



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

Thursday, May 12, 2022
WELL WORK PERMIT
Horizontal 6A / New Drill

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

Re: Permit approval for ANGELS ENVY N-15HU
47-051-02444-00-00

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

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

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

James A. Martin
Chief

Operator's Well Number: ANGELS ENVY N-15HU
Farm Name: CNX GAS COMPANY, LLC.
U.S. WELL NUMBER: 47-051-02444-00-00
Horizontal 6A New Drill
Date Issued: 5/12/2022

Promoting a healthy environment.

05/13/2022



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 22, 2022

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

RE: Application for Deep Well Permit – API #47-051-02444

COMPANY: Tug Hill Operating, LLC

FARM: CONSOL RCPC, LLC

Angels Envy N-15HU

COUNTY: Marshall

DISTRICT: Franklin

QUAD: Powhatan Point

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,

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

Susan Rose
Administrator

**Burch Ridge S-7HU 47-051-02194; Burch Ridge S-6HU 47-051-02193; Blake U-7H 47-051-01766; McMasters N-11HU 47-051-02317; McMasters S-16HU 47-051-02337; Greer 1N-12HU 47-051-01896; Greer 1N-11HU 47-051-01895; Greer 1N-10HU 47-051-01894; Greer 1N-5HU 47-051-01893; Hansen N-2HU 47-051-02174; Angels Envy N-13HU 47-051-02442; Angels Envy N-14HU 47-051-02443

05/13/2022

PERMIT CONDITIONS

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

CONDITIONS

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

API Number: _____

PERMIT CONDITIONS

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

05/13/2022

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 Powhatan Point 7
Operator ID County District Quadrangle

2) Operator's Well Number: Angels Envy N-15HU Well Pad Name: Armstrong

3) Farm Name/Surface Owner: CONSOL RCPC, LLC Public Road Access: Co. Rt. 29

4) Elevation, current ground: 1,279.12' Elevation, proposed post-construction: 1,279.12'

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 11,054' - 11,173', thickness of 119' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,323'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 22,677'

11) Proposed Horizontal Leg Length: 10,671.75'

12) Approximate Fresh Water Strata Depths: 70; 876', 55' 47-051-01621 (WR-35)

13) Method to Determine Fresh Water Depths: Based on the depth of Pittsburgh Coal seam, per WVGES mapping contours

14) Approximate Saltwater Depths: 1,429', 1664' - 47-051-01621 (WR-35)

15) Approximate Coal Seam Depths: Sewickley Coal - 781' and Pittsburgh Coal - 870', 1160' & 1190' (47-051-01621 WR-35)

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: _____

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#	1,000'	1,000'	1,613FT^3(CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	2,752'	2,752'	1,941FT^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	10,409'	10,409'	3,397FT^3(CTS)
Production	5 1/2"	NEW	P110	23#	22,677'	22,677'	5,372FT^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#		11,101'	
Liners							

ADK 1/19/2022

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water	20"	26"	.5	2,410	1,928	SEE #24	1.2
Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.33
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			

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

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP (10,601'). 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 26,700,000 lb. proppant and 485,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 12.64 acres

22) Area to be disturbed for well pad only, less access road (acres): 3.27 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

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*Note: Attach additional sheets as needed.

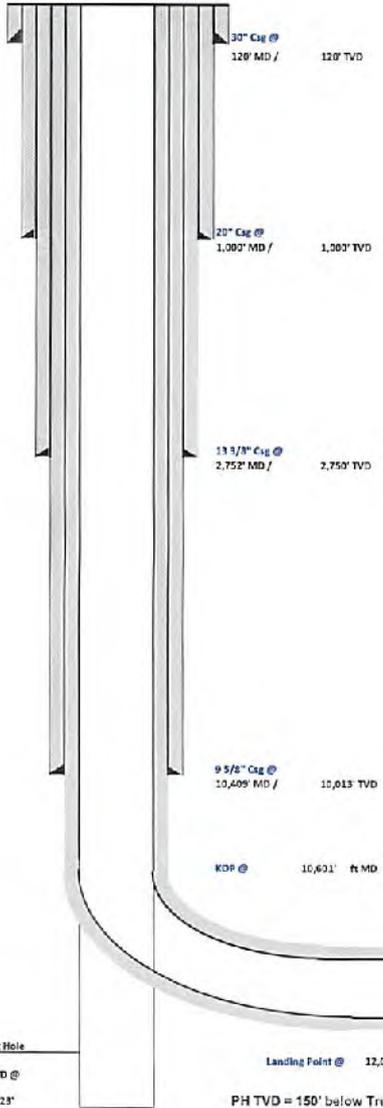


WELL NAME: Angels Emv N-15HU
STATE: WV COUNTY: Marshall
DISTRICT: Franklin
DF Elev: 1,279' **dt Elev:** 1,279'
ID: 22,677'
TH Latitude: 39.753721
TH Longitude: -80.808421
BH Latitude: 39.772167
BH Longitude: -80.840704

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	876'
Sewickley Coal	781'
Pittsburgh Coal	870'
Dig Lime	2,055'
Berna	2,577'
Tully	6,377'
Marcellus	6,430'
Onondaga	6,480'
Salina	7,201'
Lockport	8,151'
Utica	10,815'
Point Pleasant	11,054'
Landing Depth	11,104'
Trenton	11,173'
Pilot Hole TD	11,323'

CASING SUMMARY							
Type	Hole Size (in)	Cog Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	BW	BW	Surface
Surface	26	20	1,000'	1,000'	106.5	J55	Surface
Intermediate 1	17 1/2	13 3/8	2,752'	2,750'	54.5	J55	Surface
Intermediate 2	12 1/4	9 5/8	10,409'	10,813'	47	HCP110	Surface
Production	8 1/2	5 1/2	22,677'	10,917'	23	HCP110	Surface

CEMENT SUMMARY				DRILLING DETAILS	
Type	Sacks	Class	Density [ppg]	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	3,780	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,104	A	15.6	Air	1 Centralizer every other joint
Intermediate 2	3,896	A	14.5	Air	1 Centralizer every other joint
Production	5,493	A	16.5	Air/SOBM	1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface



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Pilot Hole
 PH TD @ 11,323'
 Landing Point @ 12,008' MD / 11,104' TVD
 PH TVD = 150' below Trenton Top

Lateral TD @ 22,677' R MD
 10,917' R TVD



Tug Hill Operating, LLC Casing and Cement Program

Angels Envy N-15HU

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	1,000'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	2,752'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	10,409'	CTS
Production	5 1/2"	HCP110	8 1/2"	22,677'	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

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Well: Angels Envy N-15 HU (slot O)
 Site: Armstrong Pad
 Project: Marshall County, West Virginia
 Wellbore: Original Hole
 Design: rev0

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

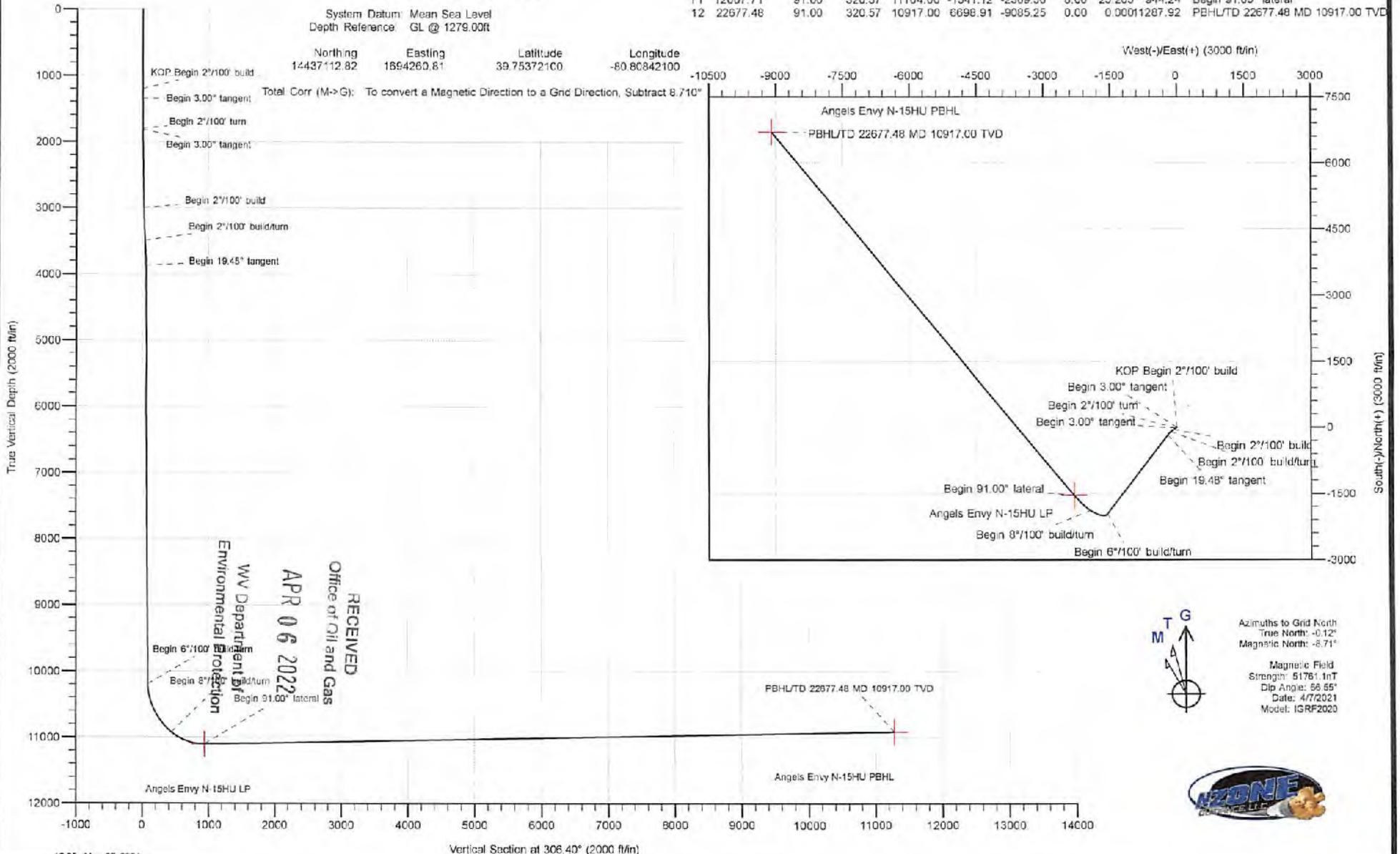
System Datum: Mean Sea Level
 Depth Reference: GL @ 1279.00ft

Northing: 14437112.82 Easting: 1894260.81 Latitude: 39.75372100 Longitude: -80.80842100

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.710°

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSec	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
2	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	1350.00	3.00	227.00	1349.93	-2.68	-2.87	2.00	227.000	0.72	Begin 3.00° tangent
4	1800.89	3.00	227.00	1800.00	-18.76	-20.12	0.00	0.000	5.06	Begin 2°/100' turn
5	1816.38	3.00	233.00	1815.67	-19.29	-20.75	2.00	92.996	5.25	Begin 3.00° tangent
6	3302.33	3.00	233.00	3000.00	-56.64	-70.32	0.00	0.000	22.98	Begin 2°/100' build
7	3502.33	13.00	233.00	3494.51	-98.47	-125.82	2.00	0.000	42.83	Begin 2°/100' build/turn
8	3851.27	19.48	217.25	3367.90	-176.53	-203.12	2.00	-11.974	56.31	Begin 19.43° tangent
9	10501.39	19.48	217.25	10193.99	-1957.60	-1554.40	0.00	0.000	89.33	Begin 6°/100' build/turn
10	11458.90	50.00	303.39	10923.50	-1885.76	-1941.54	6.00	102.235	443.66	Begin 8°/100' build/turn
11	12007.71	91.00	320.57	11104.00	-1541.12	-2309.50	8.00	25.205	944.24	Begin 91.00° lateral
12	22677.48	91.00	320.57	10917.00	6698.91	-9085.25	0.00	0.000	11287.92	PBHL/TD 22677.48 MD 10917.00 TVD



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Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Angels Envy N-15 HU (slot O)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1279.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1279.00ft
Site:	Armstrong Pad	North Reference:	Grid
Well:	Angels Envy N-15 HU (slot O)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

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

Site	Armstrong Pad				
Site Position:		Northing:	14,437,151.34 usft	Latitude:	39.75382662
From:	Lat/Long	Easting:	1,694,269.43 usft	Longitude:	-80.80831890
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Angels Envy N-15 HU (slot O)					
Well Position	+N/-S	0.00 ft	Northing:	14,437,112.82 usft	Latitude:	39.75372100
	+E/-W	0.00 ft	Easting:	1,694,260.81 usft	Longitude:	-80.80842100
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	1,279.00 ft
Grid Convergence:						

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	4/7/2021	-8.588	66.545	51,781.06218338

Design	rev0				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	306.40	

Plan Survey Tool Program	Date				
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	22.677.48 rev0 (Original Hole)			

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Company:	Tug Hill Operating LLC	TVD Reference:	CL @ 1279.00ft
Project:	Marshall County, West Virginia	MD Reference:	CL @ 1279.00ft
Site:	Armstrong Pad	North Reference:	Grid
Well:	Angels Envy N-15 HU (slot O)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.000	
1,350.00	3.00	227.00	1,349.93	-2.68	-2.87	2.00	2.00	0.00	227.000	
1,800.69	3.00	227.00	1,800.00	-18.76	-20.12	0.00	0.00	0.00	0.000	
1,816.38	3.00	233.00	1,815.67	-19.29	-20.75	2.00	0.00	38.23	92.986	
3,002.33	3.00	233.00	3,000.00	-56.64	-70.32	0.00	0.00	0.00	0.000	
3,502.33	13.00	233.00	3,494.51	-98.47	-125.82	2.00	2.00	0.00	0.000	
3,891.27	19.48	217.25	3,867.90	-176.53	-200.12	2.00	1.67	-4.05	-41.974	
10,601.39	19.48	217.25	10,193.99	-1,957.60	-1,554.40	0.00	0.00	0.00	0.000	
11,458.90	50.00	303.39	10,923.50	-1,885.76	-1,941.54	6.00	3.56	10.05	102.235	
12,007.71	91.00	320.57	11,104.00	-1,541.12	-2,309.50	8.00	7.47	3.13	25.205	
22,677.48	91.00	320.57	10,917.00	6,698.91	-9,085.25	0.00	0.00	0.00	0.000	Angels Envy N-15HU

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Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Armstrong Pad
 Well: Angels Envy N-15 HU (slot O)
 Wellbore: Original Hole
 Design: rev0

Local Co-ordinate Reference: Well Angels Envy N-15 HU (slot O)
 TVD Reference: GL @ 1279.00ft
 MD Reference: GL @ 1279.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
100.00	0.00	0.00	100.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
200.00	0.00	0.00	200.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
300.00	0.00	0.00	300.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
400.00	0.00	0.00	400.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
500.00	0.00	0.00	500.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
600.00	0.00	0.00	600.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
700.00	0.00	0.00	700.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
800.00	0.00	0.00	800.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
900.00	0.00	0.00	900.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,437,112.82	1,694,260.81	39.75372100	-80.80842100	
KOP Begin 2°/100' build										
1,300.00	2.00	227.00	1,299.98	-1.19	-1.28	14,437,111.63	1,694,259.54	39.75371774	-80.80842555	
1,350.00	3.00	227.00	1,349.93	-2.68	-2.87	14,437,110.14	1,694,257.94	39.75371357	-80.80843124	
Begin 3.00° tangent										
1,400.00	3.00	227.00	1,399.87	-4.46	-4.79	14,437,108.36	1,694,256.03	39.75370877	-80.80843808	
1,500.00	3.00	227.00	1,499.73	-8.03	-8.61	14,437,104.79	1,694,252.20	39.75369899	-80.80845171	
1,600.00	3.00	227.00	1,599.59	-11.60	-12.44	14,437,101.22	1,694,248.37	39.75368922	-80.80846535	
1,700.00	3.00	227.00	1,699.46	-15.17	-16.27	14,437,097.65	1,694,244.54	39.75367944	-80.80847900	
1,800.00	3.00	227.00	1,799.32	-18.74	-20.10	14,437,094.08	1,694,240.72	39.75366966	-80.80849264	
1,800.69	3.00	227.00	1,800.00	-18.76	-20.12	14,437,094.05	1,694,240.69	39.75366959	-80.80849274	
Begin 2°/100' turn										
1,816.38	3.00	233.00	1,815.67	-19.29	-20.75	14,437,093.53	1,694,240.06	39.75366814	-80.80849498	
Begin 3.00° tangent										
1,900.00	3.00	233.00	1,899.18	-21.93	-24.25	14,437,090.89	1,694,236.57	39.75366093	-80.80850743	
2,000.00	3.00	233.00	1,999.04	-25.07	-28.43	14,437,087.74	1,694,232.39	39.75365231	-80.80852233	
2,100.00	3.00	233.00	2,098.91	-28.22	-32.60	14,437,084.59	1,694,228.21	39.75364368	-80.80853722	
2,200.00	3.00	233.00	2,198.77	-31.37	-36.78	14,437,081.44	1,694,224.03	39.75363506	-80.80855212	
2,300.00	3.00	233.00	2,298.63	-34.52	-40.96	14,437,078.29	1,694,219.85	39.75362643	-80.80856702	
2,400.00	3.00	233.00	2,398.50	-37.67	-45.14	14,437,075.14	1,694,215.67	39.75361780	-80.80858191	
2,500.01	3.00	233.00	2,498.36	-40.82	-49.32	14,437,072.00	1,694,211.49	39.75360918	-80.80859681	
2,600.01	3.00	233.00	2,598.22	-43.97	-53.50	14,437,068.85	1,694,207.31	39.75360055	-80.80861170	
2,700.01	3.00	233.00	2,698.09	-47.12	-57.68	14,437,065.70	1,694,203.13	39.75359193	-80.80862660	
2,800.01	3.00	233.00	2,797.95	-50.27	-61.86	14,437,062.55	1,694,198.95	39.75358330	-80.80864149	
2,900.01	3.00	233.00	2,897.81	-53.42	-66.04	14,437,059.40	1,694,194.77	39.75357468	-80.80865639	
3,000.01	3.00	233.00	2,997.68	-56.57	-70.22	14,437,056.25	1,694,190.59	39.75356605	-80.80867128	
3,002.33	3.00	233.00	3,000.00	-56.64	-70.32	14,437,056.17	1,694,190.49	39.75356585	-80.80867163	
Begin 2°/100' build										
3,100.01	4.95	233.00	3,097.43	-60.72	-75.73	14,437,052.10	1,694,185.08	39.75355468	-80.80869091	
3,200.01	6.65	233.00	3,196.89	-68.96	-84.01	14,437,045.86	1,694,176.80	39.75353760	-80.80872043	
3,300.01	8.95	233.00	3,295.92	-75.29	-95.06	14,437,037.53	1,694,165.75	39.75352052	-80.80875981	
3,400.01	10.95	233.00	3,394.41	-85.89	-108.87	14,437,027.13	1,694,151.95	39.75348831	-80.80880900	
3,500.01	12.95	233.00	3,492.24	-98.16	-125.41	14,437,014.66	1,694,135.41	39.75345217	-80.80886794	
3,502.33	13.00	233.00	3,494.51	-98.47	-125.82	14,437,014.35	1,694,134.99	39.75345197	-80.80886943	
Begin 2°/100' build/turn										
3,600.01	14.51	227.78	3,569.38	-113.31	-143.66	14,436,999.51	1,694,117.15	39.75341067	-80.80893301	
3,700.01	16.15	223.46	3,685.82	-131.82	-162.51	14,436,981.00	1,694,096.30	39.75335993	-80.80900021	
3,800.01	17.87	219.93	3,781.45	-153.89	-181.93	14,436,959.13	1,694,078.89	39.75330000	-80.80906946	
3,891.27	19.48	217.25	3,867.90	-176.53	-200.12	14,436,936.26	1,694,060.69	39.75323736	-80.80913438	
Begin 19.48° tangent										
3,900.01	19.48	217.25	3,876.14	-178.85	-201.89	14,436,933.96	1,694,058.93	39.75323100	-80.80914067	
4,000.01	19.48	217.25	3,970.42	-205.40	-222.07	14,436,907.42	1,694,038.74	39.75315822	-80.80921268	

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Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Angels Envy N-15 HU (slot O)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1279.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1279.00ft
Site:	Armstrong Pad	North Reference:	Grid
Well:	Angels Envy N-15 HU (slot O)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,100.01	19.48	217.25	4,064.89	-231.94	-242.25	14,436,880.88	1,694,018.56	39.75308545	-80.80928469	
4,200.01	19.48	217.25	4,158.97	-258.48	-262.44	14,436,854.34	1,693,998.38	39.75301267	-80.80935670	
4,300.01	19.48	217.25	4,253.25	-285.03	-282.62	14,436,827.79	1,693,978.20	39.75293969	-80.80942871	
4,400.01	19.48	217.25	4,347.53	-311.57	-302.80	14,436,801.25	1,693,958.01	39.75286711	-80.80950072	
4,500.01	19.48	217.25	4,441.80	-338.11	-322.98	14,436,774.71	1,693,937.83	39.75279434	-80.80957273	
4,600.01	19.48	217.25	4,536.08	-364.66	-343.17	14,436,748.16	1,693,917.65	39.75272156	-80.80964474	
4,700.01	19.48	217.25	4,630.36	-391.20	-363.35	14,436,721.62	1,693,897.46	39.75264878	-80.80971675	
4,800.01	19.48	217.25	4,724.63	-417.74	-383.53	14,436,695.08	1,693,877.28	39.75257601	-80.80978876	
4,900.01	19.48	217.25	4,818.91	-444.28	-403.71	14,436,668.53	1,693,857.10	39.75250323	-80.80986077	
5,000.01	19.48	217.25	4,913.19	-470.83	-423.90	14,436,641.99	1,693,836.92	39.75243045	-80.80993278	
5,100.01	19.48	217.25	5,007.47	-497.37	-444.06	14,436,615.45	1,693,816.73	39.75235767	-80.81000479	
5,200.01	19.48	217.25	5,101.74	-523.91	-464.26	14,436,588.90	1,693,796.55	39.75228490	-80.81007680	
5,300.01	19.48	217.25	5,196.02	-550.46	-484.44	14,436,562.36	1,693,776.37	39.75221212	-80.81014881	
5,400.01	19.48	217.25	5,290.30	-577.00	-504.63	14,436,535.82	1,693,756.19	39.75213934	-80.81022081	
5,500.01	19.48	217.25	5,384.57	-603.54	-524.81	14,436,509.28	1,693,736.00	39.75206656	-80.81029282	
5,600.01	19.48	217.25	5,478.85	-630.09	-544.99	14,436,482.73	1,693,715.82	39.75199379	-80.81036483	
5,700.01	19.48	217.25	5,573.13	-656.63	-565.18	14,436,456.19	1,693,695.64	39.75192101	-80.81043684	
5,800.01	19.48	217.25	5,667.40	-683.17	-585.36	14,436,429.65	1,693,675.46	39.75184823	-80.81050885	
5,900.01	19.48	217.25	5,761.68	-709.72	-605.54	14,436,403.10	1,693,655.27	39.75177545	-80.81058085	
6,000.01	19.48	217.25	5,855.96	-736.26	-625.72	14,436,376.56	1,693,635.09	39.75170267	-80.81065286	
6,100.01	19.48	217.25	5,950.24	-762.80	-645.91	14,436,350.02	1,693,614.91	39.75162990	-80.81072487	
6,200.01	19.48	217.25	6,044.51	-789.35	-666.09	14,436,323.47	1,693,594.73	39.75155712	-80.81079688	
6,300.01	19.48	217.25	6,138.79	-815.89	-686.27	14,436,296.93	1,693,574.54	39.75148434	-80.81086888	
6,400.01	19.48	217.25	6,233.07	-842.43	-706.45	14,436,270.38	1,693,554.36	39.75141156	-80.81094089	
6,500.01	19.48	217.25	6,327.34	-868.97	-726.64	14,436,243.85	1,693,534.18	39.75133878	-80.81101290	
6,600.01	19.48	217.25	6,421.62	-895.52	-746.82	14,436,217.30	1,693,514.00	39.75126601	-80.81108490	
6,700.01	19.48	217.25	6,515.90	-922.06	-767.00	14,436,190.76	1,693,493.81	39.75119323	-80.81115691	
6,800.01	19.48	217.25	6,610.18	-948.60	-787.18	14,436,164.22	1,693,473.63	39.75112045	-80.81122892	
6,900.01	19.48	217.25	6,704.45	-975.15	-807.37	14,436,137.67	1,693,453.45	39.75104767	-80.81130092	
7,000.01	19.48	217.25	6,798.73	-1,001.69	-827.55	14,436,111.13	1,693,433.26	39.75097489	-80.81137293	
7,100.01	19.48	217.25	6,893.01	-1,028.23	-847.73	14,436,084.59	1,693,413.08	39.75090211	-80.81144493	
7,200.01	19.48	217.25	6,987.28	-1,054.78	-867.91	14,436,058.04	1,693,392.90	39.75082933	-80.81151694	
7,300.01	19.48	217.25	7,081.56	-1,081.32	-888.10	14,436,031.50	1,693,372.72	39.75075655	-80.81158894	
7,400.01	19.48	217.25	7,175.84	-1,107.86	-908.28	14,436,004.96	1,693,352.53	39.75068378	-80.81166095	
7,500.02	19.48	217.25	7,270.11	-1,134.41	-928.46	14,435,978.41	1,693,332.35	39.75061100	-80.81173296	
7,600.02	19.48	217.25	7,364.39	-1,160.95	-948.65	14,435,951.87	1,693,312.17	39.75053822	-80.81180496	
7,700.02	19.48	217.25	7,458.67	-1,187.49	-968.83	14,435,925.33	1,693,291.99	39.75046544	-80.81187697	
7,800.02	19.48	217.25	7,552.95	-1,214.03	-989.01	14,435,898.79	1,693,271.80	39.75039266	-80.81194897	
7,900.02	19.48	217.25	7,647.22	-1,240.58	-1,009.19	14,435,872.24	1,693,251.62	39.75031988	-80.81202097	
8,000.02	19.48	217.25	7,741.50	-1,267.12	-1,029.38	14,435,845.70	1,693,231.44	39.75024711	-80.81209298	
8,100.02	19.48	217.25	7,835.78	-1,293.66	-1,049.56	14,435,819.16	1,693,211.26	39.75017433	-80.81216498	
8,200.02	19.48	217.25	7,930.05	-1,320.21	-1,069.74	14,435,792.61	1,693,191.07	39.75010155	-80.81223699	
8,300.02	19.48	217.25	8,024.33	-1,346.75	-1,089.92	14,435,766.07	1,693,170.89	39.75002877	-80.81230899	
8,400.02	19.48	217.25	8,118.61	-1,373.29	-1,110.11	14,435,739.53	1,693,150.71	39.74995599	-80.81238100	
8,500.02	19.48	217.25	8,212.89	-1,399.84	-1,130.29	14,435,712.98	1,693,130.53	39.74988321	-80.81245300	
8,600.02	19.48	217.25	8,307.16	-1,426.38	-1,150.47	14,435,686.44	1,693,110.34	39.74981043	-80.81252500	
8,700.02	19.48	217.25	8,401.44	-1,452.92	-1,170.65	14,435,659.90	1,693,090.16	39.74973765	-80.81259701	
8,800.02	19.48	217.25	8,495.72	-1,479.47	-1,190.84	14,435,633.36	1,693,069.98	39.74966487	-80.81266901	
8,900.02	19.48	217.25	8,589.99	-1,506.01	-1,211.02	14,435,606.81	1,693,049.80	39.74959209	-80.81274101	
9,000.02	19.48	217.25	8,684.27	-1,532.55	-1,231.20	14,435,580.27	1,693,029.61	39.74951931	-80.81281302	
9,100.02	19.48	217.25	8,778.55	-1,559.10	-1,251.39	14,435,553.73	1,693,009.43	39.74944653	-80.81288502	
9,200.02	19.48	217.25	8,872.82	-1,585.64	-1,271.57	14,435,527.18	1,692,989.25	39.74937376	-80.81295702	
9,300.02	19.48	217.25	8,967.10	-1,612.18	-1,291.75	14,435,500.64	1,692,969.06	39.74930098	-80.81302902	
9,400.02	19.48	217.25	9,061.38	-1,638.72	-1,311.93	14,435,474.10	1,692,948.88	39.74922820	-80.81310103	
9,500.02	19.48	217.25	9,155.66	-1,665.27	-1,332.12	14,435,447.55	1,692,928.70	39.74915542	-80.81317303	

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Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Angels Envy N-15 HU (slot O)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1279.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1279.00ft
Site:	Armstrong Pad	North Reference:	Grid
Well:	Angels Envy N-15 HU (slot O)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,600.02	19.48	217.25	9,249.93	-1,691.81	-1,352.30	14,435,421.01	1,592,808.52	39.74908264	-80.81324503	
9,700.02	19.48	217.25	9,344.21	-1,718.35	-1,372.48	14,435,394.47	1,592,688.33	39.74900986	-80.81331703	
9,800.02	19.48	217.25	9,438.49	-1,744.90	-1,392.86	14,435,367.92	1,592,868.15	39.74893706	-80.81338903	
9,900.02	19.48	217.25	9,532.76	-1,771.44	-1,412.85	14,435,341.38	1,592,847.97	39.74886430	-80.81346104	
10,000.02	19.48	217.25	9,627.04	-1,797.98	-1,433.03	14,435,314.84	1,592,827.79	39.74879152	-80.81353304	
10,100.02	19.48	217.25	9,721.32	-1,824.53	-1,453.21	14,435,288.30	1,592,807.60	39.74871874	-80.81360504	
10,200.02	19.48	217.25	9,815.60	-1,851.07	-1,473.39	14,435,261.75	1,592,787.42	39.74864596	-80.81367704	
10,300.02	19.48	217.25	9,909.87	-1,877.61	-1,493.58	14,435,235.21	1,592,767.24	39.74857316	-80.81374904	
10,400.02	19.48	217.25	10,004.15	-1,904.16	-1,513.76	14,435,208.67	1,592,747.06	39.74850040	-80.81382104	
10,500.02	19.48	217.25	10,098.43	-1,930.70	-1,533.94	14,435,182.12	1,592,726.87	39.74842762	-80.81389304	
10,600.02	19.48	217.25	10,192.70	-1,957.24	-1,554.13	14,435,155.58	1,592,706.69	39.74835484	-80.81396504	
10,601.39	19.48	217.25	10,193.99	-1,957.60	-1,554.40	14,435,155.22	1,592,706.41	39.74835385	-80.81396603	
Begin 6°/100° build/turn										
10,700.02	19.09	235.19	10,287.18	-1,979.92	-1,577.62	14,435,132.90	1,592,683.20	39.74829270	-80.81404878	
10,800.02	20.44	252.55	10,381.36	-1,994.50	-1,607.73	14,435,118.32	1,592,653.09	39.74825293	-80.81415602	
10,900.02	23.25	286.85	10,474.24	-2,000.82	-1,644.13	14,435,112.00	1,592,616.69	39.74823567	-80.81428556	
11,000.02	27.07	277.79	10,564.79	-1,998.82	-1,688.42	14,435,114.00	1,592,574.40	39.74824141	-80.81443601	
11,100.02	31.53	286.02	10,652.01	-1,988.51	-1,734.13	14,435,124.31	1,592,526.68	39.74826999	-80.81460570	
11,200.02	36.39	292.32	10,734.95	-1,970.01	-1,788.76	14,435,142.81	1,592,474.06	39.74832106	-80.81479278	
11,300.02	41.52	297.29	10,812.71	-1,943.53	-1,843.71	14,435,169.30	1,592,417.11	39.74839416	-80.81499520	
11,400.02	46.82	301.33	10,884.42	-1,909.34	-1,904.36	14,435,203.48	1,592,356.45	39.74848838	-80.81521074	
11,458.90	50.00	303.39	10,923.50	-1,865.76	-1,941.54	14,435,227.06	1,592,319.28	39.74855335	-80.81534293	
Begin 8°/100° build/turn										
11,500.02	52.99	305.14	10,949.10	-1,867.63	-1,968.13	14,435,245.19	1,592,292.69	39.74860328	-80.81543729	
11,600.02	60.35	308.89	11,004.02	-1,817.28	-2,034.70	14,435,295.54	1,592,226.11	39.74874193	-80.81557378	
11,700.02	67.80	312.13	11,047.71	-1,758.85	-2,102.97	14,435,353.97	1,592,157.85	39.74900200	-80.81591623	
11,800.02	75.32	315.03	11,079.32	-1,693.47	-2,171.60	14,435,419.36	1,592,089.22	39.74908275	-80.81615931	
11,900.02	82.86	317.75	11,098.24	-1,622.41	-2,239.25	14,435,480.42	1,592,021.57	39.74927928	-80.81640007	
12,000.02	90.42	320.37	11,104.09	-1,547.05	-2,304.60	14,435,565.77	1,591,956.21	39.74948558	-80.81663205	
12,007.71	91.00	320.57	11,104.00	-1,541.12	-2,309.50	14,435,571.70	1,591,951.32	39.74950190	-80.81664942	
Begin 91.00° lateral										
12,100.02	91.00	320.57	11,102.38	-1,469.83	-2,368.12	14,435,642.99	1,591,892.70	39.74969801	-80.81685746	
12,200.02	91.00	320.57	11,100.63	-1,392.61	-2,431.62	14,435,720.21	1,591,829.19	39.74991046	-80.81708284	
12,300.02	91.00	320.57	11,098.87	-1,315.38	-2,495.13	14,435,797.44	1,591,765.69	39.75012290	-80.81730821	
12,400.03	91.00	320.57	11,097.12	-1,238.15	-2,558.63	14,435,874.67	1,591,702.19	39.75033535	-80.81753359	
12,500.03	91.00	320.57	11,095.37	-1,160.92	-2,622.14	14,435,951.90	1,591,638.68	39.75054779	-80.81775897	
12,600.03	91.00	320.57	11,093.62	-1,083.69	-2,685.64	14,436,029.13	1,591,575.18	39.75076024	-80.81798435	
12,700.03	91.00	320.57	11,091.86	-1,006.47	-2,749.14	14,436,106.35	1,591,511.67	39.75097268	-80.81820973	
12,800.03	91.00	320.57	11,090.11	-929.24	-2,812.65	14,436,183.58	1,591,448.17	39.75118513	-80.81843512	
12,900.03	91.00	320.57	11,088.36	-852.01	-2,876.15	14,436,260.81	1,591,384.67	39.75139757	-80.81866050	
13,000.03	91.00	320.57	11,086.61	-774.78	-2,939.66	14,436,338.04	1,591,321.16	39.75161002	-80.81888589	
13,100.03	91.00	320.57	11,084.85	-697.55	-3,003.16	14,436,415.27	1,591,257.66	39.75182246	-80.81911127	
13,200.03	91.00	320.57	11,083.10	-620.33	-3,066.67	14,436,492.49	1,591,194.15	39.75203490	-80.81933666	
13,300.03	91.00	320.57	11,081.35	-543.10	-3,130.17	14,436,569.72	1,591,130.65	39.75224734	-80.81956205	
13,400.03	91.00	320.57	11,079.60	-465.87	-3,193.67	14,436,646.95	1,591,067.14	39.75245978	-80.81978744	
13,500.03	91.00	320.57	11,077.84	-388.64	-3,257.18	14,436,724.18	1,591,003.64	39.75267223	-80.82001284	
13,600.03	91.00	320.57	11,076.09	-311.41	-3,320.68	14,436,801.40	1,590,940.14	39.75288467	-80.82023823	
13,700.03	91.00	320.57	11,074.34	-234.19	-3,384.19	14,436,878.63	1,590,876.63	39.75309711	-80.82046363	
13,800.03	91.00	320.57	11,072.58	-156.96	-3,447.69	14,436,955.86	1,590,813.13	39.75330955	-80.82068902	
13,900.03	91.00	320.57	11,070.83	-79.73	-3,511.20	14,437,033.09	1,590,749.62	39.75352199	-80.82091442	
14,000.03	91.00	320.57	11,069.08	-2.50	-3,574.70	14,437,110.32	1,590,686.12	39.75373443	-80.82113982	
14,100.03	91.00	320.57	11,067.33	74.73	-3,638.21	14,437,187.54	1,590,622.61	39.75394686	-80.82136522	
14,200.03	91.00	320.57	11,065.57	151.95	-3,701.71	14,437,264.77	1,590,559.11	39.75415930	-80.82159062	
14,300.03	91.00	320.57	11,063.82	229.18	-3,765.21	14,437,342.00	1,590,495.61	39.75437174	-80.82181603	

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Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Angels Envy N-15 HU (slot O)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1279.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1279.00ft
Site:	Armstrong Pad	North Reference:	Grid
Well:	Angels Envy N-15 HU (slot O)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,600.02	19.48	217.25	9,249.93	-1,691.81	-1,352.30	14,435,421.01	1,692,908.52	39.74908264	-80.81324503	
9,700.02	19.48	217.25	9,344.21	-1,718.35	-1,372.48	14,435,394.47	1,692,888.33	39.74900986	-80.81331703	
9,800.02	19.48	217.25	9,438.49	-1,744.90	-1,392.66	14,435,367.92	1,692,868.15	39.74893708	-80.81338903	
9,900.02	19.48	217.25	9,532.78	-1,771.44	-1,412.85	14,435,341.38	1,692,847.97	39.74886430	-80.81346104	
10,000.02	19.48	217.25	9,627.04	-1,797.98	-1,433.03	14,435,314.84	1,692,827.79	39.74879152	-80.81353304	
10,100.02	19.48	217.25	9,721.32	-1,824.53	-1,453.21	14,435,288.30	1,692,807.60	39.74871874	-80.81360504	
10,200.02	19.48	217.25	9,815.60	-1,851.07	-1,473.39	14,435,261.75	1,692,787.42	39.74864596	-80.81367704	
10,300.02	19.48	217.25	9,909.87	-1,877.61	-1,493.58	14,435,235.21	1,692,767.24	39.74857318	-80.81374904	
10,400.02	19.48	217.25	10,004.15	-1,904.16	-1,513.76	14,435,208.67	1,692,747.06	39.74850040	-80.81382104	
10,500.02	19.48	217.25	10,098.43	-1,930.70	-1,533.94	14,435,182.12	1,692,726.87	39.74842762	-80.81389304	
10,600.02	19.48	217.25	10,192.70	-1,957.24	-1,554.13	14,435,155.58	1,692,706.69	39.74835484	-80.81396504	
10,601.39	19.48	217.25	10,193.99	-1,957.60	-1,554.40	14,435,155.22	1,692,706.41	39.74835385	-80.81396603	
Begin 6°/100' build/tum										
10,700.02	19.09	235.19	10,287.18	-1,979.92	-1,577.62	14,435,132.90	1,692,683.20	39.74829270	-80.81404878	
10,800.02	20.44	252.55	10,381.38	-1,994.50	-1,607.73	14,435,118.32	1,692,653.09	39.74825283	-80.81415602	
10,900.02	23.25	266.85	10,474.24	-2,000.82	-1,644.13	14,435,112.00	1,692,616.69	39.74823567	-80.81428556	
11,000.02	27.07	277.79	10,564.79	-1,998.82	-1,688.42	14,435,114.00	1,692,574.40	39.74824141	-80.81443801	
11,100.02	31.53	286.02	10,652.01	-1,986.51	-1,734.13	14,435,124.31	1,692,526.68	39.74826999	-80.81460570	
11,200.02	36.39	292.32	10,734.95	-1,970.01	-1,788.76	14,435,142.81	1,692,474.06	39.74832109	-80.81479278	
11,300.02	41.52	297.29	10,812.71	-1,943.53	-1,843.71	14,435,169.30	1,692,417.11	39.74839416	-80.81499520	
11,400.02	46.82	301.33	10,884.42	-1,909.34	-1,904.36	14,435,203.48	1,692,356.45	39.74848838	-80.81521074	
11,458.90	50.00	303.39	10,923.50	-1,885.76	-1,941.54	14,435,227.06	1,692,319.28	39.74855335	-80.81534283	
Begin 8°/100' build/tum										
11,500.02	52.99	305.14	10,949.10	-1,867.63	-1,968.13	14,435,245.19	1,692,292.69	39.74860328	-80.81543729	
11,600.02	60.35	308.89	11,004.02	-1,817.28	-2,034.70	14,435,295.54	1,692,226.11	39.74874193	-80.81587378	
11,700.02	67.80	312.13	11,047.71	-1,758.85	-2,102.97	14,435,353.97	1,692,157.85	39.74890280	-80.81591623	
11,800.02	75.32	315.03	11,079.32	-1,693.47	-2,171.80	14,435,419.38	1,692,089.22	39.74906275	-80.81615991	
11,900.02	82.86	317.75	11,098.24	-1,622.41	-2,239.25	14,435,490.42	1,692,021.57	39.74927828	-80.81640007	
12,000.02	90.42	320.37	11,104.09	-1,547.05	-2,304.60	14,435,565.77	1,691,956.21	39.74946558	-80.81663205	
12,007.71	91.00	320.57	11,104.00	-1,541.12	-2,309.50	14,435,571.70	1,691,951.32	39.74950190	-80.81664942	
Begin 91.00° lateral										
12,100.02	91.00	320.57	11,102.38	-1,469.83	-2,368.12	14,435,642.99	1,691,892.70	39.74969801	-80.81665746	
12,200.02	91.00	320.57	11,100.63	-1,392.61	-2,431.62	14,435,720.21	1,691,829.19	39.74991046	-80.81708284	
12,300.02	91.00	320.57	11,098.87	-1,315.38	-2,495.13	14,435,797.44	1,691,765.69	39.75012290	-80.81730821	
12,400.03	91.00	320.57	11,097.12	-1,238.15	-2,558.63	14,435,874.67	1,691,702.19	39.75033535	-80.81753359	
12,500.03	91.00	320.57	11,095.37	-1,160.92	-2,622.14	14,435,951.90	1,691,638.68	39.75054779	-80.81775897	
12,600.03	91.00	320.57	11,093.62	-1,083.69	-2,685.64	14,436,029.13	1,691,575.18	39.75076024	-80.81798435	
12,700.03	91.00	320.57	11,091.86	-1,006.47	-2,749.14	14,436,106.35	1,691,511.67	39.75097268	-80.81820973	
12,800.03	91.00	320.57	11,090.11	-929.24	-2,812.65	14,436,183.58	1,691,448.17	39.75118513	-80.81843512	
12,900.03	91.00	320.57	11,088.36	-852.01	-2,876.15	14,436,260.81	1,691,384.67	39.75139757	-80.81866050	
13,000.03	91.00	320.57	11,086.61	-774.78	-2,939.66	14,436,338.04	1,691,321.16	39.75161001	-80.81888589	
13,100.03	91.00	320.57	11,084.85	-697.55	-3,003.16	14,436,415.27	1,691,257.66	39.75182245	-80.81911127	
13,200.03	91.00	320.57	11,083.10	-620.33	-3,066.67	14,436,492.49	1,691,194.15	39.75203489	-80.81933666	
13,300.03	91.00	320.57	11,081.35	-543.10	-3,130.17	14,436,569.72	1,691,130.65	39.75224734	-80.81956205	
13,400.03	91.00	320.57	11,079.60	-465.87	-3,193.67	14,436,646.95	1,691,067.14	39.75245978	-80.81978744	
13,500.03	91.00	320.57	11,077.84	-388.64	-3,257.18	14,436,724.18	1,691,003.64	39.75267222	-80.82001284	
13,600.03	91.00	320.57	11,076.09	-311.41	-3,320.69	14,436,801.40	1,690,940.14	39.75288467	-80.82023823	
13,700.03	91.00	320.57	11,074.34	-234.18	-3,384.19	14,436,878.63	1,690,876.63	39.75309711	-80.82046363	
13,800.03	91.00	320.57	11,072.58	-156.96	-3,447.69	14,436,955.86	1,690,813.13	39.75330955	-80.82068902	
13,900.03	91.00	320.57	11,070.83	-79.73	-3,511.20	14,437,033.09	1,690,749.62	39.75352199	-80.82091442	
14,000.03	91.00	320.57	11,069.08	-2.50	-3,574.70	14,437,110.32	1,690,686.12	39.75373443	-80.82113982	
14,100.03	91.00	320.57	11,067.33	74.73	-3,638.21	14,437,187.54	1,690,622.61	39.75394686	-80.82136522	
14,200.03	91.00	320.57	11,065.57	151.95	-3,701.71	14,437,264.77	1,690,559.11	39.75415930	-80.82159062	
14,300.03	91.00	320.57	11,063.82	229.18	-3,765.21	14,437,342.00	1,690,495.61	39.75437174	-80.82181603	

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Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Angels Envy N-15 HU (slot O)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1279.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1279.00ft
Site:	Armstrong Pad	North Reference:	Grid
Well:	Angels Envy N-15 HU (slot O)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
14,400.03	91.00	320.57	11,062.07	306.41	-3,828.72	14,437,419.23	1,690,432.10	39.75458418	-80.82204143	
14,500.03	91.00	320.57	11,060.32	383.64	-3,892.22	14,437,495.46	1,690,368.60	39.75479661	-80.82226684	
14,600.03	91.00	320.57	11,058.58	460.87	-3,955.73	14,437,573.68	1,690,305.09	39.75500905	-80.82249225	
14,700.03	91.00	320.57	11,056.81	538.09	-4,019.23	14,437,650.91	1,690,241.59	39.75522149	-80.82271766	
14,800.03	91.00	320.57	11,055.06	615.32	-4,082.74	14,437,728.14	1,690,178.09	39.75543392	-80.82294307	
14,900.03	91.00	320.57	11,053.31	692.55	-4,146.24	14,437,805.37	1,690,114.58	39.75564636	-80.82316643	
15,000.03	91.00	320.57	11,051.55	769.78	-4,209.74	14,437,882.59	1,690,051.08	39.75585879	-80.82339389	
15,100.03	91.00	320.57	11,049.80	847.01	-4,273.25	14,437,959.82	1,689,987.57	39.75607123	-80.82361931	
15,200.03	91.00	320.57	11,048.05	924.23	-4,336.75	14,438,037.05	1,889,924.07	39.75628366	-80.82384472	
15,300.03	91.00	320.57	11,046.30	1,001.46	-4,400.26	14,438,114.28	1,889,860.56	39.75649809	-80.82407014	
15,400.03	91.00	320.57	11,044.54	1,078.69	-4,463.76	14,438,191.51	1,889,797.06	39.75670853	-80.82429556	
15,500.03	91.00	320.57	11,042.79	1,155.92	-4,527.27	14,438,268.73	1,889,733.56	39.75692096	-80.82452098	
15,600.03	91.00	320.57	11,041.04	1,233.15	-4,590.77	14,438,345.96	1,889,670.05	39.75713339	-80.82474640	
15,700.03	91.00	320.57	11,039.29	1,310.37	-4,654.27	14,438,423.19	1,889,606.55	39.75734582	-80.82497182	
15,800.03	91.00	320.57	11,037.53	1,387.60	-4,717.78	14,438,500.42	1,889,543.04	39.75755825	-80.82519725	
15,900.03	91.00	320.57	11,035.78	1,464.83	-4,781.28	14,438,577.65	1,889,479.54	39.75777068	-80.82542268	
16,000.03	91.00	320.57	11,034.03	1,542.06	-4,844.79	14,438,654.87	1,889,416.03	39.75798311	-80.82564810	
16,100.03	91.00	320.57	11,032.28	1,619.29	-4,908.29	14,438,732.10	1,889,352.53	39.75819554	-80.82587353	
16,200.03	91.00	320.57	11,030.52	1,696.51	-4,971.80	14,438,809.33	1,889,289.03	39.75840797	-80.82609896	
16,300.03	91.00	320.57	11,028.77	1,773.74	-5,035.30	14,438,886.56	1,889,225.52	39.75862040	-80.82632439	
16,400.03	91.00	320.57	11,027.02	1,850.97	-5,098.81	14,438,963.79	1,889,162.02	39.75883283	-80.82654983	
16,500.03	91.00	320.57	11,025.27	1,928.20	-5,162.31	14,439,041.01	1,889,098.51	39.75904526	-80.82677526	
16,600.03	91.00	320.57	11,023.51	2,005.43	-5,225.81	14,439,118.24	1,889,035.01	39.75925768	-80.82700070	
16,700.03	91.00	320.57	11,021.76	2,082.65	-5,289.32	14,439,195.47	1,888,971.50	39.75947011	-80.82722613	
16,800.03	91.00	320.57	11,020.01	2,159.88	-5,352.82	14,439,272.70	1,888,908.00	39.75968254	-80.82745157	
16,900.03	91.00	320.57	11,018.25	2,237.11	-5,416.33	14,439,349.92	1,888,844.50	39.75989496	-80.82767701	
17,000.03	91.00	320.57	11,016.50	2,314.34	-5,479.83	14,439,427.15	1,888,780.99	39.76010739	-80.82790245	
17,100.03	91.00	320.57	11,014.75	2,391.57	-5,543.34	14,439,504.38	1,888,717.49	39.76031982	-80.82812789	
17,200.03	91.00	320.57	11,013.00	2,468.79	-5,606.84	14,439,581.61	1,888,653.98	39.76053224	-80.82835334	
17,300.03	91.00	320.57	11,011.24	2,546.02	-5,670.34	14,439,658.84	1,888,590.48	39.76074466	-80.82857878	
17,400.04	91.00	320.57	11,009.49	2,623.25	-5,733.85	14,439,736.06	1,888,526.98	39.76095709	-80.82880423	
17,500.04	91.00	320.57	11,007.74	2,700.48	-5,797.35	14,439,813.29	1,888,463.47	39.76116951	-80.82902968	
17,600.04	91.00	320.57	11,005.99	2,777.71	-5,860.85	14,439,890.52	1,888,399.97	39.76138194	-80.82925513	
17,700.04	91.00	320.57	11,004.23	2,854.93	-5,924.36	14,439,967.75	1,888,336.46	39.76159436	-80.82948058	
17,800.04	91.00	320.57	11,002.48	2,932.16	-5,987.87	14,440,044.97	1,888,272.96	39.76180678	-80.82970603	
17,900.04	91.00	320.57	11,000.73	3,009.39	-6,051.37	14,440,122.20	1,888,209.45	39.76201920	-80.82993148	
18,000.04	91.00	320.57	10,998.98	3,086.62	-6,114.87	14,440,199.43	1,888,145.95	39.76223162	-80.83015694	
18,100.04	91.00	320.57	10,997.22	3,163.85	-6,178.38	14,440,276.66	1,888,082.45	39.76244404	-80.83038240	
18,200.04	91.00	320.57	10,995.47	3,241.07	-6,241.88	14,440,353.89	1,888,018.94	39.76265646	-80.83060785	
18,300.04	91.00	320.57	10,993.72	3,318.30	-6,305.39	14,440,431.11	1,887,955.44	39.76286888	-80.83083331	
18,400.04	91.00	320.57	10,991.97	3,395.53	-6,368.89	14,440,508.34	1,887,891.93	39.76308130	-80.83105877	
18,500.04	91.00	320.57	10,990.21	3,472.76	-6,432.40	14,440,585.57	1,887,828.43	39.76329372	-80.83128423	
18,600.04	91.00	320.57	10,988.46	3,549.99	-6,495.90	14,440,662.80	1,887,764.92	39.76350614	-80.83150969	
18,700.04	91.00	320.57	10,986.71	3,627.21	-6,559.41	14,440,740.03	1,887,701.42	39.76371856	-80.83173516	
18,800.04	91.00	320.57	10,984.96	3,704.44	-6,622.91	14,440,817.25	1,887,637.92	39.76393098	-80.83196063	
18,900.04	91.00	320.57	10,983.20	3,781.67	-6,686.41	14,440,894.48	1,887,574.41	39.76414340	-80.83218610	
19,000.04	91.00	320.57	10,981.45	3,858.90	-6,749.92	14,440,971.71	1,887,510.91	39.76435581	-80.83241156	
19,100.04	91.00	320.57	10,979.70	3,936.13	-6,813.42	14,441,048.94	1,887,447.40	39.76456823	-80.83263704	
19,200.04	91.00	320.57	10,977.95	4,013.35	-6,876.93	14,441,126.16	1,887,383.90	39.76478064	-80.83286251	
19,300.04	91.00	320.57	10,976.19	4,090.58	-6,940.43	14,441,203.39	1,887,320.40	39.76499306	-80.83308798	
19,400.04	91.00	320.57	10,974.44	4,167.81	-7,003.94	14,441,280.62	1,887,256.89	39.76520548	-80.83331345	
19,500.04	91.00	320.57	10,972.69	4,245.04	-7,067.44	14,441,357.85	1,887,193.39	39.76541789	-80.83353893	
19,600.04	91.00	320.57	10,970.93	4,322.27	-7,130.94	14,441,435.08	1,887,129.88	39.76563030	-80.83376441	
19,700.04	91.00	320.57	10,969.18	4,399.49	-7,194.45	14,441,512.30	1,887,066.38	39.76584272	-80.83398989	
19,800.04	91.00	320.57	10,967.43	4,476.72	-7,257.95	14,441,589.53	1,887,002.87	39.76605513	-80.83421537	

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Planning Report - Geographic

Database: DB_Dec2220_v16
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia
 Site: Armstrong Pad
 Well: Angels Envy N-15 HU (slot C)
 Wellbore: Original Hole
 Design: rev0

Local Co-ordinate Reference: Well Angels Envy N-15 HU (slot C)
 TVD Reference: GL @ 1279.00ft
 MD Reference: GL @ 1279.00ft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
19,900.04	91.00	320.57	10,965.69	4,553.95	-7,321.46	14,441,666.76	1,666,939.37	39.76626754	-80.83444085
20,000.04	91.00	320.57	10,963.92	4,631.18	-7,384.96	14,441,743.99	1,686,875.87	39.76647996	-80.83466633
20,100.04	91.00	320.57	10,962.17	4,708.41	-7,448.47	14,441,821.22	1,686,812.36	39.76669237	-80.83489181
20,200.04	91.00	320.57	10,960.42	4,785.64	-7,511.97	14,441,898.44	1,686,748.86	39.76690478	-80.83511730
20,300.04	91.00	320.57	10,958.67	4,862.86	-7,575.48	14,441,975.67	1,686,685.35	39.76711719	-80.83534279
20,400.04	91.00	320.57	10,956.91	4,940.09	-7,638.98	14,442,052.90	1,686,621.85	39.76732960	-80.83556827
20,500.04	91.00	320.57	10,955.16	5,017.32	-7,702.48	14,442,130.13	1,686,558.34	39.76754201	-80.83579376
20,600.04	91.00	320.57	10,953.41	5,094.55	-7,765.99	14,442,207.35	1,686,494.84	39.76775442	-80.83601925
20,700.04	91.00	320.57	10,951.66	5,171.78	-7,829.49	14,442,284.58	1,686,431.34	39.76796683	-80.83624475
20,800.04	91.00	320.57	10,949.90	5,249.00	-7,893.00	14,442,361.81	1,686,367.83	39.76817924	-80.83647024
20,900.04	91.00	320.57	10,948.15	5,326.23	-7,956.50	14,442,439.04	1,686,304.33	39.76839165	-80.83669574
21,000.04	91.00	320.57	10,946.40	5,403.46	-8,020.01	14,442,516.27	1,686,240.82	39.76860406	-80.83692123
21,100.04	91.00	320.57	10,944.65	5,480.69	-8,083.51	14,442,593.49	1,686,177.32	39.76881646	-80.83714673
21,200.04	91.00	320.57	10,942.89	5,557.92	-8,147.01	14,442,670.72	1,686,113.81	39.76902887	-80.83737223
21,300.04	91.00	320.57	10,941.14	5,635.14	-8,210.52	14,442,747.95	1,686,050.31	39.76924128	-80.83759773
21,400.04	91.00	320.57	10,939.39	5,712.37	-8,274.02	14,442,825.18	1,685,986.81	39.76945368	-80.83782323
21,500.04	91.00	320.57	10,937.64	5,789.60	-8,337.53	14,442,902.41	1,685,923.30	39.76966609	-80.83804874
21,600.04	91.00	320.57	10,935.88	5,866.83	-8,401.03	14,442,979.63	1,685,859.80	39.76987850	-80.83827424
21,700.04	91.00	320.57	10,934.13	5,944.06	-8,464.54	14,443,056.86	1,685,796.29	39.77009090	-80.83849975
21,800.04	91.00	320.57	10,932.38	6,021.28	-8,528.04	14,443,134.09	1,685,732.79	39.77030330	-80.83872525
21,900.04	91.00	320.57	10,930.63	6,098.51	-8,591.54	14,443,211.32	1,685,669.29	39.77051571	-80.83895076
22,000.04	91.00	320.57	10,928.87	6,175.74	-8,655.05	14,443,288.55	1,685,605.78	39.77072811	-80.83917627
22,100.04	91.00	320.57	10,927.12	6,252.97	-8,718.55	14,443,365.77	1,685,542.28	39.77094052	-80.83940179
22,200.04	91.00	320.57	10,925.37	6,330.20	-8,782.06	14,443,443.00	1,685,478.77	39.77115292	-80.83962730
22,300.05	91.00	320.57	10,923.62	6,407.42	-8,845.56	14,443,520.23	1,685,415.27	39.77136532	-80.83985281
22,400.05	91.00	320.57	10,921.86	6,484.65	-8,909.07	14,443,597.46	1,685,351.76	39.77157772	-80.84007833
22,500.05	91.00	320.57	10,920.11	6,561.88	-8,972.57	14,443,674.68	1,685,288.26	39.77179012	-80.84030385
22,600.05	91.00	320.57	10,918.36	6,639.11	-9,036.08	14,443,751.91	1,685,224.76	39.77200252	-80.84052937
22,677.48	91.00	320.57	10,917.00	6,698.91	-9,085.25	14,443,811.72	1,685,175.58	39.77218700	-80.84070400

PBHL/TD 22677.48 MD 10917.00 TVD

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Angels Envy N-15HU PE - hit/miss target - Shape - Point	0.00	0.00	10,917.00	6,698.91	-9,085.25	14,443,811.72	1,685,175.58	39.77216700	-80.84070400
Angels Envy N-15HU LF - plan misses target center by 0.12ft at 12007.67ft MD (11104.00 TVD, -1541.16 N, -2309.47 E) - Point	0.00	0.00	11,104.00	-1,541.09	-2,309.38	14,435,571.74	1,691,951.44	39.74950200	-80.81664900

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Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	WV Department of Environmental Protection Hole Diameter (")
22,684.67		20' Casing	20	24



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Angels Envy N-15 HU (slot O)
Company:	Tug Hill Operating LLC	TVD Reference:	CL @ 1279.00ft
Project:	Marshall County, West Virginia	MD Reference:	CL @ 1279.00ft
Site:	Armstrong Pad	North Reference:	Grid
Well:	Angels Envy N-15 HU (slot O)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,200.00	1,200.00	0.00	0.00	KOP Begin 2°/100' build
1,350.00	1,349.93	-2.68	-2.87	Begin 3.00° tangent
1,800.69	1,800.00	-18.76	-20.12	Begin 2°/100' turn
1,816.38	1,815.67	-19.29	-20.75	Begin 3.00° tangent
3,002.33	3,000.00	-56.64	-70.32	Begin 2°/100' build
3,502.33	3,494.51	-98.47	-125.82	Begin 2°/100' build/turn
3,891.27	3,867.90	-176.53	-200.12	Begin 19.48° tangent
10,601.38	10,193.99	-1,957.60	-1,554.40	Begin 6°/100' build/turn
11,458.90	10,923.50	-1,865.76	-1,941.54	Begin 8°/100' build/turn
12,007.71	11,104.00	-1,541.12	-2,309.50	Begin 91.00° lateral
22,677.48	10,917.00	6,688.91	-9,085.25	PBHL/TD 22677.48 MD 10917.00 TVD

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WV Department of
Environmental Protection

WW-9
(4/16)

API Number 47 - 051 - _____
Operator's Well No. Angels Envy N-15HU

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

Watershed (HUC 10) French Creek - Ohio River Quadrangle Powhatan Point 7.5'

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

Will a pit be used? Yes No

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

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

Proposed Disposal Method For Treated Pit Wastes:

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

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

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

-If oil based, what type? Synthetic, petroleum, etc. n/a

Additives to be used in drilling medium? _____

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

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

-Landfill or offsite name/permit number? Wetzel County Sanitary Landfill (GW-1021 / W0102185) and Westmoreland Sanitary Landfill, LLC (SAN1436 / PA DEP EOP1396426), Cheat Valley Landfill (100419)

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

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

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

Company Official Signature James A. Pancake
Company Official (Typed Name) Jim Pancake
Company Official Title Vice President - Geosciences

Office of Oil and Gas
APR 06 2022
WV Department of Environmental Protection

Subscribed and sworn before me this 30 day of March, 2021

My commission expires 1/2/2024

Notary Public
Commonwealth of Pennsylvania - Notary Seal
SEAN COTTER - Notary Public
Washington County
My Commission Expires Jan 2, 2024
Commission Number 0513/2022

WW-9
(4/16)

API Number 47 - 051 - _____
Operator's Well No. Angels Envy N-15HU

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

Watershed (HUC 10) French Creek - Ohio River Quadrangle Powhatan Point 7.5'

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

Will a pit be used? Yes No

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

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

Proposed Disposal Method For Treated Pit Wastes:

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

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

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

-If oil based, what type? Synthetic, petroleum, etc. n/a

Additives to be used in drilling medium? _____

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

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

-Landfill or offsite name/permit number? Weir County Sanitary Landfill (BWF-1021 / WW2109165) and Westmoreland Sanitary Landfill, LLC (SAN1425 / PA DEP EC01356403), Chesapeake Valley Landfill (100419)

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

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

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

Company Official Signature James A. Pancake

Company Official (Typed Name) Jim Pancake

Company Official Title Vice President - Geosciences

APR 06 2022

REGISTRATION
Office of Oil and Gas
WV Department of
Environmental Protection

Subscribed and sworn before me this 30 day of March, 2021

My commission expires 1/21/2024

Notary Public
Commonwealth of Pennsylvania - Notary Seal
SEAN COTTER - Notary Public
Washington County
My Commission Expires Jan 21, 2024
Commission Number 12045
05/13/2022

Tug Hill Operating, LLC

Proposed Revegetation Treatment: Acres Disturbed 3.27 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

Seed Mixtures

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

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:

Comments: _____

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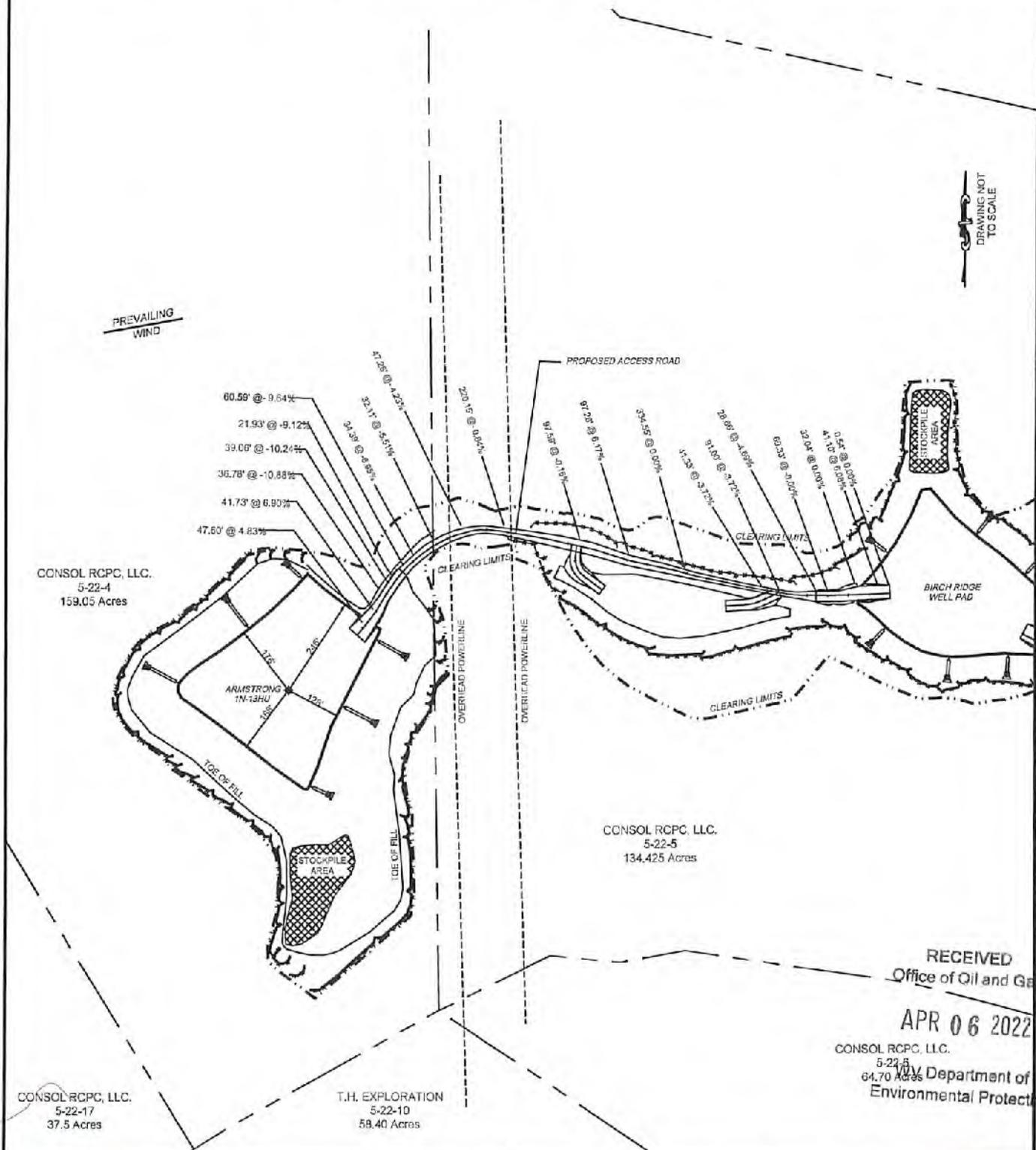
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WV Department of
Environmental Protection

Title: Oil and Gas Inspector

Date: 1/19/2022

Field Reviewed? () Yes () No



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CONSOL RCPC, LLC.
5-22-5
64.70 Acres
PA Department of
Environmental Protection

Jackson Surveying Inc.
8148 E. Pike St.
Charlottesville, VA 22901
Phone: 804-625-5807

TOPO SECTION:	
POWHATAN POINT 7.5'	
COUNTY	DISTRICT
MARSHALL	FRANKLIN
DRAWN BY	JOB NO.
J.A.H.	6345/0851

OPERATOR:	
PREPARED FOR:	
TUG HILL OPERATING, LLC 360 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15311	
DATE	SCALE
07-15-2011	NONE

**TUG HILL
OPERATING**

WW-9

PROPOSED ANGELS ENVY WELLS

SUPPLEMENT PG 2

DRAWING NOT TO SCALE

MARK E. YOHO, ET UX
5-19-18.1
55,948 Acres

PAUL V. & CAROL NEELY
5-19-18.2
32,672 Acres

MARK E. YOHO, ET UX
5-19-18
55,948 Acres

CONSOL RCPC, LLC.
5-22-5
134,425 Acres

WILLIAMS OHIO VALLEY
MIDSTREAM, LLC
5-22-5.1
12,675 Acres

CONSOL RCPC, LLC.
5-22-6
64,70 Acres

PREVAILING WIND

OVERHEAD POWERLINE

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APR 06 2022

WV Department of
Environmental Protection



Jackson Surveying Inc.
2412 E. Pine St.
Cranberry, WV 26031
Phone: 304-813-6861

TOPO SECTION:

POWHATAN POINT 75'

OPERATOR:

PREPARED FOR:

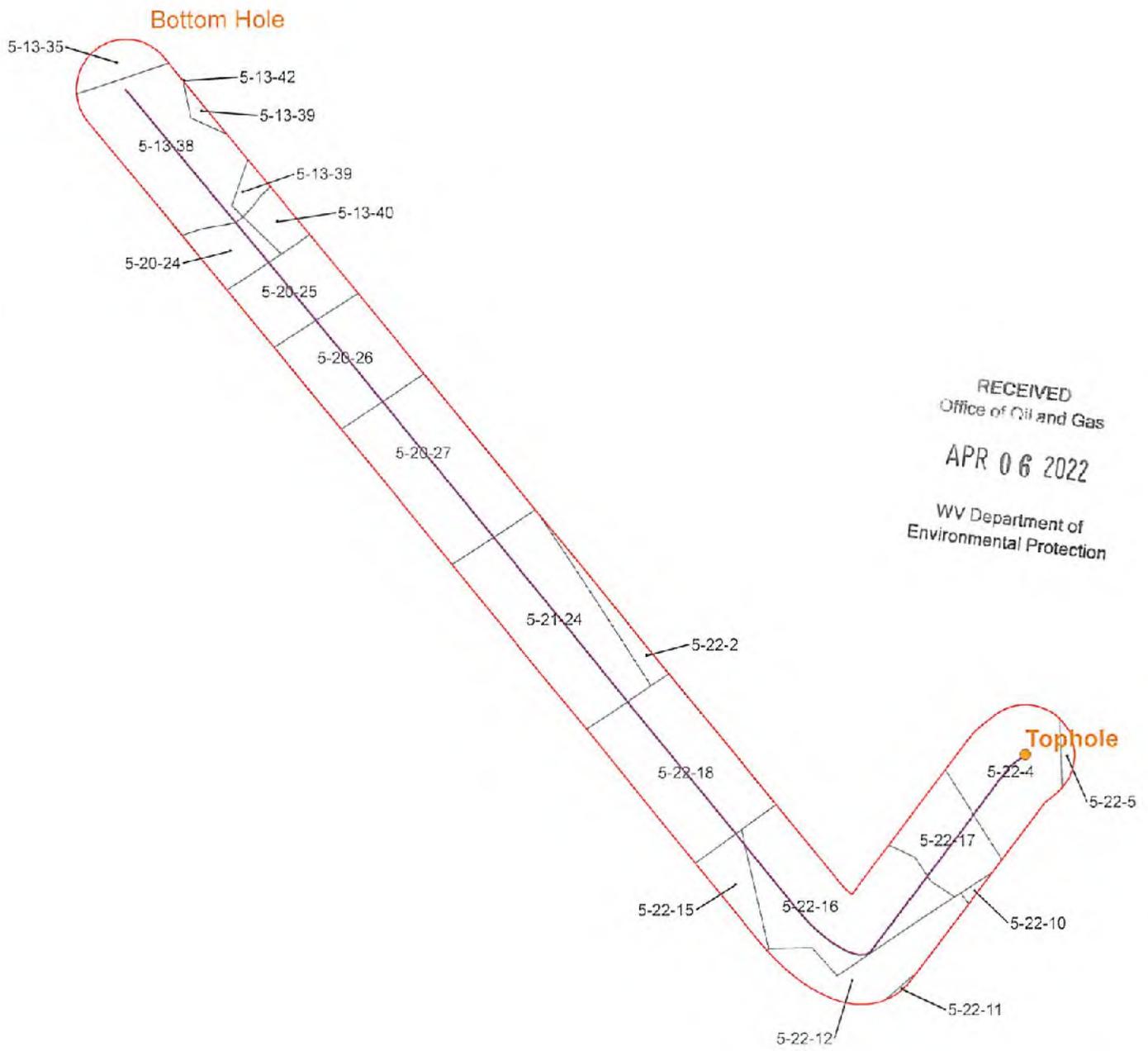
TUG HILL OPERATING LLC
300 SOUTHPOINTE BLVD
SUITE 200
CANONSBURG, PA 15219

COUNTY	DISTRICT
MARSHALL	FRANKLIN
DRAWN BY	JOB NO.
J.A.H	494510031

DATE	SCALE
07-16-2019	NONE



05/13/2022



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APR 06 2022
WV Department of
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Coordinate System: NAD 1983 UTM Zone 18N
Projection: Transverse Mercator
Datum: North American 1983
False Easting: 100,000 meters
False Northing: 0 meters
Central Meridian: -85.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000
Units: Feet US

CONFIDENTIAL



- Utica Well
- Force Pool
- 500' Buffer

Angels Envy N-15HU
Operators within 500 Feet of Well Borehole



**Operators within 500" of Well Bores
Angel's Envy N - 15HU**

COUNTY	DISTRICT	TMP	MINERAL OWNER OR LESSEE	ADDRESS
Marshall	Franklin	5-13-35	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-13-38	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-13-39	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-13-40	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-13-42	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-20-24	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-20-25	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-20-26	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-20-27	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-20-27	TH EXPLORATION, LLC	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-21-24	TH EXPLORATION, LLC	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-22-10	TH EXPLORATION, LLC	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-22-11	TH EXPLORATION, LLC	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-22-12	TH EXPLORATION, LLC	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-22-15	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-22-16	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-22-17	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-22-17	TH EXPLORATION, LLC	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-22-18	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107

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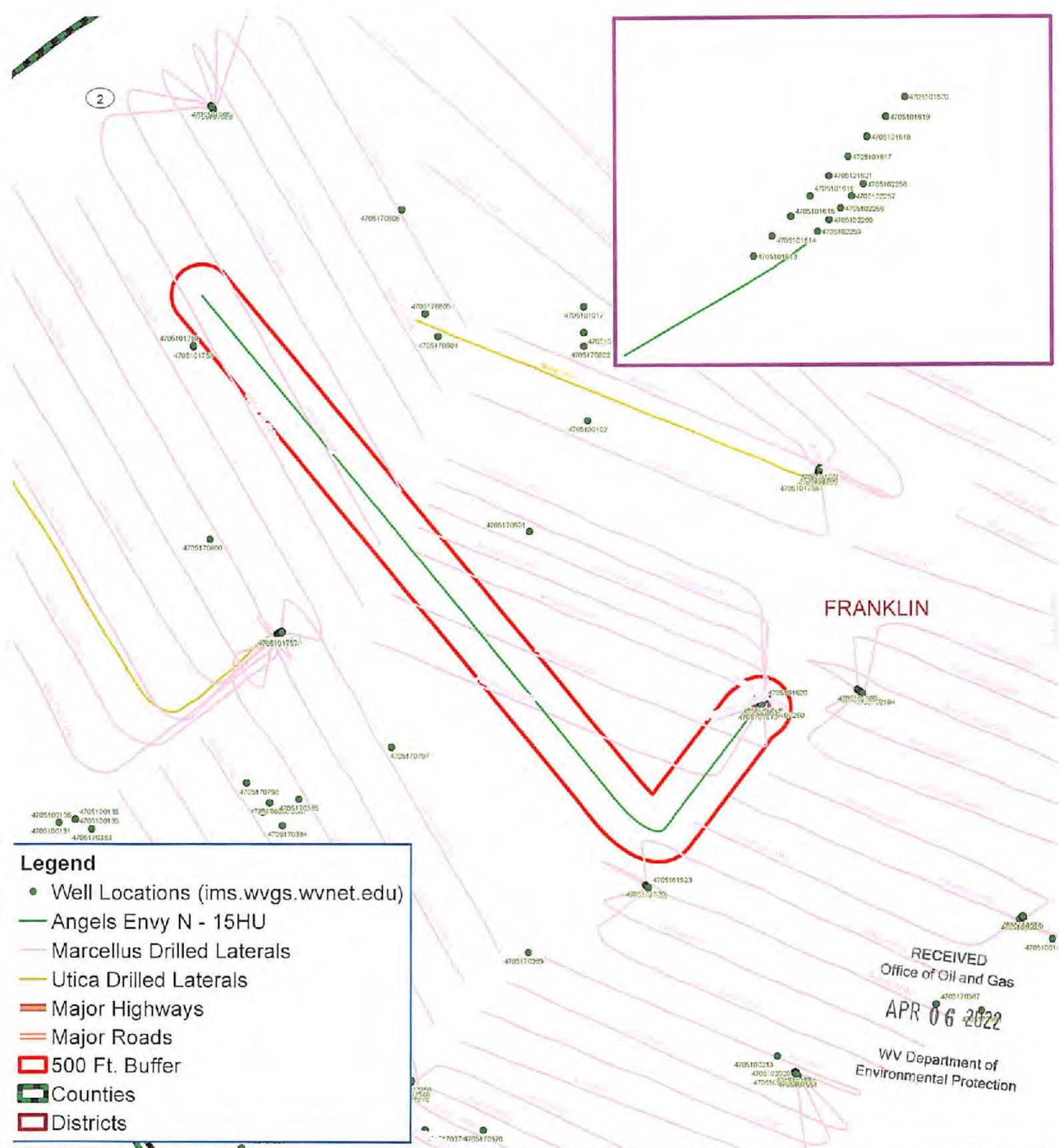
Marshall	Franklin	5-22-2	TH EXPLORATION, LLC	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-22-4	TH EXPLORATION II, LLC*	1320 S University Drive Suite 500 Fort Worth, TX 76107
Marshall	Franklin	5-22-5	TH EXPLORATION, LLC	1320 S University Drive Suite 500 Fort Worth, TX 76107
<p>* TH Exploration II, LLC is a wholly owned subsidiary of THQ Appalachia I, LLC. Tug Hill Operating, LLC provides oil and gas operations services to THQ Appalachia I, LLC under that certain Operating Services Agreement dated July 23, 2014. For further information please see the recorded affidavit submitted as part of the permit pack.</p>				

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Legend

- Well Locations (ims.wvgs.wvnet.edu)
- Angels Envy N - 15HU
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- Major Highways
- Major Roads
- 500 Ft. Buffer
- Counties
- Districts



Angels Envy N - 15HU Franklin District Marshall County, WV



Map Prepared by:
DPS
 05/13/2022
 LAND SERVICES

Map Created: January 4 2022

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

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 (1/04/2022) 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

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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
4705101613	Tug Hill Operating, LLC	12572' MD / 6463' TVD	Marcellus	none	No, this producing Marcellus 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 Angels Envy N-15HU.
4705101614	Tug Hill Operating, LLC	5652' MD / 5542' TVD	none	none	No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation. Well is not completed.	Uncompleted well drilled into the Alexander. Well located on same well pad as proposed Angels Envy N-15HU.
4705101615	Tug Hill Operating, LLC	12868' MD / 6464' TVD	Marcellus	none	No, this producing Marcellus 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 Angels Envy N-15HU.
4705101616	Tug Hill Operating, LLC	5721' MD / 5703' TVD	none	none	No, this well is not deep enough to be within the expected fracture propagation from the proposed Point Pleasant stimulation. Well is not completed.	Uncompleted well drilled into the Alexander. Well located on same well pad as proposed Angels Envy N-15HU.

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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
4705101617	Tug Hill Operating, LLC	12485' MD / 6462' TVD	Marcellus	none	No, this producing Marcellus 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 Angels Envy N-15HU.
4705101618	Tug Hill Operating, LLC	12459' MD / 6459' TVD	Marcellus	none	No, this producing Marcellus 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 Angels Envy N-15HU.
4705101619	Tug Hill Operating, LLC	12420' MD / 6461' TVD	Marcellus	none	No, this producing Marcellus 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 Angels Envy N-15HU.
4705101620	Tug Hill Operating, LLC	12282' MD / 6462' TVD	Marcellus	none	No, this producing Marcellus 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 Angels Envy N-15HU.
4705101621	Tug Hill Operating, LLC	12512' MD / 6461' TVD	Marcellus	none	No, this producing Marcellus 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 Angels Envy N-15HU.

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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
4705102256	Tug Hill Operating, LLC	11354' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102257	Tug Hill Operating, LLC	11371' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102258	Tug Hill Operating, LLC	11417' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102259	Tug Hill Operating, LLC	11357' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.
4705102260	Tug Hill Operating, LLC	11409' TVD (proposed)	none	none	No, this well will not be drilled to the proposed depth or perforated. This is a canceled permit.	Permit canceled by Tug Hill Operating, LLC.

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WV Geological & Economic Survey:

Well: County = 51 Permit = 01613

Report Time: Monday, January 10, 2022 10:30:04 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101613	Marshall	1613	Franklin	Powhatan Point	Clarrington	39.753694	-80.808539	516401.6	4400437.8

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101613	1 As Drilled	514486.7	4400761.8	-80.830862	39.756648
4705101613	1 As Proposed	514490.5	4400766.2	-80.830841	39.756688

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
4705101613	4/21/2015	Dvld Orgrl Loc	Completed	CNX Gas Company LLC	1H		Arm Trng	WV16-0102-001/WV16-0010-001/WV16-0075-001	CNX Gas Company LLC	Gastar Exploration USA, Inc.	6458	Marcellus Fm	

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_AFT	NGL_BEF	NGL_AFT	P_BEF	
4705101613	4/21/2015	8/26/2013	1276	Ground Level	Unnamed	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	12572	12572	6279		2611			194			

Comment: 4/21/2015 Additional Lease Numbers: WV16-0084-000, KOP 6279'

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
4705101613	4/21/2015	Water	Fresh Water	Vertical			55	Pennsylvanian System					
4705101613	4/21/2015	Water	Salt Water	Vertical			1664	3rd Salt Sand					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	7069	Marcellus Fm	7251	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	7209	Marcellus Fm	7471	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	7517	Marcellus Fm	7664	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	7737	Marcellus Fm	7904	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	7957	Marcellus Fm	8124	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	8177	Marcellus Fm	8344	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	8397	Marcellus Fm	8564	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	8617	Marcellus Fm	8784	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	8837	Marcellus Fm	9004	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	9057	Marcellus Fm	9224	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	9277	Marcellus Fm	9444	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	9497	Marcellus Fm	9664	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	9717	Marcellus Fm	9884	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	9929	Marcellus Fm	10111	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	10149	Marcellus Fm	10331	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	10377	Marcellus Fm	10544	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	10589	Marcellus Fm	10771	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	10817	Marcellus Fm	10984	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	11037	Marcellus Fm	11204	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	11257	Marcellus Fm	11424	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	11477	Marcellus Fm	11644	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	11697	Marcellus Fm	11864	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	11917	Marcellus Fm	12084	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	12137	Marcellus Fm	12304	Marcellus Fm					
4705101613	4/21/2015	Pay	Oil & Gas	Deviated	12359	Marcellus Fm	12419	Marcellus Fm					

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
4705101613	Gastar Exploration USA, Inc.	2014	27,340	0	0	0	0	0	0	0	0	0	0	0	27,340
4705101613	Gastar Exploration Inc.	2015	362,133	52,283	35,886	34,063	19,304	38,343	32,403	13,865	12,237	32,391	33,360	30,221	27,737
4705101613	Tug Hill Operating, LLC	2016	332,777	31,984	27,774	30,462	29,681	30,137	28,091	27,230	27,044	26,310	25,631	24,306	24,142
4705101613	Tug Hill Operating, LLC	2017	24,516	21,561	19,687	20,956	22,258	22,699	21,461	21,668	21,707	20,891	20,831	20,204	568
4705101613	Tug Hill Operating, LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101613	Tug Hill Operating, LLC	2019	17,552	17,633	30,768	21,702	22,249	23,424	20,748	20,059	27,897	20,611	22,584	20,715	23,060
4705101613	Tug Hill Operating, LLC	2020	22,717	21,756	21,956	18,152	18,461	16,793	17,999	14,239	19,448	19,363	20,433	19,333	17,654

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Well: County = 51 Permit = 01614

Report Time: Monday, January 10, 2022 10:35:25 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705101614	Marshall	1614	Franklin	Powhatan Point	Clarington	39.753738	-80.808497	516405.2	4400442.7

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705101614	1 As Drilled	516346.4	4400234	-80.809189	39.751859
4705101614	1 As Proposed	514536	4400879.3	-80.830307	39.757706

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
4705101614	-/-		Dvld Orgnl Loc	Completed	CNX Gas Company LLC	2H	Armstrong	WV16-0102-001/WV16-0010-001/WV16-0076-001	CNX Gas Company LLC	Gastar Exploration USA, Inc.	6458	Marcellus Fm	

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_BEFO	G_AFTO	O_BEFO	O_AFTO	NGL_BEFO	NGL_A	
4705101614	-/-	8/26/2013	1279	Ground Level	Cameron-Garner	Greenland Gap Fm	Alexander	Development Well	Development Well	not available	Rotary	NotCmplt	5543		5543							

Comment: -/- Additional Lease Numbers:WV16-0084-000

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEFO	G_AFTO	O_BEFO	O_AFTO	WATER_ONTY
4705101614	-/-	Water	Fresh Water	Vertical				55	Pennsylvanian System				
4705101614	-/-	Water	Salt Water	Vertical			1664		Salt Sands (undiff)				

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
4705101614	Tug Hill Operating, LLC	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101614	Tug Hill Operating, LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101614	Tug Hill Operating, LLC	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101614	Tug Hill Operating, LLC	2020	0	0	0	0	0	0	0	0	0	0	0	0	0

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Report Time: Monday, January 10, 2022 10:33:17 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101615	Marshall	1615	Franklin	Povhatan Point	Clarrington	39.753782	-80.808455	516408.8	4400447.6

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101615	1 As Drilled	514582.2	4400994	-80.829765	39.758739
4705101615	1 As Proposed	514581.4	4400992.4	-80.829775	39.758724

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
4705101615	4/21/2015	Dvld Orign Loc	Completed	CNX Gas Company LLC	3H		Armstrong	WV16-0102-001/WV16-0010-001/WV16-0076-001	CNX Gas Company LLC	Gaslar Exploration USA, Inc.	6458	Marcellus Fm	

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	KOD	G_BEFO	G_AFT	O_BEFO	O_AFT	NGL_BEFO	NGL_AFT	P_BE
4705101615	4/21/2015	10/28/2015	1278	Ground Level	Unnamed	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	12868	12868	6096				3013		194	

Comment: 4/21/2015 Additional Lease Numbers: WV16-0084-000, KOP 6096

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEFO	G_AFT	O_BEFO	O_AFT	WATER_QNTY
4705101615	4/21/2015	Water	Fresh Water	Vertical			55						
4705101615	4/21/2015	Water	Salt Water	Vertical			1664	3rd Salt Sand					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	6914	Marcellus Fm	7099	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	7137	Marcellus Fm	7319	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	7357	Marcellus Fm	7539	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	7577	Marcellus Fm	7759	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	7797	Marcellus Fm	7979	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	8017	Marcellus Fm	8199	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	8237	Marcellus Fm	8414	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	8457	Marcellus Fm	8639	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	8677	Marcellus Fm	8859	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	8897	Marcellus Fm	9079	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	9117	Marcellus Fm	9299	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	9337	Marcellus Fm	9519	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	9551	Marcellus Fm	9739	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	9777	Marcellus Fm	9959	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	9997	Marcellus Fm	10179	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	10217	Marcellus Fm	10399	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	10437	Marcellus Fm	10619	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	10665	Marcellus Fm	10832	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	10885	Marcellus Fm	11052	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	11105	Marcellus Fm	11272	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	11325	Marcellus Fm	11492	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	11545	Marcellus Fm	11712	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	11765	Marcellus Fm	11932	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	11985	Marcellus Fm	12152	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	12205	Marcellus Fm	12372	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	12425	Marcellus Fm	12592	Marcellus Fm					
4705101615	4/21/2015	Pay	Oil & Gas	Deviated	12647	Marcellus Fm	12739	Marcellus Fm					

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
4705101615	Gaslar Exploration USA, Inc.	2014	24,769	0	0	0	0	0	0	0	0	0	0	0	24,769
4705101615	Gaslar Exploration Inc.	2015	294,635	54,021	23,259	18,585	15,549	22,016	17,962	7,895	22,706	25,614	32,615	20,491	25,842
4705101615	Tug Hill Operating, LLC	2016	339,308	32,442	28,709	30,270	29,666	30,122	28,401	28,804	28,011	26,482	26,565	24,697	25,153
4705101615	Tug Hill Operating, LLC	2017	259,720	23,181	21,866	23,021	23,744	21,582	21,645	24,043	23,503	22,510	22,873	21,199	10,549
4705101615	Tug Hill Operating, LLC	2018	244,599	20,710	21,005	22,613	19,746	19,699	20,054	18,956	20,741	20,671	20,236	19,877	20,263
4705101615	Tug Hill Operating, LLC	2019	231,219	24,374	20,358	18,089	18,771	21,338	20,491	17,731	20,803	18,864	18,478	16,949	18,669
4705101615	Tug Hill Operating, LLC	2020	182,496	17,345	17,463	14,852	15,105	13,740	14,727	11,632	15,912	15,735	16,718	15,818	13,448

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Well: County = 51 Permit = 01616

Report Time: Monday, January 10, 2022 10:36:52 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX	DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101616	Marshall	1516		Franklin	Powhatan Point	Clarinjton	39.753827	-80.909412	516412.5	4400452.6

Bottom Hole Location Information:

API	EP	FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101616	1	As Drilled	516449.2	4400391.4	-80.807984	39.753275
4705101616	1	As Proposed	514626.9	4401105.4	-80.829241	39.759742

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
4705101616	-/-		Dvid Orgnl Loc	Completed	CNX Gas Company LLC	4H	Armstrong	WV15-0102-001/WV16-0010-001/WV15-0076-001	CNX Gas Company LLC	Gastar Exploration USA, Inc.	6458	Marcellus Fm	

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_AFT	NGL_BEF	NGL_A	
4705101616	-/-	8/28/2013	1279	Ground Level	Cameron-Garner	Greenland Gap Fm	Alexander	Development Well	Development Well	not available	Rotary	NotCmplt'd	5703			5703							

Comment: -/- Additional Lease Numbers:WV16-0084-000

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
4705101616	Tug Hill Operating, LLC	2017	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101616	Tug Hill Operating, LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101616	Tug Hill Operating, LLC	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101616	Tug Hill Operating, LLC	2020	0	0	0	0	0	0	0	0	0	0	0	0	0

Production Oil Information: (Volumes in Bbl) ** some operators may have reported NGL under Oil

API	PRODUCING_OPERATOR	PRD_YEAR	ANN_OIL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DCM
4705101616	Tug Hill Operating, LLC	2017	0												
4705101616	Tug Hill Operating, LLC	2018	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101616	Tug Hill Operating, LLC	2019	0	0	0	0	0	0	0	0	0	0	0	0	0
4705101616	Tug Hill Operating, LLC	2020	0	0	0	0	0	0	0	0	0	0	0	0	0

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Well: County = 51 Permit = 01617

Report Time: Monday, January 10, 2022 10:33:53 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_76	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101617	Marshall	1617	Franklin	Powhatan Point	Clarrington	39.753915	-80.808327	516419.7	4400462.3

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101617	1 As Drilled	514716.1	4401331	-80.828171	39.761773
4705101617	1 As Proposed	514717.9	4401331.6	-80.828174	39.761778

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
4705101617	4/20/2015	Dvtd Orgnl Loc	Completed	CNX Gas Company LLC	6H		Armstrong	WV16-0098-000/WV16-0010-001/WV16-0076-001	CNX Gas Company LLC	Gastar Exploration USA, Inc.	6458	Marcellus Fm	

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_FTC	KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEI
4705101617	4/20/2015	12/12/2013	1278	Ground Level	Unnamed	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	12484	12484	6190		2911		265			

Comment: 4/20/2015 Additional Lease Numbers: WV16-0126-005 KOP 6190

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
4705101617	4/20/2015	Water	Fresh Water	Vertical			55	Pennsylvanian System					
4705101617	4/20/2015	Water	Salt Water	Vertical			1664	3rd Salt Sand					
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	6911	Marcellus Fm		7074	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	7135	Marcellus Fm		7317	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	7388	Marcellus Fm		7542	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	7590	Marcellus Fm		7738	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	7783	Marcellus Fm		8009	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	8081	Marcellus Fm		8239	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	8342	Marcellus Fm		8500	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	8555	Marcellus Fm		8718	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	8833	Marcellus Fm		8951	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	9001	Marcellus Fm		9140	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	9201	Marcellus Fm		9341	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	9398	Marcellus Fm		9551	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	9601	Marcellus Fm		9773	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	9806	Marcellus Fm		9996	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	10027	Marcellus Fm		10165	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	10202	Marcellus Fm		10359	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	10409	Marcellus Fm		10537	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	10584	Marcellus Fm		10742	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	10782	Marcellus Fm		10953	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	10998	Marcellus Fm		11106	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	11160	Marcellus Fm		11338	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	11369	Marcellus Fm		11558	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	11606	Marcellus Fm		11751	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	11884	Marcellus Fm		12048	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	12091	Marcellus Fm		12219	Marcellus Fm				
4705101617	4/20/2015	Pay	Oil & Gas	Deviated	12281	Marcellus Fm		12373	Marcellus Fm				

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
4705101617	Gastar Exploration USA, Inc	2014	23,930												23,930
4705101617	Gastar Exploration Inc	2015	348,025	54,506	35,915	40,977	7,224	31,379	32,815	15,352	13,691	30,067	35,026	29,281	21,603
4705101617	Tug Hill Operating, LLC	2016	293,505	31,515	26,121	29,127	27,388	27,720	25,302	22,305	21,766	21,123	20,828	19,964	20,342
4705101617	Tug Hill Operating, LLC	2017	210,455	19,135	17,152	18,545	17,593	17,105	16,482	15,888	15,918	15,434	18,227	19,809	19,063
4705101617	Tug Hill Operating, LLC	2018	256,269	15,500	21,742	25,297	21,265	23,535	19,419	22,335	13,832	24,366	23,361	22,740	22,657
4705101617	Tug Hill Operating, LLC	2019	250,047	26,913	21,082	16,321	19,243	21,767	21,292	16,352	35,239	17,680	17,964	16,402	19,811
4705101617	Tug Hill Operating, LLC	2020	207,909	18,480	18,693	18,917	16,504	16,831	17,761	13,932	19,514	18,061	17,124	16,978	15,094

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101618	Marshall	1616	Franklin	Powhatan Point	Clinton	39.753959	-80.609284	516423.4	4400467.2

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101618	1 As Drilled	514763.1	4401443.8	-80.827843	39.762788
4705101618	1 As Proposed	514763.4	4401444.7	-80.82764	39.762797

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
4705101618	4/20/2015	Dvtd Orgnl Loc	Completed	CNX Gas Company LLC	7H		Armstrong	WV16-0085-000/WV16-0103-001/WV16-0022-001	CNX Gas Company LLC	Gastar Exploration USA, Inc.	6458	Marcellus Fm	

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_AFT	NGL_BEF	NGL_AFT	P_BEF
4705101618	4/20/2015	1/3/2014	1278	Ground Level	Unnamed	Marcellus Fm	Marcellus Fm	Development Well	Oil and Gas	Rotary	Fractured	12459	12459	5998		2443			160			

Comment: 4/20/2015 Additional Lease Numbers:WV16-0010-001/WV16-0076-001/WV16-0126-000. KOP 5998'

Pay/ShowWater 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
4705101618	4/20/2015	Water	Fresh Water	Vertical			55	Pennsylvanian System					
4705101618	4/20/2015	Water	Salt Water	Vertical			1654	3rd Salt Sand					
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	7034	Marcellus Fm		7214	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	7263	Marcellus Fm		7364	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	7414	Marcellus Fm		7615	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	7667	Marcellus Fm		7650	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	7911	Marcellus Fm		8108	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	8145	Marcellus Fm		8400	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	8456	Marcellus Fm		8590	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	8688	Marcellus Fm		8253	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	8901	Marcellus Fm		9071	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	9126	Marcellus Fm		9293	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	9346	Marcellus Fm		9513	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	9566	Marcellus Fm		9733	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	9703	Marcellus Fm		9953	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	10008	Marcellus Fm		10175	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	10226	Marcellus Fm		10393	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	10446	Marcellus Fm		10613	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	10668	Marcellus Fm		10833	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	10887	Marcellus Fm		11057	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	11106	Marcellus Fm		11273	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	11326	Marcellus Fm		11493	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	11546	Marcellus Fm		11713	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	11769	Marcellus Fm		11925	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	11988	Marcellus Fm		12153	Marcellus Fm				
4705101618	4/20/2015	Pay	Oil & Gas	Deviated	12222	Marcellus Fm		12314	Marcellus Fm				

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
4705101618	Gastar Exploration USA, Inc.	2014	18,780	0	0	0	0	0	0	0	0	0	0	0	18,780
4705101618	Gastar Exploration Inc	2015	354,942	45,791	36,938	31,022	26,549	42,627	29,618	11,290	35,187	27,973	25,497	21,633	21,804
4705101618	Tug Hill Operating, LLC	2016	241,800	24,900	23,530	23,557	21,689	21,540	19,928	19,874	18,896	17,362	17,462	16,221	16,838
4705101618	Tug Hill Operating, LLC	2017	184,261	15,163	16,217	16,819	15,317	15,191	15,135	15,439	15,480	15,351	15,528	14,488	13,968
4705101618	Tug Hill Operating, LLC	2018	249,512	12,722	16,759	20,107	19,298	23,176	24,300	25,041	19,031	23,857	22,211	20,497	20,513
4705101618	Tug Hill Operating, LLC	2019	9,353	9,353	0	0	0	0	0	0	0	0	0	0	0
4705101618	Tug Hill Operating, LLC	2020	22,130	0	0	0	0	0	0	0	0	0	0	501	21,629

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Well: County = 51 Permit = 01619

Report Time: Monday, January 10, 2022 10:34:57 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101619	Marshall	1619	Franklin	Powhatan Point	Clarington	39.754203	-80.808242	516427	4400472.1

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101619	1 As Drilled	514309.1	440155.8	-80.827104	39.763817
4705101619	1 As Proposed	514309.9	440155.7	-80.827106	39.763814

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
4705101619	4/19/2015	Divd Orign Loc	Completed	CNX Gas Company LLC	3H		Armstrong	WV16-0085-000/WV16-0124-001/WV16-0010-001	CNX Gas Company LLC	Gastar Exploration USA, Inc.		6458 Marcellus Fm	

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_AFT	NGL_BEF	NGL_AFT	P_BEF
4705101619	4/19/2015	1/13/2014	1278	Ground Level	Unnamed	Marcellus Fm	Marcellus Fm	Development Well	Oil and Gas	Rotary	Fractured	12420		12420	6097		3875		359			

Comment: 4/19/2015 Additional Lease Numbers:WV16-0022-001/WV16-0126-005. KOP 6097

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
4705101619	4/19/2015	Water	Fresh Water	Vertical			55		Pennsylvanian System				
4705101619	4/19/2015	Water	Fresh Water	Vertical			1664		3rd Salt Sand				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	7185	Marcellus Fm		7286	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	7332	Marcellus Fm		7553	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	7631	Marcellus Fm		7789	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	7834	Marcellus Fm		7961	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	7999	Marcellus Fm		8109	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	8160	Marcellus Fm		8333	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	8373	Marcellus Fm		8542	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	8588	Marcellus Fm		8766	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	8799	Marcellus Fm		8998	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	8983	Marcellus Fm		9089	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	9150	Marcellus Fm		9311	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	9366	Marcellus Fm		9483	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	9530	Marcellus Fm		9675	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	9718	Marcellus Fm		9854	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	9912	Marcellus Fm		10112	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	10177	Marcellus Fm		10370	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	10441	Marcellus Fm		10649	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	10719	Marcellus Fm		10929	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	10998	Marcellus Fm		11119	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	11200	Marcellus Fm		11367	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	11420	Marcellus Fm		11587	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	11635	Marcellus Fm		11804	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	11860	Marcellus Fm		12027	Marcellus Fm				
4705101619	4/19/2015	Pay	Oil & Gas	Deviated	12160	Marcellus Fm		12252	Marcellus Fm				

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
4705101619	Gastar Exploration USA, Inc.	2014	32,334	0	0	0	0	0	0	0	0	0	0	0	32,334
4705101619	Gastar Exploration Inc.	2015	356,066	57,366	35,912	37,572	19,956	37,822	31,423	13,299	15,939	29,860	27,854	26,125	23,138
4705101619	Tug Hill Operating, LLC	2016	271,128	27,494	23,623	24,987	24,437	23,695	21,370	22,559	22,144	20,863	20,705	19,773	19,452
4705101619	Tug Hill Operating, LLC	2017	189,252	16,467	14,358	15,649	17,376	17,984	16,246	16,250	16,166	14,580	14,673	14,159	15,341
4705101619	Tug Hill Operating, LLC	2018	31,348	12,537	9,452	9,159	200	0	0	0	0	0	0	0	0
4705101619	Tug Hill Operating, LLC	2019	234,569	4,551	28,141	16,265	19,572	24,713	23,842	18,833	21,534	19,328	19,470	18,907	19,400
4705101619	Tug Hill Operating, LLC	2020	213,413	19,652	18,887	18,079	17,498	16,607	17,962	14,185	19,160	18,432	18,770	17,745	16,436

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Well: County = 51 Permit = 01620

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705101620	Marshall	1620	Franklin	Powhatan Point	Clarington	39.754047	-80.809199	516430.7	4400477

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101620	1 As Drilled	514853.9	4401670	-80.826578	39.764825
4705101620	1 As Proposed	514854.4	4401670.8	-80.826572	39.764832

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
4705101620	4/19/2015	Dvtd Orngl Loc	Completed	CNX Gas Company LLC	9H		Armstrong	WV16-0086-000/WV16-0124-001/WV16-0010-001	CNX Gas Company LLC	Gasstar Exploration USA, Inc.	6458	Marcellus Fm	

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_AFT	NGL_BEF	NGL_AFT	P_BEF	
4705101620	4/19/2015	1/23/2014	1278	Ground Level	Unnamed	Marcellus Fm	Marcellus Fm	Development Well	Oil and Gas	Rotary	Fractured	12262		12282	6477		3072			107			

Comment: 4/19/2015 Additional Lease Numbers:WV16-0022-001/WV16-0126-005. KOP 6477

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
4705101620	4/19/2015	Water	Fresh Water	Vertical			55	Pennsylvanian System					
4705101620	4/19/2015	Water	Fresh Water	Vertical			1854	3rd Salt Sand					
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	7393	Marcellus Fm		7568	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	7637	Marcellus Fm		7928	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	7977	Marcellus Fm		8135	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	8266	Marcellus Fm		8515	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	8574	Marcellus Fm		8790	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	8868	Marcellus Fm		9029	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	9101	Marcellus Fm		9267	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	9349	Marcellus Fm		9514	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	9568	Marcellus Fm		9808	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	9889	Marcellus Fm		10057	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	10113	Marcellus Fm		10328	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	10391	Marcellus Fm		10614	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	10690	Marcellus Fm		10875	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	10945	Marcellus Fm		11101	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	11169	Marcellus Fm		11335	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	11380	Marcellus Fm		11549	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	11603	Marcellus Fm		11831	Marcellus Fm				
4705101620	4/19/2015	Pay	Oil & Gas	Deviated	12009	Marcellus Fm		12101	Marcellus Fm				

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
4705101620	Gasstar Exploration USA, Inc.	2014	30,494	0	0	0	0	0	0	0	0	0	0	0	30,494
4705101620	Gasstar Exploration Inc.	2015	292,937	38,050	26,588	26,928	19,408	32,680	26,043	10,217	17,375	25,898	27,851	21,894	20,401
4705101620	Tug Hill Operating, LLC	2016	235,136	26,160	22,266	23,114	19,915	19,705	18,326	19,362	17,907	17,118	17,411	15,191	18,654
4705101620	Tug Hill Operating, LLC	2017	174,391	16,615	14,907	17,359	16,212	15,453	13,952	14,414	13,377	13,808	12,922	13,237	12,729
4705101620	Tug Hill Operating, LLC	2018	173,643	12,101	15,697	17,582	16,273	16,134	16,489	15,193	11,962	13,446	12,050	13,034	13,432
4705101620	Tug Hill Operating, LLC	2019	155,091	12,063	15,778	10,937	11,968	14,200	13,428	11,106	14,356	12,885	12,980	12,805	12,934
4705101620	Tug Hill Operating, LLC	2020	142,324	13,101	12,592	12,052	11,965	11,071	11,975	9,507	12,773	12,288	12,513	11,830	10,957

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Well: County = 51 Permit = 01621

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101621	Marshall	1521	Franklin	Powhatan Point	Clarrington	39.753871	-80.90837	516416.1	4400457.4

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705101621	1 As Drilled	514671.4	4401216.2	-80.828719	39.760739
4705101621	1 As Proposed	514672.4	4401218.5	-80.828707	39.76076

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
4705101621	4/21/2015	Dvld Orign Loc	Completed	CNX Gas Company LLC	5H		Armstrong	WV16-0010-001/WV16-0076-001/WV16-0126-005	CNX Gas Company LLC	Gaslar Exploration USA, Inc.	6458	Marcellus Fm	

Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TYD	TMD	NEW_FTG_KOD	G_BEF	G_AFT	O_BEF	O_AFT	NGL_BEF	NGL_AFT	P_BEF
4705101621	4/21/2015	12/1/2013	1278	Ground Level	Unnamed	Marcellus Fm	Marcellus Fm	Development Well	Development Well	Oil and Gas	Rotary	Fractured	12512	12512	5736		2701				272

Comment: 4/21/2015 KOP 57.35'

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
4705101621	4/21/2015	Water	Fresh Water	Vertical			55	Pennsylvanian System					
4705101621	4/21/2015	Water	Salt Water	Vertical			1554	3rd Salt Sand					
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	6812	Marcellus Fm		6910	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	7004	Marcellus Fm		7138	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	7173	Marcellus Fm		7320	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	7393	Marcellus Fm		7550	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	7611	Marcellus Fm		7800	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	7852	Marcellus Fm		8037	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	8093	Marcellus Fm		8237	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	8294	Marcellus Fm		8524	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	8564	Marcellus Fm		8729	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	8820	Marcellus Fm		8992	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	9055	Marcellus Fm		9207	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	9263	Marcellus Fm		9437	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	9436	Marcellus Fm		9639	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	9742	Marcellus Fm		9899	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	9971	Marcellus Fm		10048	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	10097	Marcellus Fm		10280	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	10357	Marcellus Fm		10501	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	10644	Marcellus Fm		10774	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	10820	Marcellus Fm		10955	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	11020	Marcellus Fm		11187	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	11256	Marcellus Fm		11395	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	11445	Marcellus Fm		11527	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	11604	Marcellus Fm		11758	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	11835	Marcellus Fm		12069	Marcellus Fm				
4705101621	4/21/2015	Pay	Oil & Gas	Deviated	12248	Marcellus Fm		12331	Marcellus Fm				

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
4705101621	Gaslar Exploration USA, Inc.	2014	20,683	0	0	0	0	0	0	0	0	0	0	0	20,683
4705101621	Gaslar Exploration Inc.	2015	216,577	12,270	27,585	5,567	0	27,205	24,201	13,627	24,896	22,001	24,184	20,031	15,010
4705101621	Tug Hill Operating, LLC	2016	217,462	20,412	18,605	18,713	18,729	19,561	18,289	18,417	18,058	16,825	17,157	16,157	16,554
4705101621	Tug Hill Operating, LLC	2017	172,058	16,937	15,956	15,757	14,239	14,426	14,655	14,901	14,870	14,416	14,302	6,027	15,565
4705101621	Tug Hill Operating, LLC	2018	10,755	10,735	15	0	0	0	5	0	0	0	0	0	0
4705101621	Tug Hill Operating, LLC	2019	206,682	10,472	28,448	15,932	17,058	16,829	16,589	12,674	27,902	14,449	14,898	13,420	15,208
4705101621	Tug Hill Operating, LLC	2020	165,964	15,120	15,295	15,477	13,594	13,771	14,548	11,399	15,966	14,776	13,942	13,103	8,971

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Well: County = 51 Permit = 02256

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Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102256	Marshall	2256	Franklin	Powhatan Point	Clarington	39.7538	-80.808344	516418.3	4400449.6

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102256	1 As Proposed	517409.6	4397212.7	-80.798858	39.724615

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
4705102256	-/-		Dvtd Orign Loc Cancelled	Consol RCPC LLC			1S-10HU Armstrong		Consol RCPC LLC	Tug Hill Operating, LLC		11354	Pt Pleasant Fm

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_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_A
4705102256	-/-	-/-	1279	Ground Level																					

WV Geological & Economic Survey

Well: County = 51 Permit = 02257

Report Time: Monday, January 10, 2022 10:38:19 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102257	Marshall	2257	Franklin	Powhatan Point	Clarington	39.753827	-80.808319	516420.5	4400452.5

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102257	1 As Proposed	517755	4397621.6	-80.792617	39.726293

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
4705102257	-/-		Dvtd Orign Loc Cancelled	Consol RCPC LLC			1S-11HU Armstrong		Consol RCPC LLC	Tug Hill Operating, LLC		11371	Pt Pleasant Fm

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_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_A
4705102257	-/-	-/-	1279	Ground Level																					

WV Geological & Economic Survey

Well: County = 51 Permit = 02258

Report Time: Monday, January 10, 2022 10:38:32 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102258	Marshall	2258	Franklin	Powhatan Point	Clarington	39.753853	-80.808293	516422.6	4400455.5

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102258	1 As Proposed	518064.9	4397812.1	-80.788962	39.730002

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
4705102258	-/-		Dvtd Orign Loc Cancelled	Consol RCPC LLC			1S-12HU Armstrong		Consol RCPC LLC	Tug Hill Operating, LLC		11417	Pt Pleasant Fm

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_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_A
4705102258	-/-	-/-	1279	Ground Level																					

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Well: County = 51 Permit = 02259

Report Time: Monday, January 10, 2022 10:38:47 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705102259	Marshall	2259	Franklin	Povhatan Point	Clarington	39.753748	-80.808396	516413.9	4400443.7

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705102259	1 As Proposed	513346.1	4403443	-80.844146	39.780825

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
4705102259	-/-	Dvld Orgrl Loc	Cancelled	Consol RCPC LLC			1N-13HU Armstrong		Consol RCPC LLC	Tug Hill Operating, LLC		11357 Pt Pleasant Fm	

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_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_A
4705102259	-/-	-/-	1279	Ground Level																					

WV Geological & Economic Survey

Well: County = 51 Permit = 02260

Report Time: Monday, January 10, 2022 10:39:00 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705102260	Marshall	2260	Franklin	Povhatan Point	Clarington	39.753774	-80.80837	516416.1	4400446.7

Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LONG_DD	LAT_DD
4705102260	1 As Proposed	515490.2	4401711.4	-80.819148	39.765187

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
4705102260	-/-	Dvld Orgrl Loc	Cancelled	Consol RCPC LLC			1N-14HU Armstrong		Consol RCPC LLC	Tug Hill Operating, LLC		11409 Pt Pleasant Fm	

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_AFT	NGL_BEF	NGL_AFT	P_BEF	TI_BEF	P_A
4705102260	-/-	-/-	1279	Ground Level																					

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TUG HILL
OPERATING

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

Well Name: Angels Envy N-15HU

Pad Name: Armstrong

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,400,437.87

Easting: 516,409.53

*Wayne J. K...
11/19/2022*

**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

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form WW6

**ANGELS ENVY LEASE
WELL N-15HU
350.4071 ± ACRES**
(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

DETAIL
SKETCH "A" (01610) Armstrong 8H
SCALE 1"=200'
(01617) Armstrong 8H
(01621) Armstrong 5H
(01616) Armstrong 4H
(01615) Armstrong 3H
(01614) Armstrong 2H
(01613) Armstrong 1H
Angels Envy
OS-12HU
Angels Envy S-11HU
Angels Envy S-10HU
Angels Envy N-14HU
Angels Envy N-13HU
Angels Envy S-16HU

TOP HOLE LATITUDE: 39°47'30"
BOTTOM HOLE LATITUDE: 39°47'30"
REFERENCES SCALE 1"=400'
12" BLACK LOCUST
N 19°00' E
384.2'
ANGELS ENVY N-15HU
24" POPLAR
S 74°00' W
348.0'

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,440.80
E) 516,411.71

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,399,971.05
E) 515,707.80

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,402,482.61
E) 513,642.54

LINE	BEARING	DISTANCE
L1	N 49°59' W	2438.84'
L2	N 17°24' E	1924.65'
L3	S 47°46' W	27.44'
L4	S 53°56' W	132.43'
L5	S 38°12' W	2234.85'

LEGEND

- LEASE TRACTS
- SURFACE TRACTS
- WELL LATERAL
- POINT PLEASANT LEGS
- UNIT BOUNDARY
- (A) LEASE # (SEE 6A1 FORM)

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	S 44°22' W	110.71'	408.29'	111.05'
C2	S 65°07' W	100.03'	118.54'	103.26'
C3	N 76°51' W	145.97'	363.81'	146.96'
C4	N 57°25' W	291.30'	1054.02'	292.24'
C5	N 43°54' W	389.73'	1956.24'	390.38'

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 MARCH, 2022. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
4. WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
5. ALL DEEP WELLS WITHIN 1000' SHOWN ON THIS PLAT.
6. BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCCAMEY & CHILCOTE, P.C. FILE 0058304.0401147
7. LTP & LPL ARE THE SAME POINT.

FILE NUMBER _____
DRAWING NUMBER: **ANGELS ENVY N-15HU REV 0**
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY 1/200
PROVEN SOURCE OF ELEVATION **SUBMETER MAPPING**
GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

P.S. 708 *David L Jackson*

JACKSON SURVEYING INC.
P.O. Box 1460
Clarksburg, WV 26302
304-923-5851



WVDEP
OFFICE OF OIL & GAS
601 5TH STREET, SE
CHARLESTON, WV 25304

DATE: APRIL 12, 2022
OPERATORS WELL NO. ANGELS ENVY N-15HU
API WELL NO. 47-051-02444
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP X SHALLOW ___
LOCATION ELEVATION 1278.62' WATERSHED (HUC 10) FRENCH CREEK - OHIO RIVER
DISTRICT FRANKLIN COUNTY MARSHALL
QUADRANGLE POWHATAN POINT 7.5' LEASE NUMBER SEE WW-6A1 Form

SURFACE OWNER CONSOL RCPC, LLC. ACREAGE 136.32
OIL & GAS ROYALTY OWNER CONSOL RCPC, LLC. LEASE ACREAGE 136.32
PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___
PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE (SPECIFY) _____

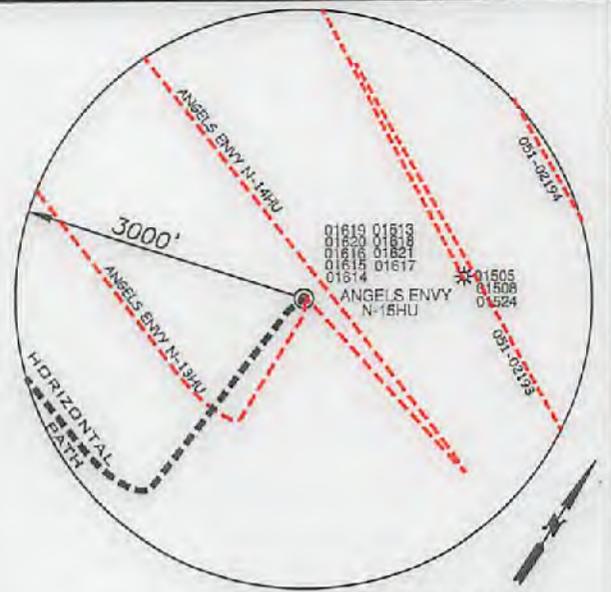
TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,323' TMD: 22,677'
WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN, CT CORP
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107 ADDRESS 5098 WASHINGTON STREET WEST, SUITE 407 CHARLESTON, WV 25313-1561

05/13/2022

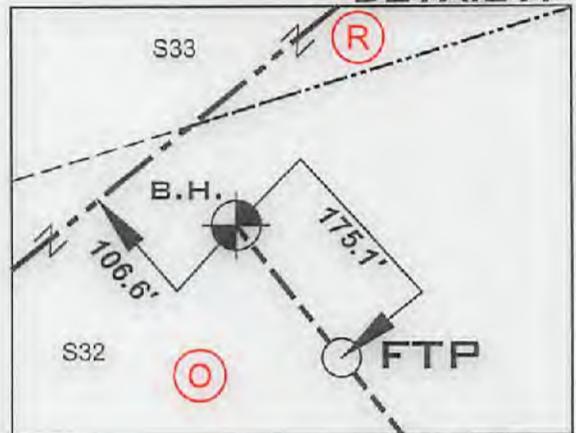
COPY NAME PERMIT

**ANGELS ENVY LEASE
WELL N-15HU
350.4071 ± ACRES**

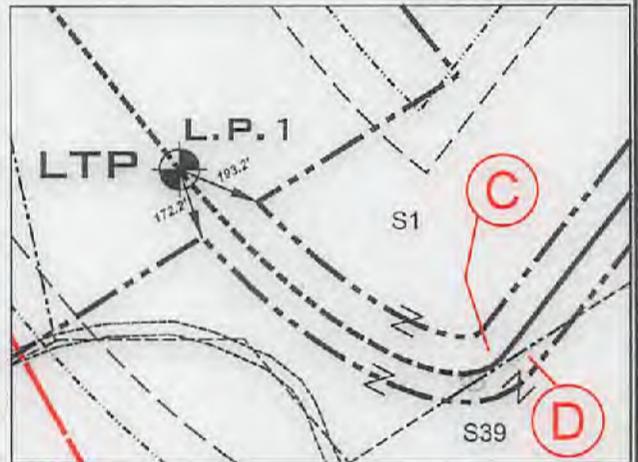
Tags	Number	Tax Map-Parcel	Surface Owner	Acres
C	S1	05-22-16	EDWARD R. YOHO, JR	57.0
F	S2	05-22-18	EDWARD R. YOHO, JR	77.13
I	S3	05-22-02	T.H. EXPLORATION III, LLC	30.0
	S4	05-22-03	CONSOL RCPC, LLC	79.74
	S5	05-22-01	MARY P. MASON, EST	2.0
	S6	05-19-22	GEORGE A. KNUTH & KELLY A. KNUTH	71.0
	S7	05-19-23	WDS PROPERTIES, LLC	28.4
	S8	05-19-01	ROBERT RINE	30.8
	S9	05-19-02	MILTON R. NEAL & LINDA L. NEAL	63.1
	S10	05-13-41A	RODNEY JACKSON & RHONDA JACKSON	17.05
M	S11	05-13-40	ROBERT RINE	29.76
	S12	05-13-41B	LARRY DARRAH & JUDY DARRAH	2.5
P	S13	05-13-39	THOMAS BOWMAN & VICTORIA BOWMAN	46.0
O	S14	05-13-42	THOMAS BOWMAN & VICTORIA BOWMAN	45.0
	S15	05-13-34	DAVID J. MAST	40.0
	S16	05-13-23	DAVID J. MAST	69.59
	S17	05-13-25	AARON PAUL HOLDREN, ET UX	30.0
	S18	05-13-27	AARON PAUL HOLDREN, ET UX	25.0
	S19	05-13-41C	HRS. OF BENTON DARRAH, LILLIE MAY DUGAN, ALMA BITZER, ALBERTA PALMER & AUDREY HOWARD	1.0
	S20	05-14-02	JOHN B WILLIAMS, ET AL	20.17
	S21	05-13-24	ROSE & JAMES DAUGHERTY	12.725
	S22	05-28-04	T.H. EXPLORATION III, LLC	48.44
	S23	05-28-03	T.H. EXPLORATION III, LLC	53.44
	S24	05-22-13	JOHN M MOORE, TERESA R MOORE, & ANDREA S MOORE	40.57
	S25	05-21-21	CONSOL RCPC, LLC	4.0
	S26	05-21-22	PEGGY LEE BOWEN BROWN, ET AL	18.29
G	S27	05-21-23	PEGGY LEE BOWEN BROWN, ET AL	42.67
	S28	05-20-28	T.H. EXPLORATION III, LLC	15.34
	S29	05-20-29	T.H. EXPLORATION III, LLC	30.08
	S30	05-20-32	T.H. EXPLORATION III, LLC	28.8
	S31	05-13-37	T.H. EXPLORATION III, LLC	51.21
O	S32	05-13-38	THOMAS BOWMAN & VICTORIA BOWMAN	61
R	S33	05-13-35	DAVID J. MAST	24.9
B	S34	05-22-17	CONSOL RCPC, LLC	37.5
E	S35	05-22-15	EDWARD R. YOHO, JR	25.5
	S36	05-22-14	CONSOL RCPC, LLC	0.3
	S37	05-13-26.1	WV DIVISION OF HIGHWAYS	0.615
	S38	05-13-26	AARON PAUL HOLDREN, ET UX	0.15
D	S39	05-22-12	T.H. EXPLORATION III, LLC	51.49
	S40	05-22-11	T.H. EXPLORATION III, LLC	55.65
	S41	05-22-09	T.H. EXPLORATION III, LLC	63.44
	S42	05-22-10	T.H. EXPLORATION III, LLC	58.40
	S43	05-22-05	CONSOL RCPC, LLC	134.425
A	S44	05-22-04	CONSOL RCPC, LLC	136.32
	S45	05-19-21	SAMMY E. WHITLATCH, ET AL	116.45
	S46	05-19-03	MILTON R. NEAL & LINDA L. NEAL	72.01
	S47	05-19-04	JUSTINE E RINE	82.75
	S48	05-19-05	MARGI RENE KEEFE	126.03
	S49	05-14-03	LEROY & DONNA K. ANDERSON	130
	S50	05-12-23	CONSOL RCPC, LLC	236.10
	S51	05-13-33	NATHAN D. YODER	142.03
N	S52	05-20-24	ROBERT RINE	24.30
L	S53	05-20-25	ROBERT RINE	43.82
K	S54	05-20-26	ROBERT RINE	60.53
J	S55	05-20-27	T.H. EXPLORATION III, LLC	119.83
H	S56	05-21-24	T.H. EXPLORATION III, LLC	132.5
	S57	05-20-30	T.H. EXPLORATION III, LLC	105



DETAIL A



DETAIL B



P.S. 708 *David L Jackson*

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Deed Book/Page
✓ 10*14033	5-22-14	A	LAMOYNE BAKER, ET AL	665 554
✓ 10*14507	5-22-17	B	MARY THERESA SOLEAU AND THOMAS SOLEAU, ET AL	749 524
✓ 10*14457	5-22-16	C	HARRY LEE GOUDY	731 140
✓ 10*39015	5-22-12	D	TH EXPLORATION III LLC	1117 129
✓ 10*14457	5-22-15	E	HARRY LEE GOUDY	731 140
✓ 10*14457	5-22-18	F	HARRY LEE GOUDY	731 140
✓ 10*14947	5-21-23	G	DANA SMALLWOOD, ET AL	850 520
✓ 10*39015	5-21-24	H	TH EXPLORATION III LLC	1117 129
✓ 10*39015	5-22-2	I	TH EXPLORATION III LLC	1117 129
✓ 10*14307	5-20-27	J	SALLY CYNTHIA HOPKINS, ET AL	777 572
✓ 10*14616	5-20-26	K	ROBERT E RINE & DONNA M RINE	708 250
✓ 10*14685	5-20-25	L	ROBERT E RINE & DONNA M RINE	708 253
✓ 10*14502	5-13-40	M	ROBERT E RINE & DONNA M RINE, ET AL	752 206
✓ 10*14615	5-20-24	N	ROBERT E RINE & DONNA M RINE	708 251
✓ 10*14526	5-13-38	O	THOMAS WILLIAM BOWMAN, ET AL	761 432
✓ 10*14526	5-13-39	P	THOMAS WILLIAM BOWMAN, ET AL	761 432
✓ 10*14526	5-13-42	Q	THOMAS WILLIAM BOWMAN, ET AL	761 432
✓ 10*14618	5-13-35	R	DAVID J MAST AND MIRIAM MAST, ET AL	707 645

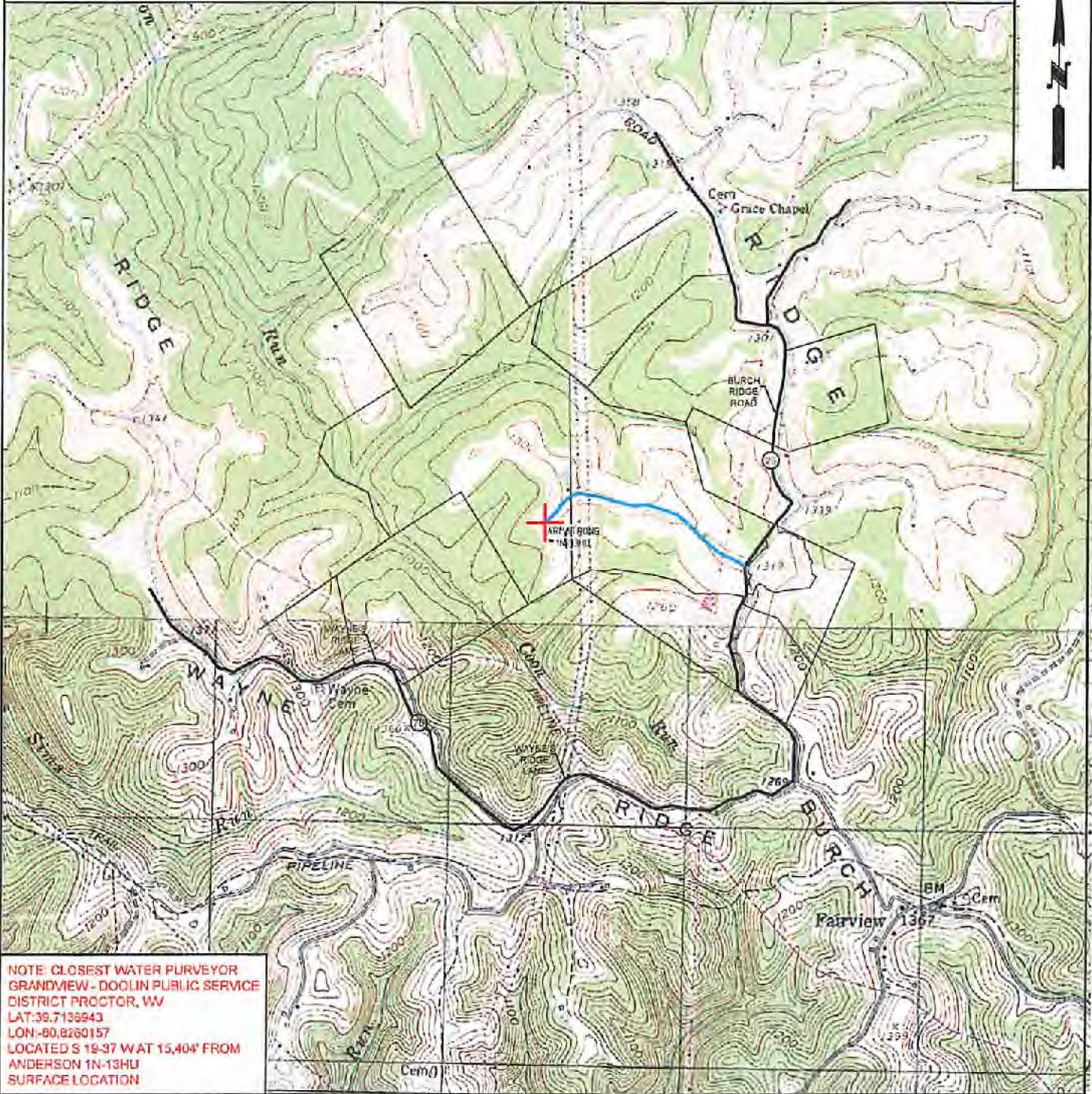
05/13/2022



**TUG HILL
OPERATING**

OPERATOR'S
WELL #: Angels Envy N-15HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API: 047-051-02444

WELL PLAT
PAGE 2 OF 2
DATE: 04/12/2022



NOTE: CLOSEST WATER PURVEYOR
 GRANDMEW - DOOLIN PUBLIC SERVICE
 DISTRICT PROCTOR, WV
 LAT: 39.7139943
 LON: -80.8260157
 LOCATED S 19-37 WAT 15,404' FROM
 ANDERSON 1N-13HU
 SURFACE LOCATION



OPERATOR 494510851
 TUG HILL OPERATING, LLC
 380 SOUTHPOINTE BLVD
 SUITE 200
 CANONSBURG, PA 15317

TOPO SECTION
 NEW MARTINSVILLE 7.5'
SCALE:
 1" = 2000'

LEASE NAME
 ARMSTRONG
DATE:
 DATE: 07-15-2019

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
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*See attached pages

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

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

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

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

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

Lease ID	TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment
10*14033	5-22-4	A	LAMOYNE BAKER	GASTAR EXPLORATION USA INC	1/8+	665	554	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Gastar Exploration USA Inc merged with and into 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*14034	5-22-4	A	LAWRENCE C AND LORRAINE J MCWHORTER	GASTAR EXPLORATION USA INC	1/8+	665	391	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Gastar Exploration USA Inc merged with and into 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*14035	5-22-4	A	PEGGY MAE WHITE	GASTAR EXPLORATION USA INC	1/8+	695	446	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Gastar Exploration USA Inc merged with and into 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*14036	5-22-4	A	WILDA WINTERS	GASTAR EXPLORATION USA INC	1/8+	701	579	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Gastar Exploration USA Inc merged with and into 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*14037	5-22-4	A	JUDITH L CHAMBERS	GASTAR EXPLORATION USA INC	1/8+	701	577	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353	Gastar Exploration USA Inc merged with and into 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*14039	5-22-4	A	CHESTNUT HOLDINGS INC	GASTAR EXPLORATION INC	1/8+	827	554	N/A	Gastar Exploration Inc to Atinum Marcellus I LLC: 32/428	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14507	5-22-17	B	MARY THERESA SOLEAU AND THOMAS SOLEAU	GASTAR EXPLORATION USA INC	1/8+	749	524	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 26/639	Gastar Exploration USA Inc merged with and into 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*14508	5-22-17	B	JEAN W FOSTER	GASTAR EXPLORATION USA INC	1/8+	752	200	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 26/639	Gastar Exploration USA Inc merged with and into 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*14509	5-22-17	B	JAMES ROBERT WELLS	GASTAR EXPLORATION USA INC	1/8+	752	202	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 26/639	Gastar Exploration USA Inc merged with and into 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*14510	5-22-17	B	MARY AGNES CARROLL	GASTAR EXPLORATION USA INC	1/8+	749	528	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 26/639	Gastar Exploration USA Inc merged with and into 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*14511	5-22-17	B	ELIZABETH JANE KELLER	GASTAR EXPLORATION USA INC	1/8+	754	242	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 26/639	Gastar Exploration USA Inc merged with and into 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*14513	5-22-17	B	CAROLYN LYNN PORTER	GASTAR EXPLORATION USA INC	1/8+	767	256	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 27/639	Gastar Exploration USA Inc merged with and into 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*14514	5-22-17	B	CHARLES ARTHUR WELLS	GASTAR EXPLORATION USA INC	1/8+	768	494	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 27/639	Gastar Exploration USA Inc merged with and into 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*14515	5-22-17	B	JERRY TODD WELLS	GASTAR EXPLORATION USA INC	1/8+	773	572	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 28/499	Gastar Exploration USA Inc merged with and into 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*14516	5-22-17	B	JAMES NESBITT WELLS BY JOANIE WELLS AIF	GASTAR EXPLORATION USA INC	1/8+	773	570	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 28/499	Gastar Exploration USA Inc merged with and into 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*14517	5-22-17	B	CARL W BACH JR	GASTAR EXPLORATION INC	1/8+	852	250	N/A	Gastar Exploration Inc to Atinum Marcellus I LLC: 35/119	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14518	5-22-17	B	RAE ELLEN FLOYD AND KENNETH FLOYD	GASTAR EXPLORATION INC	1/8+	854	599	N/A	Gastar Exploration Inc to Atinum Marcellus I LLC: 35/119	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*14519	5-22-17	B	DOUGLAS M BACH	GASTAR EXPLORATION INC	1/8+	854	597	N/A	Gastar Exploration Inc to Atinum Marcellus I LLC: 35/119	Gastar Exploration Inc to TH Exploration II LLC: 36/9	Atinum Marcellus I LLC to TH Exploration II LLC: 48/67
10*16471	5-22-17	B	CNX GAS COMPANY LLC	TH EXPLORATION LLC	1/8+	905	155	N/A	N/A	N/A	N/A
10*16652	5-22-17	B	MARY JUDITH BRANSON AND MICHAEL L BRANSON	TH EXPLORATION LLC	1/8+	942	35	N/A	N/A	N/A	N/A
10*16674	5-22-17	B	CHARLOTTE A KASTELIC	TH EXPLORATION LLC	1/8+	942	37	N/A	N/A	N/A	N/A
10*26910	5-22-17	B	BRIDGET S GATES AND DARRELL T GATES	TH EXPLORATION LLC	1/8+	1045	419	N/A	N/A	N/A	N/A
10*26940	5-22-17	B	PATRICK N WELLS	TH EXPLORATION LLC	1/8+	1045	413	N/A	N/A	N/A	N/A
✓ 10*14457	5-22-16	C	HARRY LEE GOUDY	GASTAR EXPLORATION USA INC	1/8+	731	140	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 735/263	Gastar Exploration USA Inc merged with and into 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*14457	5-22-15	E	HARRY LEE GOUDY	GASTAR EXPLORATION USA INC	1/8+	731	140	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 735/263	Gastar Exploration USA Inc merged with and into 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*14457	5-22-18	F	HARRY LEE GOUDY	GASTAR EXPLORATION USA INC	1/8+	731	140	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 735/263	Gastar Exploration USA Inc merged with and into 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*39015	5-21-24	H	TH EXPLORATION III LLC	TH EXPLORATION LLC	1/8+	1117	129	N/A	N/A	N/A	N/A
✓ 10*14307	5-20-27	J	SALLY CYNTHIA HOPKINS	GASTAR EXPLORATION USA INC	1/8+	777	572	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 28/499	Gastar Exploration USA Inc merged with and into 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*14308	5-20-27	J	MARY E BASSETT	GASTAR EXPLORATION USA INC	1/8+	779	492	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 28/499	Gastar Exploration USA Inc merged with and into 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*14309	5-20-27	J	ROBERT B THOMAS	GASTAR EXPLORATION USA INC	1/8+	779	484	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 28/499	Gastar Exploration USA Inc merged with and into 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*14310	5-20-27	J	JEAN C THOMAS	GASTAR EXPLORATION USA INC	1/8+	781	614	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 28/499	Gastar Exploration USA Inc merged with and into 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*14324	5-20-27	J	RUTH E BASSETT MEADOWS	GASTAR EXPLORATION USA INC	1/8+	792	100	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 28/499	Gastar Exploration USA Inc merged with and into 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

RECEIVED
Office of Oil and Gas

MAY 12 2022

WV Department of
Environmental Protection

10*14325	5-20-27	J	ELIZABETH ANN STRAUSBAUGH	GASTAR EXPLORATION USA INC	1/8+	792	104	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 28/499	Gastar Exploration USA Inc merged with and into 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*14326	5-20-27	J	JANET LEA BLANKENSHIP	GASTAR EXPLORATION USA INC	1/8+	792	580	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 28/499	Gastar Exploration USA Inc merged with and into 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*39015	5-20-27	J	TH EXPLORATION III LLC	TH EXPLORATION LLC	1/8+	1117	129	N/A	N/A	N/A	N/A
✓ 10*14616	5-20-26	K	ROBERT E RINE & DONNA M RINE	CHESAPEAKE APPALACHIA LLC	1/8+	708	250	Chesapeake Appalachia LLC & Statoil USA Onshore Properties Inc to Gastar Exploration USA Inc & Atinum Marcellus I LLC: 27/321	Gastar Exploration USA Inc merged with and into 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*14685	5-20-25	L	ROBERT E RINE & DONNA M RINE	CHESAPEAKE APPALACHIA LLC	1/8+	708	253	Chesapeake Appalachia LLC & Statoil USA Onshore Properties Inc to Gastar Exploration USA Inc & Atinum Marcellus I LLC: 27/321	Gastar Exploration USA Inc merged with and into 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*14615	5-20-24	N	ROBERT E RINE & DONNA M RINE	CHESAPEAKE APPALACHIA LLC	1/8+	708	251	Chesapeake Appalachia LLC & Statoil USA Onshore Properties Inc to Gastar Exploration USA Inc & Atinum Marcellus I LLC: 27/321	Gastar Exploration USA Inc merged with and into 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*14526	5-13-38	O	THOMAS WILLIAM BOWMAN	GASTAR EXPLORATION USA INC	1/8+	761	432	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 27/639	Gastar Exploration USA Inc merged with and into 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*14527	5-13-38	O	VICTORIA BOWMAN	GASTAR EXPLORATION USA INC	1/8+	761	434	Gastar Exploration USA Inc to Atinum Marcellus I LLC: 27/639	Gastar Exploration USA Inc merged with and into 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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WV Department of
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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*");

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(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, communized 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;



March 31, 2022

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

RE: Angels Envy N-15HU

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-hilop.com.

Sincerely,

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

Amy L. Morris
Permitting Specialist
Tug Hill Operating

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March 30, 2022

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

RE: Angels Envy N-15HU

Subject: Road Crossing Letter

Dear Laura:

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

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

Sincerely,

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

Amy L. Morris
Permitting Specialist – Appalachia Region

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

Date of Notice Certification: 03/30/2022

API No. 47- 051 - _____
Operator's Well No. Angels Envy N-15HU
Well Pad Name: Armstrong

Notice has been given:

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

State: <u>West Virginia</u>	UTM NAD 83	Easting: <u>4,400,440.80</u>
County: <u>Marshall</u>		Northing: <u>516,411.71</u>
District: <u>Franklin</u>	Public Road Access: <u>Co. Rt. 29</u>	
Quadrangle: <u>Powhatan Point 7.5'</u>	Generally used farm name: <u>CONSOL RCPC, LLC</u>	
Watershed: <u>French Creek - Ohio River</u>		

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

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p>RECEIVED Office of Oil and Gas</p> <p>APR 06 2022</p> <p>WV Department of Environmental Protection</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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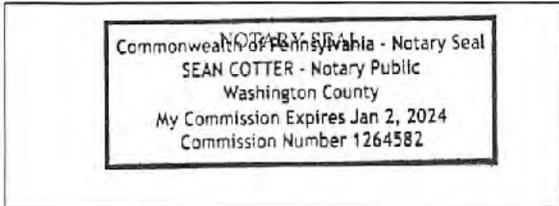
Required Attachments:

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

Certification of Notice is hereby given:

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

Well Operator:	<u>Tug Hill Operating, LLC</u>	Address:	<u>380 Southpointe Boulevard, Plaza II, Suite 200</u>
By:	<u>Amy L. Morris <i>Amy L. Morris</i></u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Permitting Specialist - Appalachia Region</u>	Facsimile:	<u></u>
Telephone:	<u>724-749-8388</u>	Email:	<u>amorris@tug-hilltop.com</u>



Subscribed and sworn before me this 31 day of March.

SEAN COTTER Notary Public

My Commission Expires 1/2/2024

Oil and Gas Privacy Notice:

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

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

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

Date of Notice: 3/30/2022 **Date Permit Application Filed:** 3/31/2022

Notice of:

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

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

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

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

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

SURFACE OWNER(s)
Name: Consol RCPC, LLC
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: Consol Energy
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317
 COAL OPERATOR
Name: n/a
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: n/a
Address: _____
Name: _____
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: none within 2,000'
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)
Name: n/a
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: n/a
Address: _____

*Please attach additional forms if necessary

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Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

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Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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WW-6A
(8-13)

API NO. 47051-02444
OPERATOR WELL NO. Angels Envy N-15HU
Well Pad Name: Armstrong

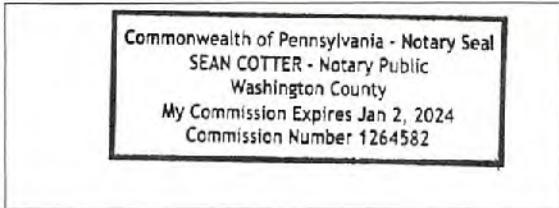
Notice is hereby given by:

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

Address: 380 Southpointe Boulevard, Plaza II, Suite 200
Canonsburg, PA 15317
Facsimile: _____

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 30 day of March 2022.
[Signature] Notary Public
My Commission Expires 1/2/2024

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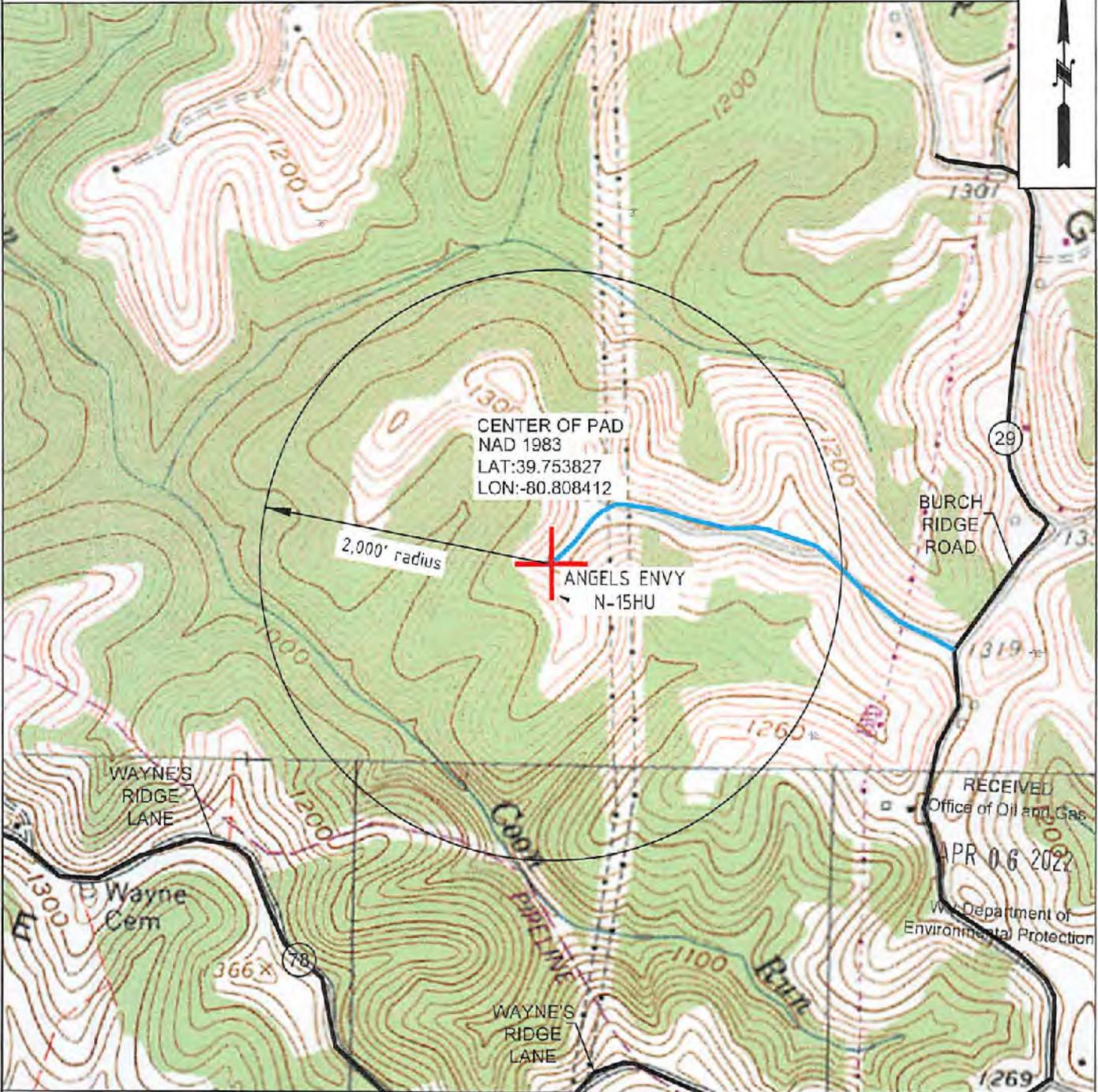
05/13/2022

WW-6A

PROPOSED ANGELS ENVY N-15HU

SUPPLEMENT PG 1

THERE APPEAR TO BE NO (0) RESIDENCES WITHIN 2,000'.



 TUG HILL OPERATING	OPERATOR	494510851	TOPO SECTION	LEASE NAME
	TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317		POWHATAN POINT 7.5'	ANGELS ENVY
			SCALE:	DATE:
			1" = 1000'	DATE: 03-18-2022



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

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

D. Alan Reed, P.E.
 State Highway Engineer

Jimmy Wriston, P. E.
 Secretary of Transportation
 Commissioner of Highways

January 21, 2022

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

Subject: DOH Permit for the Armstrong Pad, Marshall County
 Angels Envy N-15HU Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2019-0438 which has been issued to Tug Hill Operating LLC for access to the State Road for a well site located off Marshall County Route 29 SLS MP 4.94.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

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

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 Environmental Protection

Cc: Amy Morris
 Tug Hill Operating LLC
 CH, OM, D-6
 File



PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION

Angels Envy Wells

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

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WEST VIRGINIA COUNTY MAP



WVDEP O&G ACCEPTED AS-BUILT 5/11/2022

Armstrong Well Site Site Design, Construction Plan, & Erosion and Sediment Control Plans Tug Hill Operating Marshall County Franklin District Latitude 39.75382673° Longitude -80.80841198° Stillhouse Run - Ohio River Watershed

Pertinent Site Information Armstrong Well Site Emergency Number: 304-845-1920 Franklin District, Marshall County, WV Watershed: Stillhouse Run - Ohio River Watershed Tug Hill Contact Number: 1-817-632-3400

Table with 7 columns: Name, Area, Volume, etc. for Property Owner Information - Armstrong Well Site.

Exhibit A: As-Built



North Arrow and Scale information.

Tables for 'As-Built Road' and 'As-Built Well Site Quantities'.

Table for 'Wellhead Impact Quantities Feet'.

Table with 2 columns: Well Number and Well Head Location.



Large table listing well numbers and their corresponding coordinates.



Tables for 'Site Location (NAD 83)' and 'Site Location (NAD 83)'.

Project Contacts: Tug Hill Operating, Stillhouse Run, etc.

Notes and additional contact information.

Approach Details: From the intersection of OH Rt 7 and WV Rt 2 near New Marlinton, WV...



Notes regarding well construction and site conditions.



Table with 2 columns: Sheet Number and Description.

MISS UTILITY OF WEST VIRGINIA logo and contact information.

811 logo and 'Call before you dig' message.

TUG HILL OPERATING logo.



THIS DOCUMENT PREPARED FOR TUG HILL OPERATING

Logo for K&S CONSULTANTS.

Armstrong Well Site Franklin District Marshall County, WV

DATE: 01/16/2021 SCALE: AS SHOWN SHEET: 25 OF 25

