



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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Wednesday, April 26, 2023
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

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

Re: Permit Modification Approval for HENDRICKSON S-13HU
47-051-02485-00-00

Extended lateral length

TUG HILL OPERATING, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926-0450.

A blue ink signature of James A. Martin, written in a cursive style.

James A. Martin
Chief

Operator's Well Number: HENDRICKSON S-13HU
Farm Name: LINDA L PICKERING HENDRICKSON
U.S. WELL NUMBER: 47-051-02485-00-00
Horizontal 6A New Drill
Date Modification Issued: 4/26/2023

Promoting a healthy environment.

04/28/2023



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

April 6, 2023

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

RE: Application for Deep Well Permit – API #47-051-02485

COMPANY: Tug Hill Operating, LLC

FARM: Linda L. Pickering Hendrickson Hendrickson S-13HU modification

COUNTY: Marshall DISTRICT: Franklin QUAD: Wileyville

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

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

1. Comments to Notice of Deviation filed? No.
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: **yes
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,

Susan Rose
Administrator

**Corley N-10HU 47-051-01998; Corley N-9HU 47-051-01983; Hillrock S-13HU 47-051-02273; Hillrock S-14HU 47-051-02262; Hillrock S-15HU 47-051-02263; Pendleton N-10HU 47-051-02455; Pendleton N-11HU 47-051-02456; Pendleton N-8HU 47-051-02454; Pendleton N-16HU 47-051-02441; Pendleton S-12HU 47-051-02457; Pendleton S-13HU 47-051-02458; Pendleton S-14HU 47-051-02459; Pendleton S-15HU 47-051-02460; Simms U-5H 47-051-01731; Hendrickson N-7HU 47-051-02479; Hendrickson N-8HU 47-051-02480; Hendrickson N-9HU 47-051-02481; Hendrickson S-10HU 47-051-02482; Hendrickson S-11HU 47-051-02483; Hendrickson S-12HU 47-051-02484

04/28/2023

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 Franklin Wileyville 7.5'
Operator ID County District Quadrangle
- 2) Operator's Well Number: Hendrickson S-13HU Well Pad Name: Hendrickson
- 3) Farm Name/Surface Owner: Linda L. Hendrickson Public Road Access: Co. Rte. 76
- 4) Elevation, current ground: 1,220.33' Elevation, proposed post-construction: 1,220.33'
- 5) Well Type (a) Gas ☒ Oil ☐ Underground Storage ☐
Other ☐
(b) If Gas Shallow ☐ Deep ☒
Horizontal ☒
- 6) Existing Pad: Yes or No Yes
- 7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Point Pleasant is the target formation at a depth of 11,451' - 11,568', thickness of 117' and anticipated pressure of approx. 7,500 psi.
- 8) Proposed Total Vertical Depth: 11,718'
- 9) Formation at Total Vertical Depth: Trenton
- 10) **Proposed Total Measured Depth:** 19,338'
- 11) **Proposed Horizontal Leg Length:** 7,062.48'
- 12) Approximate Fresh Water Strata Depths: 70; 841'
- 13) Method to Determine Fresh Water Depths: Based on the depth of Pittsburgh Coal seam, per WVGES mapping contours
- 14) Approximate Saltwater Depths: 1,368'
- 15) Approximate Coal Seam Depths: Sewickley Coal - 739' and Pittsburgh Coal - 835'
- 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: _____
Depth: _____
Seam: _____
Owner: _____

*Stake Ground
STREPPED LOWER
3/13/2023*

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/Coal	20"	NEW	J55	106.5#	975'	975'	1,576ft^3(CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2,700'	2,700'	1,905ft^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,657'	10,657'	3,472ft^3(CTS)
Production	5 1/2"	NEW	HCP110	23#	19,338'	19,338'	4,611ft^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,384'	
Liners							

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/Coal	20"	26"	.5	2,410	1,928	SEE #24	1.2
Intermediate 1	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate 2	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.33
Production	5 1/2"	8 1/2"	.415	16,510	13,208	SEE #24	1.17/1.19
Tubing	2 7/8"			14,530	11,624		
Liners							

PACKERS

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

STRADER
3/3/2023

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

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP (10,884'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

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

Well to be completed with approximately 17,700,000 lb. proppant and 320,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 30.63 acres

22) Area to be disturbed for well pad only, less access road (acres): 4.21 acres

23) Describe centralizer placement for each casing string:

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

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

Sfc - Premium NE-1 + 2% CaCl; Int1 - Premium NE-1 + 1.5% CaCL + Flake; Int2 - Lead: Premium NE-1 + 5% BA-90 + .85% R-3 + 3% KCl + .75 gals/100sk FP-13L + 1% MPA-170 Tail: Premium NE-1 + .1% R-3 + 5% KCl + 1% CD-32 + .4% FL-52 + .2% ASA-301 + .6% Sodium Metasilicate; Kick Plug - Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L; Prod - Lead: 50:50 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .75 gal/100sk FP-13L Tail: 25:75 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .375 gal/100sk FP-13L

25) Proposed borehole conditioning procedures:

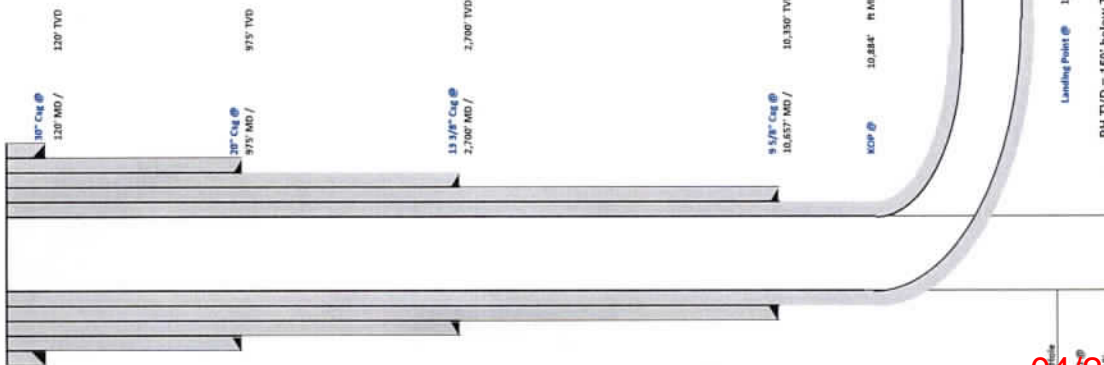
Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, POOH

*Note: Attach additional sheets as needed.

John L. Curran
SRP/SC/LS/SH
3/13/2023



WELL NAME: Hendrickson 5-13HU COUNTY: Marshall
STATE: WV DISTRICT: Franklin
DISTRICT: 1,220' GL Elev: 1,220'
DIP Elev: 13,338'
TD: 39,744,936.69
TH Latitude: -80.74792251
TH Longitude: 39.71078
BH Latitude: -80.728013
BH Longitude: 39.71078



FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	841'
Swackley Coal	730'
Pittsburgh Coal	835'
Big Lime	2,077'
Berea	2,562'
Tully	6,458'
Marcellus	6,558'
Onondaga	6,608'
Salina	7,320'
Lodiport	8,408'
Utica	11,175'
Point Pleasant	11,451'
Landing Depth	11,501'
Trenton	11,568'
Point Hole TD	11,718'

CASING SUMMARY						
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Top of Cement
Conductor	36	30	120'	120'	8W	Surface
Surface	26	20	875'	875'	106.5	Surface
Intermediate 1	17 1/2	13 5/8	2,700'	2,700'	54.5	Surface
Intermediate 2	12 1/4	9 5/8	10,637'	10,350'	47	Surface
Production	8 1/2	5 1/2	18,338'	11,624'	23	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density (ppg)	Fluid Type	Centralizer Notes
Conductor	318	A	15.6	Air	None
Surface	1,699	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,964	A	15.6	Air	1 Centralizer every other joint
Intermediate 2	3,173	A	14.5	Air	1 Centralizer every other joint
Production	4,674	A	16.5	Air / SORM	1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface

Landing Point @ 12,077 MD / 11,501' TVD
PH TVD = 150' below Trenton Top

Lateral TD @ 19,338' RI MD
11,624' RI TVD

04/28/2023

Stacy Cowart
3/3/2023



Tug Hill Operating, LLC Casing and Cement Program

Hendrickson S-13HU

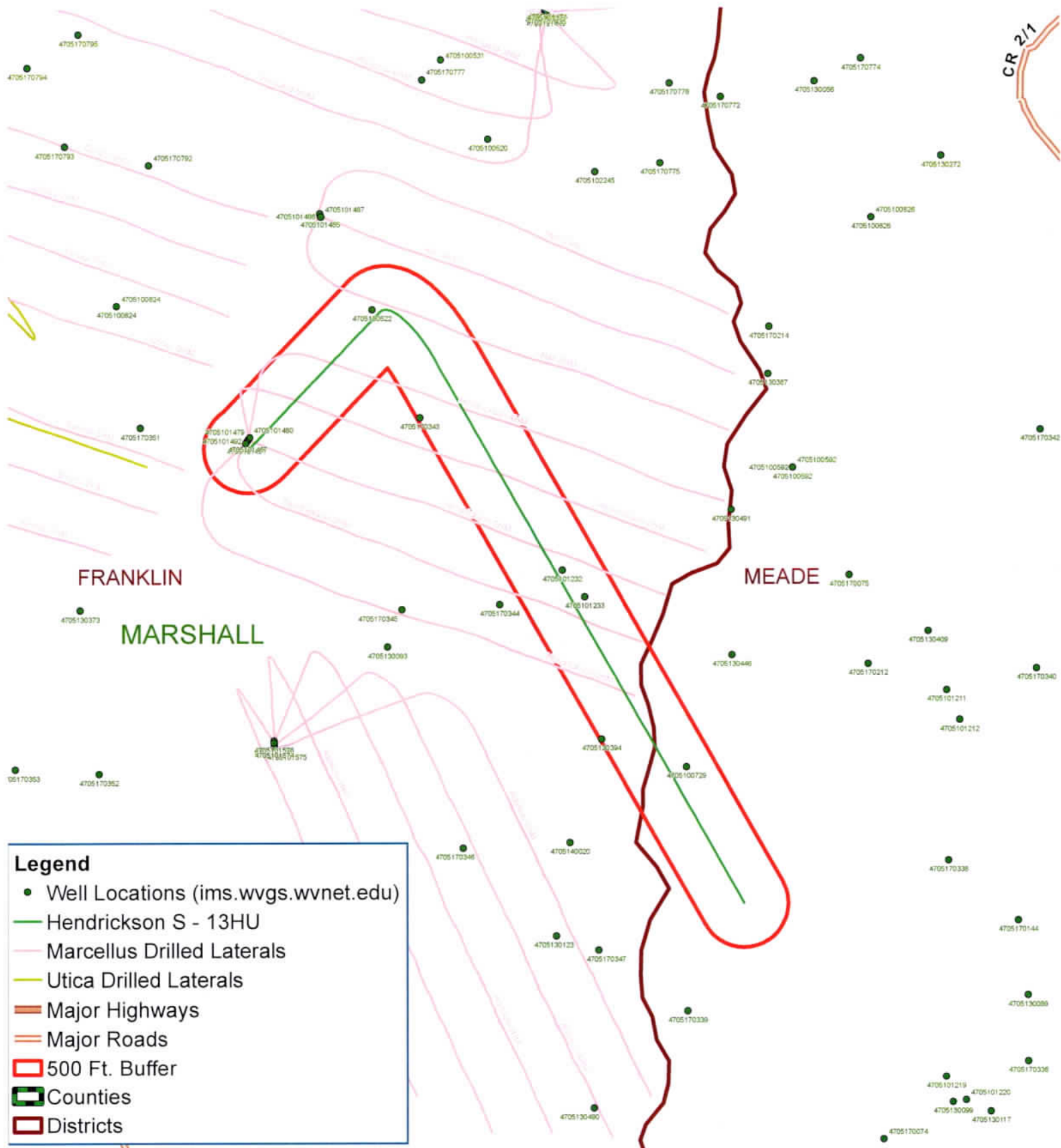
Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	975'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,700'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,657'	CTS
Production	5 1/2"	HCP110	8 1/2"	19,338'	CTS

Cement

Conductor:	Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Conductor Cement mixed at 15.6 ppg, Y=1.2
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 14.5 ppg, Y=1.35
Kick Off Plug:	Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L - KOP Plug
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 16.5 ppg, Y = 1.03

04/28/2023



Hendrickson S - 13HU Franklin District Marshall County, WV

0 550 1,100 2,200 Feet

Notes:

All locations are approximate and are for visualization purposes only.



Map Prepared by:

EPS
LAND SERVICES

04/28/2023

Map Created February 17, 2023

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. Enverus and RS Energy Group 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 Adam Picard 724-485-9331, apicard@dpslandservices.com, DPS GIS (2/17/2023) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it is the best publicly available. See attached map he provided.

Request maps for:

1. Wellbore with Enverus 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

Wells within 500' Buffer

Note: Well spots depicted on Area of Review map 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
4705101467	Tug Hill Operating, LLC.	6670' TVD, 11434' MD	Marcellus	none	No, this is a producing well in the Marcellus. This well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed well.
4705101479	Tug Hill Operating, LLC.	6676' TVD, 11924' MD	Marcellus	none	No, this is a producing well in the Marcellus. This well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed well.
4705101480	Tug Hill Operating, LLC.	6692' TVD, 12395' MD	Marcellus	none	No, this is a producing well in the Marcellus. This well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed well.
4705101491	Tug Hill Operating, LLC.	6675' TVD, 11518' MD	Marcellus	none	No, this is a producing well in the Marcellus. This well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed well.

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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
4705101492	Tug Hill Operating, LLC.	6672' TVD, 12410' MD	Marcellus	none	No, this is a producing well in the Marcellus. This well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation.	Producing Marcellus well, operated by Tug Hill Operating, LLC., located on same well pad as proposed well.
4705100522	Fruchtman, M.	2895' TVD	Gordon	unknown	No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation. Well is plugged.	Well was plugged 8/26/1966.
4705170343	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well.	State records are incomplete.
4705101232	CNX Gas Co. LLC (North).	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well.	State records are incomplete.
4705101233	CNX Gas Co. LLC (North).	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well.	State records are incomplete.

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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
4705100729	Hope Natural Gas Company	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well.	State records are incomplete.
4705130394	Manufacturers Light & Heat Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing of the proposed Point Pleasant well. Well is plugged.	Well was plugged 7/14/1959.

04/28/2023

WV Geological & Economic Survey

Well: County = 51 Permit = 01467 [Link to all digital records for well](#)Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX DISTRICT	QUAD	75 QUAD	15	LAT_DD	LON_DD	UTME	UTMN
4705101467	Marshall	1467	Franklin	Willeyville	Littleton		39.745186	-80.747924	521596.9	4399506.4

Bottom Hole Location Information:

API	EP	FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101467	1	As Proposed	522994.4	4398994	-80.731631	39.740533

Owner Information:

API	CMP DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN
4705101467	3/31/2012	Dvld Orgnl Loc	Completed	Linda L Pickering & Donald R Hendrickson	1H		Hendrickson	WV16-0065-000/WV16-0007-004	Donald R Hendrickson et al
4705101467	-/-	Dvld Wrkd Ovr	Permitted	Linda L Hendrickson	1H		Hendrickson		L L Hendrickson

Completion Information:

API	CMP DT	SPUD DT	ELEV DATUM	FIELD	DEEPEST FM	DEEPEST FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD
4705101467	3/31/2012	6/27/2011	1228 Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6670	11434		
4705101467	-/-	-/-	1220 Ground Level												

Comment: 3/31/2012 Lease Number: WV16-0007-002/WV16-0007-005/WV16-0007-003/WV16-0007-006

Pay/Show/Water Information:

API	CMP DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705101467	3/31/2012	Water	Fresh Water	Vertical			60	Pennsylvanian System					
4705101467	3/31/2012	Water	Salt Water	Vertical			1600						
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	6762	Marcellus Fm	6932	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	6972	Marcellus Fm	7182	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	7272	Marcellus Fm	7482	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	7572	Marcellus Fm	7782	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	7872	Marcellus Fm	8082	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	8172	Marcellus Fm	8382	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	8472	Marcellus Fm	8682	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	8772	Marcellus Fm	8982	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	9072	Marcellus Fm	9282	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	9372	Marcellus Fm	9582	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	9672	Marcellus Fm	9882	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	9972	Marcellus Fm	10182	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	10272	Marcellus Fm	10482	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	10572	Marcellus Fm	10782	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	10872	Marcellus Fm	11082	Marcellus Fm					
4705101467	3/31/2012	Pay	Oil & Gas	Deviated	11172	Marcellus Fm	11382	Marcellus Fm					

04/28/2023

WV Geological & Economic Survey

Well: County = 51 Permit = 01479 [Link to all digital records for well](#)Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX DISTRICT	QUAD.75	QUAD.15	LAT_DD	LON_DD	UTME	UTMN
4705101479	Marshall	1479	Franklin	Wileyville	Litleton	39.745232	-80.747884	521600.3	4399511.5

Bottom Hole Location Information:

API	EP FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101479	1	As Proposed	523164.4	4399128.2	-80.729642
					39.741738

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT
4705101479	3/31/2012	Divd Orign Loc	Completed	Hendrickson North	2H		Hendrickson	WV16-0065-0001	WV16-0007-001	Linda Louise & D R Hendrickson et al
4705101479	-/-	Divd Wkld Ovr	Permitted	Linda L Hendrickson	2H		Hendrickson			Tug Hill Operator

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_Fm	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD
4705101479	3/31/2012	7/3/2011	1228 Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development	Well	Oil and Gas	Rotary	Fractured	6676	11924		11924
4705101479	-/-	-/-	1220 Ground Level												

Comment: 3/31/2012 Additional Lease Numbers: WV16-0007-002 thru 006

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101479	Gastar Exploration USA, Inc.	2012	430.620	0	0	0	45.973	59.174	67.759	49.372	50.131	33.221	49.459	46.631	28.900
4705101479	Gastar Exploration USA, Inc.	2013	389.949	7.887	12.179	44.293	44.372	45.821	37.393	36.995	31.298	36.141	33.293	30.540	29.737
4705101479	Gastar Exploration USA, Inc.	2014	324.454	28.349	27.379	31.963	25.702	32.616	30.315	30.878	26.653	24.809	20.436	21.580	23.774
4705101479	Gastar Exploration USA, Inc.	2015	254.399	25.266	20.225	23.138	23.014	22.657	18.509	16.353	20.719	23.981	21.341	22.686	16.510
4705101479	Tug Hill Operating, LLC	2016	260.643	25.532	18.662	26.440	23.907	23.974	20.056	20.868	21.075	19.196	19.918	20.619	20.392
4705101479	Tug Hill Operating, LLC	2017	197.191	18.439	16.082	18.435	17.545	17.573	17.112	17.065	16.372	15.267	13.798	14.977	14.522
4705101479	Tug Hill Operating, LLC	2018	174.729	14.389	16.458	16.914	15.022	17.206	16.143	11.690	14.360	12.183	13.907	13.194	13.263
4705101479	Tug Hill Operating, LLC	2019	184.337	16.492	15.112	16.024	15.546	14.929	14.337	15.891	16.244	15.495	15.292	14.440	14.535
4705101479	Tug Hill Operating, LLC	2020	77.637	0	0	0	0	0	0	13.101	13.434	13.256	12.371	12.893	12.582
4705101479	Tug Hill Operating, LLC	2021	146.700	13.841	12.398	11.932	12.280	11.956	11.836	11.227	12.032	12.303	12.600	12.027	12.268

04/28/2023

WV Geological & Economic Survey

Well: County = 51 Permit = 01480 [Link to all digital records for well](#)Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX DISTRICT	QUAD	76	QUAD	15	LAT_DD	LON_DD	UTME	UTMN
4705101480	Marshall	1480	Franklin	Wileyville	Littleton	39.745277	-80.747843	521603.8	4399516.5		

Bottom Hole Location Information:

API	EP FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101480	1	As Proposed	523217.6	4399303.5	-80.729015
					39.743316

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_A
4705101480	3/31/2012	Divd Origl Loc	Completed	Hendrickson North	4H		Hendrickson	WV16-0065-0001	WV16-0007-001	Linda Louise & D R Hendrickson et al
4705101480	-/-	Divd Wrkd Ovr	Permitted	Unda L Hendrickson	4H		Hendrickson			L L Hendrickson
										Tug Hill Operati

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD
4705101480	3/31/2012	7/22/2011	1228	Ground Level	Cameron-Garner	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6892	12395		12395
4705101480	-/-	-/-	1220	Ground Level												

Comment: 3/31/2012 Additional Lease Numbers: WV16-0007-002 thru 006

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101480	Gastar Exploration USA, Inc.	2012	508.242	0	0	0	72.596	67.959	80.861	58.445	58.500	37.293	48.389	50.296	33.903
4705101480	Gastar Exploration USA, Inc.	2013	421.951	3.657	15.042	47.289	47.821	46.390	39.225	43.415	39.361	33.977	35.730	34.038	34.006
4705101480	Gastar Exploration USA, Inc.	2014	326.535	31.916	28.202	32.257	25.522	31.800	31.623	28.746	25.901	23.702	20.843	21.897	24.126
4705101480	Gastar Exploration Inc.	2015	255.597	25.425	21.264	23.138	23.014	22.657	18.509	16.353	20.719	23.981	21.341	22.686	16.510
4705101480	Tug Hill Operating, LLC	2016	280.643	25.532	16.662	26.440	23.907	23.974	20.056	20.868	21.075	19.196	19.918	20.619	20.392
4705101480	Tug Hill Operating, LLC	2017	197.194	18.439	16.082	18.435	17.545	17.573	17.112	17.065	16.372	15.250	13.798	14.977	14.542
4705101480	Tug Hill Operating, LLC	2018	174.705	14.363	16.458	16.914	15.022	17.206	16.143	11.679	14.360	12.196	13.907	13.194	13.263
4705101480	Tug Hill Operating, LLC	2019	184.391	16.492	15.112	16.024	15.546	14.929	14.391	15.891	16.244	15.495	15.292	14.440	14.535
4705101480	Tug Hill Operating, LLC	2020	78.580	0	0	0	0	0	0	13.101	13.434	13.256	13.314	12.893	12.582
4705101480	Tug Hill Operating, LLC	2021	146.984	13.841	12.398	11.932	12.280	11.956	11.836	11.227	12.032	12.303	12.600	12.311	12.268

WV Geological & Economic Survey

Well: County = 51 Permit = 01491 [Link to all digital records for well](#)Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX DISTRICT	QUAD_75	QUAD_16	LAT_DD	LONG_DD	UTME	UTMN
4705101491	Marshall	1491	Franklin	Wileyville	Littleton	39.745141	-80.747963	521593.6	4399501.3

Bottom Hole Location Information:

API	EP FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101491	1	As Proposed	521753.5	4399254.4	-80.746105

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN
4705101491	3/31/2012	Dvld Orgnl Loc	Completed	Hendrickson South	3H		Hendrickson South	WV16-0065-000/1-306235-001/WV16-0007-001	Linda Louise & Donald Ray Hendrickson et al
4705101491	-/-/-	Dvld Wrkd Ovr	Permitted	Linda L Hendrickson	3H		Hendrickson		L L Hendrickson

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FIG	KOC
4705101491	3/31/2012	8/3/2011	1228 Ground Level	Cameron-Gamer	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6675	11518		11518
4705101491	-/-/-	-/-/-	1220 Ground Level												

Comment: 3/31/2012 Additional Lease Numbers: WV16-0007-004/WV16-0017-001/WV16-0007-002/WV16-0007-005/WV16-0007-003/WV16-0007-006/1288528

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101491	Gasstar Exploration USA, Inc.	2012	358,323	0	0	0	44,497	51,759	54,013	40,957	43,126	27,187	39,379	34,644	22,761
4705101491	Gasstar Exploration USA, Inc.	2013	337,131	6,878	18,294	33,227	33,928	36,108	31,243	32,691	25,609	34,805	31,909	26,408	26,031
4705101491	Gasstar Exploration USA, Inc.	2014	269,427	25,905	22,353	25,857	21,055	26,810	24,074	24,069	21,139	20,259	17,021	19,869	21,016
4705101491	Gasstar Exploration Inc.	2015	219,107	23,305	17,933	20,301	20,474	19,239	16,038	14,129	16,285	20,540	15,213	20,171	15,479
4705101491	Tug Hill Operating, LLC	2016	242,082	22,368	17,307	22,457	20,502	21,524	20,118	19,943	20,427	19,468	20,240	18,962	18,762
4705101491	Tug Hill Operating, LLC	2017	190,919	18,801	16,744	17,784	16,291	16,476	15,856	16,243	15,855	15,218	11,976	14,790	14,882
4705101491	Tug Hill Operating, LLC	2018	161,328	14,185	14,062	15,813	13,449	14,878	15,003	11,260	11,754	12,307	13,287	12,567	12,763
4705101491	Tug Hill Operating, LLC	2019	157,881	11,995	13,200	13,560	13,223	13,026	12,189	13,868	13,364	13,803	13,622	13,022	13,009
4705101491	Tug Hill Operating, LLC	2020	81,696	0	0	0	0	0	0	0	12,553	12,811	12,358	12,515	11,528
4705101491	Tug Hill Operating, LLC	2021	138,517	15,786	14,529	11,018	11,797	11,128	9,821	9,678	10,798	10,803	11,614	10,706	10,839

WV Geological & Economic Survey

Well: County = 51 Permit = 01492 [Link to all digital records for well](#)Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101492	Marshall	1492	Franklin	Willeysville	Littleton	39.745096	-80.748004	521590.1	4399496.3

Bottom Hole Location Information:

API	EP FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101492	1	As Proposed	521670.8	4399094.2	-80.747075

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN
4705101492	3/31/2012	Dvld Orgnl Loc	Completed	Hendrickson South	5H	5H	Hendrickson South	WV16-0065-000/1-308235-001/WV16-0007-001	Linda Louise & Donald Ray Hendrickson et al
4705101492	-/-	Dvld Wkld Ovr	Permitted	Linda L Hendrickson	5H	5H	Hendrickson		L L Hendrickson

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOC
4705101492	3/31/2012	10/5/2011	1228 Ground Level	Cameron-Gamer	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	6672	12410		12410
4705101492	-/-	-/-	1220 Ground Level												

Comment: 3/31/2012 Additional Lease Numbers: WV16-0007-004/WV16-0017-001/WV16-0007-002/WV16-0007-005/WV16-0007-003/WV16-0007-006/1288528

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101492	Gastar Exploration USA, Inc.	2012	465,670	9,870	12,514	39,126	45,647	50,959	41,781	44,464	36,129	32,128	29,451	38,001	31,539
4705101492	Gastar Exploration USA, Inc.	2013	417,329	9,870	12,514	39,126	45,647	50,959	41,781	44,464	36,129	32,128	29,451	38,001	31,539
4705101492	Gastar Exploration USA, Inc.	2014	387,127	37,280	32,163	37,206	30,299	38,580	34,641	34,633	30,421	29,151	24,325	28,396	30,032
4705101492	Gastar Exploration Inc.	2015	314,899	33,306	25,625	29,218	29,485	27,681	23,079	20,325	23,440	29,558	21,894	29,029	22,279
4705101492	Tug Hill Operating, LLC	2016	348,364	32,189	24,906	32,316	29,503	30,974	28,950	28,698	29,395	28,015	29,126	27,287	26,999
4705101492	Tug Hill Operating, LLC	2017	274,758	27,055	24,095	25,591	23,443	23,709	22,817	23,374	22,816	21,899	17,235	21,304	21,415
4705101492	Tug Hill Operating, LLC	2018	232,154	20,392	20,236	22,755	19,353	21,410	21,589	16,223	16,914	17,710	19,121	18,084	18,367
4705101492	Tug Hill Operating, LLC	2019	227,021	17,214	18,995	19,513	19,029	18,745	17,413	19,957	19,231	19,863	19,602	18,739	18,720
4705101492	Tug Hill Operating, LLC	2020	118,083	0	0	0	0	0	0	18,064	18,435	17,783	18,010	16,590	29,201
4705101492	Tug Hill Operating, LLC	2021	199,314	22,717	20,907	15,855	16,961	16,013	14,133	13,926	15,539	15,546	16,713	15,407	15,597

04/28/2023

Well: County = 51 Permit = 00522 [Link to all digital records for well](#)

WV Geological & Economic Survey:

Report Time: Wednesday, October 12, 2022 2:37:05 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100522	Marshall	522	Franklin	Wileyville	Littleton	39.749208	-80.742896	522026.4	4399954

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_IRGT_FM	TFM_EST_PR
4705100522	5/2/1964		Original Loc	Completed	Louis Goddard	1			Louis Goddard	Fruchtlman, M.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FTM	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_BEF_G
4705100522	5/2/1964	3/25/1964	1248	Ground Level	Cameron-Garner	Gordon	Gordon	Development Well	Development Well	Gas w/ Oil Show	Spudder	Nat/Open H	2895	2895				

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705100522	5/2/1964	Show	Oil	Vertical	1412		1109		0	0	0	0	
4705100522	5/2/1964	Show	Oil	Vertical	2848		1422		0	0	0	0	
4705100522	5/2/1964	Pay	Gas	Vertical			2851		0	0	0	0	

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 Wireline (E-Log) data for this well

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100522	8/26/1966	0

Well: County = 51 Permit = 70343 [Link to all digital records for well](#)

WV Geological & Economic Survey:

Report Time: Wednesday, October 12, 2022 2:37:20 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705170343	Marshall	70343	Franklin	Wileyville	Littleton	39.745869	-80.740988	522191	4399583.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170343	-/-	unknown	Prpty Map	William Yoho						----- unknown -----			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV_DT	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFO	G_AFT	O_BEFO	O_AFT
4705170343	-/-	-/-	-/-					unclassified	unclassified	not available	unknown	unknown								

WV Geological & Economic Survey:

Report Time: Wednesday, October 12, 2022 2:37:31 PM

Well: County = 51 Permit = 01232 [Link to all digital records for well](#)

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101232	Marshall	1232	Franklin	Wileyville	Littleton	39.741117	-80.735275	522681.9	4399057.9

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101232	-/-	Original Loc	Cancelled	Roy Friend Yoho					MC73	CNX Gas Co. LLC (North)	1080	Pittsburgh coal	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV_DT	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFO	G_AFT	O_BEFO	O_AFT
4705101232	-/-	-/-	-/-		1212 Ground Level															

WV Geological & Economic Survey:

Report Time: Wednesday, October 12, 2022 2:37:43 PM

Well: County = 51 Permit = 01233 [Link to all digital records for well](#)

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101233	Marshall	1233	Franklin	Wileyville	Littleton	39.7403	-80.734375	522759.3	4398967.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101233	-/-	Original Loc	Cancelled	Roy Friend Yoho					MC73A	CNX Gas Co. LLC (North)	842	Pittsburgh coal	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV_DT	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFO	G_AFT	O_BEFO	O_AFT
4705101233	-/-	-/-	-/-		1222 Ground Level															

WV Geological & Economic Survey:

Well: County = 51 Permit = 00729 [Link to all digital records for well](#)

Report Time: Wednesday, October 12, 2022 2:37:54 PM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705100729	Marshall	729	Meade	Wileyville	Littleton	39.734998	-80.730306	523109.8	4398380

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705100729	-/-	-/-	Original Loc Completed	Elizabeth Brinkmeier	468					Hope Natural Gas Company			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEF	O_A
4705100729	-/-	-/-	895 Spirit Level				unclassified	unclassified	not available	unknown	unknown	unknown							

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_GAS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705100729	Perkins Oil and Gas, Inc.	1990	0	0	0	0	0	0	0	0	0	0	0	0	0
4705100729	Perkins Oil and Gas, Inc.	1991	2,378	0	0	0	0	0	0	0	0	0	0	0	0
4705100729	Perkins Oil and Gas, Inc.	1997	23,135	2,021	2,089	2,002	1,829	1,576	248	1,327	3,875	2,668	2,017	1,833	1,650
4705100729	Perkins Oil and Gas, Inc.	1999	8,249	636	625	518	565	648	650	634	651	588	936	1,182	616
4705100729	Perkins Oil and Gas, Inc.	2001	6,589	507	707	717	700	632	283	574	329	466	731	352	591
4705100729	Perkins Oil and Gas, Inc.	2002	6,296	470	384	462	545	673	614	377	736	794	760	0	481
4705100729	Perkins Oil and Gas, Inc.	2003	8,137	806	499	639	686	708	662	781	688	751	775	706	436
4705100729	Perkins Oil and Gas, Inc.	2004	1,633	66	130	251	120	111	0	161	137	113	101	199	244
4705100729	Perkins Oil and Gas, Inc.	2005	1,282	41	25	74	6	170	175	165	180	149	148	48	111
4705100729	Perkins Oil and Gas, Inc.	2006	1,950	85	79	195	177	204	228	171	218	204	193	193	3
4705100729	Perkins Oil and Gas, Inc.	2007	5,836	367	292	438	564	605	634	643	597	514	635	330	217
4705100729	Perkins Oil and Gas, Inc.	2008	4,225	223	238	307	402	420	447	472	479	320	322	363	232
4705100729	Perkins Oil and Gas, Inc.	2009	1,757	134	161	146	233	217	178	160	117	76	159	118	58
4705100729	Perkins Oil and Gas, Inc.	2010	854	20	0	0	137	35	65	27	149	73	114	102	132
4705100729	Perkins Oil and Gas, Inc.	2011	1,450	268	56	51	19	112	39	297	227	60	188	64	69
4705100729	Perkins Oil and Gas, Inc.	2012	1,544	193	0	54	135	257	0	122	248	240	96	64	135
4705100729	Perkins Oil and Gas, Inc.	2013	1,111	0	84	132	0	160	143	128	49	75	119	85	136
4705100729	Perkins Oil and Gas, Inc.	2014	1,182	373	397	0	0	0	0	165	146	0	9	29	63
4705100729	Perkins Oil and Gas, Inc.	2015	1,605	265	79	244	298	188	141	231	129	0	9	12	9
4705100729	Perkins Oil and Gas, Inc.	2016	1,516	96	230	226	156	138	68	118	16	50	42	58	318
4705100729	Perkins Oil and Gas, Inc.	2017	3,990	197	2	165	0	258	449	667	793	325	303	479	352
4705100729	Perkins Oil and Gas, Inc.	2018	3,866	40	374	161	769	591	0	178	422	224	554	270	313
4705100729	Perkins Oil and Gas, Inc.	2019	5,756	377	348	406	485	585	589	634	511	500	622	403	316
4705100729	Perkins Oil and Gas, Inc.	2020	4,253	414	108	478	703	823	714	616	272	28	3	6	88
4705100729	Perkins Oil and Gas, Inc.	2021													

WV Geological & Economic Survey:

Well: County = 51 Permit = 30394 [Link to all digital records for well](#)

Report Time: Wednesday, October 12, 2022 2:38:30

Location Information: View Map									
API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705130394	Marshall	30394	Franklin	Wileyville	Littleton	39.735867	-80.733714	522817.4	4398475.7

There is no Bottom Hole Location data for this well

Owner Information:									
API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN
4705130394	-J-/1930	-J-/	Original Loc Completed	Nicholas Cooper	1	1257		2851	OPERATOR_AT_COMPLETION PROP_VD PROP_TRGT_FM TFM_EST_PR

Completion Information:									
API	CMP_DT	SPUD_DT	ELEV_DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE
4705130394	-J-/1930	-J-/	1217 Spirit Level				unclassified	unclassified	not available

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 Wireline (E-Log) data for this well

Plugging Information:		
API	PLG_DT	DEPTH_PBT
4705130394	7/14/1959	0

There is no Sample data for this well



TUG HILL
OPERATING

Well Site Safety Plan
Part A – Site Specific Data and Figures

Well Name: Hendrickson S-13HU

Pad Name: Hendrickson

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,399,478.69

Easting: 521,597.12

**KEY CONTACT FOR WELL SITE SAFETY PLAN
DEVELOPMENT AND MAINTENANCE**

Jerry V. DeRosa, Director EH&S Affairs

(724) 338-2029 (office)

(412) 736-5767 (cellular)

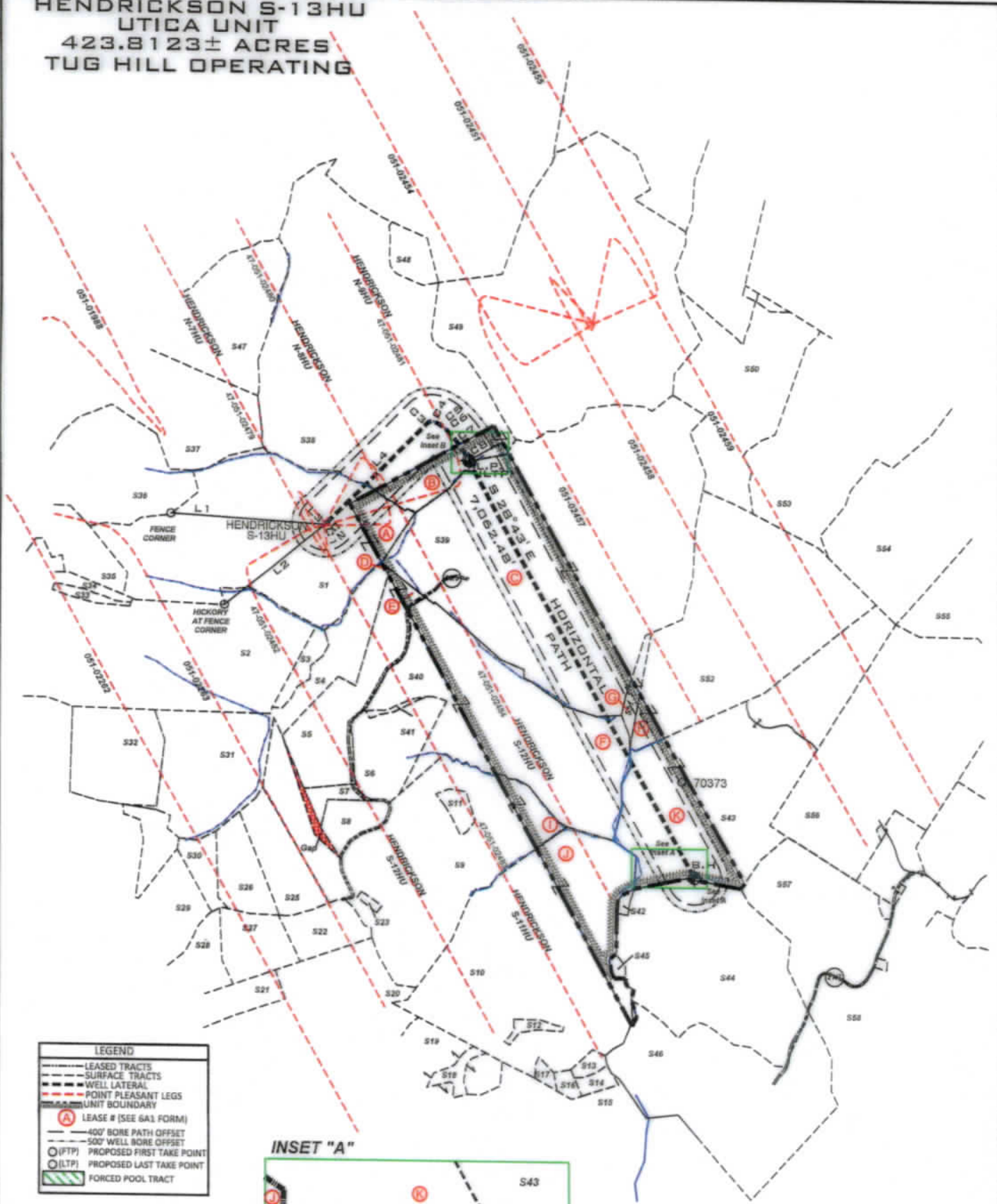
24-HOUR EMERGENCY PHONE NUMBER

(800) 921-9745

John C. Strader
STRADER COWER
3/3/2023

04/28/2023

HENDRICKSON S-13HU
UTICA UNIT
423.8123± ACRES
TUG HILL OPERATING



LEGEND	
	LEASE TRACTS
	SURFACE TRACTS
	WELL LATERAL
	POINT PLEASANT LEGS
	UNIT BOUNDARY
	LEASE # (SEE SA1 FORM)
	400' BORE PATH OFFSET
	500' WELL BORE OFFSET
	PROPOSED FIRST TAKE POINT
	PROPOSED LAST TAKE POINT
	FORCED POOL TRACT

INSET "A"



INSET "B"

P.S.
708

David L Jackson

04/28/2023



TUG HILL
OPERATING

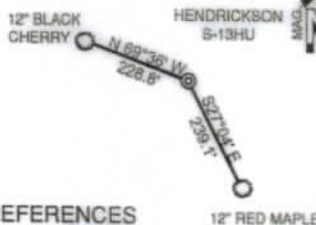
WELL #: Hendrickson S-13HU
 DISTRICT: Franklin
 COUNTY: Marshall
 STATE: WV
 API #: 47-051-02485

WELL PLAT

PAGE 2 OF 3

DATE: 3/07/2023

HENDRICKSON S-13HU UTICA UNIT 423.8123± ACRES TUG HILL OPERATING



REFERENCES
SCALE 1"=200'

(+) DENOTES LOCATION
ON UNITED STATES
TOPOGRAPHIC MAPS

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,399,478.69
E) 521,597.12

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,399,782.07
E) 522,242.09

DETAIL
SKETCH "A"
SCALE 1"=100'

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,397,912.49
E) 523,307.66

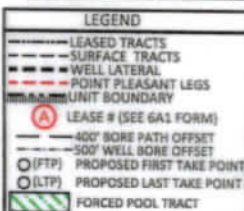
Deep Wells Within 2400' of Proposed
Well's Surface Location and/or 500' of Well Lateral

API	OPERATOR
47-051-02479	Tug Hill Operating, LLC
47-051-02480	Tug Hill Operating, LLC
47-051-02481	Tug Hill Operating, LLC
47-051-02482	Tug Hill Operating, LLC
47-051-02483	Tug Hill Operating, LLC
47-051-02484	Tug Hill Operating, LLC

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Deed Book/Page
10*14138	5-24-1	A	LINDA AND DONALD HENDRICKSON	666 528
10*14460	5-17-8	B	GERTRUD GODDARD, H G WELLS AIF, ET AL	735 515
10*14024	5-24-2	C	ROY FRIEND YOHO AND DARLENE J YOHO, ET AL	665 508
10*14462	5-24-4	D	JERRY ELTON RICHMOND, ET AL	744 57
10*14068	5-24-3.2	E	ROHN JEAN MARTIN, ET AL	666 552
10*14068	5-24-3.3	F	ROHN JEAN MARTIN, ET AL	666 552
10*39661	9-20-1	G	SHELLIE J PEKULA AND MICHAEL PEKULA	1126 542
10*39661	9-20-2	H	SHELLIE J PEKULA AND MICHAEL PEKULA	1126 542
10*14525	5-25-2	I	IMA LEE YOHO	757 192
10*14524	5-25-3	J	IMA LEE YOHO	757 194
10*31101	9-20-4	K	ELIZABETH BRINKMEIER ET AL	103 183

NOTES

1. BORE PATH BASED ON GRID NORTH.
2. NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
3. OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN FEBRUARY, 2023. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
4. WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
5. BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCCAMEY & CHILCOTE, P.C. FILE 0058304.0401147
6. ALL DEEP WELLS ARE SHOWN ON THIS PLAT.
7. LP1 & LTP ARE THE SAME POINT.



CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 53°32' E	32.08'	189.41'	32.12'
C2	N 46°37' E	87.11'	827.41'	87.15'
C3	N 67°08' E	61.49'	81.19'	63.06'
C4	S 77°02' E	73.39'	167.17'	73.99'
C5	S 58°36' E	101.48'	438.37'	101.71'
C6	S 48°23' E	130.99'	945.29'	131.09'
C7	S 38°56' E	295.46'	1584.49'	295.89'
C8	S 31°20' E	223.07'	2389.93'	223.15'

FILE NUMBER

DRAWING NUMBER HENDRICKSON_S-13HU_REV2

SCALE 1" = 2000'

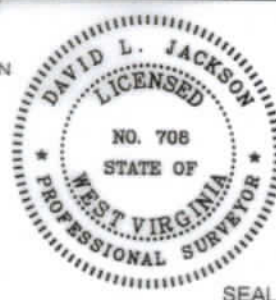
MINIMUM DEGREE OF ACCURACY 1/200

PROVEN SOURCE OF ELEVATION SUBMETER MAPPING
GRADE GPS

P.S.
708



JACKSON SURVEYING INC.
P.O. Box 1460
Clarksburg, WV 26302
304-623-5851



WVDEP
OFFICE OF OIL & GAS
601 57TH STREET, SE
CHARLESTON, WV 25304

DATE: MARCH 7, 2023

OPERATORS WELL NO HENDRICKSON S-13HU

API WELL NO.

47-051-02485
STATE COUNTY PERMIT

LOCATION ELEVATION 1220.33' WATERSHED (HUC 10) Rocky Fork of Fish Creek (HUC-10)

DISTRICT Franklin COUNTY Marshall

QUADRANGLE Wileyville 7.5' LEASE NUMBER SEE WW-6A1 Form

SURFACE OWNER LINDA L. PICKERING HENDRICKSON ACREAGE 175.0

OIL & GAS ROYALTY OWNER LINDA L. PICKERING HENDRICKSON LEASE ACREAGE 175.0

PROPOSED WORK: DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒ PLUG OFF OLD FORMATION ☐

PERFORATE NEW FORMATION ☐ OTHER PHYSICAL CHANGE (SPECIFY)

PLUG & ABANDON ☐ CLEAN OUT & REPLUG ☐

TARGET FORMATION POINT PLEASANT

ESTIMATED DEPTH TVD: 11,718' TMD: 19,338'

WELL OPERATOR TUG HILL OPERATING, LLC

DESIGNATED AGENT DARREN BROWN, CT CORP

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

ADDRESS 5098 WASHINGTON STREET WEST, SUITE 407
CHARLESTON, WV 25313-1561

04/28/2023

COUNTY NAME

PERMIT

form ww6

HENDRICKSON S-13HU
UTICA UNIT
423.8123± ACRES
TUG HILL OPERATING

Parcels within Unit Boundary				
Tags	Number	Tax Map -Parcel	Surface Owner	Acres
A	S1	05-24-1	LINDA L PICKERING HENDRICKSON	175
B	S38	05-17-8	ROGER H HALL, JR	257.50
C	S39	05-24-2	ROY FRIEND YOHO	316.80
D	S4	05-24-4	TERRY E SIMMS, ET UX	84.05
E	S5	05-24-3.2	TH EXPLORATION II, LLC	49
F	S40	05-24-3.3	CHARLES E & DEBRA K BERTRAND	120.43
G	S51	09-20-1	MICHAEL JAMES PEKULA	5
H	S52	09-20-2	MICHAEL JAMES PEKULA	138
I	S9	05-25-2	JAMES W KLUG	122.3
J	S10	05-25-3	SD & SUSAN SMITH FERTITTA	181.548
K	S43	09-20-4	SHELLIE J PEKULA, HRS	171
Adjoining Parcels Ownership Table				
	Number	Tax Map -Parcel	Surface Owner	Acres
	S2	05-24-5	ROBERT C FRANCIS ET UX (LIFE)	145.78
	S3	05-25-21	TERRY E SIMMS, ET UX	7
	S6	05-24-3	CHARLES E & DEBRA K BERTRAND	30.914
	S7	05-24-3.1	TH EXPLORATION II, LLC	5.50
	S8	05-25-2.2	JOHN G KLUG, SR	10
	S11	05-25-2.3	KELSEY E KLUG	5
	S12	05-25-3.1	SD & SUSAN SMITH FERTITTA	3.022
	S13	05-25-5	TERRY L & TAMMY J KIRKLAND AS TRUSTEES OF THE TERRY & TAMMY KIRKLAND LIVING TRUST	1.12
	S14	05-25-06	TERRY L & TAMMY J KIRKLAND AS TRUSTEES OF THE TERRY & TAMMY KIRKLAND LIVING TRUST	3
	S15	12-3-41.1	TERRY L & TAMMY J KIRKLAND AS TRUSTEES OF THE TERRY & TAMMY KIRKLAND LIVING TRUST	74.138
	S16	05-25-4	TERRY L & TAMMY J KIRKLAND AS TRUSTEES OF THE TERRY & TAMMY KIRKLAND LIVING TRUST	5
	S17	05-10-18	JOHN & RENEE HART, REVOCABLE LIVING TRUST	2
	S18	05-25-10.1	TERRY L & TAMMY J KIRKLAND AS TRUSTEES OF THE TERRY & TAMMY KIRKLAND LIVING TRUST	5.250
	S19	05-25-10	TERRY L & TAMMY J KIRKLAND AS TRUSTEES OF THE TERRY & TAMMY KIRKLAND LIVING TRUST	18.75
	S20	05-25-12	MARION PARSONS JR, ET AL	85.16
	S21	05-25-12.1	KENT & BETTY MASON	15
	S22	05-25-13.3	WILLIAM M SR & CYNTHIA A FERDA	17.21
	S23	05-25-2.1	NANCY JACKSON	1
	S24	05-25-1.4	SAMANTHA J & PHILIP A NAMLIK	24.44
	S25	05-25-1.3	PHILIP A & SAMANTHA K NAMLIK	26.20
	S26	05-25-1.2	WILLIAM JR & ANDREA J DUBIEL	20.10
	S27	05-25-1.5	RYAN J BRATTON	21.35
	S28	05-25-13	WILLIAM M FERDA JR & STEPHANIE L PALICKA	16.014
	S29	05-25-1	MICHAEL L MASON	35.43
	S30	05-25-1.1	RYAN A & JAQUELINE E LAYMAN	9.79
	S32	05-24-6	TERRY E SIMMS, ET UX	42.84
	S33	05-24-5.2	JAMES D WATKINS ET UX	3.151
	S34	05-24-5.1	JAMES D WATKINS ET UX	4.60
	S35	05-23-7	TERRY E SIMMS, ET UX	123.097
	S36	05-17-11.1	RANDY W FRANCIS ET UX	67
	S37	05-17-9.4	VICKI L BOWEN	60.3
	S41	05-24-3.4	CHARLES E & DEBRA K BERTRAND	1.27
	S42	09-22-1.1	CNG TRANSMISSION CO	1.43
	S44	9-22-1	LOUIS T FOX	124.57
	S45	05-25-3.2	CONSOL ENERGY HOLDINGS, LLC	1.43
	S46	09-22-02	MARK H J MILLER, ET AL	124.80
	S47	05-17-9	LLOYD RICHARD OLIVER, ET UX	61.6
	S48	05-17-7	ALPINE FARM, LLC	10.8
	S49	05-17-6	ALPINE FARM, LLC	249.07
	S50	09-18-1	THERESA MAE LONG THOMAS ET AL	58.66
	S53	09-18-2	BRIAN T KLUG	85
	S54	09-18-18	JAMES D FROHNAPFEL ET UX	154.03
	S55	09-20-6	KEITH & KRISTY FERRELL REVOCABLE LIVING TRUST	64.75
	S56	09-20-5	GERALD A FROHNAPFEL ET UX -ESTATES TRUST	164.143
	S57	09-22-3.2	MARK H MILLER	75
	S58	09-22-3	MARK HILARY MILLER	62.73



P.S.
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David L Jackson

04/28/2023



TUG HILL
OPERATING

OPERATOR'S
WELL #: Hendrickson S-13HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02485

WELL PLAT
PAGE 3 OF 3
DATE: 3/07/2023

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

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

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

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

*See attached pages

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

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

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

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

Well Operator: Tug Hill Operating, LLC

By: Amy L. Morris 

Its: Permitting Specialist - Appalachia Region

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	
10*14138	5-24-1	A	LINDA AND DONALD HENDRICKSON	TRIENERGY, INC.	1/8+	666	528	N/A	TriEnergy Inc to AB Resources LLC: 20/348	AB Resources LLC to Chief Exploration & Development LLC and Radler 2000 Limited Partnership: 21/491	Chief Expl & Development LLC and Radler 2000 Ltd Partnership to Enerplus Resources (USA) Corporation: 685/643	Chief Expl & Development, LLC and Radler 2000 to Gaster Exploration USA, Inc & Atinum Marcellus I LLC: 24/26	Certificate of Merger - Gaster Exploration USA Inc to Gaster Exploration Inc: 21/41	Gaster Exploration Inc to TH Exploration II LLC: 36/9	TH Exploration II, LLC to TH Exploration, LLC: 40/552	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14460	5-17-8	B	GERTRUD GODDARD, H G WELLS AIF	GASTAR EXPLORATION USA INC	1/8+	735	515	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 26/183	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-001	5-17-8	B	RONALD GODDARD	CHESAPEAKE APPALACHIA LLC	1/8+	690	611	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ Gastar Exploration USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 21/427	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-002	5-17-8	B	FRANCIS R GODDARD	CHESAPEAKE APPALACHIA LLC	1/8+	689	175	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ Gastar Exploration USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 21/427	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-003	5-17-8	B	WAYNE GODDARD	CHESAPEAKE APPALACHIA LLC	1/8+	690	610	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ Gastar Exploration USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 21/427	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-004	5-17-8	B	MARTHA BAILEY	CHESAPEAKE APPALACHIA LLC	1/8+	695	366	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ Gastar Exploration USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 21/427	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67

04/28/2023

1288082-005	5-17-8	B	PAULETTE F PARKER	CHESAPEAKE APPALACHIA LLC	1/8+	695	368	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	04/28/2023 Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-006	5-17-8	B	JUDY PROCK	CHESAPEAKE APPALACHIA LLC	1/8+	722	339	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-007	5-17-8	B	BRUCE GODDARD, SR.	CHESAPEAKE APPALACHIA LLC	1/8+	732	489	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-008	5-17-8	B	RONALD W. GODDARD	CHESAPEAKE APPALACHIA LLC	1/8+	695	223	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-009	5-17-8	B	CLIFFORD GODDARD	CHESAPEAKE APPALACHIA LLC	1/8+	694	473	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-010	5-17-8	B	WANDA SUE SAVERS	CHESAPEAKE APPALACHIA LLC	1/8+	695	531	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67

1288082-011	5-17-8	B	LINDA LEE COX	CHESAPEAKE APPALACHIA LLC	1/8+	696	613	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ Chesapeake USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-012	5-17-8	B	KENNETH ALAN GODDARD	CHESAPEAKE APPALACHIA LLC	1/8+	696	611	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ Gasstar Exploration USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-013	5-17-8	B	HARRY C CRONE	CHESAPEAKE APPALACHIA LLC	1/8+	696	607	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ Gasstar Exploration USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-014	5-17-8	B	JERRY J CRONE	CHESAPEAKE APPALACHIA LLC	1/8+	696	621	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ Gasstar Exploration USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-015	5-17-8	B	DONALD P CRONE	CHESAPEAKE APPALACHIA LLC	1/8+	698	216	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ Gasstar Exploration USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-016	5-17-8	B	RICHARD P CRONE	CHESAPEAKE APPALACHIA LLC	1/8+	696	596	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	memo of Operating Agmt & Fin Stmt bet/ Gasstar Exploration USA Inc, Atinum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67

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1288082-017	5-17-8	B	BRIAN D CRONE	CHESAPEAKE APPALACHIA LLC	1/8+	696	609	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	Memo of Operating Agmt & Fin Stmt bet/ USA Inc, Atitum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atitum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-018	5-17-8	B	PAUL D CRONE	CHESAPEAKE APPALACHIA LLC	1/8+	698	234	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	Memo of Operating Agmt & Fin Stmt bet/ Gasstar Exploration USA Inc, Atitum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atitum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-019	5-17-8	B	BOBBY D CRONE	CHESAPEAKE APPALACHIA LLC	1/8+	698	232	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	Memo of Operating Agmt & Fin Stmt bet/ Gasstar Exploration USA Inc, Atitum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atitum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-020	5-17-8	B	KAREN L CAMPBELL	CHESAPEAKE APPALACHIA LLC	1/8+	698	609	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	Memo of Operating Agmt & Fin Stmt bet/ Gasstar Exploration USA Inc, Atitum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc:	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atitum Marcellus I LLC to TH Exploration II LLC: 48/67
1288082-021	5-17-8	B	EDWARD F SOUTIS REVOCABLE TRUST	CHESAPEAKE APPALACHIA LLC	1/8+	700	325	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/338	Memo of Operating Agmt & Fin Stmt bet/ Gasstar Exploration USA Inc, Atitum Marcellus I, LLC, Chesapeake Appalachia, LLC & Statoil USA Onshore Properties Inc: 24/338	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424	SWN Exchange Titleholder LLC merged with/into SWN Production Company LLC: 19/624	Statoil USA Onshore Properties Inc changed name to Equinor USA Onshore Properties Inc: 2/427	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atitum Marcellus I LLC to TH Exploration II LLC: 48/67
10+14024	5-24-2	C	ROY FRIEND YOHO AND DARLENE J YOHO	GASTAR EXPLORATION USA INC	1/8+	665	508	N/A	N/A	N/A	N/A	N/A	Gasstar Exploration USA Inc to Atitum Marcellus I LLC: 23/353	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atitum Marcellus I LLC to TH Exploration II LLC: 48/67
10+14025	5-24-2	C	NANCY CAROL GIBSON	GASTAR EXPLORATION USA INC	1/8+	697	87	N/A	N/A	N/A	N/A	N/A	Gasstar Exploration USA Inc to Atitum Marcellus I LLC: 23/353	Certificate of Merger - Gasstar Exploration USA Inc to Gasstar Exploration Inc: 21/41	Gasstar Exploration Inc to TH Exploration II LLC: 36/9	Atitum Marcellus I LLC to TH Exploration II LLC: 48/67

10*14026	5-24-2	C	CONRAD S YEATER	GASTAR EXPLORATION USA INC	1/8+	697	91	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 23/353	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14027	5-24-2	C	HILDA R CONNER RUNYAN	GASTAR EXPLORATION USA INC	1/8+	697	89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 23/353	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14028	5-24-2	C	WILDA L CLARK	GASTAR EXPLORATION USA INC	1/8+	697	83	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 23/353	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14029	5-24-2	C	MARY MAXINE CLARKE	GASTAR EXPLORATION USA INC	1/8+	697	85	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 23/353	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14068	5-24-3-3	F	ROHN JEAN MARTIN	GASTAR EXPLORATION USA INC	1/8+	666	552	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 23/353	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14069	5-24-3-3	F	SHARON E YOHO	GASTAR EXPLORATION USA INC	1/8+	708	193	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 23/353	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14070	5-24-3-3	F	CLAUDIA R SCHEELE	GASTAR EXPLORATION USA INC	1/8+	708	197	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 23/353	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14071	5-24-3-3	F	SHIRLEY M DORSEY AND WILLIAM DORSEY	GASTAR EXPLORATION USA INC	1/8+	708	187	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 23/353	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14072	5-24-3-3	F	CHARLES ROBERT MYERS	GASTAR EXPLORATION USA INC	1/8+	708	189	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 23/353	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14073	5-24-3-3	F	RICHARD WHITE II & GLORIA I WHITE	GASTAR EXPLORATION USA INC	1/8+	708	195	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 23/353	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67

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10*14074	5-24-3-3	F	JANE N FISHER AND LEX FISHER	GASTAR EXPLORATION USA INC	1/8+	710	604	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 735/263	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	04/28/2023	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14075	5-24-3-3	F	SHIRLEY K WHITE	GASTAR EXPLORATION USA INC	1/8+	708	201	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 24/335	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	04/28/2023	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14076	5-24-3-3	F	PATRICIA CROW AGENT & AIF FOR VERLA SHUTLER	GASTAR EXPLORATION USA INC	1/8+	710	63	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 24/335	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	04/28/2023	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14077	5-24-3-3	F	WILLIAM FRANK TORRES	GASTAR EXPLORATION USA INC	1/8+	710	72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 24/335	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	04/28/2023	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14078	5-24-3-3	F	CAROL VASS	GASTAR EXPLORATION USA INC	1/8+	710	74	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 24/335	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	04/28/2023	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14079	5-24-3-3	F	JON NEWMAN & SUSAN NEWMAN	GASTAR EXPLORATION USA INC	1/8+	710	76	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 24/335	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	04/28/2023	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14080	5-24-3-3	F	EDITH ORLINGER	GASTAR EXPLORATION USA INC	1/8+	714	133	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 735/263	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	04/28/2023	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14081	5-24-3-3	F	STEVEN L & CAROL J NEWMAN	GASTAR EXPLORATION USA INC	1/8+	724	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 735/263	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	04/28/2023	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14082	5-24-3-3	F	PAUL E & LYNN E BARCUS JR	GASTAR EXPLORATION USA INC	1/8+	734	455	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 26/183	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	04/28/2023	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67
10*14083	5-24-3-3	F	JAN L O'DONNELL	GASTAR EXPLORATION USA INC	1/8+	739	415	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Gastar Exploration USA Inc to Atinum Marcellus LLC; 26/183	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc; 21/41	04/28/2023	Gastar Exploration Inc to TH Exploration II LLC; 36/9	Atinum Marcellus I LLC to TH Exploration II LLC; 48/67

10*14084	5-24-3-3	F	ROGER A & LAURA J MAY	GASTAR EXPLORATION USA INC	1/8+	741	643	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9
10*14085	5-24-3-3	F	BRAD EYMON	GASTAR EXPLORATION USA INC	1/8+	741	645	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9
10*14086	5-24-3-3	F	BRUCE BAILEY	GASTAR EXPLORATION USA INC	1/8+	741	647	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9
10*14090	5-24-3-3	F	CATHERINE R KLUG PAUL FOX - POWER OF ATTORNEY	GASTAR EXPLORATION USA INC	1/8+	762	454	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9
10*14091	5-24-3-3	F	AGNES C KLUG	GASTAR EXPLORATION USA INC	1/8+	762	456	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Certificate of Merger - Gastar Exploration USA Inc to Gastar Exploration Inc: 21/41	Gastar Exploration Inc to TH Exploration II LLC: 36/9
10*14094	5-24-3-3	F	GASPARE A INGRASSELLINO	GASTAR EXPLORATION INC	1/8+	839	528	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		Gastar Exploration Inc to TH Exploration II LLC: 36/9
10*23467	5-24-3-3	F	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1010	228	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A
10*25630	5-24-3-3	F	CHESTNUT HOLDINGS INC	TH EXPLORATION LLC	1/8+	1034	544	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A
10*28464	5-24-3-3	F	GERALD H COOPER	TH EXPLORATION LLC	1/8+	1073	397	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A
10*31101	9-20-4	K	ELIZABETH BRINKMEIER ET AL	HOPE NATURAL GAS CO	1/8+	103	183	N/A	Hope Natural Gas Company to Consolidated Gas Supply Corp: 374/234	Consolidated Gas Supply Corp to Consolidated Gas Transmission Corp: 505/406	Consolidated Gas Transmission Corp to CNG Development Company: 515/88	CNG Development Company merged with/into CNG Producing Company on 3/13/1991.	CNG Producing Company merged with/into Dominion Exploration & Production Inc on 6/2/2000 - WV	Dominion Exploration & Development Inc Merged with/into CONSOL Gas Company: CB 19/546	CONSOL Gas Company merged with/into CNX Gas Company LLC: MB 11/415	CNX Gas Company to TH Exploration LLC: 46/210			

04/27/2016
MARSHALL County 01:22:38 PM
Instrument No 1403499
Date Recorded 04/27/2016
Document Type ASN
Pages Recorded 77
Book-Page 36-9
Recording Fee \$77.00
Additional \$13.00

WHEN RECORDED RETURN TO:
TH Exploration II, LLC
1320 South University Drive, Suite 500
Fort Worth, Texas 76107
Attn: David Kalish

Execution Version

ASSIGNMENT AND BILL OF SALE

STATE OF WV §
 § KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF MARSHALL §

THIS ASSIGNMENT AND BILL OF SALE (this "*Assignment*"), dated April 7, 2016, but effective as of 7:00 A.M. Houston time on January 1, 2016 (the "*Effective Time*"), is between Gastar Exploration Inc., a Delaware corporation, whose address is 1331 Lamar Street, Suite 650 Houston, Texas 77010 ("*Assignor*"), and TH Exploration II, LLC, a Texas limited liability company, whose address is 1320 South University Drive, Suite 500, Fort Worth, Texas 76107 ("*Assignee*"). Assignor and Assignee are each, individually, referred to herein as a "*Party*" and, collectively, as the "*Parties*".

Capitalized terms used but not defined herein shall have the respective meanings set forth in that certain Purchase and Sale Agreement (the "*Purchase Agreement*"), dated as of February 19, 2016, by and between Assignor and Assignee (as successor-in-interest).

Section 1. Assignment. The conveyance and assignment herein shall be deemed effective as of the Effective Time.

For Ten Dollars (\$10.00) and other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged), Assignor does hereby forever GRANT, BARGAIN, SELL, CONVEY, ASSIGN, TRANSFER, SET OVER AND DELIVER unto Assignee, all of Assignor's right, title and interest in and to the following interests and properties (such right, title and interest described in *subsections (a) through (k)* of this Section 1, less and except the Excluded Assets, collectively, the "*Conveyed Interests*");

(a) all oil, gas and/or mineral leases of Assignor, together with any and all other right, title and interest of Assignor in and to the leasehold estates created thereby, including subleases, royalties, overriding royalties, net profits interest, carried interests or similar rights or interests in such leases, and together with all rights, privileges, benefits and powers conferred upon Assignor with respect to the use and occupation of the lands covered thereby that may be necessary, convenient or incidental to the possession and enjoyment of such leases, located in Marshall, Wetzel, Doddridge, Harrison, Lewis, Marion, and Monongalia Counties, West Virginia and Greene, Butler, Fayette, Somerset, and Clearfield Counties, Pennsylvania, including those described on Exhibit A—Part 1 attached hereto (subject to any reservations, limitations or depth restrictions described on Exhibit A—Part 1), (Assignor's interest in such leases and other right, title and interest as so limited, the "*Leases*");

(b) all rights and interests in, under or derived from all unitization agreements in effect with respect to any of the Leases and the units created thereby, including those described

STATE OF WEST VIRGINIA §
 §
COUNTY OF MARSHALL §

ASSIGNMENT, BILL OF SALE AND CONVEYANCE

THIS ASSIGNMENT, BILL OF SALE AND CONVEYANCE (this "*Assignment*"), dated effective as of 7:00 A.M., local time, where the respective Assets are located, on July 1, 2020 (the "*Effective Time*"), is between Atinum Marcellus I, LLC, a Delaware limited liability company ("*Assignor*"), whose mailing address is One Riverway, Suite 710, Houston, TX 77056-1988, and TH Exploration II, LLC, a Texas limited liability company, whose mailing address is 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 ("*Assignee*"). Assignor and Assignee are each, individually, referred to herein as a "*Party*" and, collectively, as the "*Parties*."

Capitalized terms used but not defined herein shall have the respective meanings set forth in that certain Asset Purchase Agreement dated as of November 13, 2020, by and among Assignor and Assignee (the "*Purchase Agreement*").

Section 1. Assignment. The conveyance and assignment herein shall be deemed effective as of the Effective Time.

For Ten Dollars (\$10.00) and other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged), Assignor does hereby forever GRANT, BARGAIN, SELL, CONVEY, ASSIGN, TRANSFER, SET OVER AND DELIVER unto Assignee, and Assignee does hereby acquire, the undivided interests in the Leases (as defined below) set forth on Exhibit A-1, and all other of Assignor's right, title and interest in and to the interests and properties described in subsections (a) through (k) of this Section 1 (without duplication) (such right, title and interest, less and except the Excluded Assets, collectively, the "*Assets*"):

(a) The oil and gas leases, mineral leases and Royalties located in the Covered Counties (which Covered Counties include, for the avoidance of doubt, the county in which this Assignment is filed of record), including those described on Exhibit A-1 together with any and all other right, title and interest in and to the leasehold estates created thereby, subject to the terms, conditions, covenants and obligations set forth in such leases or other instrument creating such rights or interests or on Exhibit A-1 (such leases, Royalties, and mineral interests, collectively, the "*Leases*"), together with any related interest in the lands covered by the Leases or lands unitized, pooled, communitized or consolidated therewith (the "*Lands*");

(b) All of the oil and/or gas wells identified on Exhibit A-2 hereto (the "*Wells*"), and any other oil, gas, or other wells located on any of the Leases or the Lands, in each case, whether producing, non-producing, shut-in, temporarily or permanently abandoned or otherwise;

(c) All rights, titles and interests arising under any unitization, pooling and/or communitization agreements, declarations or designations for drilling, spacing and/or production units related to any of the Leases, Wells or Lands, including the units described on Exhibit A-4;

ASSIGNMENT OF OIL AND GAS LEASES

This **ASSIGNMENT OF OIL AND GAS LEASES** (hereinafter, "**Assignment**"), made the 2nd day of November, 2020 (hereinafter, "**Effective Date**"), is by and between **CNX GAS COMPANY LLC**, a Virginia limited liability company, whose address is 1000 CONSOL Energy Drive, Suite 400, Canonsburg, Pennsylvania 15317 (hereinafter "**Assignor**") and **TH EXPLORATION, LLC**, a Texas limited liability company, whose address is 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 (hereinafter "**Assignee**"). All references in this Assignment to "**Party**" shall be deemed at all times to mean Assignor or Assignee and to "**Parties**" shall be deemed to mean both Assignor and Assignee. Capitalized terms used but not defined herein shall have the meaning given such terms in the Acreage Trade Agreement, by and between Assignor and Assignee dated June 19, 2020, as amended, (the "**Trade Agreement**").

WHEREAS, Assignor desires to assign all of Assignor's right, title and interest in and to the Assigned Rights (as defined below), as more particularly described in this Assignment.

NOW, THEREFORE, for and in consideration of TEN AND NO/100 DOLLARS (\$10.00) and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor does hereby **GRANT, BARGAIN, ASSIGN, TRANSFER, AND CONVEY** unto Assignee the following "**Assigned Rights**" expressly excluding the Retained Rights (as defined below):

- (a) All of Assignor's right, title, and interest in and to the oil and gas leases described on Exhibit A attached hereto and made a part hereof located in Marshall County, West Virginia ("**Leases**"); and
- (b) all rights expressly granted under the Leases including rights related to, or necessary in connection with, the ownership, exploration, drilling, development, or operation of the Leases, including, without limitation, any pooling or unitization, any ability to shut-in a well(s), and the non-exclusive access rights to conduct seismic, geophysical, and other investigations, install pipelines, roadways, surface locations, water and/or power lines, impoundments, structures, tanks, gas gathering and/or metering facilities, and all other related facilities.

TO HAVE AND TO HOLD the Assigned Rights unto Assignee, its respective successors and assigns, subject to the terms of this Assignment and subject to and burdened by the contracts set forth on Exhibit B.

"Retained Rights" means: (i) any and all existing oil and/or gas wells currently in, on, or pertaining to the Leases ("**Retained Wells**"), (ii) all rights relating to, or necessary in connection with, the ownership, exploration, drilling, development, or operation of the Retained Wells, including, without limitation, any pooling or unitization, any ability to shut-in any Retained Wells, and the non-exclusive access rights to conduct seismic, geophysical, and other investigations, install pipelines, roadways, surface locations, water and/or power lines, impoundments, structures, tanks, gas gathering and/or metering facilities, and all other related facilities, and (iii) any and all assets not expressly being conveyed, assigned or leased, as applicable, by Assignor to Assignee at Closing pursuant to the Trade Agreement.

This Assignment is further made subject to the following:

1. **TRANSFER TAXES / RECORDING FEES.** Assignee agrees to pay any and all fees and taxes (including recording, real estate transfer, excise, and documentary) in connection with the filing



March 14, 2023

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

RE: Hendrickson S-13HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

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

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

Sincerely,

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

Amy L. Morris
Permitting Specialist – Appalachia Region
Tug Hill Operating

CERTIFICATE OF CONSENT AND EASEMENT

I, the undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being all the owners of the surface of that certain lot, tract or parcel of land located in Franklin District, Marshall County, State of West Virginia, shown on the attached plat or survey, or hereby consent and grant an easement, pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Conservation Commission, to TH Exploration, LLC, its successors or assigns, for the drilling and operation of a deep well for the production of oil or gas at the location shown on the attached plat or survey.

Executed this 28 day of Dec., 2018.

Linda L. Hendrickson
Linda L. Hendrickson

Donald R. Hendrickson
Donald R. Hendrickson

ACKNOWLEDGMENT

STATE OF WEST VIRGINIA §
 § SS:
COUNTY OF Broke §

On this the 28 day of December, 2018, before me, a notary public, the undersigned authority, personally appeared Linda L. Hendrickson, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he/she executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires: August 8, 2021
Signature/Notary Public: [Signature]
Name/Notary Public (print): Mich Feather



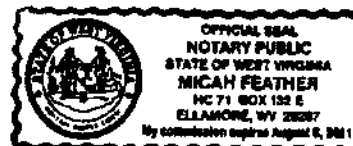
ACKNOWLEDGMENT

STATE OF WEST VIRGINIA §
 § SS:
COUNTY OF Broke §

On this the 28 day of December, 2018, before me, a notary public, the undersigned authority, personally appeared Donald R. Hendrickson, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he/she executed the same for the purposes therein contained.

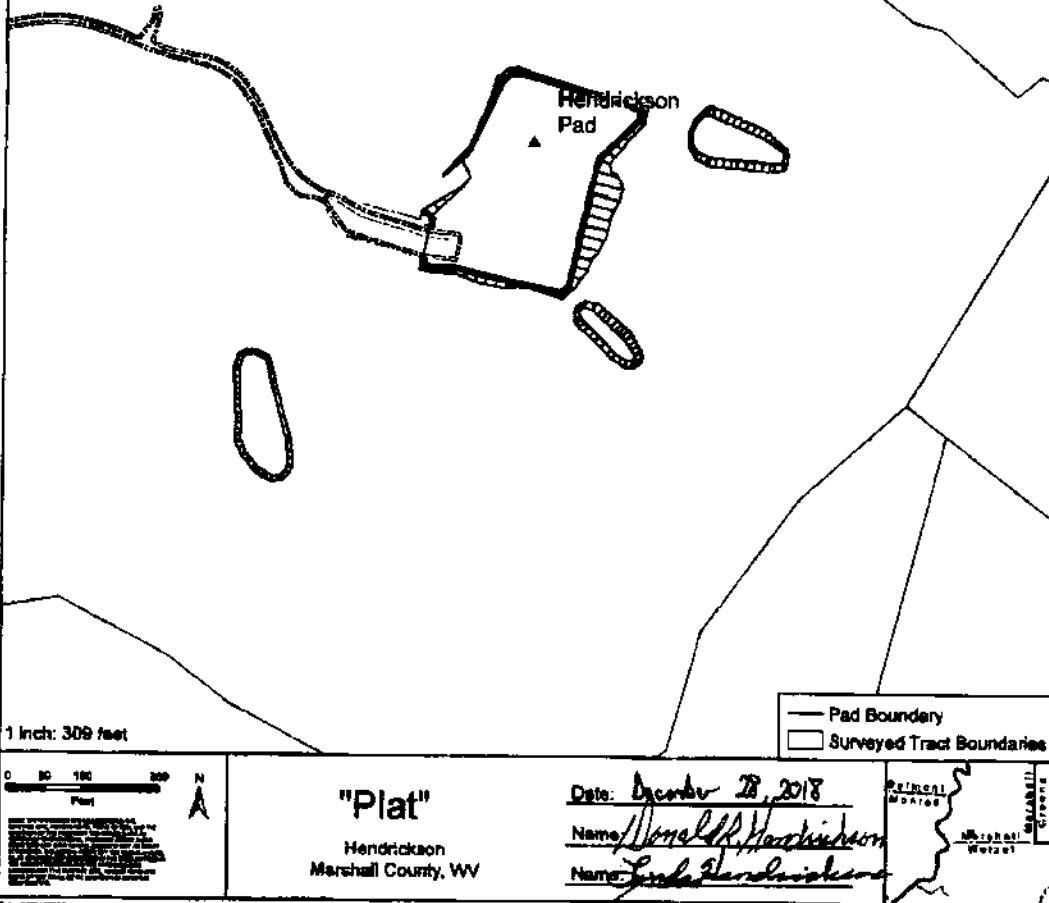
IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires: August 8, 2021
Signature/Notary Public: [Signature]
Name/Notary Public (print): Mich Feather



This instrument prepared by:
WV Oil and Gas Conservation Commission
601 57th Street
Charleston, WV 25304

04/28/2023



Marshall County
 Jan Pest, Clerk
 Instrument 1449438
 01/04/2019 @ 03:31:23 PM
 RIGHT OF WAY W/O CONSIDERATION
 Book 1027 @ Page 236
 Pages Recorded 2
 Recording Cost \$ 11.00

STATE OF WEST VIRGINIA, MARSHALL COUNTY, SCT.:

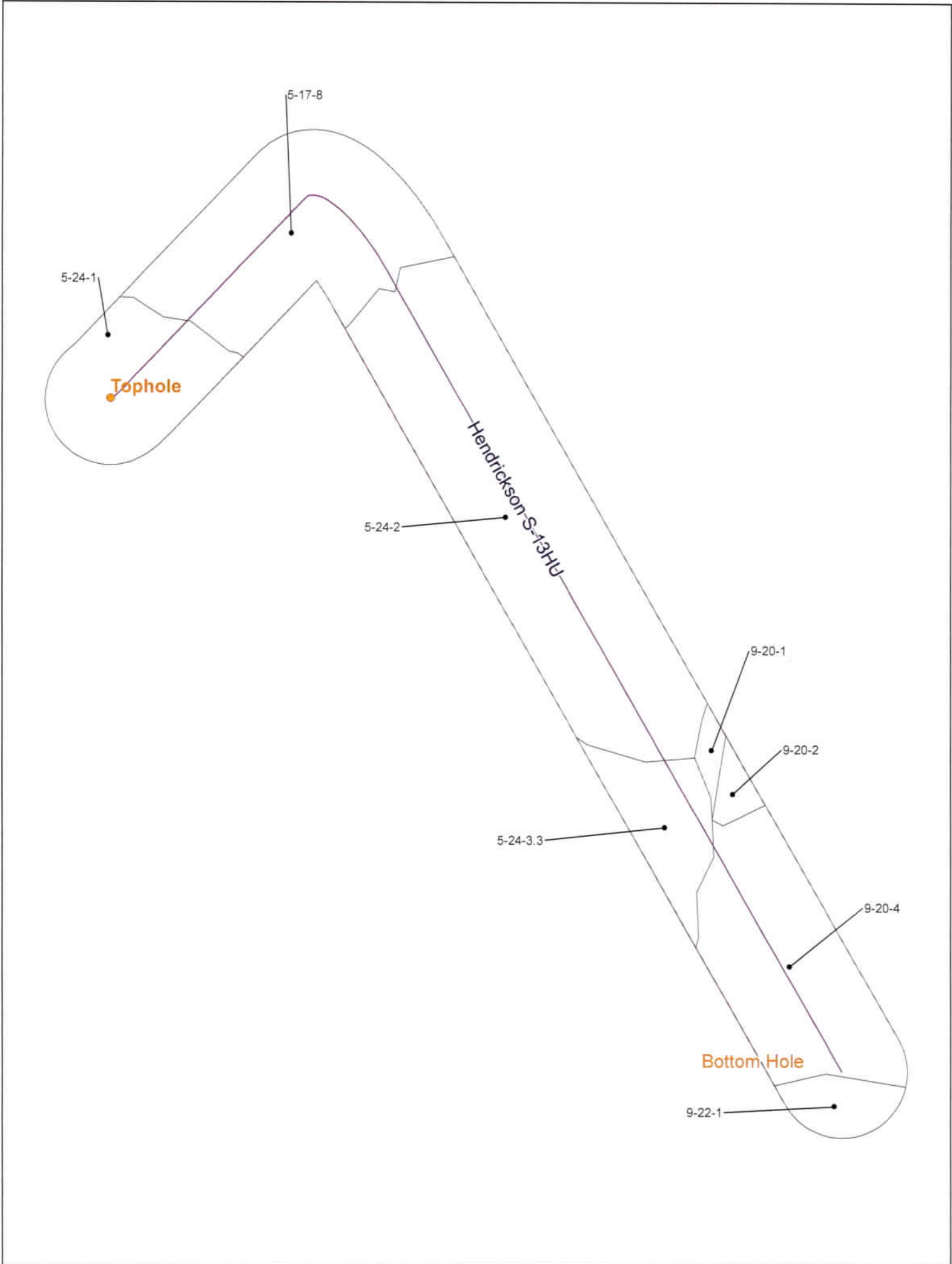
I, JAN PEST, Clerk of the County Commission of said County, do hereby certify that the annexed writing, bearing date on the 28th day of December, 2018, was presented for and by me, admitted to record in my office upon the above certificate as to the parties therein named this 4th day of January, 2019 at 3:31 o'clock P. M.

TESTE: _____

Jan Pest
 Clerk

04/28/2023

Hendrickson S-13HU



Document Number: 1442-1002-UTM Zone 17N Projection: Transverse Mercator Datum: North American 1983 False Easting: 1,000,000.000 False Northing: 0.000 Central Meridian: 81.000 Scale Factor: 0.9999 Latitude of Origin: 0.000 UTM Zone: 17N	CONFIDENTIAL	— Utica Well 500' Buffer Force Pool	
0 16,000 32,000 64,000 Feet		Hendrickson S-13HU Operators within 500 Feet of Well Borehole	
		Belmont Clay Cameron Ohio Monroe West Virginia Wetzel	

Operators within 500' of Well Bores
Hendrickson S - 13HU

COUNTY	DISTRICT	TMP	MINERAL OWNER/LESSEE	ADDRESS
MARSHALL	FRANKLIN	5-17-8	TH EXPLORATION II, LLC	1320 S. University Blvd. Suite 500 Fort Worth,TX 76107
MARSHALL	FRANKLIN	5-17-8	SOUTHWESTERN ENERGY COMPANY	10000 Energy Drive Spring, TX 77389
MARSHALL	FRANKLIN	5-17-8	EQUINOR USA ONSHORE PROPERTIES INC	2107 Citywest Blvd. Suite 100 Houston, TX 77042
MARSHALL	FRANKLIN	5-24-1	TH EXPLORATION II, LLC	1320 S. University Blvd. Suite 500 Fort Worth,TX 76107
MARSHALL	FRANKLIN	5-24-2	TH EXPLORATION II, LLC	1320 S. University Blvd. Suite 500 Fort Worth,TX 76107
MARSHALL	FRANKLIN	5-24-3.3	TH EXPLORATION II, LLC	1320 S. University Blvd. Suite 500 Fort Worth,TX 76107
MARSHALL	FRANKLIN	5-24-3.3	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth,TX 76107
MARSHALL	MEADE	9-20-1	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth,TX 76107
MARSHALL	MEADE	9-20-2	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth,TX 76107
MARSHALL	MEADE	9-20-4	TH EXPLORATION, LLC	1320 S. University Blvd. Suite 500 Fort Worth,TX 76107
MARSHALL	MEADE	9-22-1	SOUTHWESTERN ENERGY COMPANY	10000 Energy Drive Spring, TX 77389
MARSHALL	MEADE	9-22-1	EQUINOR USA ONSHORE PROPERTIES INC	2107 Citywest Blvd. Suite 100 Houston, TX 77042
MARSHALL	MEADE	9-22-1	JAMESTOWN RESOURCES, LLC C/O BLACK FALCON ENERGY	600 Travis St., Suite 4750 Houston, TX 77002

04/28/2023