	N/A	N/A
10*47051.256.17	9-11-7	F	MAXINE G JOHNSON	TH EXPLORATION LLC	1/8+	904 457	N/A	N/A	N/A	N/A
10*47051.256.18	9-7-23	E	JOHN WILLIAM BONAR AND SHIRLEY BONAR	TH EXPLORATION LLC	1/8+	913 522	N/A	N/A	N/A	N/A
10*47051.256.19	9-7-23	E	MICHAEL DAVID PYLES AND CYNTHIA A PYLES	TH EXPLORATION LLC	1/8+	907 207	N/A	N/A	N/A	N/A
10*47051.256.20	9-7-23	E	JEFFREY THOMAS PYLES AND TERESA A PYLES	TH EXPLORATION LLC	1/8+	907 209	N/A	N/A	N/A	N/A
10*47051.256.21	9-7-23	E	JACK L MASON AND JEAN M MASON	TH EXPLORATION LLC	1/8+	904 626	N/A	N/A	N/A	N/A
10*47051.256.22	9-7-23	E	BEVERLY J HOPSON	TH EXPLORATION LLC	1/8+	913 581	N/A	N/A	N/A	N/A
10*47051.256.23	9-7-23	E	ROBERT L BONAR	TH EXPLORATION LLC	1/8+	913 556	N/A	N/A	N/A	N/A
10*47051.256.24	9-7-23	E	CATHERINE BONAR PETTIT BILLIE	TH EXPLORATION LLC	1/8+	904 628	N/A	N/A	N/A	N/A
10*15746	9-11-7	F	BRUCE D SCHUBR	TH EXPLORATION LLC	1/8+	921 478	N/A	N/A	N/A	N/A
10*16021	9-11-7	F	TOMMY BONAR AND TANYA S BONAR	TH EXPLORATION LLC	1/8+	925 325	N/A	N/A	N/A	N/A
10*16115	9-11-7	F	EARL W HARRIS	TH EXPLORATION LLC	1/8+	925 329	N/A	N/A	N/A	N/A
10*16121	9-11-7	F	ISAAH BENNETT	TH EXPLORATION LLC	1/8+	933 105	N/A	N/A	N/A	N/A
10*16247	9-11-7	F	CAROL RIGGLE PARSLEY AND JAMES DENNIS PARSLEY	TH EXPLORATION LLC	1/8+	925 327	N/A	N/A	N/A	N/A
10*17415	9-11-7	F	DILLON PITSENBARGER	TH EXPLORATION LLC	1/8+	919 241	N/A	N/A	N/A	N/A
10*17506	9-11-7	F	CHASKIA F HARRIS AND JAMES M HARRIS	TH EXPLORATION LLC	1/8+	919 239	N/A	N/A	N/A	N/A
10*17507	9-11-7	F	DEZRAY METCALF	TH EXPLORATION LLC	1/8+	919 235	N/A	N/A	N/A	N/A
10*47051.256.1	9-11-7	F	BRENDA J WHEITZEL	TH EXPLORATION LLC	1/8+	881 145	N/A	N/A	N/A	N/A
10*47051.256.7	9-11-7	F	MARILYN SUE BUMER	TH EXPLORATION LLC	1/8+	905 29	N/A	N/A	N/A	N/A
10*47051.256.8	9-11-7	F	PAMELA ANN MASON	TH EXPLORATION LLC	1/8+	905 31	N/A	N/A	N/A	N/A
10*47051.256.9	9-11-7	F	WANDA MASON SUNSHINE	TH EXPLORATION LLC	1/8+	905 33	N/A	N/A	N/A	N/A
10*47051.256.10	9-11-7	F	GRACE LAUBA BONAR	TH EXPLORATION LLC	1/8+	905 35	N/A	N/A	N/A	N/A
10*47051.256.11	9-11-7	F	JOHN L MASON	TH EXPLORATION LLC	1/8+	905 37	N/A	N/A	N/A	N/A
10*47051.256.12	9-11-7	F	STEVEN A BOHRER	TH EXPLORATION LLC	1/8+	905 39	N/A	N/A	N/A	N/A
10*47051.256.13	9-11-7	F	WILLIAM W CRAIG	TH EXPLORATION LLC	1/8+	905 41	N/A	N/A	N/A	N/A
10*47051.256.14	9-11-7	F	HUGH R BUZZARD	TH EXPLORATION LLC	1/8+	905 43	N/A	N/A	N/A	N/A
10*47051.256.15	9-11-7	F	ROY E AND CHARLOTTE J BONAR YOHO	TH EXPLORATION LLC	1/8+	904 455	N/A	N/A	N/A	N/A
10*47051.256.16	9-11-7	F	CHARLOTTE B HUMMELL	TH EXPLORATION LLC	1/8+	905 45	N/A	N/A	N/A	N/A
10*47051.256.17	9-11-7	F	MAXINE G JOHNSON	TH EXPLORATION LLC	1/8+	904 457	N/A	N/A	N/A	N/A

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10*47051.256.18	9-11-7	F	JOHN WILLIAM BONAR AND SHIRLEY BONAR	TH EXPLORATION LLC	1/8+	913 522	N/A	N/A	N/A	N/A
10*47051.256.19	9-11-7	F	MICHAEL DAVID PYLES AND CYNTHIA A PYLES	TH EXPLORATION LLC	1/8+	907 207	N/A	N/A	N/A	N/A
10*47051.256.20	9-11-7	F	JEFFREY THOMAS PYLES AND TERESA A PYLES	TH EXPLORATION LLC	1/8+	907 209	N/A	N/A	N/A	N/A
10*47051.256.21	9-11-7	F	JACK L MASON AND JEAN M MASON	TH EXPLORATION LLC	1/8+	904 626	N/A	N/A	N/A	N/A
10*47051.256.22	9-11-7	F	BEVERLY J HOPSON	TH EXPLORATION LLC	1/8+	913 581	N/A	N/A	N/A	N/A
10*47051.256.23	9-11-7	F	ROBERT L BONAR	TH EXPLORATION LLC	1/8+	913 556	N/A	N/A	N/A	N/A
10*47051.256.24	9-11-7	F	CATHERINE BONAR PETTIT BILLIE	TH EXPLORATION LLC	1/8+	904 628	N/A	N/A	N/A	N/A
10*15560	9-11-6.2	G	WILLIAM F KERNS AND JULIE A KERNS	CHESAPEAKE APPALACHIA LLC	1/8+	677 561	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 21/565	Statoil USA Onshore Properties Inc to Chevron USA Inc: 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15669	9-11-6.2	G	EMMA CATHERINE ANDERSON	CHEVRON U.S.A. INC.	1/8+	861 586	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15670	9-11-6.2	G	GARY M BONAR AND ELLEN L BONAR	CHEVRON U.S.A. INC.	1/8+	861 577	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15671	9-11-6.2	G	JUDALENE K COLLUMS	CHEVRON U.S.A. INC.	1/8+	861 571	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15672	9-11-6.2	G	NAOMI HUPP	CHEVRON USA INC	1/8+	861 604	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*47051.256.2	9-11-6.2	G	CAROL JEAN ANDERSON	TH EXPLORATION LLC	1/8+	879 299	N/A	N/A	N/A	N/A
10*47051.256.3	9-11-6.2	G	BRENDA S DYKHOUSE	TH EXPLORATION LLC	1/8+	881 148	N/A	N/A	N/A	N/A
10*47051.256.4	9-11-6.2	G	GLEN A BONAR	TH EXPLORATION LLC	1/8+	881 151	N/A	N/A	N/A	N/A
10*47051.256.5	9-11-6.2	G	KATHLEEN E ZIEN	TH EXPLORATION LLC	1/8+	882 530	N/A	N/A	N/A	N/A
10*15669	9-11-6.1	H	EMMA CATHERINE ANDERSON	CHEVRON U.S.A. INC.	1/8+	861 586	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15670	9-11-6.1	H	GARY M BONAR AND ELLEN L BONAR	CHEVRON U.S.A. INC.	1/8+	861 577	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15671	9-11-6.1	H	JUDALENE K COLLUMS	CHEVRON U.S.A. INC.	1/8+	861 571	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15672	9-11-6.1	H	NAOMI HUPP	CHEVRON USA INC	1/8+	861 604	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*47051.256.1	9-11-6.1	H	BRENDA J WHEITZEL	TH EXPLORATION LLC	1/8+	881 145	N/A	N/A	N/A	N/A
10*47051.256.2	9-11-6.1	H	CAROL JEAN ANDERSON	TH EXPLORATION LLC	1/8+	879 299	N/A	N/A	N/A	N/A
10*47051.256.3	9-11-6.1	H	BRENDA S DYKHOUSE	TH EXPLORATION LLC	1/8+	881 148	N/A	N/A	N/A	N/A
10*47051.256.4	9-11-6.1	H	GLEN A BONAR	TH EXPLORATION LLC	1/8+	881 151	N/A	N/A	N/A	N/A
10*47051.256.5	9-11-6.1	H	KATHLEEN E ZIEN	TH EXPLORATION LLC	1/8+	882 530	N/A	N/A	N/A	N/A
10*15667	9-7-19	I	KEVIN E MCGILTON AND TERESA E MCGILTON	CHEVRON USA INC	1/8+	850 351	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15667	9-7-20	J	KEVIN E MCGILTON AND TERESA E MCGILTON	CHEVRON USA INC	1/8+	850 351	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15720	9-7-20	J	KAREN L GREATHOUSE AND FLOYD GREATHOUSE	TH EXPLORATION LLC	1/8+	905 458	N/A	N/A	N/A	N/A
10*15721	9-7-20	J	TINA L EDGE MONTI AND THOMAS MONTI	TH EXPLORATION LLC	1/8+	905 456	N/A	N/A	N/A	N/A
10*16020	9-7-20	J	SHARON HINEMAN MAY & DANIEL G MAY	TH EXPLORATION LLC	1/8+	905 464	N/A	N/A	N/A	N/A

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10*16028	9-7-20	J	ROSEMARY PARKINS AND STEPHEN PARKINS	TH EXPLORATION LLC	1/8+	905 460	N/A	N/A	N/A	N/A
10*16051	9-7-20	J	DONNA JEAN SNIDER AND DAVID SNIDER	TH EXPLORATION LLC	1/8+	905 462	N/A	N/A	N/A	N/A
10*16053	9-7-20	J	GARY D HINERMAN AND JUDY ANN HINERMAN	TH EXPLORATION LLC	1/8+	905 466	N/A	N/A	N/A	N/A
10*16289	9-7-20	J	BRENDA HINERMAN WILLIAMSON AND BRIAN K WILLIAMSON	TH EXPLORATION LLC	1/8+	905 468	N/A	N/A	N/A	N/A
10*16412	9-7-20	J	ELIZABETH ANN BLAZER AND PAUL R BLAZER	TH EXPLORATION LLC	1/8+	905 452	N/A	N/A	N/A	N/A
10*16413	9-7-20	J	RONALD H EDGE JR	TH EXPLORATION LLC	1/8+	905 454	N/A	N/A	N/A	N/A
10*16852	9-7-20	J	KEVIN R DURBIN AND KRISTA A DURBIN	TH EXPLORATION LLC	1/8+	929 312	N/A	N/A	N/A	N/A
10*17622	9-7-20	J	DAVID E HINERMAN JR AN INCARCERATED PER BY & THRU COURT APPTD GUARDIAN AS ITEM DAVID WHITE ESQ	TH EXPLORATION LLC	1/8+	929 314	N/A	N/A	N/A	N/A
10*15667	9-7-18	K	KEVIN E MCGILTON AND TERESA E MCGILTON	CHEVRON USA INC	1/8+	850 351	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15720	9-7-18	K	KAREN L GREATHOUSE AND FLOYD GREATHOUSE	TH EXPLORATION LLC	1/8+	905 458	N/A	N/A	N/A	N/A
10*15721	9-7-18	K	TINA L EDGE MONTI AND THOMAS MONTI	TH EXPLORATION LLC	1/8+	905 456	N/A	N/A	N/A	N/A
10*16020	9-7-18	K	SHARON HINERMAN MAY & DANIEL G MAY	TH EXPLORATION LLC	1/8+	905 464	N/A	N/A	N/A	N/A
10*16028	9-7-18	K	ROSEMARY PARKINS AND STEPHEN PARKINS	TH EXPLORATION LLC	1/8+	905 460	N/A	N/A	N/A	N/A
10*16051	9-7-18	K	DONNA JEAN SNIDER AND DAVID SNIDER	TH EXPLORATION LLC	1/8+	905 462	N/A	N/A	N/A	N/A
10*16053	9-7-18	K	GARY D HINERMAN AND JUDY ANN HINERMAN	TH EXPLORATION LLC	1/8+	905 466	N/A	N/A	N/A	N/A
10*16289	9-7-18	K	BRENDA HINERMAN WILLIAMSON AND BRIAN K WILLIAMSON	TH EXPLORATION LLC	1/8+	905 468	N/A	N/A	N/A	N/A
10*16412	9-7-18	K	ELIZABETH ANN BLAZER AND PAUL R BLAZER	TH EXPLORATION LLC	1/8+	905 452	N/A	N/A	N/A	N/A
10*16413	9-7-18	K	RONALD H EDGE JR	TH EXPLORATION LLC	1/8+	905 454	N/A	N/A	N/A	N/A
10*16852	9-7-18	K	KEVIN R DURBIN AND KRISTA A DURBIN	TH EXPLORATION LLC	1/8+	929 312	N/A	N/A	N/A	N/A
10*17622	9-7-18	K	DAVID E HINERMAN JR AN INCARCERATED PER BY & THRU COURT APPTD GUARDIAN AS ITEM DAVID WHITE ESQ	TH EXPLORATION LLC	1/8+	929 314	N/A	N/A	N/A	N/A
10*16471	9-7-2	L	CNX GAS COMPANY LLC	TH EXPLORATION LLC	1/8+	905 155	N/A	N/A	N/A	N/A
10*23272	9-7-2	L	HG ENERGY II APPALACHIA LLC	TH EXPLORATION LLC	1/8+	961 644	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15557	NOT ASSD.	M	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780 226	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15667	9-7-17	N	KEVIN E MCGILTON AND TERESA E MCGILTON	CHEVRON USA INC	1/8+	850 351	N/A	N/A	N/A	Exploration LLC: 36/148
10*15720	9-7-17	N	KAREN L GREATHOUSE AND FLOYD GREATHOUSE	TH EXPLORATION LLC	1/8+	905 458	N/A	N/A	N/A	N/A
10*15721	9-7-17	N	TINA L EDGE MONTI AND THOMAS MONTI	TH EXPLORATION LLC	1/8+	905 456	N/A	N/A	N/A	N/A
10*16020	9-7-17	N	SHARON HINERMAN MAY & DANIEL G MAY	TH EXPLORATION LLC	1/8+	905 464	N/A	N/A	N/A	N/A
10*16028	9-7-17	N	ROSEMARY PARKINS AND STEPHEN PARKINS	TH EXPLORATION LLC	1/8+	905 460	N/A	N/A	N/A	N/A
10*16051	9-7-17	N	DONNA JEAN SNIDER AND DAVID SNIDER	TH EXPLORATION LLC	1/8+	905 462	N/A	N/A	N/A	N/A
10*16053	9-7-17	N	GARY D HINERMAN AND JUDY ANN HINERMAN	TH EXPLORATION LLC	1/8+	905 466	N/A	N/A	N/A	N/A
10*16289	9-7-17	N	BRENDA HINERMAN WILLIAMSON AND BRIAN K WILLIAMSON	TH EXPLORATION LLC	1/8+	905 468	N/A	N/A	N/A	N/A
10*16412	9-7-17	N	ELIZABETH ANN BLAZER AND PAUL R BLAZER	TH EXPLORATION LLC	1/8+	905 452	N/A	N/A	N/A	N/A
10*16413	9-7-17	N	RONALD H EDGE JR	TH EXPLORATION LLC	1/8+	905 454	N/A	N/A	N/A	N/A
10*16852	9-7-17	N	KEVIN R DURBIN AND KRISTA A DURBIN	TH EXPLORATION LLC	1/8+	929 312	N/A	N/A	N/A	N/A

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10*17622	9-7-17	N	DAVID E HINERMAN JR AN INCARCERATED PER BY & THRU COURT APPTD GUARDIAN AS LITEM DAVID WHITE ESQ	TH EXPLORATION LLC	1/8+	929 314	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10**15557	NOT ASSD.	O	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780 226	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15665	9-7-1	P	MICHAEL J RINE ET UX	CENTRAL MICHIGAN EXPLORATION	1/8+	668 147	N/A	Central Michigan Exploration LLC to Stone Energy Corporation: 21/288	Stone Energy Corporation to Chevron USA Inc: 39/276	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15667	9-7-16	Q	KEVIN E MCGILTON AND TERESA E MCGILTON	CHEVRON USA INC	1/8+	850 351	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15557	9-7-31	R	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780 226	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15557	9-7-15	S	RICKY L WHITLATCH ET AL	CHEVRON USA INC	1/8+	780 226	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15558	9-7-14	T	ARNIE AND BOBBIE B GOODNIGHT	CHEVRON USA INC	1/8+	777 59	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*21593	9-7-4	U	HELEN R. PAYNE	CHEVRON USA INC	1/8+	791 38	N/A	N/A	N/A	Chevron USA Inc to TH Exploration LLC: 42/435
10*15521	9-7-3	V	VENANGO 21ST CENTURY ENERGY INC	TRIENERGY HOLDINGS, LLC	1/8+	722 281	N/A	TriEnergy Holdings LLC to NPAR LLC: 24/196	NPAR LLC to Chevron USA Inc: 756/332	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*15608	9-7-3	V	CHARLES R HAGEDORN JR	CHEVRON U.S.A. INC.	1/8+	816 423	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*47051.073.1	9-7-3	V	VENANGO 21ST CENTURY ENERGY INC	TH EXPLORATION LLC	1/8+	888 618	N/A	N/A	N/A	N/A
10*47051.073.2	9-7-3	V	PATRIOT RESTORATIONS LLC	TH EXPLORATION LLC	1/8+	908 541	N/A	N/A	N/A	N/A
10*47051.073.3	9-7-3	V	TRIENERGY HOLDINGS, LLC	TH EXPLORATION LLC	1/8+	878 330	N/A	N/A	N/A	N/A
10*16923	9-7-3.1	W	CHARLES R HAGEDORN JR ET UX	CHESAPEAKE APPALACHIA LLC	1/8+	689 177	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 22/506	Statoil USA Onshore Properties Inc to Chevron USA Inc: 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*16927	9-7-3.1	W	ELMA L HAGEDORN	CHESAPEAKE APPALACHIA LLC	1/8+	697 120	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 23/512	Statoil USA Onshore Properties Inc to Chevron USA Inc: 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*47051.073.1	9-7-3.1	W	VENANGO 21ST CENTURY ENERGY INC	TH EXPLORATION LLC	1/8+	888 618	N/A	N/A	N/A	N/A
10*47051.073.2	9-7-3.1	W	PATRIOT RESTORATIONS LLC	TH EXPLORATION LLC	1/8+	908 541	N/A	N/A	N/A	N/A
10*47051.073.3	9-7-3.1	W	TRIENERGY HOLDINGS, LLC	TH EXPLORATION LLC	1/8+	878 330	N/A	N/A	N/A	N/A
10*15558	9-7-5	X	ARNIE AND BOBBIE B GOODNIGHT	CHEVRON USA INC	1/8+	777 59	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 36/148
10*47051.223.9	9-7-5	X	LINDA DELBERT	TH EXPLORATION LLC	1/8+	908 32	N/A	N/A	N/A	N/A
10*47051.223.10	9-7-5	X	ROBERT E GORBY AND NANCY GORBY	TH EXPLORATION LLC	1/8+	908 47	N/A	N/A	N/A	N/A
10*47051.223.11	9-7-5	X	ELIZABETH ESTER	TH EXPLORATION LLC	1/8+	908 37	N/A	N/A	N/A	N/A
10*47051.223.12	9-7-5	X	ALICE GORBY MARTIN	TH EXPLORATION LLC	1/8+	908 52	N/A	N/A	N/A	N/A
10*47051.223.13	9-7-5	X	JAMES A GORBY	TH EXPLORATION LLC	1/8+	908 42	N/A	N/A	N/A	N/A

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10*21585	9-5-1	Y	TERRY L AND HARIKILA HEIDI SAMPSON	CHEVRON USA INC	1/8+	852 351	N/A	N/A	N/A	Chevron USA Inc to Tug Hill Exploration LLC: 42/435
10*21588	9-5-3	Z	LAWRENCE ALLEN WART	CHESAPEAKE APPALACHIA LLC	1/8+	687 233	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 22/646	Statoil USA Onshore Properties Inc to Chevron USA Inc: 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 42/435
10*21591	9-5-3	Z	BEATRICE ANN KIDD	CHESAPEAKE APPALACHIA LLC	1/8+	687 230	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 22/646	Statoil USA Onshore Properties Inc to Chevron USA Inc: 30/427	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to TH Exploration LLC: 42/435
10*15482	9-5-4.1	AA	SUSAN NELSON	TH EXPLORATION LLC	1/8+	908 203	N/A	N/A	N/A	N/A
10*15594	9-5-4.1	AA	IVAN F GORBY	TH EXPLORATION LLC	1/8+	695 527	N/A	N/A	N/A	N/A
10*15595	9-5-4.1	AA	JOSEPH D DAKAN	CHESAPEAKE APPALACHIA LLC	1/8+	695 519	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148	Chevron USA Inc to Tug Hill Exploration LLC: 960/409
10*15596	9-5-4.1	AA	JOHN E GORBY	CHESAPEAKE APPALACHIA LLC	1/8+	695 523	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148	Chevron USA Inc to Tug Hill Exploration LLC: 960/409
10*15597	9-5-4.1	AA	KAREN S GAST	CHESAPEAKE APPALACHIA LLC	1/8+	694 534	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148	Chevron USA Inc to Tug Hill Exploration LLC: 960/409
10*15598	9-5-4.1	AA	ADA HAZEL GONITA	CHESAPEAKE APPALACHIA LLC	1/8+	695 183	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148	Chevron USA Inc to Tug Hill Exploration LLC: 960/409
10*15599	9-5-4.1	AA	PATSY JO RAIU	CHESAPEAKE APPALACHIA LLC	1/8+	694 561	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148	Chevron USA Inc to Tug Hill Exploration LLC: 960/409
10*15686	9-5-4.1	AA	JOHN OMER BOLTZ	TH EXPLORATION LLC	1/8+	908 160	N/A	N/A	N/A	N/A
10*15750	9-5-4.1	AA	SANDRA K TRULL	TH EXPLORATION LLC	1/8+	908 229	N/A	N/A	N/A	N/A
10*16058	9-5-4.1	AA	MATTIE RUTH JACKSON PRESCOTT	TH EXPLORATION LLC	1/8+	908 231	N/A	N/A	N/A	N/A
10*16118	9-5-4.1	AA	RUBY RIDGLE JACKSON	TH EXPLORATION LLC	1/8+	908 233	N/A	N/A	N/A	N/A
10*16383	9-5-4.1	AA	ROBERT STEPHEN DRIGGERS	TH EXPLORATION LLC	1/8+	908 224	N/A	N/A	N/A	N/A
10*16414	9-5-4.1	AA	MARY ELZABETH DRIGGERS	TH EXPLORATION LLC	1/8+	908 208	N/A	N/A	N/A	N/A
10*16415	9-5-4.1	AA	TERENCE J ANDERSON AND NANCY J ANDERSON	TH EXPLORATION LLC	1/8+	908 213	N/A	N/A	N/A	N/A
10*16416	9-5-4.1	AA	CYNTHIA HUDSON	TH EXPLORATION LLC	1/8+	908 219	N/A	N/A	N/A	N/A
10*16448	9-5-4.1	AA	RALPH L AND JUANITA L CRIM	TH EXPLORATION LLC	1/8+	908 584	N/A	N/A	N/A	N/A
10*16478	9-5-4.1	AA	MARION L AND EMILY CAMPBELL	TH EXPLORATION LLC	1/8+	908 245	N/A	N/A	N/A	N/A
10*16514	9-5-4.1	AA	ALEX R CAMPBELL & JOYCE A CAMPBELL	TH EXPLORATION LLC	1/8+	908 248	N/A	N/A	N/A	N/A

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10*16515	9-5-4.1	AA	ANNA MARIE JACKSON	TH EXPLORATION LLC	1/8+	908 251	N/A	N/A	N/A	N/A
10*16516	9-5-4.1	AA	WILSON ANDREW JACKSON	TH EXPLORATION LLC	1/8+	908 253	N/A	N/A	N/A	N/A
10*16545	9-5-4.1	AA	ROBERT G FOUNDS AND ELLEN FOUNDS	TH EXPLORATION LLC	1/8+	908 260	N/A	N/A	N/A	N/A
10*16662	9-5-4.1	AA	RICHARD THOMAS MIMS & VICKIE J MIMS	TH EXPLORATION LLC	1/8+	908 263	N/A	N/A	N/A	N/A
10*16666	9-5-4.1	AA	MICHAEL P PYLE	TH EXPLORATION LLC	1/8+	908 255	N/A	N/A	N/A	N/A
10*16667	9-5-4.1	AA	CHARLES F PYLE AND GAIL ANN PYLE	TH EXPLORATION LLC	1/8+	908 266	N/A	N/A	N/A	N/A
10*16668	9-5-4.1	AA	JACK I PYLE AND MERRILEE ANN PYLE	TH EXPLORATION LLC	1/8+	908 257	N/A	N/A	N/A	N/A
10*16669	9-5-4.1	AA	JOHN S DADO AND PATRICIA S DADO	TH EXPLORATION LLC	1/8+	908 269	N/A	N/A	N/A	N/A
10*16686	9-5-4.1	AA	CHERYLE M TRACEY	TH EXPLORATION LLC	1/8+	927 475	N/A	N/A	N/A	N/A
10*16688	9-5-4.1	AA	SHERRYL PYLE BAIR	TH EXPLORATION LLC	1/8+	927 481	N/A	N/A	N/A	N/A
10*16690	9-5-4.1	AA	RICARDO ORTIZ	TH EXPLORATION LLC	1/8+	921 352	N/A	N/A	N/A	N/A
10*16720	9-5-4.1	AA	DONNA ELAINE BRASKETT	TH EXPLORATION LLC	1/8+	921 152	N/A	N/A	N/A	N/A
10*16738	9-5-4.1	AA	CHARLES A RINE AND RUTH K RINE	TH EXPLORATION LLC	1/8+	908 274	N/A	N/A	N/A	N/A
10*16747	9-5-4.1	AA	WILLIAM DALE BRASKETT	TH EXPLORATION LLC	1/8+	921 96	N/A	N/A	N/A	N/A
10*16787	9-5-4.1	AA	HERBERT B CAMPBELL & DONNA D CAMPBELL	TH EXPLORATION LLC	1/8+	942 451	N/A	N/A	N/A	N/A
10*16798	9-5-4.1	AA	PATRICK A RANKIN AND ROBIN A RANKIN	TH EXPLORATION LLC	1/8+	921 364	N/A	N/A	N/A	N/A
10*16800	9-5-4.1	AA	JAMES KENNETH JACKSON AND JULIE JACKSON	TH EXPLORATION LLC	1/8+	921 93	N/A	N/A	N/A	N/A
10*16802	9-5-4.1	AA	CHRISTOPHER RICHARDSON AND TAMMY RICHARDSON	TH EXPLORATION LLC	1/8+	921 495	N/A	N/A	N/A	N/A
10*16804	9-5-4.1	AA	WILLIAM N TAYLOR AND SHERRY D TAYLOR	TH EXPLORATION LLC	1/8+	921 510	N/A	N/A	N/A	N/A
10*16806	9-5-4.1	AA	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	9-5-4.1	AA	DAVID TULLER AND SUSAN STORTS TULLER	TH EXPLORATION LLC	1/8+	921 513	N/A	N/A	N/A	N/A
10*16808	9-5-4.1	AA	MICHAEL L ORTIZ	TH EXPLORATION LLC	1/8+	921 349	N/A	N/A	N/A	N/A
10*16815	9-5-4.1	AA	HAROLD W PYLE	TH EXPLORATION LLC	1/8+	921 357	N/A	N/A	N/A	N/A
10*16819	9-5-4.1	AA	TERESA ORTIZ BIGGS	TH EXPLORATION LLC	1/8+	921 147	N/A	N/A	N/A	N/A
10*16821	9-5-4.1	AA	SHEILA BRASKETT WEICHEY	TH EXPLORATION LLC	1/8+	921 516	N/A	N/A	N/A	N/A
10*16836	9-5-4.1	AA	RICK A STORTS AND LENORE A STORTS	TH EXPLORATION LLC	1/8+	921 507	N/A	N/A	N/A	N/A
10*16837	9-5-4.1	AA	TERRY L POFF AND THELMA A POFF	TH EXPLORATION LLC	1/8+	927 472	N/A	N/A	N/A	N/A
10*16838	9-5-4.1	AA	ROBERT G FUNARI	TH EXPLORATION LLC	1/8+	921 82	N/A	N/A	N/A	N/A
10*16839	9-5-4.1	AA	JAMES B FOUNDS AND LYNN M MOWERY	TH EXPLORATION LLC	1/8+	921 73	N/A	N/A	N/A	N/A
10*16863	9-5-4.1	AA	TINA MOORE	TH EXPLORATION LLC	1/8+	921 334	N/A	N/A	N/A	N/A
10*16868	9-5-4.1	AA	MICHAEL W STORTS AND JESSICA M STORTS	TH EXPLORATION LLC	1/8+	921 504	N/A	N/A	N/A	N/A
10*16879	9-5-4.1	AA	MARK E STORTS AND LESLEY A STORTS	TH EXPLORATION LLC	1/8+	921 501	N/A	N/A	N/A	N/A
10*16880	9-5-4.1	AA	BEVERLY ANN STORTS	TH EXPLORATION LLC	1/8+	921 498	N/A	N/A	N/A	N/A
10*16902	9-5-4.1	AA	MARY BARCAW DUKE	TH EXPLORATION LLC	1/8+	921 105	N/A	N/A	N/A	N/A
10*16962	9-5-4.1	AA	DENNIS P FLORY AND BARBARA EZELL FLORY	TH EXPLORATION LLC	1/8+	921 70	N/A	N/A	N/A	N/A
10*16976	9-5-4.1	AA	LESTER G AND CONSTANCE B NICKOLSON	TH EXPLORATION LLC	1/8+	921 343	N/A	N/A	N/A	N/A
10*16977	9-5-4.1	AA	JEREMY COCHENOUR	TH EXPLORATION LLC	1/8+	921 102	N/A	N/A	N/A	N/A
10*16987	9-5-4.1	AA	LAURIE EZELL PERRY	TH EXPLORATION LLC	1/8+	921 355	N/A	N/A	N/A	N/A
10*16989	9-5-4.1	AA	BRITTANY RICHARDSON	TH EXPLORATION LLC	1/8+	921 376	N/A	N/A	N/A	N/A
10*16991	9-5-4.1	AA	MARYELLEN FOUNDS AND LAUREN FOUNDS	TH EXPLORATION LLC	1/8+	921 79	N/A	N/A	N/A	N/A
10*16996	9-5-4.1	AA	THOMAS RANKIN	TH EXPLORATION LLC	1/8+	917 75	N/A	N/A	N/A	N/A
10*17130	9-5-4.1	AA	CINDY L BARGER	TH EXPLORATION LLC	1/8+	921 137	N/A	N/A	N/A	N/A

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10*17155	9-5-4.1	AA	JESSE LEON JR AND TERESA GAIL EZELLE	TH EXPLORATION LLC	1/8+	921 118	N/A	N/A	N/A	N/A
10*17156	9-5-4.1	AA	HENRI NELL JACKSON KENT BARNES	TH EXPLORATION LLC	1/8+	921 139	N/A	N/A	N/A	N/A
10*17157	9-5-4.1	AA	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	9-5-4.1	AA	THOMAS G AND DIANE W BAYLESS	TH EXPLORATION LLC	1/8+	921 141	N/A	N/A	N/A	N/A
10*17205	9-5-4.1	AA	SANDRA JEAN WILSON	TH EXPLORATION LLC	1/8+	921 524	N/A	N/A	N/A	N/A
10*17274	9-5-4.1	AA	DAVID H WILSON	TH EXPLORATION LLC	1/8+	921 474	N/A	N/A	N/A	N/A
10*17275	9-5-4.1	AA	JOHN R REEVES AND MONA G REEVES	TH EXPLORATION LLC	1/8+	921 373	N/A	N/A	N/A	N/A
10*17276	9-5-4.1	AA	BERTHA EZELL WYATT	TH EXPLORATION LLC	1/8+	921 526	N/A	N/A	N/A	N/A
10*17278	9-5-4.1	AA	MICHAEL L EZELLE	TH EXPLORATION LLC	1/8+	921 121	N/A	N/A	N/A	N/A
10*17339	9-5-4.1	AA	JOSEPH W FOUNDS	TH EXPLORATION LLC	1/8+	921 76	N/A	N/A	N/A	N/A
10*17377	9-5-4.1	AA	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	9-5-4.1	AA	ANDREW M ORTIZ	TH EXPLORATION LLC	1/8+	921 346	N/A	N/A	N/A	N/A
10*17438	9-5-4.1	AA	DENNIS M WILSON	TH EXPLORATION LLC	1/8+	921 476	N/A	N/A	N/A	N/A
10*17440	9-5-4.1	AA	KENDRA WALISA	TH EXPLORATION LLC	1/8+	927 484	N/A	N/A	N/A	N/A
10*17441	9-5-4.1	AA	RALPH J WILSON	TH EXPLORATION LLC	1/8+	921 522	N/A	N/A	N/A	N/A
10*17442	9-5-4.1	AA	SHANE ALLEN AND MENDY JEAN ALLEN	TH EXPLORATION LLC	1/8+	921 134	N/A	N/A	N/A	N/A
10*17443	9-5-4.1	AA	MICHELLE MORROW-BACK	TH EXPLORATION LLC	1/8+	921 337	N/A	N/A	N/A	N/A
10*17444	9-5-4.1	AA	KELLY FOUNDS CAMPBELL	TH EXPLORATION LLC	1/8+	921 99	N/A	N/A	N/A	N/A
10*17449	9-5-4.1	AA	PHYLLIS J BLAKE	TH EXPLORATION LLC	1/8+	921 150	N/A	N/A	N/A	N/A
10*17482	9-5-4.1	AA	TERESA EZELLE RALVA AND DAVID L RALVA	TH EXPLORATION LLC	1/8+	927 487	N/A	N/A	N/A	N/A
10*17483	9-5-4.1	AA	RICHARD I PYLE	TH EXPLORATION LLC	1/8+	921 359	N/A	N/A	N/A	N/A
10*17484	9-5-4.1	AA	NELDA S JACKSON	TH EXPLORATION LLC	1/8+	921 330	N/A	N/A	N/A	N/A
10*17485	9-5-4.1	AA	MARGIE ANN JACKSON ROBBINS GRAHAM	TH EXPLORATION LLC	1/8+	921 91	N/A	N/A	N/A	N/A
10*17526	9-5-4.1	AA	JEFFREY L REEVES AND JODY L REEVES	TH EXPLORATION LLC	1/8+	921 370	N/A	N/A	N/A	N/A
10*17527	9-5-4.1	AA	JAMES MICHAEL EZELL AND LUCILLE D EZELL	TH EXPLORATION LLC	1/8+	921 111	N/A	N/A	N/A	N/A
10*17538	9-5-4.1	AA	CHERYL RANKIN-KING	TH EXPLORATION LLC	1/8+	922 160	N/A	N/A	N/A	N/A
10*17552	9-5-4.1	AA	JOHN BEVACQUA AND PATRICIA A BEVACQUA	TH EXPLORATION LLC	1/8+	921 144	N/A	N/A	N/A	N/A
10*17554	9-5-4.1	AA	MICHAEL T RANKIN	TH EXPLORATION LLC	1/8+	921 361	N/A	N/A	N/A	N/A
10*17561	9-5-4.1	AA	ROGER L TYRRELL AND KATHRYN L TYRRELL	TH EXPLORATION LLC	1/8+	927 24	N/A	N/A	N/A	N/A
10*17564	9-5-4.1	AA	JAMES RONALD NICKOLSON AND TRACEY E NICKOLSON	TH EXPLORATION LLC	1/8+	921 340	N/A	N/A	N/A	N/A
10*17565	9-5-4.1	AA	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	TH EXPLORATION LLC	1/8+	921 327	N/A	N/A	N/A	N/A
10*17566	9-5-4.1	AA	NATHAN P ERDOSSY AND BARBARA T ERDOSSY	TH EXPLORATION LLC	1/8+	921 108	N/A	N/A	N/A	N/A
10*17588	9-5-4.1	AA	JAMES M JACKSON	TH EXPLORATION LLC	1/8+	921 325	N/A	N/A	N/A	N/A
10*17589	9-5-4.1	AA	MARY CHRISTINE MCKENNA	TH EXPLORATION LLC	1/8+	921 332	N/A	N/A	N/A	N/A
10*17744	9-5-4.1	AA	SAM PRESLEY EZZEL DIVERSICARE OF PELL CITY	TH EXPLORATION LLC	1/8+	921 116	N/A	N/A	N/A	N/A
10*17983	9-5-4.1	AA	HOLLY SUE CUTHBERT	TH EXPLORATION LLC	1/8+	925 380	N/A	N/A	N/A	N/A
10*18021	9-5-4.1	AA	CHRISTOPHER A HANIFAN AND JACKIE F HANIFAN	TH EXPLORATION LLC	1/8+	927 267	N/A	N/A	N/A	N/A
10*18022	9-5-4.1	AA	DALE P WARD AND CYNTHIA J WARD	TH EXPLORATION LLC	1/8+	927 264	N/A	N/A	N/A	N/A
10*19524	9-5-4.1	AA	THE ESTATE OF AGNES IRENE EZELL CLARK BY DAVID M EDWARDS, EXECUTOR	TH EXPLORATION LLC	1/8+	942 633	N/A	N/A	N/A	N/A
10*19693	9-5-4.1	AA	MARIO R FLUARI	TH EXPLORATION LLC	1/8+	936 145	N/A	N/A	N/A	N/A
10*19695	9-5-4.1	AA	GENERAL RECEIVER OF MARSHALL COUNTY ATTN: BERNIE TWIGG	TH EXPLORATION LLC	1/8+	944 333	N/A	N/A	N/A	N/A

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10*19695.1	9-5-4.1	AA	GENERAL RECEIVER OF MARSHALL COUNTY ATTN: BERNIE TWIGG	TH EXPLORATION LLC	1/8+	944 333	N/A	N/A	N/A	N/A
10*19939	9-5-4.1	AA	ROBERT J MILLS & SHERRA SUE MILLS AGENA FOUNDATION INC MORGAN STANLEY WEALTH MANAGEMENT	TH EXPLORATION LLC	1/8+	949 212	N/A	N/A	N/A	N/A
10*22630	9-5-4.1	AA	MANAGEMENT	TH EXPLORATION LLC	1/8+	1035 11	N/A	N/A	N/A	N/A
10*25628	9-5-4.1	AA	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1025 631	N/A	N/A	N/A	N/A
10*47051.223.1	9-5-4.1	AA	JEAN ANNE GORBY STORCH AIF JOHN HERMAN STORCH	TH EXPLORATION LLC	1/8+	877 216	N/A	N/A	N/A	N/A
10*47051.223.2	9-5-4.1	AA	STEPHANIE SCHIEFER AND GEOFFREY SCHIEFER	TH EXPLORATION LLC	1/8+	885 321	N/A	N/A	N/A	N/A
10*47051.223.3	9-5-4.1	AA	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	TH EXPLORATION LLC	1/8+	885 324	N/A	N/A	N/A	N/A
10*47051.223.5	9-5-4.1	AA	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	9-5-4.1	AA	JOSHUA RINE AND REBECCA RINE	TH EXPLORATION LLC	1/8+	907 634	N/A	N/A	N/A	N/A
10*47051.223.7	9-5-4.1	AA	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	9-5-4.1	AA	DAVID M WILSON	TH EXPLORATION LLC	1/8+	907 649	N/A	N/A	N/A	N/A
10*47051.223.14	9-5-4.1	AA	JUSTIN RINE AND BECKY RINE	TH EXPLORATION LLC	1/8+	907 639	N/A	N/A	N/A	N/A
10*47051.223.15	9-5-4.1	AA	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	9-5-4.1	AA	WILLIAM K STERN AND BETTY L STERN	TH EXPLORATION LLC	1/8+	908 64	N/A	N/A	N/A	N/A
10*47051.223.17	9-5-4.1	AA	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	9-5-4.1	AA	BRITNEY MENEAR	TH EXPLORATION LLC	1/8+	908 57	N/A	N/A	N/A	N/A
10*47051.223.19	9-5-4.1	AA	JASON RINE AND HEATHER RINE	TH EXPLORATION LLC	1/8+	907 629	N/A	N/A	N/A	N/A
10*47051.223.20	9-5-4.1	AA	BARBARA A BUZZARD	TH EXPLORATION LLC	1/8+	908 24	N/A	N/A	N/A	N/A
10*47051.223.21	9-5-4.1	AA	GARY T WARD AND SHARON D WARD	TH EXPLORATION LLC	1/8+	908 19	N/A	N/A	N/A	N/A
10*47051.223.24	9-5-4.1	AA	JO DEE K DAVIS	TH EXPLORATION LLC	1/8+	908 136	N/A	N/A	N/A	N/A
10*47051.223.28	9-5-4.1	AA	KAREN S GAST	TH EXPLORATION LLC	1/8+	908 150	N/A	N/A	N/A	N/A
10*47051.223.30	9-5-4.1	AA	LAURIE DRIGGERS MANDERSON	TH EXPLORATION LLC	1/8+	908 165	N/A	N/A	N/A	N/A
10*15481	9-5-4	BB	DEAN P RIGBY AND SUSAN RIGBY	TH EXPLORATION LLC	1/8+	908 197	N/A	N/A	N/A	N/A
10*15482	9-5-4	BB	SUSAN NELSON	TH EXPLORATION LLC	1/8+	908 203	N/A	N/A	N/A	N/A
10*15594	9-5-4	BB	IVAN F GORBY	TH EXPLORATION LLC	1/8+	695 527	N/A	N/A	N/A	N/A
10*15595	9-5-4	BB	JOSEPH D DAKKAN	CHESAPEAKE APPALACHIA LLC	1/8+	695 519	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148	Chevron USA Inc to Tug Hill Exploration LLC: 960/409
10*15596	9-5-4	BB	JOHN E GORBY	CHESAPEAKE APPALACHIA LLC	1/8+	695 523	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148	Chevron USA Inc to Tug Hill Exploration LLC: 960/409
10*15597	9-5-4	BB	KAREN S GAST	CHESAPEAKE APPALACHIA LLC	1/8+	694 534	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148	Chevron USA Inc to Tug Hill Exploration LLC: 960/409
10*15598	9-5-4	BB	ADA HAZEL GONITA	CHESAPEAKE APPALACHIA LLC	1/8+	695 183	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148	Chevron USA Inc to Tug Hill Exploration LLC: 960/409

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10*15599	9-5-4	BB	PATSY JO RAU	CHESAPEAKE APPALACHIA LLC	1/8+	694	N/A	Chesapeake Appalachia LLC to Chevron USA Inc: 30/461	Chevron USA Inc to Tug Hill Exploration LLC: 36/148	Chevron USA Inc to Tug Hill Exploration LLC: 960/409
10*15686	9-5-4	BB	JOHN OMER BOLTZ	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*15750	9-5-4	BB	SANDRA K TRULL	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16058	9-5-4	BB	MATTIE RUTH JACKSON PRESCOTT	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16118	9-5-4	BB	RUBY RIDDL JACKSON	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16383	9-5-4	BB	ROBERT STEPHEN DRIGGERS	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16414	9-5-4	BB	MARY ELIZABETH DRIGGERS	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16415	9-5-4	BB	TERENCE J ANDERSON AND NANCY J ANDERSON	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16416	9-5-4	BB	CYNTHIA HUDSON	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16424	9-5-4	BB	ROBERT J RIGBY	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16448	9-5-4	BB	RALPH L AND JUANITA L CRIM	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16478	9-5-4	BB	MARION L AND EMILY CAMPBELL	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16514	9-5-4	BB	ALEX R CAMPBELL & JOYCE A CAMPBELL	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16515	9-5-4	BB	ANNA MARIE JACKSON	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16516	9-5-4	BB	WILSON ANDREW JACKSON	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16545	9-5-4	BB	ROBERT G FOUNDS AND ELLEN FOUNDS	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16662	9-5-4	BB	RICHARD THOMAS MIMS & VICKIE J MIMS	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16666	9-5-4	BB	MICHAEL P PYLE	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16667	9-5-4	BB	CHARLES F PYLE AND GAIL ANN PYLE	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16668	9-5-4	BB	JACK I PYLE AND MERRILEE ANN PYLE	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16669	9-5-4	BB	JOHN S DADO AND PATRICIA S DADO	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16686	9-5-4	BB	CHERYLE M TRACEY	TH EXPLORATION LLC	1/8+	927	N/A	N/A	N/A	N/A
10*16688	9-5-4	BB	SHERRYL PYLE BAIR	TH EXPLORATION LLC	1/8+	927	N/A	N/A	N/A	N/A
10*16689	9-5-4	BB	JOHN C FOUNDS	TH EXPLORATION LLC	1/8+	927	N/A	N/A	N/A	N/A
10*16690	9-5-4	BB	RICARDO ORTIZ	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16720	9-5-4	BB	DONNA ELAINE BRASKETT	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16738	9-5-4	BB	CHARLES A RINE AND RUTH K RINE	TH EXPLORATION LLC	1/8+	908	N/A	N/A	N/A	N/A
10*16747	9-5-4	BB	WILLIAM DALE BRASKETT	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16787	9-5-4	BB	HERBERT B CAMPBEL & DONNA D CAMPBELL	TH EXPLORATION LLC	1/8+	942	N/A	N/A	N/A	N/A
10*16798	9-5-4	BB	PATRICK A RANKIN AND ROBIN A RANKIN	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16800	9-5-4	BB	JAMES KENNETH JACKSON AND JULIE JACKSON	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16802	9-5-4	BB	CHRISTOPHER RICHARDSON AND TAMMY RICHARDSON	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16804	9-5-4	BB	WILLIAM N TAYLOR AND SHERRY D TAYLOR	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16806	9-5-4	BB	VIRGINIA WHITMAN TRUST DTD 7-25-1984 JON WHITMAN TRUSTEE	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16807	9-5-4	BB	DAVID TULLER AND SUSAN STORTS TULLER	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16808	9-5-4	BB	MICHAEL L ORTIZ	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16815	9-5-4	BB	HAROLD W PYLE	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16819	9-5-4	BB	TERESA ORTIZ BIGGS	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A
10*16821	9-5-4	BB	SHEILA BRASKETT WEICHEY	TH EXPLORATION LLC	1/8+	921	N/A	N/A	N/A	N/A

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment
10*16836	9-5-4	BB	RICK A STORTS AND LENORE A STORTS	TH EXPLORATION LLC	1/8+	921 507	N/A	N/A	N/A	N/A
10*16837	9-5-4	BB	TERRY L POFF AND THELMA A POFF	TH EXPLORATION LLC	1/8+	927 472	N/A	N/A	N/A	N/A
10*16838	9-5-4	BB	ROBERT G FUMARI	TH EXPLORATION LLC	1/8+	821 82	N/A	N/A	N/A	N/A
10*16839	9-5-4	BB	JAMES B FOUNDS AND LYNN M MOWERY	TH EXPLORATION LLC	1/8+	921 73	N/A	N/A	N/A	N/A
10*16863	9-5-4	BB	TINA MOORE	TH EXPLORATION LLC	1/8+	921 334	N/A	N/A	N/A	N/A
10*16868	9-5-4	BB	MICHAEL W STORTS AND JESSICA M STORTS	TH EXPLORATION LLC	1/8+	921 504	N/A	N/A	N/A	N/A
10*16879	9-5-4	BB	MARK E STORTS AND LESLEY A STORTS	TH EXPLORATION LLC	1/8+	921 501	N/A	N/A	N/A	N/A
10*16880	9-5-4	BB	BEVERLY ANN STORTS	TH EXPLORATION LLC	1/8+	921 498	N/A	N/A	N/A	N/A
10*16902	9-5-4	BB	MARY BARCAW DUKE	TH EXPLORATION LLC	1/8+	921 105	N/A	N/A	N/A	N/A
10*16962	9-5-4	BB	DENNIS P FLORY AND BARBARA EZELL FLORY	TH EXPLORATION LLC	1/8+	921 70	N/A	N/A	N/A	N/A
10*16976	9-5-4	BB	LESTER G AND CONSTANCE B NICKOLSON	TH EXPLORATION LLC	1/8+	921 343	N/A	N/A	N/A	N/A
10*16977	9-5-4	BB	JEREMY COCHENOUR	TH EXPLORATION LLC	1/8+	921 102	N/A	N/A	N/A	N/A
10*16987	9-5-4	BB	LAURIE EZELL PERRY	TH EXPLORATION LLC	1/8+	921 355	N/A	N/A	N/A	N/A
10*16989	9-5-4	BB	BRITTANY RICHARDSON	TH EXPLORATION LLC	1/8+	921 376	N/A	N/A	N/A	N/A
10*16991	9-5-4	BB	MARYELLEN FOUNDS AND LAUREN FOUNDS	TH EXPLORATION LLC	1/8+	921 79	N/A	N/A	N/A	N/A
10*16996	9-5-4	BB	THOMAS RANKIN	TH EXPLORATION LLC	1/8+	917 75	N/A	N/A	N/A	N/A
10*17130	9-5-4	BB	CINDY L BARGER	TH EXPLORATION LLC	1/8+	921 137	N/A	N/A	N/A	N/A
10*17155	9-5-4	BB	JESSE LEON JR AND TERESA GAIL EZELLE	TH EXPLORATION LLC	1/8+	921 118	N/A	N/A	N/A	N/A
10*17156	9-5-4	BB	HENRI NELL JACKSON KENT BARNES	TH EXPLORATION LLC	1/8+	921 139	N/A	N/A	N/A	N/A
10*17157	9-5-4	BB	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	9-5-4	BB	THOMAS G AND DIANE W BAYLESS	TH EXPLORATION LLC	1/8+	921 141	N/A	N/A	N/A	N/A
10*17205	9-5-4	BB	SANDRA JEAN WILSON	TH EXPLORATION LLC	1/8+	921 524	N/A	N/A	N/A	N/A
10*17208	9-5-4	BB	PATRICK S GALLAGHER AND JOYCE ANN FOUNDS	TH EXPLORATION LLC	1/8+	921 86	N/A	N/A	N/A	N/A
10*17274	9-5-4	BB	DAVID H WILSON	TH EXPLORATION LLC	1/8+	921 474	N/A	N/A	N/A	N/A
10*17275	9-5-4	BB	JOHN R REEVES AND MONA G REEVES	TH EXPLORATION LLC	1/8+	921 373	N/A	N/A	N/A	N/A
10*17276	9-5-4	BB	BERTHA EZELL WVAIT	TH EXPLORATION LLC	1/8+	921 526	N/A	N/A	N/A	N/A
10*17278	9-5-4	BB	MICHAEL L EZELLE	TH EXPLORATION LLC	1/8+	921 121	N/A	N/A	N/A	N/A
10*17339	9-5-4	BB	JOSEPH W FOUNDS	TH EXPLORATION LLC	1/8+	921 76	N/A	N/A	N/A	N/A
10*17377	9-5-4	BB	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	9-5-4	BB	ANDREW M ORTIZ	TH EXPLORATION LLC	1/8+	921 346	N/A	N/A	N/A	N/A
10*17438	9-5-4	BB	DENNIS M WILSON	TH EXPLORATION LLC	1/8+	921 476	N/A	N/A	N/A	N/A
10*17440	9-5-4	BB	KENDRA WALISA	TH EXPLORATION LLC	1/8+	927 484	N/A	N/A	N/A	N/A
10*17441	9-5-4	BB	RALPH J WILSON	TH EXPLORATION LLC	1/8+	921 522	N/A	N/A	N/A	N/A
10*17442	9-5-4	BB	SHANE ALLEN AND MENDY JEAN ALLEN	TH EXPLORATION LLC	1/8+	921 134	N/A	N/A	N/A	N/A
10*17443	9-5-4	BB	MICHELLE MORROW-BACK	TH EXPLORATION LLC	1/8+	921 337	N/A	N/A	N/A	N/A
10*17444	9-5-4	BB	KELLY FOUNDS CAMPBELL	TH EXPLORATION LLC	1/8+	921 99	N/A	N/A	N/A	N/A
10*17449	9-5-4	BB	PHYLLIS J BLAKE	TH EXPLORATION LLC	1/8+	921 150	N/A	N/A	N/A	N/A
10*17482	9-5-4	BB	TERESA EZELLE RALYA AND DAVID L RALYA	TH EXPLORATION LLC	1/8+	927 487	N/A	N/A	N/A	N/A
10*17483	9-5-4	BB	RICHARD J PYLE	TH EXPLORATION LLC	1/8+	921 359	N/A	N/A	N/A	N/A
10*17484	9-5-4	BB	NELDA S JACKSON	TH EXPLORATION LLC	1/8+	921 330	N/A	N/A	N/A	N/A
10*17485	9-5-4	BB	MARGIE ANN JACKSON ROBBINS GRAHAM	TH EXPLORATION LLC	1/8+	921 91	N/A	N/A	N/A	N/A
10*17526	9-5-4	BB	JEFFREY L REEVES AND JODY L REEVES	TH EXPLORATION LLC	1/8+	921 370	N/A	N/A	N/A	N/A
10*17527	9-5-4	BB	JAMES MICHAEL EZELL AND LUCILLE D EZELL	TH EXPLORATION LLC	1/8+	921 111	N/A	N/A	N/A	N/A

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment
10*17538	9-5-4	BB	CHERYL RANKIN-KING	TH EXPLORATION LLC	1/8+	952 160	N/A	N/A	N/A	N/A
10*17552	9-5-4	BB	JOHN BEVACQUA AND PATRICIA A BEVACQUA	TH EXPLORATION LLC	1/8+	921 144	N/A	N/A	N/A	N/A
10*17554	9-5-4	BB	MICHAEL T RANKIN	TH EXPLORATION LLC	1/8+	921 361	N/A	N/A	N/A	N/A
10*17561	9-5-4	BB	ROGER L TYRELL AND KATHRYN L TYRELL	TH EXPLORATION LLC	1/8+	927 24	N/A	N/A	N/A	N/A
10*17564	9-5-4	BB	JAMES RONALD NICKOLSON AND TRACEY E NICKOLSON	TH EXPLORATION LLC	1/8+	921 340	N/A	N/A	N/A	N/A
10*17565	9-5-4	BB	JESSE ALLEN JACKSON AND ELIZABETH D JACKSON	TH EXPLORATION LLC	1/8+	921 327	N/A	N/A	N/A	N/A
10*17566	9-5-4	BB	NATHAN P ERDOSSY AND BARBARA T ERDOSSY	TH EXPLORATION LLC	1/8+	921 108	N/A	N/A	N/A	N/A
10*17588	9-5-4	BB	JAMES M JACKSON	TH EXPLORATION LLC	1/8+	921 325	N/A	N/A	N/A	N/A
10*17589	9-5-4	BB	MARY CHRISTINE MCKENNA	TH EXPLORATION LLC	1/8+	921 332	N/A	N/A	N/A	N/A
10*17744	9-5-4	BB	SAM PRESLEY EZZELL DIVERSICARE OF BELL CITY	TH EXPLORATION LLC	1/8+	921 116	N/A	N/A	N/A	N/A
10*17983	9-5-4	BB	HOLLY SUE CUTHERBERT	TH EXPLORATION LLC	1/8+	925 380	N/A	N/A	N/A	N/A
10*18021	9-5-4	BB	CHRISTOPHER A HANIFAN AND JACKIE F HANIFAN	TH EXPLORATION LLC	1/8+	927 267	N/A	N/A	N/A	N/A
10*18022	9-5-4	BB	DALE P WARD AND CYNTHIA J WARD	TH EXPLORATION LLC	1/8+	927 264	N/A	N/A	N/A	N/A
10*19524	9-5-4	BB	THE ESTATE OF AGNES IRENE EZZELL CLARK BY DAVID M EDWARDS, EXECUTOR	TH EXPLORATION LLC	1/8+	942 633	N/A	N/A	N/A	N/A
10*19692	9-5-4	BB	KENDRA WALISA	TH EXPLORATION LLC	1/8+	924 484	N/A	N/A	N/A	N/A
10*19693	9-5-4	BB	MARIO R FUNARI	TH EXPLORATION LLC	1/8+	936 145	N/A	N/A	N/A	N/A
10*19695	9-5-4	BB	GENERAL RECEIVER OF MARSHALL COUNTY ATTN: BERNIE TWIGG	TH EXPLORATION LLC	1/8+	944 333	N/A	N/A	N/A	N/A
10*19695.1	9-5-4	BB	GENERAL RECEIVER OF MARSHALL COUNTY ATTN: BERNIE TWIGG	TH EXPLORATION LLC	1/8+	944 333	N/A	N/A	N/A	N/A
10*19939	9-5-4	BB	ROBERT J MILLS & SHERRA SUE MILLS	TH EXPLORATION LLC	1/8+	949 212	N/A	N/A	N/A	N/A
10*22630	9-5-4	BB	AGENA FOUNDATION INC MORGAN STANLEY WEALTH MANAGEMENT	TH EXPLORATION LLC	1/8+	1035 11	N/A	N/A	N/A	N/A
10*25628	9-5-4	BB	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1025 631	N/A	N/A	N/A	N/A
10*47051.223.1	9-5-4	BB	JEAN ANNE GORBY STORCH AIF JOHN HERMAN STORCH	TH EXPLORATION LLC	1/8+	877 216	N/A	N/A	N/A	N/A
10*47051.223.2	9-5-4	BB	STEPHANIE SCHIEFER AND GEOFFREY SCHIEFER	TH EXPLORATION LLC	1/8+	885 321	N/A	N/A	N/A	N/A
10*47051.223.3	9-5-4	BB	ROBERT A LEADBETTER AND M REBECCA LEADBETTER	TH EXPLORATION LLC	1/8+	885 324	N/A	N/A	N/A	N/A
10*47051.223.5	9-5-4	BB	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	9-5-4	BB	JOSHUA RINE AND REBECCA RINE	TH EXPLORATION LLC	1/8+	907 634	N/A	N/A	N/A	N/A
10*47051.223.7	9-5-4	BB	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	9-5-4	BB	DAVID M WILSON	TH EXPLORATION LLC	1/8+	907 649	N/A	N/A	N/A	N/A
10*47051.223.14	9-5-4	BB	JUSTIN RINE AND BECKY RINE	TH EXPLORATION LLC	1/8+	907 639	N/A	N/A	N/A	N/A
10*47051.223.15	9-5-4	BB	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	9-5-4	BB	WILLIAM K STERN AND BETTY L STERN	TH EXPLORATION LLC	1/8+	908 64	N/A	N/A	N/A	N/A
10*47051.223.17	9-5-4	BB	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	9-5-4	BB	BRITTNEY MENEAR	TH EXPLORATION LLC	1/8+	908 57	N/A	N/A	N/A	N/A
10*47051.223.19	9-5-4	BB	JASON RINE AND HEATHER RINE	TH EXPLORATION LLC	1/8+	907 629	N/A	N/A	N/A	N/A
10*47051.223.20	9-5-4	BB	BARBARA A BUZZARD	TH EXPLORATION LLC	1/8+	908 24	N/A	N/A	N/A	N/A
10*47051.223.21	9-5-4	BB	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	9-5-4	BB	SALLY DAVIS COLE	TH EXPLORATION LLC	1/8+	908 74	N/A	N/A	N/A	N/A
10*47051.223.23	9-5-4	BB	RONALD S CRIM	TH EXPLORATION LLC	1/8+	908 79	N/A	N/A	N/A	N/A
10*47051.223.24	9-5-4	BB	JO DEE K DAVIS	TH EXPLORATION LLC	1/8+	908 136	N/A	N/A	N/A	N/A

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment
10*47051.223.25	9-5-4	BB	JOANNE WELCH	TH EXPLORATION LLC	1/8+	908 141	N/A	N/A	N/A	N/A
10*47051.223.26	9-5-4	BB	WENDY L SMARKE	TH EXPLORATION LLC	1/8+	908 69	N/A	N/A	N/A	N/A
10*47051.223.27	9-5-4	BB	TIM J HOBBS	TH EXPLORATION LLC	1/8+	908 277	N/A	N/A	N/A	N/A
10*47051.223.28	9-5-4	BB	KAREN S GAST	TH EXPLORATION LLC	1/8+	908 150	N/A	N/A	N/A	N/A
10*47051.223.30	9-5-4	BB	LAURIE DRIGGERS MANDERSON	TH EXPLORATION LLC	1/8+	908 165	N/A	N/A	N/A	N/A
10*47051.223.33	9-5-4	BB	NANCY C HOUSLEY	TH EXPLORATION LLC	1/8+	908 187	N/A	N/A	N/A	N/A
10*47051.223.34	9-5-4	BB	JOHN CIAFFAGLIONE	TH EXPLORATION LLC	1/8+	908 170	N/A	N/A	N/A	N/A
10*47051.223.35	9-5-4	BB	DEBRA L CIAFFAGLIONE	TH EXPLORATION LLC	1/8+	908 192	N/A	N/A	N/A	N/A

STATE OF WEST VIRGINIA §
§
COUNTY OF MARSHALL §

Jan Pest
MARSHALL County 12:43:01 PM
Instrument No 1404876
Date Recorded 05/20/2016
Document Type ASN
Pages Recorded 20
Book-Page 36-148
Recording Fee \$20.00
Additional \$8.00

ASSIGNMENT AND CONVEYANCE

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

WITNESSETH:

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

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

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

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

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

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

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5/20/16

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JAN 14 2020

WV Department of
Environmental Protection

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STATE OF WEST VIRGINIA
COUNTY OF MARSHALL

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MEMORANDUM OF ASSIGNMENT OF OIL AND GAS LEASES

This **MEMORANDUM OF ASSIGNMENT OF OIL AND GAS LEASES** ("Memorandum") dated as of September 7th, 2018 (the "Effective Date"), is made by and between **Chevron U.S.A. Inc.**, a Pennsylvania corporation, with an address at 700 Cherrington Parkway, Coraopolis, PA 15108 ("Chevron" or "Assignor") and **TH Exploration, LLC**, Texas limited liability company, with an address at 1320 S. University Drive, Suite 500, Fort Worth, TX 76107 ("Assignee"). Chevron and Assignee are each referred to herein as a "Party" and collectively as the "Parties." Capitalized terms used but not defined herein shall have the meaning ascribed to those terms in that certain Assignment of Oil and Gas Leases between the Parties dated September 7th, 2018 ("Assignment").

- A. Notice is hereby given that the Parties have entered into the Assignment, pursuant to which Chevron assigned to Assignee all of Assignor's right, title, and interest in and to those certain Leases situated in Marshall County, West Virginia, less and except certain identified portions, as described in Exhibit "A", attached hereto and made a part hereof.
- B. Chevron does covenant, promise and agree, to and with the Assignee, its respective successors and assigns, to forever specially warrant and defend the title to the Leases or portions thereof included under the Assignment and this Memorandum, unto the Assignee and its respective successors and assigns, against the lawful claims of Chevron, and all persons claiming, or to claim, the same or any part thereof, by, through or under Chevron.
- C. Preparation of this Memorandum has been a joint effort of the Parties and it must not be construed more severely against any of the Parties than against any other.
- D. This Memorandum is subject to and expressly incorporates the terms of the Assignment. The Assignment will govern to the extent of any conflict between the terms of this Memorandum and the Assignment.
- E. In consideration of the mutual promises set out in this Assignment, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree to be bound by the terms of this Assignment.

IN WITNESS WHEREOF, this Memorandum is executed this 7th day of September, 2018.

Marshall County
Jan Pest, Clerk
Instrument 1445509
09/11/2018 @ 02:17:18 PM
ASSIGNMENTS
Book 42 @ Page 435
Pages Recorded 7
Recording Cost \$ 13.00

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement is entered into this 16th day of February, 2018, between TUG HILL OPERATING, LLC (THQ), a Texas limited liability company, whose address is 1320 S. University Blvd., Suite 500, Fort Worth, TX 76107 and CHEVRON U.S.A., INC. (Chevron), a Pennsylvania corporation, whose address is 700 Cherrington Parkway, Coraopolis, PA 15108.

PARTIES AND AGREEMENT REFERENCE: THQ and Chevron entered into a letter agreement ("Letter Agreement") dated February 16th, 2018 (the "Commencement Date") outlining pursuit of definitive agreements to allow THQ the right to permit, drill, extract, produce and market oil and gas from those certain oil and gas interests controlled by Chevron in the Meade District of Marshall County, West Virginia, as more fully described in Exhibit A attached hereto, made a part hereof, and incorporated herein by reference.

1. **TERM:** The rights granted in the Letter Agreement will terminate upon the earlier of (i) one hundred eighty (180) days from the Commencement Date, (ii) Chevron's revocation of the rights granted in the Letter Agreement, or (iii) the parties entering into the definitive agreement described in the Letter Agreement. Upon termination of the Letter Agreement under subsection (i) or (ii) of the immediately preceding sentence, THQ will record a surrender of this Memorandum and withdraw any related well work permit requests.

2. **MEMORANDUM FOR RECORDING PURPOSES ONLY:** This Memorandum is for recording purposes only and does not supplement or supersede the parties' respective rights set forth in the Letter Agreement or other agreements.

IN WITNESS WHEREOF, the parties have signed their names hereto as of the date first above written.

Tug Hill Operating, LLC


By: Sean Willis
Its: VP, Engineering &
Development Manager – Appalachia

Chevron U.S.A., Inc.


By: William E. Kerns
Its: Attorney-in-Fact

Marshall County	
Jan Pest, Clerk	
Instrument 1436705	
02/16/2018 @ 02:16:57 PM	
AGREEMENT	
Book 960 @ Page 409	
Pages Recorded 2	
Recording Cost \$	11.00

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JAN 14 2020

WV Department of
Environmental Protection



January 7, 2020

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

RE: Heaven Hill 3N-15HU

Subject: Road Crossing Letter

Dear Laura:

Tug Hill Operating, LLC will not be drilling, extracting or producing any minerals under any WV County or State Routes in the area reflected on the Heaven Hill 3N-15HU well plat.

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

Sincerely,

Amy L. Miller
Permitting Specialist – Appalachia Region

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WV Department of
Environmental Protection

WW-6AC
(1/12)

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

Date of Notice Certification: 01/07/2020

API No. 47- 051 -

Operator's Well No. Heaven Hill 3N-15HU

Well Pad Name: Heaven Hill 3

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>526,241.29</u>
County:	<u>Marshall</u>		Northing:	<u>4,406,567.76</u>
District:	<u>Meade</u>	Public Road Access:	<u>Yeater Lane (Co. Rt. 21/11)</u>	
Quadrangle:	<u>Glen Easton 7.5'</u>	Generally used farm name:	<u>Ricky L. Whittlatch</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.

<p>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:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><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</p> <p style="padding-left: 40px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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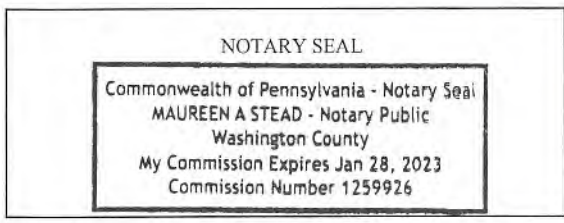
Required Attachments:

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.

Certification of Notice is hereby given:

THEREFORE, I Amy L. 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 L. Miller <i>Amy Miller</i></u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Regulatory Analyst - 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 7 day of JANUARY 2020
Maureen Stead Notary Public
 My Commission Expires 1/28/23

Oil and Gas Privacy Notice:

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

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WW-6A
(9-13)

API NO. 47- 051
OPERATOR WELL NO. Heaven Hill 3N-15HU
Well Pad Name: Heaven Hill 3

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

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

Date of Notice: 1/7/2020 **Date Permit Application Filed:** 1/8/2020

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: Ricky L. Whittlatch
Address: 1044 Yeater Lane
Glen Easton, WV 26039

Name: None
Address: _____

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

Name: Andrew Whittlatch
Address: 942 Yeater Lane
Glen Easton, WV 26039

Name: Amie Goodnight, et ux
Address: 102 Goodnight Lane
Moundsville, WV 26041

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
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(8-13)

API NO. 47- 051 -
OPERATOR WELL NO. Heaven Hill 3N-15HU
Well Pad Name: Heaven Hill 3

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. Heaven Hill 3N-15HU
Well Pad Name: Heaven Hill 3

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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API NO. 47- 051 -
OPERATOR WELL NO. Heaven Hill 3N-15HU
Well Pad Name: Heaven Hill 3

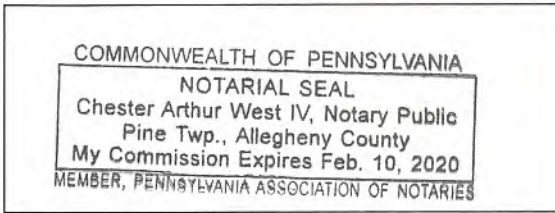
Notice is hereby given by:

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

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

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 31 day of Dec, 2019.

[Signature] Notary Public

My Commission Expires 2-10-2020

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Exhibit WW-6A**Supplement Pg. 1A**

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

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

Well: Heaven Hill 3N – 15HU
District: Meade (Residence #1)
State: WV

There is one (1) residence, no business or commercial sites, no churches, no schools or emergency facilities within two-thousand feet (2,000') of the above referenced well location.

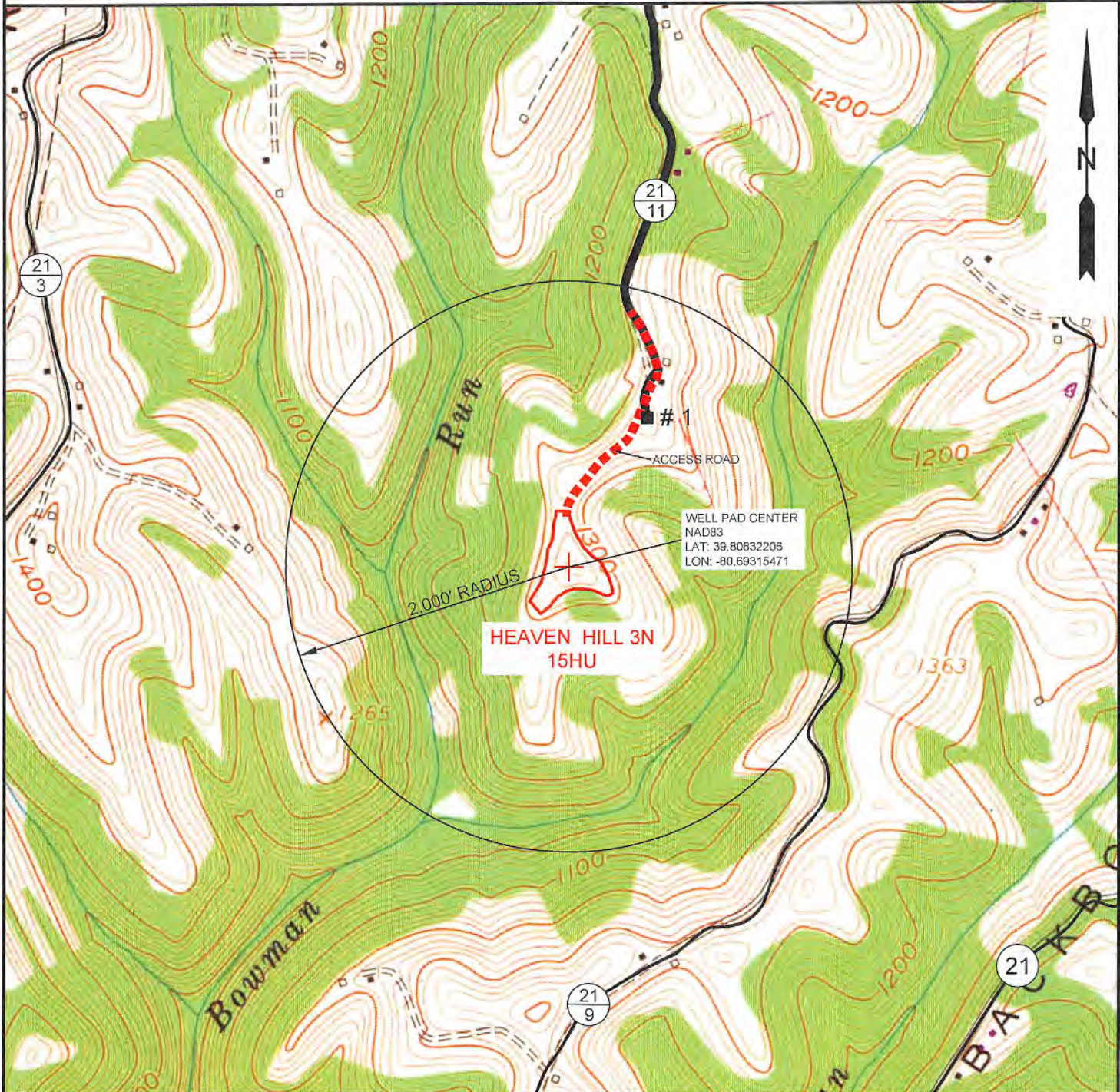
<p>Residence (#1) TM 7 Pcl. 30 Ricky L. Whitlatch Phone: 304-843-1168 Physical Address: 1044 Yeater Ln. Glen Easton, WV 26039 Tax Address: Same</p>

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WV Department of
Environmental Protection

PROPOSED HEAVEN HILL 3N - 15HU



NOTE: THERE APPEARS TO BE ONE (1) POSSIBLE WATER SOURCE WITHIN TWO THOUSAND FEET (2,000').

 <p>SLS Land & Energy Development <i>Solutions from the ground up.</i></p> <p><small>P.O. Box 150 • 12 Vanhorn Drive • Glenville, WV 26031 • (304) 402-5634 www.slsurveys.com</small></p>	TOPO SECTION: GLEN EASTON 7.5'		OPERATOR: PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		 <p>TUG HILL OPERATING</p>
	COUNTY MARSHALL	DISTRICT MEADE	DATE 06/21/2019	SCALE 1" = 1000'	
	DRAWN BY K.G.M.	JOB NO. 8654			

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: 5/13/2019 **Date of Planned Entry:** 5/20/2019

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: Ricky L. Whitlatch
 Address: 1044 Yeater Lane
Glen Easton, WV 26039

Name: Andrew Whitlatch
 Address: 982 Yeater Lane
Glen Easton, WV 26039

Name: Arnie Goodnight ET UX
 Address: 102 Goodnight Lane
Moundsville, WV 26041

COAL OWNER OR LESSEE

Name: Murray Energy Corp.
 Address: 46226 National Road
St. Clairsville, OH 43950

MINERAL OWNER(s)

Name: Ricky L. Whitlatch
 Address: 1044 Yeater Lane
Glen Easton, WV 26039 ****SEE SUPPLEMENT PAGE****

*please attach additional forms if necessary

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 WV Department of
 Environmental Protection

Notice is hereby given:

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>Lat: 39.8083194, Long: -80.6931660</u>
County: <u>Marshall</u>	Public Road Access: <u>Yeater Lane (CO. Rt. 21/11)</u>
District: <u>Meade</u>	Watershed: <u>HUC-10 Fish Creek</u>
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>Ricky L. Whitlatch</u>

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

Notice is hereby given by:

Well Operator: <u>Tug Hill Operating, LLC</u>	Address: <u>380 Southpointe Blvd., Soutpointe Plaza II, Suite 200</u>
Telephone: <u>724-0749-8388</u>	<u>Canonsburg, PA 15317</u>
Email: <u>amiller@tug-hillop.com</u>	Facsimile: <u>724-338-2030</u>

Oil and Gas Privacy Notice:

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

Operator Well No. Heaven Hill Unit 3N-15HU

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

Mineral Owner(s):

Name: Arnie Goodnight ET UX
Address: 102 Goodnight Lane
Moundsville, WV 26041

Bounty Minerals III Acquisitions, LLC
777 Main Street – Suite 850
Ft. Worth, TX 76102

Andrew Whitlatch
982 Yeater Lane
Glen Easton, WV 26039

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JAN 14 2020
WV Department of
Environmental Protection

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WW-6A5
(1/12)

Operator Well No. Heaven Hill 3N-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: 01/07/2020 **Date Permit Application Filed:** 01/08/2020

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: Ricky L. Whittlatch
Address: 1044 Yeater Lane
Glen Easton, WV 26039

Name: Andrew Whittlatch
Address: 942 Yeater Lane
Glen Easton, WV 26039 **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>526,241.29</u>
County: <u>Marshall</u>		Northing: <u>4,406,567.76</u>
District: <u>Meade</u>	Public Road Access: <u>Yeater Lane (Co. Rt. 21/11)</u>	
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>Ricky L. Whittlatch</u>	
Watershed: <u>(HUC 10) Fish Creek</u>		

This Notice Shall Include:

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

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

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

Oil and Gas Privacy Notice:

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

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WV Department of
Environmental Protection

Operator Well No. Heaven Hill Unit 3N-15HU

WW-6A5 Notice of Entry for Plat Survey Attachment 1 of 1

Notice is hereby provided to the SURFACE OWNER(s):

Name: Arnie Goodnight, et ux
Address: 102 Goodnight Lane
Moundsville, WV 26041

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AN 14 2020
WV Department of
Environmental Protection



4705102306

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

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

Byrd E. White, III
Secretary of Transportation/
Commissioner of Highways

January 7, 2020 ✓

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

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

Subject: DOH Permit for the Heaven Hill Unit 3 Pad, Marshal County

Heaven Hill 3N-15HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2016-0126 which has been issued to Tug Hill Operating, LLC for access to the State Road for a well site located off Marshall County Route 21/11 SLS.

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

Very Truly Yours,

Gary K. Clayton, P.E.
Regional Operations 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. Heaven Hill 3N-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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 JAN 14 2020

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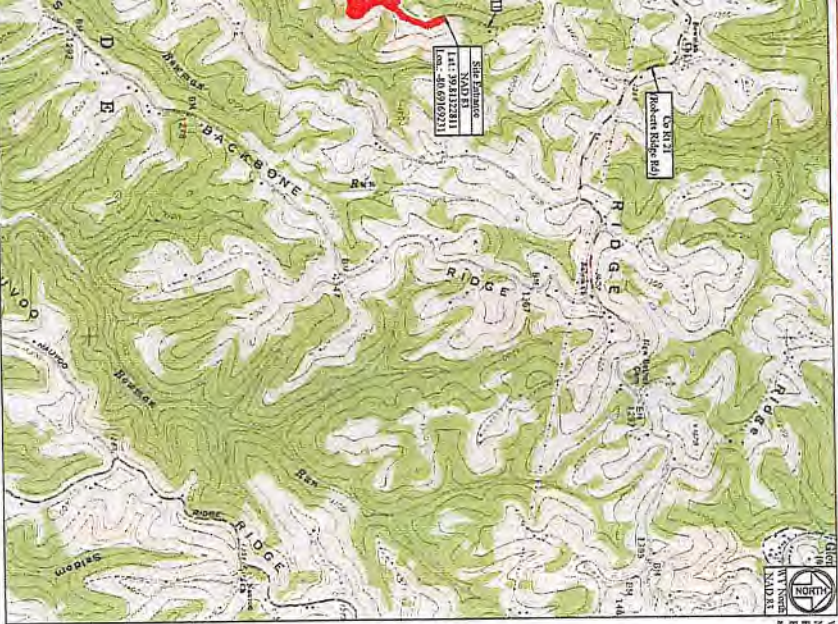
Pertinent Site Information

Heaven Hill 3 Site
 Emergency Number: 304-845-1920
 Meade District, Marshall County, WV
 Watershed: Middle Fish Creek Watershed
 Tug Hill Contact Number: 1-817-632-3400

Hill 3 Site

Instruction Plan, &
 ment Control Plans
 Operating
 l County
 District
 9.80832206°
 60.69315471°
 creek Watershed

As-Built



WV State Plane Coordinate System
 North Zone, NAD 83
 Horizontal Based on NAD83
 Established by Survey Date 03/9
 and UTM Zone 18TUB
 NVA 83

Property Owner Information - Heaven Hill 3 Site
 Meade District - Marshall County

Owner	TNS Parcel	Well Pad Access Road	Export/Import	Access Road	Truck	Total Disturbed
Andrew Wehler	7-3-01	0.00	0.00	0.00	0.00	0.00
Shirley Wehler	7-3-02	0.35	1.56	0.00	0.14	0.15
James Wehler	7-15	0.00	0.00	0.00	0.70	0.28
Robert Wehler	7-31	0.00	0.00	0.00	1.84	2.33
Robert Wehler	7-31	0.89	0.00	0.00	1.84	2.33
Site Location	7-15	2.01	1.44	1.44	1.84	1.84

Access Road

Surface Disturb	TNS Parcel	Road Length	New Access Road Construction
Andrew Wehler	7-3-01	114.17'	1592.78'
Robert Wehler	7-30	1592.78'	1592.78'

Disturbed Area

Well Pad Construction	715 AC
Access Road Construction	201 AC
Export/Import Material	714 AC
Additional Clearance	1.34 AC
Additional Information	1.34 AC
Total Disturbed Area Disturbed	209 AC
Total Linear Feet of Access Road	3285.56'

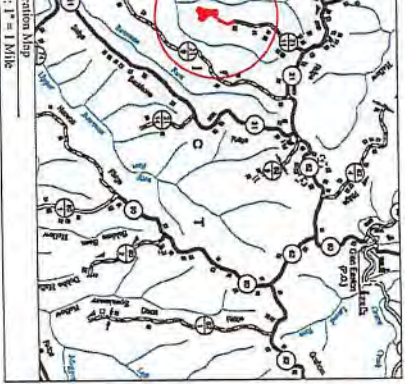
Heaven Hill 3 Site Quantities

Description	Category	Quantity	Export/Import	Material	Length of Pipe
Well Pad	Well Pad	1	1	1	1
Access Road	Access Road	1592.78	1592.78	1592.78	1592.78
Export/Import Material	Export/Import	714	714	714	714
Additional Clearance	Additional	1.34	1.34	1.34	1.34
Total Disturbed Area	Total	209	209	209	209



Site Locations (NVA 83)

Well Pad	Location (UTM)	Length (ft)
Well Pad 1	18TUB2330110	1592.78
Well Pad 2	18TUB2330110	1592.78



Well Location Restrictions
 All Well construction complies with the following restrictions:
 * 250' from an existing well or developed spring used for human or domestic animals.
 * 425' from an existing well or developed spring or from greater than 2,500 SF used for poultry or dairy
 * 100' from the edge of distance to wetland, permanent stream, natural or artificial lake,
 pond or reservoir.
 * 100' from the edge of disturbance to a naturally reproducing trout stream.
 * 1,000' of a surface or ground water table to a public water supply.
 Well Location Restrictions of WV Code 22-6A-12

As-Built Conditions
 This As-Built map is a true and accurate representation of the site as it exists on the date of the survey. It is not intended to be used for any other purpose. The engineer is not responsible for any errors or omissions on this map. The engineer is not responsible for any errors or omissions on this map. The engineer is not responsible for any errors or omissions on this map.



Zachary C. Slaughter
 Professional Engineer
 License No. 22214
 State of West Virginia
 My Commission Expires 12/31/2024
 My Renewal Date is 12/31/2024
 My Renewal Amount is \$100.00
 My Renewal Date is 12/31/2024
 My Renewal Amount is \$100.00

Sheet	Description
1	Cover Sheet
VI	Schedule of Quantities
VI-N1-N3	Site Notes
2	Pre-Construction Site Conditions
3	Site Soil Map
4	Clearing Exhibit
5	Overall Plan View
6	Well Pad Exhibit
7	Access Road Exhibit
8	Plan View
9-10	Cross Sections - Well Pad
11-12	Cross Sections - Access Road
13	Cross Sections - Additional Access Roads
14	Geotechnical Exhibit
GI-G3	Landowner Disturbed Area Exhibit
L1	Site Reclamation
SI	Construction Schedule
M1-M2	Environmental and Sediment Control Details
DI-D2	Access Road Details
P1	Well Details

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 WVD
 ENVIRONMENTAL PROTECTION
 DEPT. OF ENVIRONMENTAL PROTECTION

THIS DOCUMENT PREPARED FOR OPERATING

TUG HILL OPERATING

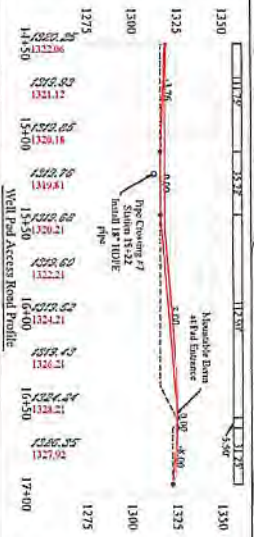
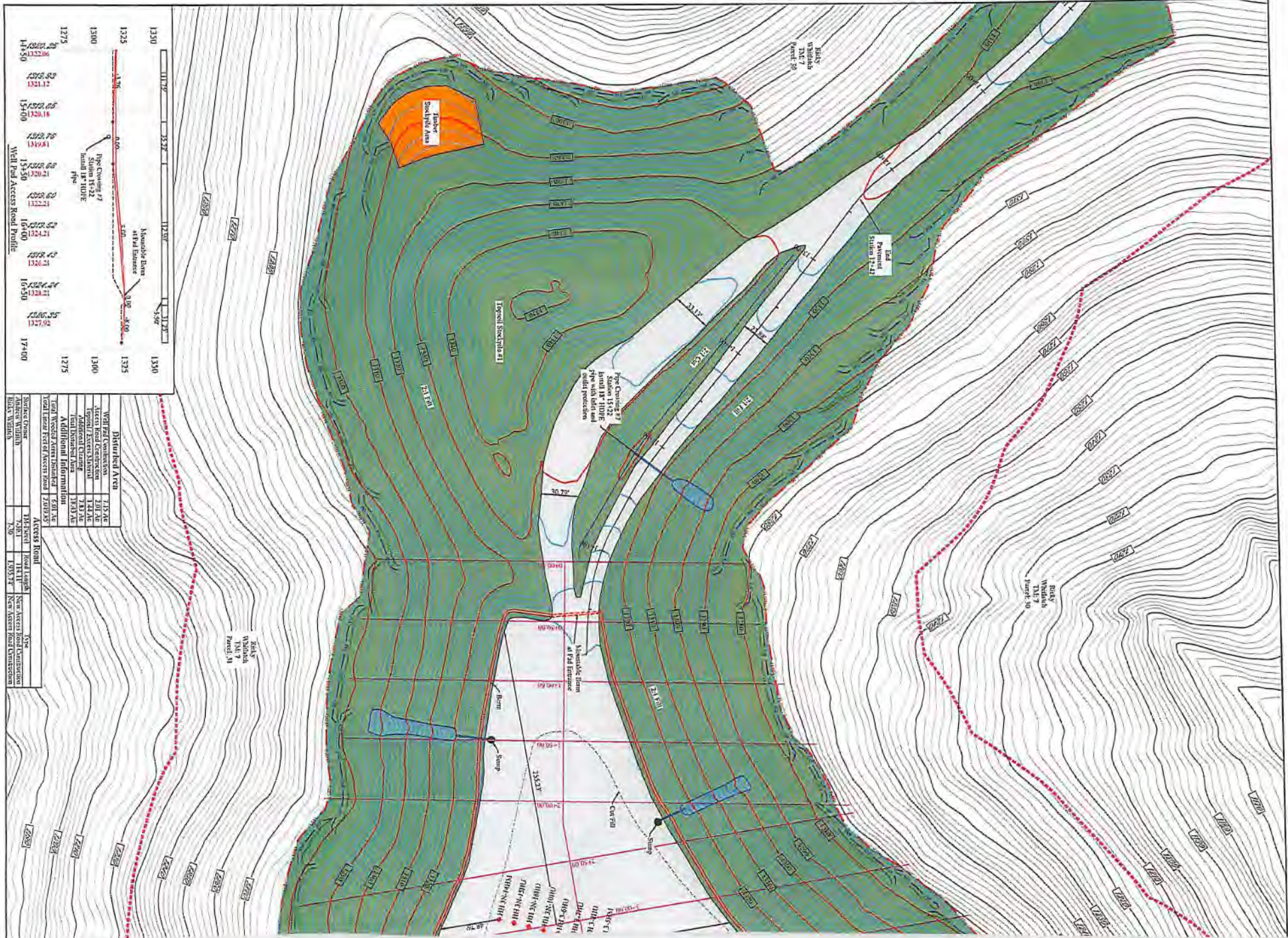
Kelly Succorina
 Registered Professional Engineer
 License No. 22214
 State of West Virginia

Date: 02-24-2017
 03-24-2017
 02-13-2018

Revision
 Design
 Design: Access Road Modification
 As-Built

Cover Sheet
Heaven Hill 3 Site
 Meade District
 Marshall County, WV

Date: 02/13/2018
 Scale: As Shown
 Designed By: ZS
 File No.
 Sheet 1 of 14



Disturbed Area	
Well Pad Construction	717 AC
Access Road Construction	131 AC
Mound Construction	133 AC
Additional Clearing	133 AC
Additional Area	1733 AC
Total Disturbed Area	2018 AC

Additional Information	
Total Linear Feet of Access Road	2018.58

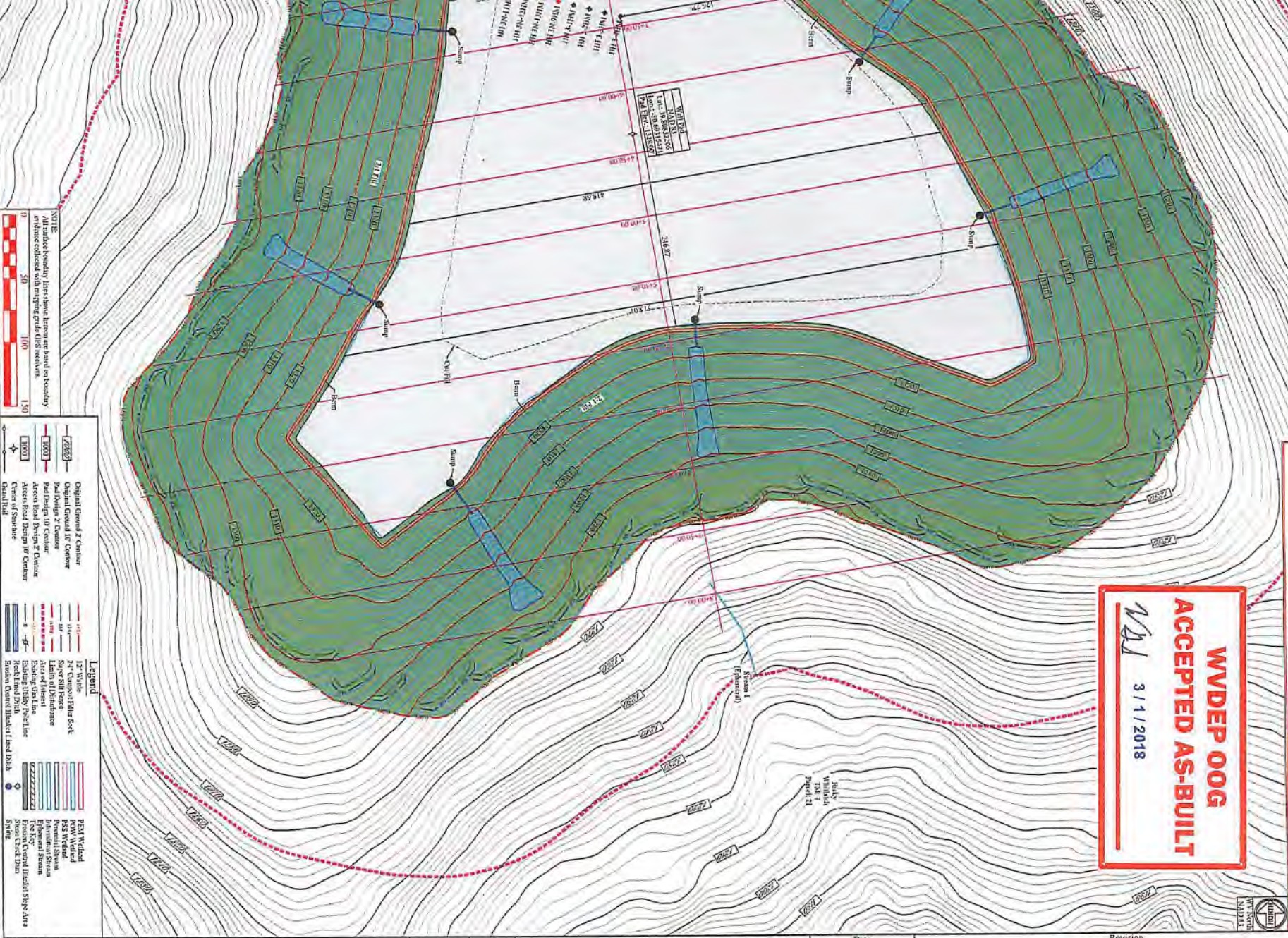
Surface Course	Width	Length	Use
Asphalt	11'11"	1111'	New Access Road Construction
Gravel	7'5"	1303'	New Access Road Construction
Gravel	7'5"	730'	New Access Road Construction

Surface Course	Width	Length	Use
Asphalt	11'11"	1111'	New Access Road Construction
Gravel	7'5"	1303'	New Access Road Construction
Gravel	7'5"	730'	New Access Road Construction

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Heaven Hill 3 Site
Tug Hill Operating
Exhibit A: As-Built

WDEP 006
ACCEPTED AS-BUILT
12/1 3/1/2018



NOTE:
All under knowledge lines from horizontal level on boundary.
Reference Station: 50+00.00 Stationing on Right of Way

- Legend**
- Original Ground 1" Contour
 - Original Ground 10" Contour
 - Proposed 2" Contour
 - Proposed 10" Contour
 - Proposed 100" Contour
 - Proposed 200" Contour
 - Proposed 500" Contour
 - Proposed 1000" Contour
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Site Plan
Heaven Hill 3 Site
Meade District
Marshall County, WV

Kyle S Underlina
Professional Engineer
No. 10055
State of West Virginia



TUG HILL OPERATING

THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

Date	Revision
02-24-2017	Design
03-24-2017	Design: Access Road Modification
02-13-2018	As-Built

DWG: 0217/02018
Scale: As Shown
Designed By: ZS
File No.:
Sheet 10 of 14