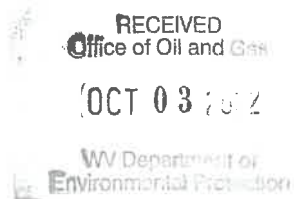


State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work



API 47 - 051 - 02287 County Marshall District Mead
Quad Glen Easton 7.5' Pad Name Knob Creek Field/Pool Name _____
Farm name David Lee Franklin Well Number Knob Creek N-11HU
Operator (as registered with the OOG) Tug Hill Operating, LLC
Address 380 Southpointe Boulevard, Plaza II, Suite 200 City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,402,270.92 Easting 525,224.95
Landing Point of Curve Northing 4,402,335.4 Easting 524,871.0
Bottom Hole Northing 4,405,855.8 Easting 522,837.5

Elevation (ft) 734.67' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
SOBM; Base oil, osmotic inhibitor, weighting agent, viscosifier, emulsifier, hardness buffer, fluid loss additive, LCM, Shale inhibitor, de-foamer, soaping agent, coagulant, flocculant; specific additives per WSSP and Permit.

Date permit issued 3/5/2020 Date drilling commenced spud: 3/26/2020 big rig: 2/26/2021 Date drilling ceased 4/8/2021
Date completion activities began 1/20/2022 Date completion activities ceased 2/18/2022
Verbal plugging (Y/N) N Date permission granted n/a Granted by n/a

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 413' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 920' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 325-331', 407-413' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED
Reviewed by:
SA 10-11-22
Shelby Gannon

10/21/2022

API 47- 051 - 02287 Farm name David Lee Franklin Well number Knob Creek N-11HU

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	36"	30"	120'	NEW	94.5#	N/A	Y
Surface	26"	20"	512'	NEW	106.5#	N/A	Y
Coal							
Intermediate 1	17 1/2"	13 3/8"	2,236'	NEW	54.5#	N/A	Y
Intermediate 2	12 1/4"	9 5/8"	10,079'	NEW	47#	N/A	Y
Intermediate 3							
Production	8 1/2"	5 1/2"	25,035'	NEW	23#	N/A	Y
Tubing		2 7/8"	12,518'	NEW	4.7#	N/A	Y
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	A					0	8
Surface	A	891	15.6	1.19	1060.29	0	8
Coal							
Intermediate 1	A	1907	15.6	1.18	2250.26	0	8
Intermediate 2	A	3900	14.5	1.35	5265	0	8
Intermediate 3							
Production	A	5580	17.2	1.12	6249.6	0	8
Tubing							

Drillers TD (ft) 25,089' Loggers TD (ft) n/a
 Deepest formation penetrated Trenton Plug back to (ft) n/a
 Plug back procedure n/a

Kick off depth (ft) 10,276'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING 3 centralizers on surface casing at equal distance.
Intermediate - 1 centralizer every other joint.
 Production - one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

10/21/2022

**KNOB CREEK N-11HU
STIMULATION INFORMATION PER STAGE**

Stage No.	Ave. Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	81.00	11762	11307	6840	247660	6,791	0
2	84.00	12151	9191	6868	503600	8,336	0
3	85.00	12346	8735	6977	507400	8,357	0
4	84.00	12415	9174	7699	494740	8,337	0
5	87.00	12243	9529	8122	499860	8,117	0
6	88.00	12086	8762	7958	510340	8,236	0
7	88.00	12170	8702	7877	500400	8,104	0
8	88.00	12012	8837	7833	498480	8,099	0
9	87.00	11828	8681	8048	495820	7,994	0
10	88.00	11919	9397	7847	505360	8,099	0
11	88.00	11963	9243	7884	498380	8,087	0
12	89.00	11888	8230	7645	494100	8,070	0
13	88.00	11915	8523	7584	446340	7,453	0
14	90.00	12123	9341	7618	504020	8,139	0
15	87.00	11725	9462	7810	493980	8,043	0
16	87.00	11586	8727	8175	496080	8,052	0
17	89.00	11886	9392	7613	505000	8,105	0
18	86.00	11524	9451	7460	500400	8,489	0
19	88.00	11567	8951	7584	507900	8,092	0
20	87.00	11659	9562	7993	508200	8,150	0
21	84.00	12187	9351	7657	507140	10,596	0
22	85.00	11536	8994	8244	506060	8,067	0
23	90.00	11750	11030	8007	506900	8,119	0
24	89.00	11657	9081	7881	503080	8,149	0
25	87.00	11407	9290	8516	501280	8,084	0
26	89.00	11757	8999	7981	499680	7,907	0
27	89.00	11966	9083	7582	491050	7,875	0
28	84.00	11423	8081	8191	500500	7,951	0
29	89.00	11701	8312	8125	499420	7,993	0
30	88.00	11711	9175	7689	499800	7,961	0
31	87.00	11352	9015	7880	506420	8,084	0
32	89.00	11499	8784	7848	496900	7,853	0

Stage No.	Ave. Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
33	88.00	11279	9456	7969	504660	7,961	0
34	89.00	11279	8494	8673	508220	8,180	0
35	88.00	11322	9371	7655	501980	8,816	0
36	87.00	11121	10169	8278	504600	8,100	0
37	87.00	11195	9217	7896	494640	7,795	0
38	88.00	11146	9172	7975	504800	7,866	0
39	88.00	11245	9112	8356	480800	7,662	0
40	88.00	11151	8688	8228	499960	7,936	0
41	87.00	11183	9584	8255	495160	7,735	0
42	88.00	10942	9036	7899	499880	7,813	0
43	89.00	11162	9691	8158	496130	7,978	0
44	89.00	11206	9816	7785	497460	7,938	0
45	85.00	10747	8625	7966	498760	8,243	0
46	85.00	10621	9259	7951	504640	7,805	0
47	85.00	10752	9187	8458	497640	7,781	0
48	88.00	10865	8735	7830	508100	9,123	0
49	86.00	10761	9032	8603	506220	7,814	0
50	85.00	10537	9851	6770	500840	7,827	0
51	86.00	10674	10230	7942	502900	7,937	0
52	85.00	10510	10135	7993	504860	8,888	0
53	88.00	10731	8968	8193	501820	9,073	0
54	88.00	10753	9993	7904	504960	8,928	0
55	90.00	10443	9075	7902	501980	7,823	0
56	89.00	10387	8782	8137	500980	7,648	0
57	89.00	10526	8623	8053	502580	7,774	0
58	89.00	10783	9982	7592	508500	7,903	0
59	90.00	10402	9392	7883	497300	7,704	0
60	89.00	10232	9360	7970	501040	7,710	0
61	90.00	10304	8953	8035	501400	7,657	0
62	88.00	9818	8672	7386	503860	7,591	0
63	88.00	10017	8984	8284	497720	7,619	0
64	89.00	10003	8786	8246	498800	7,585	0
65	88.00	10017	8622	8063	506780	7,729	0
66	89.00	9828	8834	8464	499720	8,432	0

Stage No.	Ave. Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
67	89.00	9704	8502	7950	509340	7,752	0

Knob Creek N-11HU

PERFORATION RECORD

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	1/20/2022	24,863	24,910	48	Utica
2	1/20/2022	24,635	24,811	48	Utica
3	1/21/2022	24,435	24,611	48	Utica
4	1/21/2022	24,234	24,411	48	Utica
5	1/21/2022	24,034	24,210	48	Utica
6	1/22/2022	23,834	24,010	48	Utica
7	1/22/2022	23,633	23,809	48	Utica
8	1/23/2022	23,433	23,609	48	Utica
9	1/23/2022	23,232	23,409	48	Utica
10	1/24/2022	23,032	23,208	48	Utica
11	1/24/2022	22,832	23,008	48	Utica
12	1/25/2022	22,631	22,807	48	Utica
13	1/25/2022	22,431	22,607	48	Utica
14	1/25/2022	22,230	22,407	48	Utica
15	1/26/2022	22,030	22,206	48	Utica
16	1/26/2022	21,830	22,006	48	Utica
17	1/27/2022	21,629	21,805	48	Utica
18	1/27/2022	21,429	21,605	48	Utica
19	1/28/2022	21,228	21,405	48	Utica
20	1/29/2022	21,028	21,204	48	Utica
21	1/29/2022	20,828	21,004	48	Utica
22	1/29/2022	20,627	20,803	48	Utica
23	1/31/2022	20,427	20,603	48	Utica
24	1/31/2022	20,226	20,403	48	Utica
25	1/31/2022	20,026	20,202	48	Utica
26	2/1/2022	19,826	20,002	48	Utica
27	2/1/2022	19,625	19,801	48	Utica
28	2/1/2022	19,425	19,601	48	Utica
29	2/2/2022	19,224	19,401	48	Utica
30	2/2/2022	19,024	19,200	48	Utica
31	2/2/2022	18,824	19,000	48	Utica
32	2/3/2022	18,623	18,799	48	Utica
33	2/3/2022	18,423	18,599	48	Utica
34	2/6/2022	18,222	18,399	48	Utica
35	2/6/2022	18,022	18,198	48	Utica
36	2/6/2022	17,822	17,998	48	Utica
37	2/7/2022	17,621	17,797	48	Utica
38	2/7/2022	17,421	17,597	48	Utica
39	2/8/2022	17,220	17,397	48	Utica
40	2/8/2022	17,020	17,196	48	Utica
41	2/8/2022	16,820	16,996	48	Utica

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	2/9/2022	16,619	16,795	48	Utica
43	2/9/2022	16,419	16,595	48	Utica
44	2/10/2022	16,218	16,395	48	Utica
45	2/10/2022	16,018	16,194	48	Utica
46	2/10/2022	15,818	15,994	48	Utica
47	2/11/2022	15,617	15,793	48	Utica
48	2/11/2022	15,417	15,593	48	Utica
49	2/12/2022	15,216	15,393	48	Utica
50	2/12/2022	15,016	15,192	48	Utica
51	2/12/2022	14,816	14,992	48	Utica
52	2/13/2022	14,615	14,791	48	Utica
53	2/13/2022	14,415	14,591	48	Utica
54	2/14/2022	14,214	14,391	48	Utica
55	2/14/2022	14,014	14,190	48	Utica
56	2/15/2022	13,814	13,990	48	Utica
57	2/15/2022	13,613	13,789	48	Utica
58	2/15/2022	13,413	13,589	48	Utica
59	2/15/2022	13,212	13,389	48	Utica
60	2/16/2022	13,012	13,188	48	Utica
61	2/16/2022	12,812	12,988	48	Utica
62	2/16/2022	12,611	12,787	48	Utica
63	2/17/2022	12,411	12,587	48	Utica
64	2/17/2022	12,210	12,387	48	Utica
65	2/18/2022	12,010	12,186	48	Utica
66	2/18/2022	11,810	11,986	48	Utica
67	2/18/2022	11,609	11,785	48	Utica

Knob Creek N-11HU

Lithology Information

LITHOLOGY/FORMATION	TOP DEPTH IN FT/ Name TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID
Maxton	1458	1637	1458	1637	Sandstone
Big Lime	1637	1702	1637	1702	Limestone
Big Injun	1702	1922	1702	1922	Sandstone
Weir	1922	2124	1922	2124	Sandstone
Berea	2124	2385	2124	2385	Sandstone
Gordon	2385	2468	2385	2469	Sandstone
Fifty Foot	2468	3054	2469	3055	Sandstone
Speechley	3054	4500	3055	4502	Sandstone
Benson	4500	4917	4502	4919	Sandstone
Alexander	4917	5546	4919	5548	Siltstone
Rhonestreet	5546	6016	5548	6018	Black Shale
Middlesex	6016	6085	6018	6087	Black Shale
Geneseo/Burkett	6085	6118	6087	6120	Black Shale
Tully	6118	6151	6120	6153	Limestone
Hamilton	6151	6218	6153	6220	Gray Shale
Marcellus	6218	6268	6220	6270	Black Shale
Onondaga	6268	6501	6270	6503	Limestone
Oriskany	6501	6625	6503	6627	Sandstone
Helderberg	6625	6979	6627	6981	Limestone
Salina	6979	8105	6981	8113	Salt/Anhydrite/LS
Lockport	8105	8478	8113	8495	Dolomite
Rose Hill	8478	8756	8495	8788	Shale
Packer Shell	8756	8976	8788	9018	Limestone
Clinton/Tuscarora	8976	9082	9018	9128	Sandstone
Juniata/Queenston	9082	9873	9128	9943	Red Shale
Reedsville	9873	10846	9943	11014	Gray Shale
Utica	10846	11098	11014	11472	Black Shale
Point Pleasant	11098	-	11472	-	Shale/Limestone

Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	1/20/2022
Job End Date:	2/18/2022
State:	West Virginia
County:	Marshall
API Number:	47-051-02287-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Knob Creek 11HU
Latitude:	39.76999525
Longitude:	-80.70547243
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	11,056
Total Base Water Volume (gal):	22,676,430
Total Base Non Water Volume:	0

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Service Abstract Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Tug Hill Operating	Carrier/Base Fluid	Water	7732-18-5	100.00000	84.69584	None
Sand (40/70 White Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	11.74557	None
Sand (100 Mesh Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	3.15194	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Water	7732-18-5	85.00000	0.23426	None
StimStream FR 9800	Chemstream	Friction Reducer	Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.10197	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.02126	None
			Butene, homopolymer	9003-29-6	25.00000	0.02126	None
MC MX 9-4743	Multi-Chem	Biocide	Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00265	None
LD-7750W	Multi-Chem	Scale Inhibitor	Sodium Nitrate	7631-99-4	60.00000	0.02126	None

10/21/2022

				Methanol	67-56-1	60.00000	0.00521	None
				Phosphonic Acid Salt	Proprietary	5.00000	0.00043	None
ProHib 100	CNR	Acid Inhibitor						
				2-Butoxyethanol	111-76-2	60.00000	0.00052	None
				Proprietary material	Proprietary	30.00000	0.00026	None
				Proprietary non-ionic surfactant	Proprietary	20.00000	0.00017	None
				Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00009	None
				Proprietary corrosion inhibitor	Proprietary	10.00000	0.00009	None
ProFE 105	CNR	Iron Control						
				Citric Acid	77-92-9	20.00000	0.00021	None
				Acetic Acid	64-19-7	5.00000	0.00005	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.								
Other Chemical(s)	Listed Above	See Trade Name(s) List						
				Water	7732-18-5	85.00000	0.23426	
				Butene, homopolymer	9003-29-6	25.00000	0.02126	
				Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00255	
				Phosphonic Acid Salt	Proprietary	5.00000	0.00043	
				Proprietary material	Proprietary	30.00000	0.00026	
				Proprietary non-ionic surfactant	Proprietary	20.00000	0.00017	
				Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00009	
				Proprietary corrosion inhibitor	Proprietary	10.00000	0.00009	
				Acetic Acid	64-19-7	5.00000	0.00005	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

**Knob Creek N Lease
Utica Unit - 458.32 AC ±
Well 11HU
Tug Hill Operating**

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

MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
9-11-1	GERALD F. PADLOW	1.033
9-13-10	ARTHUR L. MOORE	3.96
9-13-13.1	THOMAS JOHN FOX	0.827
9-14-2	MICHAEL L. ALVAREZ	0.75
9-14-35	PAUL G. FOX	0.338
9-14-37	MARGARET FOX - LIFE	LOT
9-14-40	MARGARET FOX - LIFE	19,560 SQ. FT.
9-14-41	MARGARET FOX - LIFE	9165 SQ. FT.
9-16-14	LYNN CAMP METHODIST CHURCH	0.762
9-16-15	RONALD R. YOUNG, ET UX - LIFE	52.02
9-16-15.1	ERIC J. YOUNG	1.98

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

NAD'83 S.P.C.(FT)	N. 464,844.77	E. 1,629,670.00
NAD'83 GEO.	LAT-(N) 39.769995	LONG-(W) 80.705472
NAD'83 UTM (M)	N. 4,402,270.92	E. 525,224.95
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 464,992.5	E. 1,628,542.5
NAD'83 GEO.	LAT-(N) 39.770359	LONG-(W) 80.709491
NAD'83 UTM (M)	N. 4,402,310.2	E. 524,880.7
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 476,749.9	E. 1,622,075.4
NAD'83 GEO.	LAT-(N) 39.802393	LONG-(W) 80.733070
NAD'83 UTM (M)	N. 4,405,859.2	E. 522,850.6

T.H. LONGITUDE 80°40'00"
B.H. LONGITUDE 80°42'30"

TAG	SURFACE OWNER	PARCEL	ACRES
A	DAVID LEE FRANKLIN	9-14-33	65.824
B	RONALD R. YOUNG ET UX - LIFE	9-16-15	52.02
C	LYNN CAMP METHODIST CHURCH	9-16-14	0.762
D	PAUL G. FOX	9-14-35	0.338
E	MARGARET FOX - LIFE	9-14-38	0.631
F	MARGARET FOX - LIFE	9-14-37	LOT
G	MARGARET FOX - LIFE	9-14-40	19,560 SQ. FT.
H	MARGARET FOX - LIFE	9-14-36	1,600 SQ. FT.
I	MARGARET FOX - LIFE	9-14-39	8,075 SQ. FT.
J	MARGARET FOX - LIFE	9-14-41	9,165 SQ. FT.
K	DAVID LEE FRANKLIN	9-14-44	2.913
L	STATE OF WEST VIRGINIA (FISH CREEK)	N/A	N/A
M	JAMES RICHMOND	9-16-12	28.638
N	THOMAS JOHN FOX	9-13-13.1	0.827
O	MARGARET FOX - LIFE	9-13-13	15.513
P	JOHN C. LAGOS, ET UX	9-14-42	1.87
Q	NILA JEAN FROHNAPFEL	9-13-12	91.1007
R	DANIEL JAY FITZWATER	9-13-20	105.5
S	ELEANOR M. FOX ESTATE	9-13-18	30.00
T	ELEANOR M. FOX ESTATE	9-13-19	19.20
U	TRICYCLE LLC	9-13-22	42.27
V	KENNETH & TERESA A. SMERTNECK	9-13-11	112.67
W	SHUTLER FAMILY TRUST	9-13-8	56.04
X	MARY VIRGINIA PETHTELL - LIFE	9-13-7	96.00
Y	ARTHUR L. MOORE	9-13-9	57 X 117 SQ. FT.
Z	ARTHUR L. MOORE	9-13-10	3.96
AA	MARGARET FOX - LIFE	9-11-2	84.378
BB	GERALD PADLOW, ET UX	9-11-2.2	0.291
CC	GERALD PADLOW, ET UX	9-11-1	1.033
DD	JAY A. WHEZAL, JR., ET AL.	9-10-13	71.119
EE	WILLIAM MCCONNELL	9-10-14	15.00
FF	MARY VIRGINIA PETHTELL - LIFE	9-13-6	66.36
GG	WILLIAM D. MCCONNELL	9-10-16	0.859
HH	JOSEPH MICHAEL BONENE	9-10-15	44.00
II	COBLENTZ BROS. INC.	9-10-18	67.88
JJ	KENNETH W. MASON ESTATE	9-10-6	43.00
KK	KENNETH W. MASON ESTATE	9-10-4	67.00
LL	KENNETH W. MASON ESTATE	9-10-5	51.62
MM	J. F. CROW ESTATE, ET AL.	9-6-15	55.23
NN	JANE RICHARDSON HEIRS, ET AL.	9-6-16	23.05
OO	WILLIAM N. ROUPE	9-10-3	52.00
PP	ROBERT LEE CARNEY, ET UX	9-6-4	118.17
QQ	WILLIAM N. ROUPE	9-6-3	110.09
RR	CONSOLIDATION COAL COMPANY/MURRAY ENERGY	9-6-3.1	10.00

7,894' T.H. A.D.
11,282' B.H. A.D.

NOTES ON SURVEY

- NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
- SEE REFERENCES FOR DWELLINGS LOCATED 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.
- PROPOSED LATERAL OR TOP HOLE OF Knob Creek N-11HU (47-051-02287) IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF EXISTING WELLS:
Knob Creek N-12HU (47-051-02268),
Knob Creek N-13HU (47-051-02269),
Knob Creek S-14HU (47-051-02288),
Knob Creek S-15HU (47-051-02289),
Knob Creek S-16HU (47-051-02290),
HEAVEN HILL 2W-13HU (47-051-01957),
KEITH STERN N-13HU (47-051-02265).
- PLAT UPDATED TO SHOW AS DRILLED PATH.
- AS DRILLED DATA PROVIDED BY TUG HILL OPERATING.

T.H. A.D.

B.H. A.D.

AS DRILLED COORDINATES FOR WELL NO. 11HU

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

NAD'83 S.P.C.(FT)	N. 464,844.77	E. 1,629,670.00
NAD'83 GEO.	LAT-(N) 39.769995	LONG-(W) 80.705472
NAD'83 UTM (M)	N. 4,402,270.92	E. 525,224.95
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 465,075.9	E. 1,628,512.1
NAD'83 GEO.	LAT-(N) 39.770587	LONG-(W) 80.709602
NAD'83 UTM (M)	N. 4,402,335.4	E. 524,871.0
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 476,739.5	E. 1,622,032.1
NAD'83 GEO.	LAT-(N) 39.802393	LONG-(W) 80.733224
NAD'83 UTM (M)	N. 4,405,855.8	E. 522,837.5

DETAIL SCALE: 1" = 500'

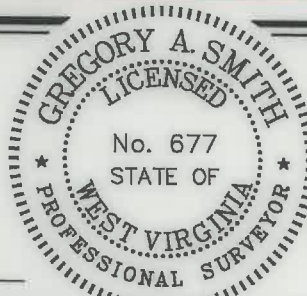


12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3932
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slsrv.com

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 SEPTEMBER 30, 20 22

REVISED _____
OPERATORS WELL NO. Knob Creek N-11HU
API WELL NO. 47 - 051 - 02287
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8789P11HUAD.dwg
Knob Creek N-11HU 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 INJECTION LIQUID WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: GROUND = 734.20' ELEVATION PROPOSED = 734.67' WATERSHED FISH CREEK (HUC 10)
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER DAVID LEE FRANKLIN ACREAGE 65.824±
ROYALTY OWNER DAVID LEE FRANKLIN, ET AL - SEE ADDITIONAL SHEETS ACREAGE 65.824±

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION POINT PLEASANT
ESTIMATED DEPTH TVD: 11,298' / TMD: 25,044'

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

COUNTY NAME

PERMIT

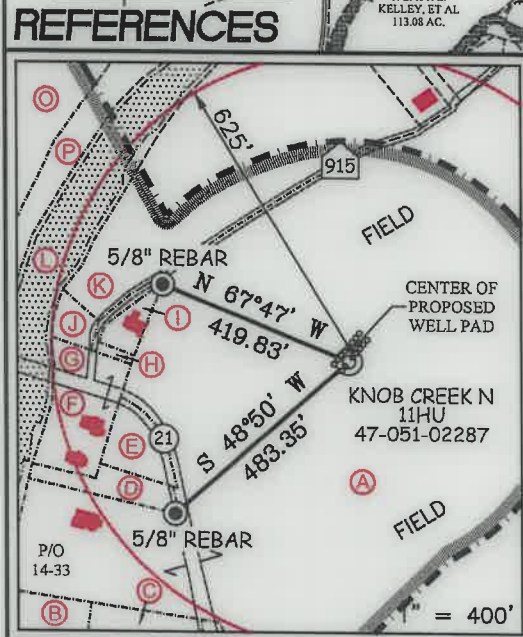
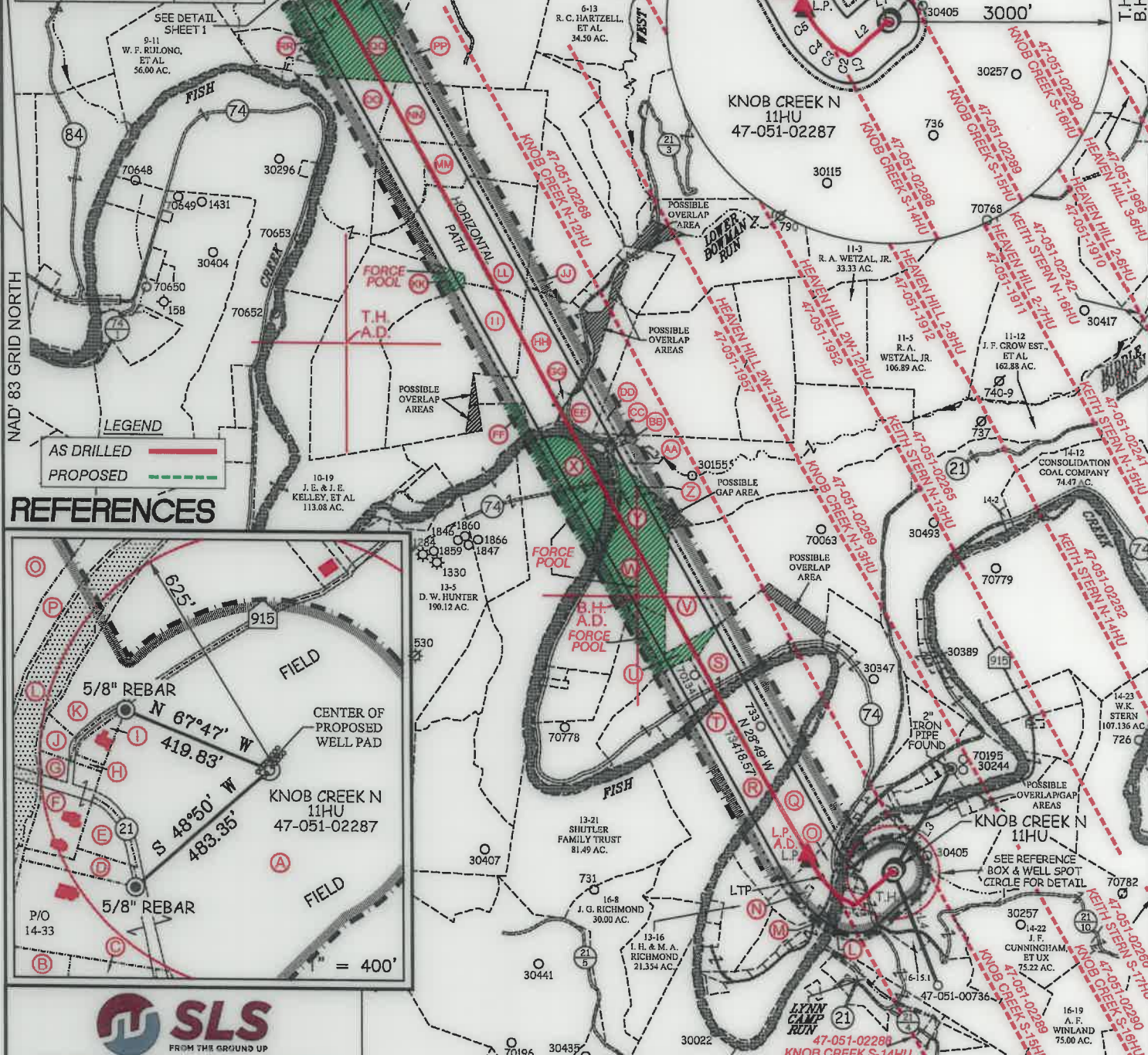
10/21/2022

**KNOB CREEK N LEASE
UTICA UNIT - 458.32 AC ±
WELL 11HU
TUG HILL OPERATING**

LINE	BEARING	DISTANCE
L1	S 68°27' W	52.38'
L2	S 47°39' W	585.03'
L3	N 29°22' E	1596.33'
L4	S 21°02' E	1643.06'

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

T.H. LONGITUDE 80°40'00"
B.H. LONGITUDE 80°42'30"



SLS
FROM THE GROUND UP

12 Vanhorn Drive | P.O. Box 100 | Glenville, WV 26351 | 304.462.3634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.265.5298
sllwv.com

P.S. 677 *Gregory A. Smith*

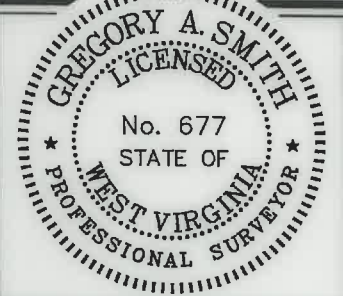
CURVE TABLE

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	56.78'	70.73'	S 73°15' W	55.26'
C2	99.70'	256.68'	N 71°44' W	99.07'
C3	220.06'	996.75'	N 54°12' W	219.62'
C4	161.65'	1120.16'	N 44°42' W	161.51'
C5	367.90'	1775.97'	N 34°28' W	367.24'

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

NAD'83 S.P.C.(FT)	N. 464,844.77	E. 1,629,670.00
NAD'83 GEO.	LAT-(N) 39.769995	LONG-(W) 80.705472
NAD'83 UTM (M)	N. 4,402,270.92	E. 525,224.95
LANDING POINT		
NAD'83 S.P.C.(FT)	N. 464,992.5	E. 1,628,542.5
NAD'83 GEO.	LAT-(N) 39.770359	LONG-(W) 80.709491
NAD'83 UTM (M)	N. 4,402,310.2	E. 524,880.7
BOTTOM HOLE		
NAD'83 S.P.C.(FT)	N. 476,749.9	E. 1,622,075.4
NAD'83 GEO.	LAT-(N) 39.802393	LONG-(W) 80.733070
NAD'83 UTM (M)	N. 4,405,859.2	E. 522,850.6

SCALE 1" = 2000' FILE NO. 8789P11HUAD.dwg
KNOB CREEK N-11HU REV4
DATE SEPTEMBER 30, 2022
REVISED _____
OPERATORS WELL NO. KNOB CREEK N-11HU
API WELL NO. 47 — 051 — 02287
NO. STATE COUNTY PERMIT



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

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

LEGEND

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

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

10/21/2022

COUNTY NAME PERMIT

**KNOB CREEK N LEASE
UTICA UNIT - 458.32 AC ±
WELL 11HU
TUG HILL OPERATING**



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

NO.	Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Deed Book/Page	
1	10*47051.219.1	9-14-33	A	DAVID LEE FRANKLIN	874	312
2	10*23112	9-16-15	B	JOHN V AND RACHEL M SHEPHERD	63	219
3	10*23112	9-16-14	C	JOHN V AND RACHEL M SHEPHERD	63	219
4	10*47051.219.1	9-14-35	D	DAVID LEE FRANKLIN	937	385
5	10*47051.243.1	9-14-38	E	MARY A FOX, ET AL.	879	332
6	10*47051.219.1	9-14-37	F	DAVID LEE FRANKLIN, ET AL.	937	385
7	10*18298	9-14-40	G	MAUREEN GREGG, ET AL.	929	273
8	10*47051.219.1	9-14-36	H	DAVID LEE FRANKLIN	937	385
9	10*47051.219.1	9-14-39	I	DAVID LEE FRANKLIN	937	385
10	10*47051.219.1	9-14-41	J	DAVID LEE FRANKLIN	937	385
11	10*47051.219.1	9-14-44	K	DAVID LEE FRANKLIN	937	385
12	10*23458	FISH CREEK	L	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	1019	373
13	10*16481	9-16-12	M	JAMES G RICHMOND AND CINDY L RICHMOND	829	71
14	10*18732	9-13-13.1	N	SHERRILL M LEAVERS AND JAMES H LEAVERS, ET AL.	938	245
15	10*18732	9-13-13	O	SHERRILL M LEAVERS AND JAMES H LEAVERS, ET AL.	938	245
16	10*19538	9-14-42	P	JOHN C LAGOS AND CYNTHIA M LAGOS	936	531
17	10*24858	9-13-12	Q	NILA JEAN FROHNAPFEL	1028	119
18	10*17193	9-13-20	R	JOHN P. ICARD, ET AL.	716	12
19	10*18351	9-13-18	S	MARK ALLEN LENENBERG, ET AL.	931	399
20	10*18351	9-13-19	T	MARK ALLEN LENENBERG, ET AL.	931	399
21	*FORCE POOL*	9-13-22	U	TRICYCLE, LLC	881	615
22	10*27247	9-13-22	U	DANIEL R AND JOANNA L JOHNSON	1053	3
23	10*27248	9-13-22	U	NILA K & THOMAS R MOWDER	1053	5
24	10*18265	9-13-11	V	KENNETH NELSON SMERTNECK AND TERESA ANN SMERTNECK	933	103
25	*FORCE POOL*	9-13-8	W	ROBERT LEE SHUTLER AND PAATRICIA A. SHULER, TRUSTEES OF THE SHUTLER FAMILY TRUST	702	386
26	*FORCE POOL*	9-13-7	X	FRANK E. PETHEL AND MARY VIRGINIA PETHEL (LIFE ESTATE)	668 672 771	525 171 11
27	10*19534	9-13-9	Y	ARTHUR L MOORE AND SHARON A MOORE	936	553
28	*FORCE POOL*	9-13-9	Y	ROBERT LEE SHUTLER AND PAATRICIA A. SHULER, TRUSTEES OF THE SHUTLER FAMILY TRUST	702	386
29	10*19534	9-13-10	Z	ARTHUR L MOORE AND SHARON A MOORE	936	553
30	*FORCE POOL*	9-13-10	Z	ROBERT LEE SHUTLER AND PAATRICIA A. SHULER, TRUSTEES OF THE SHUTLER FAMILY TRUST	702	386
31	10*47051.243.1	9-11-2	AA	MARY A FOX, ET AL.	879	332
32	10*16526	9-11-2.2	BB	JUDITH PADLOW AKA JUDI L PADLOW	957	134
33	10*16526	9-11-1	CC	JUDITH PADLOW AKA JUDI L PADLOW	957	134
34	10*15567	9-10-13	DD	VICKIE J MASON, ET AL.	680	409
35	10*15600	9-10-14	EE	WILLIAM D MCCONNELL	715	447
36	"FORCE POOL"	9-13-6	FF	FRANK E. PETHEL AND MARY VIRGINIA PETHEL (LIFE ESTATE)	668 672 771	525 171 11
37	10*16510	9-10-16	GG	WILLIAM D MCCONNELL	957	148
38	10*47051.117.1	9-10-15	HH	JOSEPH MICHAEL BONENE	876	79
39	10*17383	9-10-18	II	JACQUES ROY, ET AL.	919	631
40	10*17385	9-10-18	II	GABRIEL ARTHUR KRAUSE ROY	919	633
41	10*17386	9-10-18	II	LYNNE MERYL KRAUSE	919	629
42	10*17387	9-10-18	II	JACINTHE KRAUSE-ROY	919	636
43	10*15504	9-10-6	JJ	JAMES MASON ET AL	692	461
44	*FORCE POOL*	9-10-4	KK	JAMES MASON ET AL	692	461
45	10*19749	9-10-4	KK	JOHN CALVERT	944	428
46	10*19750	9-10-4	KK	DELORES J MYERS	944	430
47	10*19824	9-10-4	KK	ROBERT BRADLEY HIGGINS	946	57
48	10*19972	9-10-4	KK	ALBERT J WARSINKY AIF ELLEN K NYLES	948	209
49	10*15504	9-10-5	LL	JAMES MASON ET AL	692	461
50	10*15511	9-6-15	MM	DAVID E CROW, ET AL.	718	376
51	10*15464	9-6-16	NN	MARY ALICE THOMAS MELLOTT, ET AL	906	527
52	10*23561	9-10-3	OO	VINCENT PATRELLO AND AMANDA PATRELLO, ET AL	988	97
53	10*19116	9-6-4	PP	ROBERT LEE CARNEY AND BONNIE ANNE CARNEY	682	255
54	10*18839	9-6-3	QQ	MARGARET DARLENE DUTTON, ET AL.	937	607
55	*FORCE POOL*	9-6-3	QQ	VICKY JO GRIFFIN AKA VICKIE JO GRIFFIN	870	134
56	*FORCE POOL*	9-6-3	QQ	THOMAS MICHAEL GRIFFIN	870	128
57	*FORCE POOL*	9-6-3	QQ	THE DERROW FAMILY IRREVOCABLE TRUST	874	500
58	*FORCE POOL*	9-6-3	QQ	SONDRA S. MENENDEZ	864	565
59	*FORCE POOL*	9-6-3	QQ	RUTH FUNNER	870	132
60	*FORCE POOL*	9-6-3	QQ	JOSEPH MARK MENENDEZ	868	440
61	*FORCE POOL*	9-6-3	QQ	CATHERINE E. GRIFFIN	889	13
62	10*18839	9-6-3.1	RR	MARGARET DARLENE DUTTON, ET AL.	937	607
63	*FORCE POOL*	9-6-3.1	RR	VICKY JO GRIFFIN AKA VICKIE JO GRIFFIN	870	134
64	*FORCE POOL*	9-6-3.1	RR	THOMAS MICHAEL GRIFFIN	870	128
65	*FORCE POOL*	9-6-3.1	RR	THE DERROW FAMILY IRREVOCABLE TRUST	874	500
66	*FORCE POOL*	9-6-3.1	RR	SONDRA S. MENENDEZ	864	565
67	*FORCE POOL*	9-6-3.1	RR	RUTH FUNNER	870	132
68	*FORCE POOL*	9-6-3.1	RR	JOSEPH MARK MENENDEZ	868	440
69	*FORCE POOL*	9-6-3.1	RR	CATHERINE E. GRIFFIN	889	13

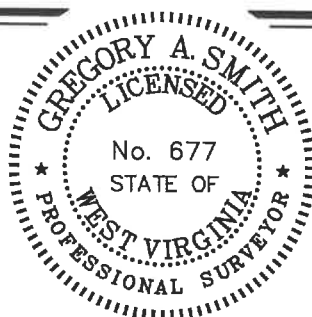
FILE NO. 8789P11HUAD.dwg
KNOB CREEK N-11HU REV4

DATE SEPTEMBER 30, 20 22

REVISED _____

OPERATORS WELL NO. KNOB CREEK N-11HU

API WELL NO. 47 — 051 — 02287
STATE COUNTY PERMIT



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



10/27/2022

P.S. 677

Gregory A. Smith

COUNTY NAME PERMIT

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