



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

Tuesday, January 3, 2023
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

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

Re: Permit Modification Approval for VAN WINKLE N-4HM
47-051-02348-00-00

Extend Lateral. Total Measured Depth 16745' to 20969'. Updated Lease Chain Included

TUG HILL OPERATING, LLC

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

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

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

James A. Martin
Chief

Operator's Well Number: VAN WINKLE N-4HM
Farm Name: XCL MIDSTREAM OPERATING, LLC
U.S. WELL NUMBER: 47-051-02348-00-00
Horizontal 6A New Drill
Date Modification Issued: 01/03/2023

Promoting a healthy environment.

01/06/2023

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

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

2) Operator's Well Number: Van Winkle N-4HM Well Pad Name: Hunter Pethtel

3) Farm Name/Surface Owner: XcL Midstream Operating, LLC Public Road Access: County Route 74

4) Elevation, current ground: 753' Elevation, proposed post-construction: 753'

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):**

Marcellus is the target formation at a depth of 6,125' - 6,175', thickness of 50' and anticipated pressure of approx. 3800 psi.

8) **Proposed Total Vertical Depth:** 6,275'

9) Formation at Total Vertical Depth: Onondaga

10) **Proposed Total Measured Depth:** 20,969'

11) **Proposed Horizontal Leg Length:** 14,186.65'

12) **Approximate Fresh Water Strata Depths:** 70; 414'

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

14) **Approximate Saltwater Depths:** 869'

15) **Approximate Coal Seam Depths:** Sewickley Coal - 313' and Pittsburgh Coal - 408'

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: _____

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Stacy L. ...
STACY L. ...
12-1-2022

WW-6B
(04/15)

API NO. 47- 051 - 02348
 OPERATOR WELL NO. Van Winkle N-4HM
 Well Pad Name: Hunter Pethel

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	13 3/8"	NEW	J55	54.5#	515'	515' ✓	708ft ³ (CTS)
Intermediate	9 5/8"	NEW	J55	36#	2,233'	2,233' ✓	725ft ³ (CTS)
Production	5 1/2"	NEW	P110	20#	20,969'	20,969'	5,340ft ³ (CTS)
Tubing	2 3/8"	NEW	P110	4.7#		6,223'	
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	1.0	2,333	1,866	CLASS A	1.2
Fresh Water/ Coal	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate	9 5/8"	12 1/4"	.352	3,520	2,816	SEE #24	1.19
Production	5 1/2"	8 7/8" _ 8 3/4"	.361	12,640	10,112	SEE #24	1.17/1.19
Tubing	2 3/8"		.19	11,200	8,960		
Liners							

PACKERS

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Kind:	N/A			DEC 21 2022
Sizes:	N/A			WV Department of Environmental Protection
Depths Set:	N/A			

John C. Strader
STRADER
12-1-2022

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

Drill through the Marcellus and TD Pilot Hole 100' into the Onondaga. Log vertical section and run a solid cement plug back to proposed KOP (5,723'). 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 35,500,000 lb proppant and 640,000 bbl of water. Max rate = 80 bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 16.63 acres

22) Area to be disturbed for well pad only, less access road (acres): 4.87 acres

23) Describe centralizer placement for each casing string:

Will run 3 centralizers on surface casing at equal distance. Intermediate 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.

Stacy Brown
5/12/2023
12-1-2022

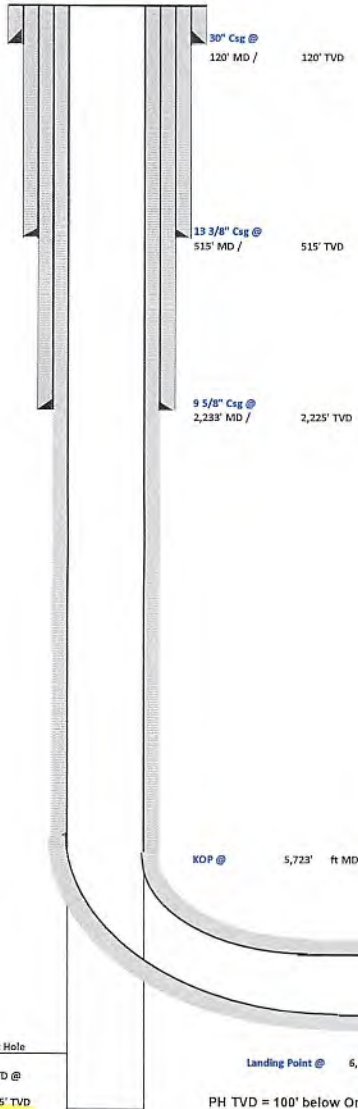


WELL NAME: Van Winkle N-4HM
 STATE: WV COUNTY: Marshall
 DISTRICT: Meade
 DF Elev: 753' GL Elev: 753'
 TD: 20,969'
 TH Latitude: 39.781981
 TH Longitude: -80.72624
 BH Latitude: 39.81442
 BH Longitude: -80.7563

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	414
Sewickley Coal	313
Pittsburgh Coal	408
Big Lime	1612
Weir	1904
Berea	2103
Gordon	2373
Rhinestreet	5490
Genesee/Burkett	5995
Tully	6022
Hamilton	6057
Marcellus	6125
Landing Depth	6160
Onondaga	6175
Pilot Hole Depth	6275

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	8W	8W	Surface
Surface	17.5	13 3/8	515'	515'	54.5	J55	Surface
Intermediate 1	12 1/4	9 5/8	2,233'	2,225'	36	J55	Surface
Production	8 7/8 x 8 3/4	5 1/2	20,969'	5,912'	20	CYHP110	Surface

CEMENT SUMMARY			DRILLING DETAILS		
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	687	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	759	A	15	Air	1 Centralizer every other jt
Production	4,916	A	14.5	Air / SOBMs	1 every other joint in lateral; 1 per joint in curve; 1 every other jt to sfc



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Steve Conrad
 STRADGER
 12-1-2022



Tug Hill Operating, LLC Casing and Cement Program

Van Winkle N-4HM

Casing

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	13 3/8"	J55	17 1/2"	515'	CTS
Intermediate	9 5/8"	J55	12 1/4"	2,233'	CTS
Production	5 1/2"	CYHP110	8 7/8 x 8 3/4"	20,969'	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: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.19
- 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 15.2ppg, Y = 1.19

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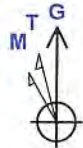
Well: Van Winkle N-04 HM (slot S)
 Site: Van Winkle
 Project: Marshall County, West Virginia NAD83 UTM 17N
 Design: rev4
 Rig:

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Van Winkle N-04HM PBHL r3 - plan hits target center	5912.21	11787.58	-8477.23	14459250.569	1708849.517	39.814420000	-80.756300000
Van Winkle N-04HM LP r1 - plan misses target center by 0.17ft at 6784.53ft MD (6160.00 TVD, -510.15 N, -1413.73 E)	6160.00	-510.06	-1413.58	14446862.953	1715913.157	39.780592000	-80.731277000

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2	1500.00	0.00	0.000	1500.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2°/100' build
3	2500.00	20.00	200.000	2479.82	-162.35	-59.09	2.00	200.00	-97.30	Begin 20.00° tangent
4	2750.00	20.00	200.000	2714.74	-242.70	-88.33	0.00	0.00	-145.46	Begin 2°/100' build/turn
5	3304.49	20.92	231.991	3235.66	-393.22	-199.10	2.00	100.46	-202.99	Begin 20.92° tangent
6	5723.00	20.92	231.991	5494.98	-924.95	-879.45	0.00	0.00	-237.45	Begin 8°/100' build/turn
7	6339.35	50.00	311.122	6013.33	-831.61	-1161.61	8.00	97.16	3.07	Begin 10°/100' build/turn
8	6784.60	91.00	330.128	6160.00	-510.09	-1413.76	10.00	27.67	411.32	Begin 91.00° lateral
9	20968.63	91.00	330.128	5912.21	11787.58	-8477.23	0.00	0.00	14519.32	PBHL/TD 20968.63 MD 5912.21 TVD



Azimuths to Grid North
 True North: -0.18°
 Magnetic North: -8.82°
 Magnetic Field
 Strength: 51677.7nT
 Dip Angle: 66.47°
 Date: 2/28/2022
 Model: IGRF2020

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

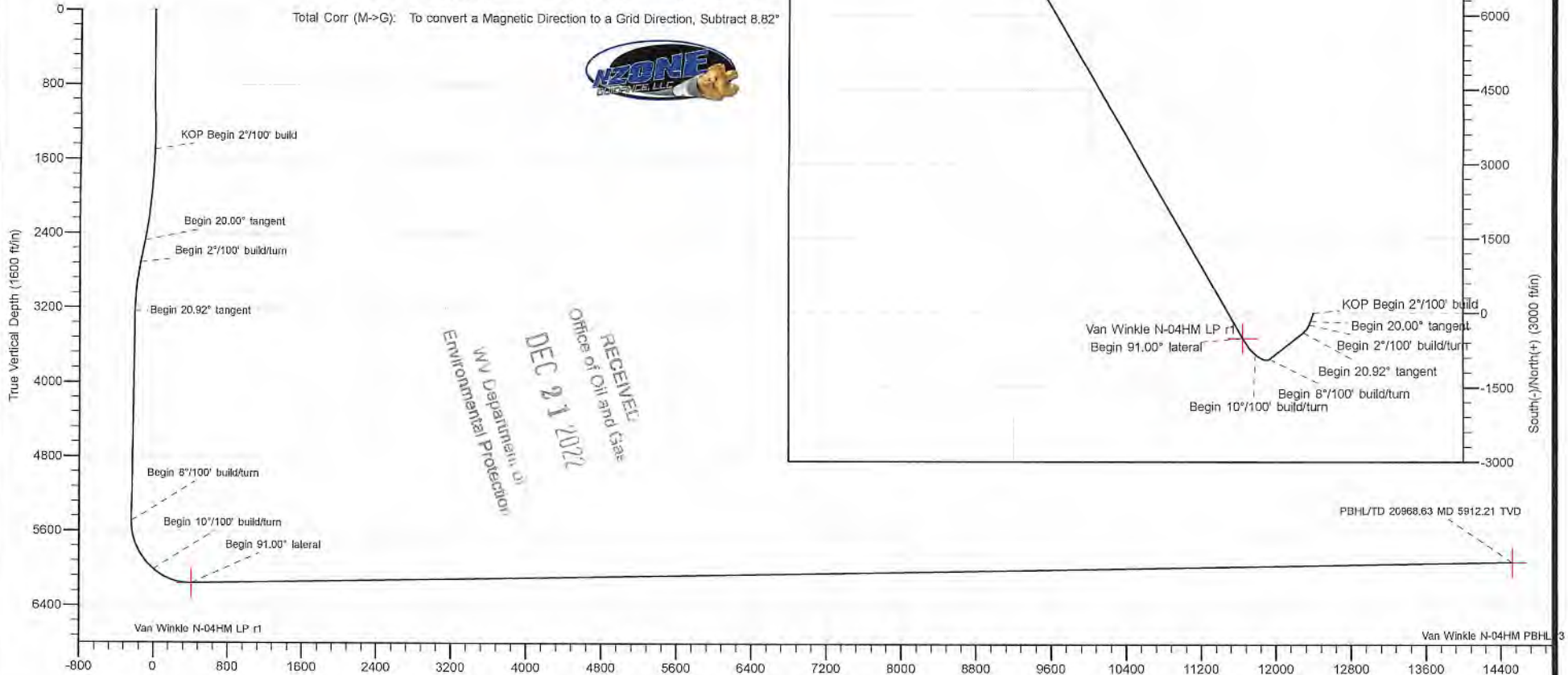
System Datum: Mean Sea Level
 Depth Reference: GL @ 753.00ft

Northing: 14447463.013
 Easting: 1717326.734
 Latitude: 39.781981000
 Longitude: -80.726240000

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.82°



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Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Van Winkle N-04 HM (slot S)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 753.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 753.00ft
Site:	Van Winkle	North Reference:	Grid
Well:	Van Winkle N-04 HM (slot S)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev4		

Project	Marshall County, West Virginia NAD83 UTM 17N		
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	Van Winkle				
Site Position:		Northing:	14,447,369.493 usft	Latitude:	39.781725330
From:	Lat/Long	Easting:	1,717,188.440 usft	Longitude:	-80.726733270
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "		

Well	Van Winkle N-04 HM (slot S)					
Well Position	+N/-S	0.00 ft	Northing:	14,447,463.013 usft	Latitude:	39.781981000
	+E/-W	0.00 ft	Easting:	1,717,326.735 usft	Longitude:	-80.726240000
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	753.00 ft
Grid Convergence:	0.18 °					

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2/28/2022	-8.65	66.47	51,677.73153327

Design	rev4			
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	324.278

Plan Survey Tool Program	Date	3/2/2022		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,968.57 rev4 (Original Hole)	MWD MWD - Standard	

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Planning Report - Geographic

Database:	DB_Feb2822	Local Co-ordinate Reference:	Well Van Winkle N-04 HM (slot S)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 753.00ft
Project:	Marshall County, West Virginia NAD83 UTM 17N	MD Reference:	GL @ 753.00ft
Site:	Van Winkle	North Reference:	Grid
Well:	Van Winkle N-04 HM (slot S)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev4		

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	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.000	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	20.00	200.000	2,479.82	-162.35	-59.09	2.00	2.00	0.00	200.00	
2,750.00	20.00	200.000	2,714.74	-242.70	-88.33	0.00	0.00	0.00	0.00	
3,304.49	20.92	231.991	3,235.86	-393.22	-199.10	2.00	0.17	5.77	100.46	
5,723.00	20.92	231.991	5,494.98	-924.95	-879.45	0.00	0.00	0.00	0.00	
6,339.35	50.00	311.122	6,013.33	-831.61	-1,161.61	8.00	4.72	12.84	97.16	
6,784.60	91.00	330.128	6,160.00	-510.09	-1,413.76	10.00	9.21	4.27	27.67	
20,968.63	91.00	330.128	5,912.21	11,787.58	-8,477.23	0.00	0.00	0.00	0.00	Van Winkle N-04HM F

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Planning Report - Geographic

Database: DB_Feb2822
Company: Tug Hill Operating LLC
Project: Marshall County, West Virginia NAD83 UTM 17N
Site: Van Winkle
Well: Van Winkle N-04 HM (slot S)
Wellbore: Original Hole
Design: rev4

Local Co-ordinate Reference: Well Van Winkle N-04 HM (slot S)
TVD Reference: GL @ 753.00ft
MD Reference: GL @ 753.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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Planned Survey

Table with 11 columns: Measured Depth (ft), Inclination (°), Azimuth (°), Vertical Depth (ft), +N/-S (ft), +E/-W (ft), Map Northing (usft), Map Easting (usft), Latitude, Longitude. Rows range from 8,400.00 to 13,700.00.



Planning Report - Geographic

Database: DB_Feb2822
 Company: Tug Hill Operating LLC
 Project: Marshall County, West Virginia NAD83 UTM 17N
 Site: Van Winkle
 Well: Van Winkle N-04 HM (slot S)
 Wellbore: Original Hole
 Design: rev4

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

Well Van Winkle N-04 HM (slot S)
 GL @ 753.00ft
 GL @ 753.00ft
 Grid
 Minimum Curvature

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Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
19,200.00	91.00	330.128	5,943.11	10,254.16	-7,596.48	14,457,717.155	1,709,730.271	39.810202219	-80.753178585	
19,300.00	91.00	330.128	5,941.36	10,340.86	-7,646.28	14,457,803.856	1,709,680.473	39.810440699	-80.753355062	
19,400.00	91.00	330.128	5,939.61	10,427.56	-7,696.08	14,457,890.556	1,709,630.674	39.810679178	-80.753531541	
19,500.00	91.00	330.128	5,937.87	10,514.26	-7,745.87	14,457,977.257	1,709,580.875	39.810917657	-80.753708021	
19,600.00	91.00	330.128	5,936.12	10,600.97	-7,795.67	14,458,063.958	1,709,531.077	39.811156135	-80.753884502	
19,700.00	91.00	330.128	5,934.37	10,687.67	-7,845.47	14,458,150.658	1,709,481.278	39.811394614	-80.754060984	
19,800.00	91.00	330.128	5,932.63	10,774.37	-7,895.27	14,458,237.359	1,709,431.480	39.811633092	-80.754237468	
19,900.00	91.00	330.128	5,930.88	10,861.07	-7,945.07	14,458,324.059	1,709,381.681	39.811871570	-80.754413953	
20,000.00	91.00	330.128	5,929.13	10,947.77	-7,994.87	14,458,410.760	1,709,331.882	39.812110047	-80.754590439	
20,100.00	91.00	330.128	5,927.38	11,034.47	-8,044.67	14,458,497.461	1,709,282.084	39.812348524	-80.754766926	
20,200.00	91.00	330.128	5,925.64	11,121.17	-8,094.47	14,458,584.161	1,709,232.285	39.812587001	-80.754943414	
20,300.00	91.00	330.128	5,923.89	11,207.87	-8,144.26	14,458,670.862	1,709,182.486	39.812825478	-80.755119904	
20,400.00	91.00	330.128	5,922.14	11,294.57	-8,194.06	14,458,757.563	1,709,132.688	39.813063954	-80.755296395	
20,500.00	91.00	330.128	5,920.40	11,381.27	-8,243.86	14,458,844.263	1,709,082.889	39.813302430	-80.755472887	
20,600.00	91.00	330.128	5,918.65	11,467.97	-8,293.66	14,458,930.964	1,709,033.090	39.813540906	-80.755649380	
20,700.00	91.00	330.128	5,916.90	11,554.67	-8,343.46	14,459,017.665	1,708,983.292	39.813779382	-80.755825875	
20,800.00	91.00	330.128	5,915.16	11,641.38	-8,393.26	14,459,104.365	1,708,933.493	39.814017857	-80.756002370	
20,900.00	91.00	330.128	5,913.41	11,728.08	-8,443.06	14,459,191.066	1,708,883.694	39.814256332	-80.756178867	
20,968.63	91.00	330.128	5,912.21	11,787.58	-8,477.23	14,459,250.569	1,708,849.517	39.814420000	-80.756300000	

PBHL/TD 20968.63 MD 5912.21 TVD

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Van Winkle N-04HM PBI - hit/miss target - Shape - Point	0.00	0.000	5,912.21	11,787.58	-8,477.23	14,459,250.569	1,708,849.517	39.814420000	-80.756300000	
Van Winkle N-04HM LP - plan misses target center by 0.17ft at 6784.53ft MD (6160.00 TVD, -510.15 N, -1413.73 E) - Point	0.00	0.000	6,160.00	-510.06	-1,413.58	14,446,952.953	1,715,913.157	39.780592000	-80.731277000	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,500.00	1,500.00	0.00	0.00	KOP Begin 2°/100' build	
2,500.00	2,479.82	-162.35	-59.09	Begin 20.00° tangent	
2,750.00	2,714.74	-242.70	-88.33	Begin 2°/100' build/turn	
3,304.49	3,235.86	-393.22	-199.10	Begin 20.92° tangent	
5,723.00	5,494.98	-924.95	-879.45	Begin 8°/100' build/turn	
6,339.35	6,013.33	-831.61	-1,161.61	Begin 10°/100' build/turn	
6,784.60	6,160.00	-510.09	-1,413.76	Begin 91.00° lateral	
20,968.63	5,912.21	11,787.58	-8,477.23	PBHL/TD 20968.63 MD 5912.21 TVD	



TUG HILL
OPERATING

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

Well Name: Van Winkle N-4HM

Pad Name: Hunter Pethtel

County: Marshall

UTM (meters), NAD83, Zone 17

Northing: 4,403,595.53

Easting: 523,442.20

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Environmental Protection

**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

JV
12-1-2022

01/06/2023

VAN WINKLE N 4HM WELL TUG HILL OPERATING

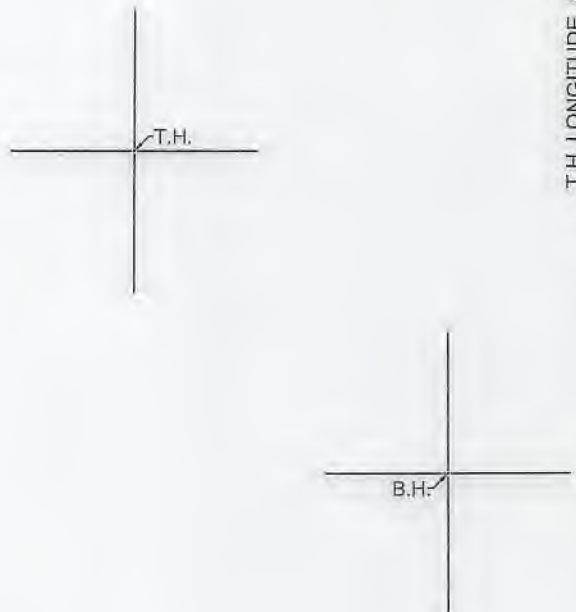
T.H. LATITUDE 39°47'30"
B.H. LATITUDE 39°50'00"

5,033' T.H. 1,770' B.H.

T.H. LONGITUDE 80°42'30"
B.H. LONGITUDE 80°45'00"
3,629' T.H.
6,890' B.H.

NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'.
- BASED ON WV DOT COUNTY ROUTE 74 IS A 40' STRIP OF LAND ACQUIRED IN NUMEROUS DEEDS.



9-10-1.3	FINLEY D. MONTGOMERY, ET UX	20.294
5-10.5	WILLIAM F. RULONG ET AL	27.5
5-10-7	WILLIAM F. RULONG ET AL	22.872
5-10-8.1	SAMUEL D. & BECKY ROBINSON	1.511
9-10-21	JAMES & VICKIE J. MASON	2.00
9-10-22	JAMES & VICKIE J. MASON	1.169

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

NAD'83 S.P.C.(FT)	N. 469,289.20	E. 1,623,892.67
NAD'83 GEO.	LAT-(N) 39.781981	LONG-(W) 80.726240
NAD'83 UTM (M)	N. 4,403,595.53	E. 523,442.24
<u>LANDING POINT</u>		
NAD'83 S.P.C.(FT)	N. 468,802.6	E. 1,622,470.1
NAD'83 GEO.	LAT-(N) 39.780592	LONG-(W) 80.731278
NAD'83 UTM (M)	N. 4,403,440.1	E. 523,011.3
<u>BOTTOM HOLE</u>		
NAD'83 S.P.C.(FT)	N. 481,220.8	E. 1,615,610.7
NAD'83 GEO.	LAT-(N) 39.814420	LONG-(W) 80.75630
NAD'83 UTM (M)	N. 4,407,188.4	E. 520,858.4

TAG	SURFACE OWNER	PARCEL	ACRES
A	TH EXPLORATION	9-13-5.3	16.10
B	XCL MIDSTREAM OPERATING, LLC	9-13-5	168.73
C	XCL MIDSTREAM OPERATING, LLC	9-10-19.1	10.00
D	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
E	ALAN KELLEY ET AL	9-10-19	113.08
F	CAROL VAN SCYOC EST	9-10-2	206.988
G	WALTER J. FECAT, JR., ET UX	9-10-2.2	5.00
H	CAROL VAN SCYOC EST	9-10-1	118.087
I	CONNIE S. CUNNINGHAM	9-10-1.1	0.482
J	WILLIAM F. RULONG, ET AL	5-10-8	70.6672
K	ROBERT GREGORY MCGUIRE, ET UX	5-9-10	139.60
L	ROBERT GREGORY MCGUIRE, ET UX	5-9-12	78.28
M	ROBERT GREGORY MCGUIRE, ET UX	5-9-9	49
N	PATRICIA McCLINTOCK	5-9-7	110.02
O	LINDA S. OSTRANDER	5-4-8.1	122.301
P	PATRICIA McCLINTOCK	5-9-6	101

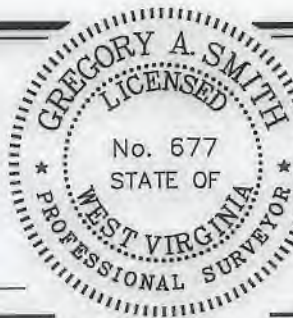
REFERENCES



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.3634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slsvv.com

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

P.S. 677 *Gregory A. Smith*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE DECEMBER 2, 20 20
REVISED 12-04-20, 12-10-20, 12-22-20, 6-1-22, 12-12-22
OPERATORS WELL NO. VAN WINKLE N 4HM
API WELL NO. 47 - 051 - 2348
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8952P4HMR5.dwg
VAN WINKLE N 4HM-REV4
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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



WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 753.50' WATERSHED FISH CREEK (HUC 10)
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER TH EXPLORATION, LLC ACREAGE 16.10 ±
ROYALTY OWNER DENNIS HUNTER, ET AL - SEE WW-6A1 ACREAGE 190.12 ±
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
ESTIMATED DEPTH TVD: 6,275' / TMD: 20,969'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DARREN BROWN
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 ADDRESS 5098 WASHINGTON ST. W, STE 407
FORT WORTH, TX 76107 CHARLESTON, WV 25313-1561

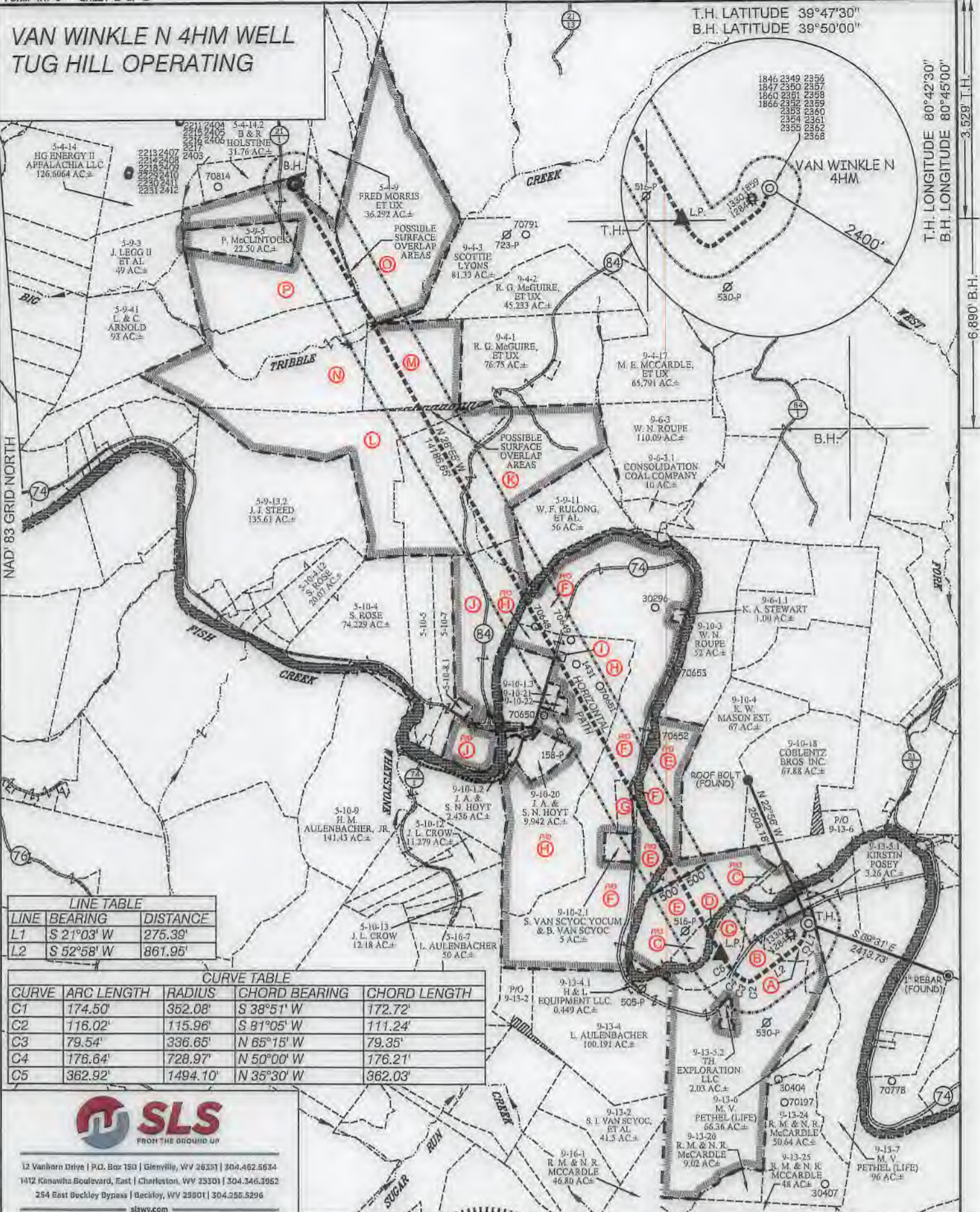
01/06/2023

COUNTY NAME
PERMIT

VAN WINKLE N 4HM WELL TUG HILL OPERATING

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

T.H. LONGITUDE 80°42'30"
B.H. LONGITUDE 80°45'00"



LINE	BEARING	DISTANCE
L1	S 21°03' W	275.39'
L2	S 52°58' W	861.95'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	174.50'	352.08'	S 38°51' W	172.72'
C2	116.02'	115.96'	S 81°05' W	111.24'
C3	79.54'	336.65'	N 65°15' W	79.35'
C4	176.64'	728.97'	N 50°00' W	176.21'
C5	362.92'	1494.10'	N 35°30' W	362.03'

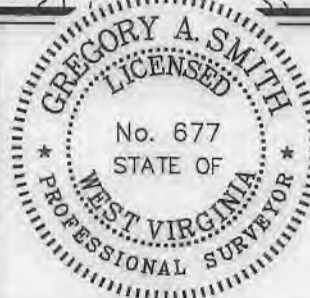


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1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.256.5296
slswv.com

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'83 S.P.C.(FT) N. 469,269.20 E. 1,629,892.67
 NAD'83 GEO. LAT-(N) 39.781981 LONG-(W) 80.726240
 NAD'83 UTM (M) N. 4,403,595.53 E. 523,442.24

LANDING POINT
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 NAD'83 UTM (M) N. 4,403,440.1 E. 523,011.3

BOTTOM HOLE
 NAD'83 S.P.C.(FT) N. 481,220.8 E. 1,615,610.7
 NAD'83 GEO. LAT-(N) 39.814420 LONG-(W) 80.75630
 NAD'83 UTM (M) N. 4,407,188.4 E. 520,858.4



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

P.S. 677 *Gregory A. Smith*

LEGEND

- LEASE LINE
- SURFACE LINE
- WELL LATERAL
- OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- TAX MAP-PARCEL
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE WW-5A1)

SCALE 1" = 2000' FILE NO. 8952P4HMR5.dwg
 VAN WINKLE N 4HM-REV4
 DATE DECEMBER 2, 20 20
 REVISED 12-04-20, 12-10-20, 12-22-20, 6-1-22, 12-12-22
 OPERATORS WELL NO. VAN WINKLE N 4HM
 API WELL 47 — 051 — 2348
 NO. STATE COUNTY PERMIT

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



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

DESIGNATED AGENT DARREN BROWN
 CT CORPORATION
 ADDRESS 5098 WASHINGTON ST. W, STE 407
 CHARLESTON, WV 25313-1561

01/06/2023

COUNTY NAME PERMIT

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

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

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

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

*See attached pages

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WV Department of
Environmental Protection

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

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

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

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

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

WW-6A1 Supplement

Operator's Well No. Van Winkle N - 4HM

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 WV Department of Environmental Protection

Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Book/Page	Assignment	Assignment	Assignment
10*31312	9-13-5.3	A	DENNIS W HUNTER AND KATHY HUNTER	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	668 155	Central Michigan Exploraiton LLC to Stone Energy Corporation: 21/288 & 21/356	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31312	9-13-5	B	DENNIS W HUNTER AND KATHY HUNTER	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	668 155	Central Michigan Exploraiton LLC to Stone Energy Corporation: 21/288 & 21/356	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31352	9-10-19.1	C	DENNIS W HUNTER AND KATHY HUNTER	CENTRAL MICHIGAN EXPLORATION LLC	1/8+	690 60	Central Michigan Exploration LLC to Stone Energy Corp.: AB 21/288 & 21/497	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*23458	FISH CREEK	D	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	TH EXPLORATION LLC	1/8+	1019 373	N/A	N/A	N/A
10*31384	9-10-19	E	JOHN E KELLEY AND JANET E KELLEY	STONE ENERGY CORPORATION	1/8+	693 6	N/A	Stone Energy Corp. to EQT Production Company: AB 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*19894	9-10-2	F	CAROL L VANSCYOC	TH EXPLORATION LLC	1/8+	941 392	N/A	N/A	N/A
10*28415	9-10-2.2	G	WALTER J FECAT AND BRENDA S FECAT	TH EXPLORATION LLC	1/8+	1071 547	N/A	N/A	N/A
10*19894	9-10-1	H	CAROL L VANSCYOC	TH EXPLORATION LLC	1/8+	941 392	N/A	N/A	N/A
10*19894	9-10-1.1	I	CAROL L VANSCYOC	TH EXPLORATION LLC	1/8+	941 392	N/A	N/A	N/A
10*18726	5-10-8	J	EMILY K RULONG AND WILLIAM F RULONG SR	TH EXPLORATION LLC	1/8+	941 441	N/A	N/A	N/A
10*18837	5-10-8	J	THE RODGERS FAMILY TRUST	TH EXPLORATION LLC	1/8+	935 122	N/A	N/A	N/A
10*18943	5-10-8	J	BRANDY SUE MOORE AND DELMAS L MOORE	TH EXPLORATION LLC	1/8+	940 124	N/A	N/A	N/A
10*19607	5-10-8	J	DAVA HARTLEY SMITH	TH EXPLORATION LLC	1/8+	944 186	N/A	N/A	N/A
10*19666	5-10-8	J	RALPH TERRY AND MONICA TERRY	TH EXPLORATION LLC	1/8+	944 182	N/A	N/A	N/A
10*22324	5-10-8	J	RHONDA RISDEN	TH EXPLORATION LLC	1/8+	965 600	N/A	N/A	N/A
10*22542	5-10-8	J	VINCE E OSER AND KAY J OSER	TH EXPLORATION LLC	1/8+	966 198	N/A	N/A	N/A
10*23491	5-10-8	J	GENERAL RECEIVER OF MARSHALL COUNTY ATTN: BERNIE T	TH EXPLORATION LLC	1/8+	1014 498	N/A	N/A	N/A
10*26513	5-10-8	J	CLIFFORD C HARTLEY AND BARBARA T HARTLEY	TH EXPLORATION LLC	1/8+	1034 226	N/A	N/A	N/A
10*27959	5-10-8	J	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063 594	N/A	N/A	N/A
10*28119	5-10-8	J	WILMA JEAN OSER	TH EXPLORATION LLC	1/8+	1057 328	N/A	N/A	N/A
10*28563	5-10-8	J	MARGARET TOLER	TH EXPLORATION LLC	1/8+	1074 630	N/A	N/A	N/A
10*28616	5-10-8	J	SILVIA J NEEHOUSE	TH EXPLORATION LLC	1/8+	1075 37	N/A	N/A	N/A
10*28617	5-10-8	J	RICKY E DAVIS AIF ALISA M DAVIS	TH EXPLORATION LLC	1/8+	1075 35	N/A	N/A	N/A
10*28812	5-10-8	J	ROBERT N BAKER AND THERESA L BAKER	TH EXPLORATION LLC	1/8+	1077 33	N/A	N/A	N/A
10*28855	5-10-8	J	PAMELA J WHORTON AND ROBERT D WHORTON	TH EXPLORATION LLC	1/8+	1077 264	N/A	N/A	N/A
10*28926	5-10-8	J	DAVID M AND SHERRY L TOLER	TH EXPLORATION LLC	1/8+	1078 13	N/A	N/A	N/A
10*28950	5-10-8	J	ANTHONY C BENEDETTA AND MARY A BENEDETTA	TH EXPLORATION LLC	1/8+	1078 188	N/A	N/A	N/A
10*28969	5-10-8	J	HARRY MCCRACKEN AND BETH ANN MCCRACKEN	TH EXPLORATION LLC	1/8+	1078 436	N/A	N/A	N/A

10*28988	5-10-8	J	HAROLD L GOUDY AND DONNA D GOUDY	TH EXPLORATION LLC		1/8+	1080	536	N/A	N/A	N/A
10*28989	5-10-8	J	SANDRA K LYTTON AND CHARLES E LYTTON	TH EXPLORATION LLC		1/8+	1080	538	N/A	N/A	N/A
10*28993	5-10-8	J	CALVIN MCGUIRE	TH EXPLORATION LLC		1/8+	1080	541	N/A	N/A	N/A
10*28994	5-10-8	J	JENNIFER T PUMPA AND RICHARD PUMPA	TH EXPLORATION LLC		1/8+	1080	543	N/A	N/A	N/A
10*28995	5-10-8	J	ELLEN SCHMIDT	TH EXPLORATION LLC		1/8+	1080	545	N/A	N/A	N/A
10*28996	5-10-8	J	SHAWN MARIE SEWGARD AND JERRY SWEGARD	TH EXPLORATION LLC		1/8+	1083	124	N/A	N/A	N/A
10*29043	5-10-8	J	DONALD LESTER GOUDY JR AND BILLIE GOUDY	TH EXPLORATION LLC		1/8+	1083	121	N/A	N/A	N/A
10*29044	5-10-8	J	GARREN RAY GOUDY AND HOLLEE J GOUDY	TH EXPLORATION LLC		1/8+	1083	377	N/A	N/A	N/A
10*29073	5-10-8	J	JOEL B MATHIS II AND DEBORAH MATHIS	TH EXPLORATION LLC		1/8+	1083	563	N/A	N/A	N/A
10*29206	5-10-8	J	PAMELA R BENEDETTA	TH EXPLORATION LLC		1/8+	1085	598	N/A	N/A	N/A
10*29245	5-10-8	J	AMFLO ENTERPRISES LLC CO BARRY STIFFLER	TH EXPLORATION LLC		1/8+	1086	508	N/A	N/A	N/A
10*29267	5-10-8	J	ELNORA M BARANICH	TH EXPLORATION LLC		1/8+	1090	141	N/A	N/A	N/A
10*29394	5-10-8	J	WILLIAM ELLIOTT AND MARY MARCIA ELLIOTT	TH EXPLORATION LLC		1/8+	1096	303	N/A	N/A	N/A
10*29512	5-10-8	J	KERRY R MOORE AND BARBARA MOORE	TH EXPLORATION LLC		1/8+	1096	305	N/A	N/A	N/A
10*29643	5-10-8	J	JAMES PATRICK MATHIS AND DEBRA LEE MATHIS	TH EXPLORATION LLC		1/8+	1100	83	N/A	N/A	N/A
10*29664	5-10-8	J	DALE BRUCE MOORE	TH EXPLORATION LLC		1/8+	1100	89	N/A	N/A	N/A
10*29669	5-10-8	J	JEFFREY MOORE AND MELISSA M MOORE	TH EXPLORATION LLC		1/8+	1100	91	N/A	N/A	N/A
10*29721	5-10-8	J	CHARLES MICHAEL BAKER AND TRACEY L BAKER	TH EXPLORATION LLC		1/8+	1100	250	N/A	N/A	N/A
10*29795	5-10-8	J	LOUIS M BENEDETTA	TH EXPLORATION LLC		1/8+	1101	25	N/A	N/A	N/A
10*29801	5-10-8	J	KIRCHGESSNER CONSULTING GROUP LLC	TH EXPLORATION LLC		1/8+	1101	300	N/A	N/A	N/A
10*29807	5-10-8	J	DANIEL J NABUDA	TH EXPLORATION LLC		1/8+	1101	294	N/A	N/A	N/A
10*29809	5-10-8	J	RICHARD D REPASKY AND JULIA M REPASKY	TH EXPLORATION LLC		1/8+	1101	288	N/A	N/A	N/A
10*29813	5-10-8	J	HELEN E ROBINSON	TH EXPLORATION LLC		1/8+	1101	23	N/A	N/A	N/A
10*29833	5-10-8	J	SKYPOINT RESOURCES LLC	TH EXPLORATION LLC		1/8+	1103	556	N/A	N/A	N/A
10*29857	5-10-8	J	DEAN A BENEDETTA	TH EXPLORATION LLC		1/8+	1102	298	N/A	N/A	N/A
10*29858	5-10-8	J	H3 LLC MICHAEL E HOEFT MANAGING MEMBER	TH EXPLORATION LLC		1/8+	1103	567	N/A	N/A	N/A
10*30033	5-10-8	J	DANNY MOORE AND M LYNNE MOORE	TH EXPLORATION LLC		1/8+	1103	579	N/A	N/A	N/A
10*30036	5-10-8	J	RUSSELL ALBERT WHITE	TH EXPLORATION LLC		1/8+	1103	585	N/A	N/A	N/A
10*30039	5-10-8	J	MARY RENEE WHITE	TH EXPLORATION LLC		1/8+	1103	597	N/A	N/A	N/A
10*30041	5-10-8	J	RICHARD NEWMAN WHITE	TH EXPLORATION LLC		1/8+	1103	591	N/A	N/A	N/A
10*30045	5-10-8	J	ROBERT LEE WHITE JR AND KIMBERLY L WHITE	TH EXPLORATION LLC		1/8+	1103	609	N/A	N/A	N/A
10*30075	5-10-8	J	RHONDA SUE DEPAUL	TH EXPLORATION LLC		1/8+	1103	603	N/A	N/A	N/A
10*31356	5-10-8	J	AMY M TOLER FKA AMY M PARKER	STONE ENERGY CORPORATION		1/8+	772	407	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31357	5-10-8	J	LORI E KESTNER	STONE ENERGY CORPORATION		1/8+	886	251	N/A	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21

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10*31360	5-10-8	J	AVA SMITH	CHEVRON USA INC	1/8+	801	572	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*31361	5-10-8	J	JAMES W HARTLEY	CHEVRON USA INC	1/8+	801	563	Chevron USA Inc to Stone Energy Corporation: 34/143	Stone Energy Corporation to EQT Production Company: 38/75	EQT Production Company to TH Exploration LLC: 48/21
10*47051.305.0	5-9-10	K	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	895	45	N/A	N/A	N/A
10*47051.305.0	5-9-12	L	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	895	45	N/A	N/A	N/A
10*40134	5-9-9	M	ROBERT G & TERRI L MCGUIRE	TH EXPLORATION LLC	1/8+	1131	336	N/A	N/A	N/A
10*40132	5-9-7	N	P & D REALTY	TH EXPLORATION LLC	1/8+	1131	334	N/A	N/A	N/A
10*41159	5-4-8.1	O	VENABLE ROYALTY LTD AND V14 LP	TH EXPLORATION LLC	1/8+	1151	442	N/A	N/A	N/A
10*40132	5-9-6	P	P & D REALTY	TH EXPLORATION LLC	1/8+	1131	334	N/A	N/A	N/A

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ASSIGNMENT AND BILL OF SALE

This ASSIGNMENT AND BILL OF SALE (this "*Assignment*") dated as of December 1, 2020 (the "*Execution Date*"), is made by and between EQT PRODUCTION COMPANY, a Pennsylvania corporation, with an address at 625 Liberty Avenue, Suite 1700, Pittsburgh, Pennsylvania 15222 ("*EQT*"), and TH EXPLORATION, LLC, a Texas limited liability company, with an address at 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 ("*TH*") pursuant to the terms of that certain Acreage Trade Agreement by and among EQT, TH and TH Exploration II, LLC ("*TH II*"), dated July 8, 2020 (the "*Agreement*"). EQT and TH may be referred to herein together as the "*Parties*", and each individually as a "*Party*".

RECITALS

WHEREAS, EQT desires to transfer, convey and assign to TH certain of EQT's oil and gas leasehold interests located in Marshall County, West Virginia set forth on Exhibit A attached hereto and incorporated herein ("*EQT Leases*") in accordance with this Assignment and the Agreement; and

WHEREAS, TH desires to receive from EQT, all of EQT's right, title and interest in and to the EQT Leases in accordance with this Assignment and the Agreement.

NOW, THEREFORE, for and in consideration of the mutual promises contained herein and in the Agreement, the benefits to be derived by each Party hereunder and under the Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

ARTICLE I
DEFINED TERMS

1.1 *Definitions.* Capitalized terms used herein and not otherwise defined throughout this Assignment shall have the meanings given such terms in the Agreement.

ARTICLE II
ASSIGNMENT OF ASSETS

2.1 *Assignment.* Subject to the terms and conditions of this Assignment and the Agreement, EQT does hereby assign, convey and transfer to TH all of the right, title and interest of EQT in and to the following (collectively for purposes of this Assignment, the "*EQT Assets*"):

(a) Subject to the conveyance of the Wells Assets from EQT to TH II as described in the Agreement, the EQT Leases and appurtenances thereto (including rights of access and to install facilities), all Hydrocarbons within, produced from, derived from, or sold from the EQT Leases (and all proceeds related thereto), on and after the Valuation Date, and all Surface Contracts including but not limited to those set forth on Exhibit B attached hereto and incorporated herein (the "*EQT Surface Contracts*") related to the EQT Leases and such Hydrocarbons; and

(b) Copies of deeds, files and all other ownership information directly related to the acquisition, operations and maintenance of the EQT Leases, lease files for the EQT Leases

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01/06/2023



December 20, 2022

WADE STANSBERRY
WV DEP OFFICE OF OIL & GAS
601 57TH STREET SE
CHARLESTON, WV 25304-2345

VIA USPS

**RE: Van Winkle N-4HM API # 47-051-02348 (H6A Permit Modification)
Meade District, Marshall County, WV**

Dear Wade:

Tug Hill Operating, LLC is submitting a permit modification for its permitted well, Van Winkle N-4HM to add 4,225.45' to the lateral length. Therefore, enclosed please find the following:

- Check in the amount of \$2,500 to cover modification fees.
- Modified WW-6B with changes highlighted in yellow
- Updated well plat
- Updated WW-6A1 information
- Updated Site Safety Plan

If you have any questions or need any additional information, please do not hesitate to call me on (304) 376-0111. Thank you for attention to this matter.

Sincerely,

AMY MORRIS
PERMIT SPECIALIST-APPALACHIA REGION
TUG HILL OPERATING, LLC

Enclosures

*API # 060981
\$2500.00*

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Environmental Protection



Stansberry, Wade A <wade.a.stansberry@wv.gov>

Modification Horizontal H6A Well Work Permit API : (47-051-02348)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov>

Tue, Jan 3, 2023 at 11:48 AM

To: Amy Morris <amorris@tug-hilop.com>, Eric Buzzard <ebuzzard@marshallcountywv.org>, Strader C Gower <strader.c.gower@wv.gov>

I have attached a copy of the newly issued well [permit](#) number(s):

47-051-02348 - VAN WINKLE N-4HM

These will serve as your copy.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115


(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

2 attachments

 **IR-26 Blank.pdf**

169K

 **47-051-02348 - mod.pdf**

2242K

01/06/2023