

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

RECEIVED  
Office of Oil and Gas  
OCT 03 2022  
WV Department of  
Environmental Protection

API 47- 051 - 02290 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 S-16HU  
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 4,402,285.21 Easting 525,236.36  
Landing Point of Curve Northing 4,402,126.1 Easting 525,873.7  
Bottom Hole Northing 4,399,914.7 Easting 527,150.2

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: 3/30/2020 big rig: 10/18/2020 Date drilling ceased 11/16/2020  
Date completion activities began 12/30/2021 Date completion activities ceased 1/19/2022  
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: \_\_\_\_\_  
10/21/2022  
STRAPAR

API 47- 051 - 02290 Farm name David Lee Franklin Well number Knob Creek S-16HU

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"	517'	NEW	106.5#	N/A	Y
Coal							
Intermediate 1	17 1/2"	13 3/8"	2,237'	NEW	54.5#	N/A	Y
Intermediate 2	12 1/4"	9 5/8"	10,130'	NEW	47#	N/A	Y
Intermediate 3							
Production	8 1/2"	5 1/2"	20699'	NEW	23#	N/A	Y
Tubing		2 7/8"	10,335'	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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	A	547	15.16	1.18	646	0	8
Surface	A	1058	15.6	1.18	1248.44	0	8
Coal							
Intermediate 1	A	1827	15.6	1.18	2155.86	0	8
Intermediate 2	A	4575	14.5	1.15	5261.25	0	8
Intermediate 3							
Production	A	5015	16.5	1.03	5165.45	0	8
Tubing							

Drillers TD (ft) 20,730' Loggers TD (ft) n/a  
 Deepest formation penetrated Trenton Plug back to (ft) n/a  
 Plug back procedure n/a

Kick off depth (ft) 10,305'

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 \_\_\_\_\_





**KNOB CREEK S-16HU**  
**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	78.00	11949	11637	7717	504180	8,068	0
2	84.00	11850	10278	8692	507460	8,251	0
3	82.00	11780	10007	8359	502940	8,136	0
4	85.00	11975	9254	8617	502000	8,067	0
5	89.00	12177	10029	7977	503000	8,025	0
6	89.00	11870	9629	8374	504360	7,949	0
7	85.00	11715	10335	8421	506840	8,099	0
8	90.00	11664	9404	8428	507180	7,999	0
9	90.00	11516	9091	8672	500920	7,860	0
10	88.00	11256	9583	8895	491880	8,842	0
11	88.00	11258	10719	8648	491900	7,782	0
12	89.00	11480	10026	8565	509420	7,897	0
13	89.00	11190	9288	8571	502480	7,931	0
14	88.00	11157	9600	8737	500540	7,854	0
15	88.00	11231	9702	9213	507000	7,938	0
16	90.00	11401	9270	8696	492460	7,792	0
17	90.00	11685	9786	8649	507580	7,911	0
18	90.00	11634	9866	8691	507160	8,056	0
19	89.00	11841	10155	8695	492080	8,673	0
20	90.00	11366	9822	8308	488470	7,228	0
21	88.00	11063	9209	8652	490760	8,126	0
22	89.00	11307	8874	9011	483160	7,624	0
23	90.00	11300	9161	9179	507140	7,831	0
24	88.00	11175	9460	8594	510720	7,847	0
25	88.00	11008	8910	8524	509340	7,806	0
26	90.00	11081	8977	8638	504020	7,815	0
27	90.00	11038	9964	8466	510160	7,918	0
28	89.00	10986	10180	7968	506220	7,835	0
29	89.00	10916	9500	8131	501420	7,704	0
30	89.00	10614	9022	8810	499440	8,148	0
31	89.00	10615	9473	8604	499880	7,665	0
32	89.00	10641	9154	8285	499660	7,651	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	10531	8970	8518	505160	8,688	0
34	89.00	10463	9046	8226	497220	7,838	0
35	89.00	10421	9350	8055	501220	7,705	0
36	88.00	10469	8908	8072	500260	7,602	0
37	88.00	10448	8710	8072	505240	7,674	0
38	88.00	10213	8950	8335	497400	7,627	0
39	88.00	10125	8722	8279	504020	7,712	0
40	88.00	10056	9131	8334	503440	7,651	0
41	90.00	10164	9067	8230	500140	7,647	0
42	88.00	10172	8755	8399	499160	7,609	0

## Knob Creek S-16HU

### PERFORATION RECORD

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	12/17/2021	20,297	20,472	48	Utica
2	12/18/2021	20,099	20,274	48	Utica
3	12/18/2021	19,900	20,075	48	Utica
4	12/18/2021	19,702	19,877	48	Utica
5	12/18/2021	19,503	19,678	48	Utica
6	12/19/2021	19,305	19,480	48	Utica
7	12/19/2021	19,106	19,281	48	Utica
8	12/19/2021	18,908	19,083	48	Utica
9	12/20/2021	18,709	18,884	48	Utica
10	12/20/2021	18,511	18,686	48	Utica
11	12/20/2021	18,312	18,487	48	Utica
12	12/20/2021	18,114	18,289	48	Utica
13	12/20/2021	17,915	18,090	48	Utica
14	12/21/2021	17,717	17,892	48	Utica
15	12/21/2021	17,518	17,693	48	Utica
16	12/21/2021	17,320	17,495	48	Utica
17	12/22/2021	17,121	17,296	48	Utica
18	12/22/2021	16,923	17,098	48	Utica
19	12/22/2021	16,724	16,899	48	Utica
20	12/23/2021	16,526	16,701	48	Utica
21	12/23/2021	16,327	16,502	48	Utica
22	12/23/2021	16,129	16,304	48	Utica
23	12/24/2021	15,930	16,105	48	Utica
24	12/24/2021	15,732	15,907	48	Utica
25	12/24/2021	15,533	15,708	48	Utica
26	12/24/2021	15,335	15,510	48	Utica
27	12/25/2021	15,136	15,311	48	Utica
28	12/25/2021	14,938	15,113	48	Utica
29	12/25/2021	14,739	14,914	48	Utica
30	12/26/2021	14,541	14,716	48	Utica
31	12/26/2021	14,342	14,517	48	Utica
32	12/26/2021	14,144	14,319	48	Utica
33	12/27/2021	13,945	14,120	48	Utica
34	12/27/2021	13,747	13,922	48	Utica
35	12/27/2021	13,548	13,723	48	Utica
36	12/28/2021	13,350	13,525	48	Utica
37	12/28/2021	13,151	13,326	48	Utica
38	12/28/2021	12,953	13,128	48	Utica
39	12/28/2021	12,754	12,929	48	Utica
40	12/29/2021	12,556	12,731	48	Utica
41	12/29/2021	12,357	12,532	48	Utica

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	12/29/2021	12,159	12,334	48	Utica



## Knob Creek S-16HU

### 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	1923	Sandstone
Weir	1922	2124	1923	2125	Sandstone
Berea	2124	2385	2125	2386	Sandstone
Gordon	2385	2468	2386	2469	Sandstone
Fifty Foot	2468	3054	2469	3055	Sandstone
Speechley	3054	4500	3055	4506	Sandstone
Benson	4500	4917	4506	4924	Sandstone
Alexander	4917	5545	4924	5555	Siltstone
Rhinestreet	5545	6016	5555	6031	Black Shale
Middlesex	6016	6085	6031	6100	Black Shale
Geneseo/Burkett	6085	6118	6100	6133	Black Shale
Tully	6118	6151	6133	6166	Limestone
Hamilton	6151	6224	6166	6240	Gray Shale
Marcellus	6224	6277	6240	6293	Black Shale
Onondaga	6277	6505	6293	6524	Limestone
Oriskany	6505	6629	6524	6651	Sandstone
Helderberg	6629	6985	6651	7018	Limestone
Salina	6985	8114	7018	8179	Salt/Anhydrite/LS
Lockport	8114	8489	8179	8559	Dolomite
Rose Hill	8489	8768	8559	8845	Shale
Packer Shell	8768	8989	8845	9071	Limestone
Clinton/Tuscarora	8989	9098	9071	9181	Sandstone
Juniata/Queenston	9098	9890	9181	9990	Red Shale
Reedsville	9890	10917	9990	11103	Gray Shale
Utica	10917	11181	11103	11716	Black Shale
Point Pleasant	11181	-	11716	-	Shale/Limestone

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/17/2021
Job End Date:	12/29/2021
State:	West Virginia
County:	Marshall
API Number:	47-051-02290-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Knob Creek 16HU
Latitude:	39.77012366
Longitude:	-80.70533874
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	11,298
Total Base Water Volume (gal):	13,947,402
Total Base Non Water Volume:	0



## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service 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	84.32157	None
Sand (40/70 White Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	12.10834	None
Sand (100 Mesh Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	3.15259	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Water	7732-18-5	85.00000	0.24556	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.10689	None
StimStream FR 9800	Chemstream	Friction Reducer	Alkanes, C16-20-iso-	90622-59-6	25.00000	0.02066	None
			Butene, homopolymer	9003-29-6	25.00000	0.02066	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00248	None
MC MX 9-4743	Multi-Chem	Biocide	Sodium Nitrate	7631-99-4	60.00000	0.02148	None
LD-7750W	Multi-Chem	Scale Inhibitor					

			Methanol	67-56-1	60.00000	0.00486	None
			Phosphonic Acid Salt	Proprietary	5.00000	0.00041	None
ProHib 100	CNR	Acid Inhibitor					
			2-Butoxyethanol	111-76-2	60.00000	0.00056	None
			Proprietary material	Proprietary	30.00000	0.00028	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00019	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	0.00022	None
			Acetic Acid	64-19-7	5.00000	0.00006	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	0.24556	
			Butene, homopolymer	9003-29-6	25.00000	0.02066	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00248	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00041	
			Proprietary material	Proprietary	30.00000	0.00028	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00019	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00009	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00009	
			Acetic Acid	64-19-7	5.00000	0.00006	

\* 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 S LEASE  
UTICA UNIT - 325.12 AC ±  
WELL 16HU  
TUG HILL OPERATING**

A.D.  
B.H.

T.H. LATITUDE 39°47'30"  
B.H. LATITUDE 39°45'00"

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

NAD'83 S.P.C.(FT)	N. 464,891.03	E. 1,629,708.20
NAD'83 GEO.	LAT-(N) 39.770124	LONG-(W) 80.705339
NAD'83 UTM (M)	N. 4,402,285.21	E. 525,236.36

**LANDING POINT**

NAD'83 S.P.C.(FT)	N. 464,762.1	E. 1,631,519.6
NAD'83 GEO.	LAT-(N) 39.769836	LONG-(W) 80.698889
NAD'83 UTM (M)	N. 4,402,255.2	E. 525,788.9

**BOTTOM HOLE**

NAD'83 S.P.C.(FT)	N. 457,002.2	E. 1,635,850.5
NAD'83 GEO.	LAT-(N) 39.748692	LONG-(W) 80.683119
NAD'83 UTM (M)	N. 4,399,913.1	E. 527,147.8

T.H. LONGITUDE 80°40'00"  
B.H. LONGITUDE 80°40'00"  
472' B.H. A.D.  
7,847' T.H. A.D.

**AS DRILLED COORDINATES  
FOR WELL NO. 16HU**

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

NAD'83 S.P.C.(FT)	N. 464,891.03	E. 1,629,708.20
NAD'83 GEO.	LAT-(N) 39.770124	LONG-(W) 80.705339
NAD'83 UTM (M)	N. 4,402,285.21	E. 525,236.36

**LANDING POINT**

NAD'83 S.P.C.(FT)	N. 464,333.9	E. 1,631,790.9
NAD'83 GEO.	LAT-(N) 39.769571	LONG-(W) 80.697903
NAD'83 UTM (M)	N. 4,402,128.1	E. 525,873.7

**BOTTOM HOLE**

NAD'83 S.P.C.(FT)	N. 457,007.2	E. 1,635,858.4
NAD'83 GEO.	LAT-(N) 39.748706	LONG-(W) 80.683091
NAD'83 UTM (M)	N. 4,399,914.7	E. 527,150.2

A.D.  
T.H.

TAG	SURFACE OWNER	PARCEL	ACRES
A	DAVID LEE FRANKLIN	9-14-33	65.824
B	MARGARET FOX - LIFE	9-14-39	8,675 SQ. FT
C	DAVID LEE FRANKLIN	9-14-44	2.913
D	TWILA C. COFFIELD	9-14-32	0.583
E	TWILA C. COFFIELD	9-14-32.1	0.184
F	RICHARD L. HARVETH, ET UX	9-14-54	1.649
G	ANDREW FASOULETOS, ET UX	9-14-29.1	1.171
H	ANDREW FASOULETOS, ET UX	9-14-29	0.209
I	CHARLES R. SCHELLHASE, ET UX	9-14-28	3.029
J	PATRICK J. SCHELLHASE TRUST	9-14-11.3	23.424
K	JOHN F. CUNNINGHAM, ET UX	9-14-22	75.22
L	WILLIAM KEITH STERN, ET UX	9-14-23	107.133
M	RONALD R. YOUNG, ET UX - LIFE	9-16-15	52.02
N	ALICE FAYE WINLAND	9-16-19	75.00
O	DAVID P. WARSINSKY & ELLEN K. NYLES	9-17-1	70.00
P	I. C. YOUNG ESTATE	9-17-2	140.00
Q	ROBERT J. COMBS, ET AL	9-18-9	110.75
R	WSD PROPERTIES, I.LC	9-17-41	25.57
S	BETTY J. GOULDSBERRY ESTATE, ET AL	9-18-11	60.00
T	BETTY J. GOULDSBERRY ESTATE, ET AL	9-18-10	20.00
U	I. C. YOUNG ESTATE	9-17-40	51.44
V	I. C. YOUNG ESTATE	9-19-1	80.00
W	I. C. YOUNG ESTATE	9-19-2	80.00

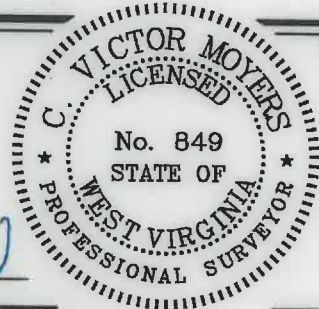
**NOTES ON SURVEY**

- 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 S-16HU (47-051-02290) IS WITHIN 3000' OF THE TOP HOLES OR LATERALS OF EXISTING WELLS  
 KNOB CREEK N-11HU (47-051-02287),  
 KNOB CREEK N-12HU (47-051-02288),  
 KNOB CREEK N-13HU (47-051-02269),  
 KNOB CREEK S-14HU (47-051-02288),  
 KNOB CREEK S-15HU (47-051-02289),  
 KEITH STERN N-13HU (47-051-02265),  
 KEITH STERN N-14HU (47-051-02252),  
 KEITH STERN S-17HU (47-051-02266),  
 KEITH STERN S-18HU (47-051-02243).
- AS-DRILLED DATA PROVIDED BY TUG HILL OPERATING, LLC.
- PLAT UPDATED TO SHOW AS-DRILLED PATH.



12 Vanhorn Drive | P.O. Box 150 | Stennville, WV 25351 | 304.462.5654  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
254 East Decibley Bypass | Decibley, WV 25001 | 304.255.5296  
sllsv.com

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



P.S. 849 *C. Victor Moyers*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE MAY 21, 20 21  
REVISED \_\_\_\_\_, 20 \_\_\_\_  
OPERATORS WELL NO. KNOB CREEK S-16HU  
API WELL NO. 47 - 051 - 02290  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8789P16HUAD.dwg  
KNOB CREEK S-16HU REV4  
HORIZONTAL & VERTICAL SCALE 1" = 2000'  
CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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

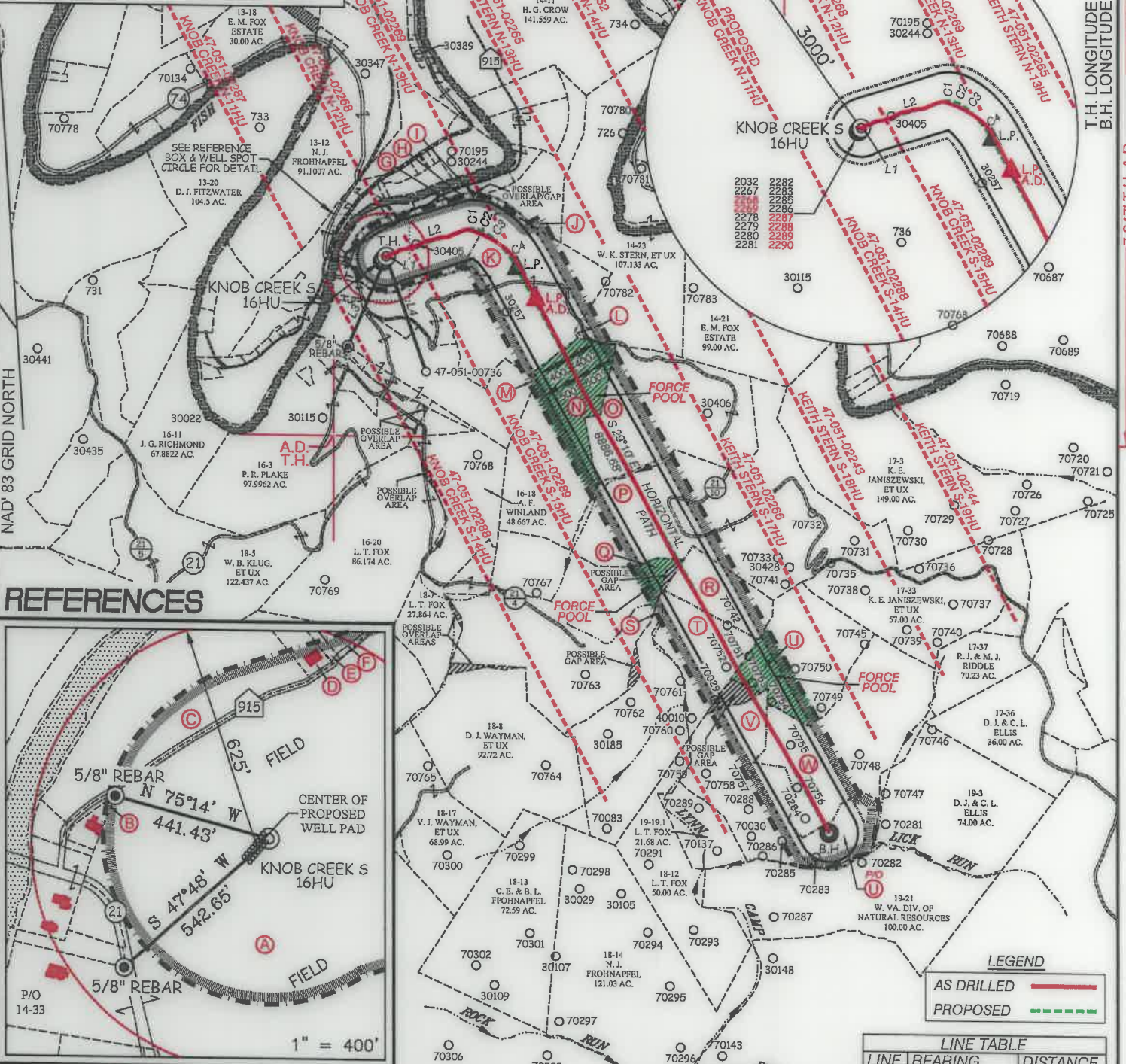
WELL TYPE: OIL \_\_\_\_\_ GAS X INJECTION \_\_\_\_\_ WASTE DISPOSAL \_\_\_\_\_ IF "GAS" PRODUCTION X STORAGE \_\_\_\_\_ DEEP X SHALLOW \_\_\_\_\_  
LOCATION: GROUND = 729.30' ELEVATION PROPOSED = 734.67' WATERSHED FISH CREEK (HUC 10)  
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'  
SURFACE OWNER DAVID LEE FRANKLIN ACREAGE 65.824±  
ROYALTY OWNER DAVID LEE FRANKLIN, ET AL - SEE ADDITIONAL SHEETS ACREAGE 65.824±  
PROPOSED WORK: DRILL X CONVERT \_\_\_\_\_ DRILL DEEPER \_\_\_\_\_ REDRILL \_\_\_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_\_\_ PERFORATE NEW FORMATION \_\_\_\_\_ PLUG AND ABANDON \_\_\_\_\_ CLEAN OUT AND REPLUG \_\_\_\_\_ OTHER \_\_\_\_\_  
PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION \_\_\_\_\_ POINT PLEASANT \_\_\_\_\_ ESTIMATED DEPTH TVD: 11,351' TMD: 20,709'

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

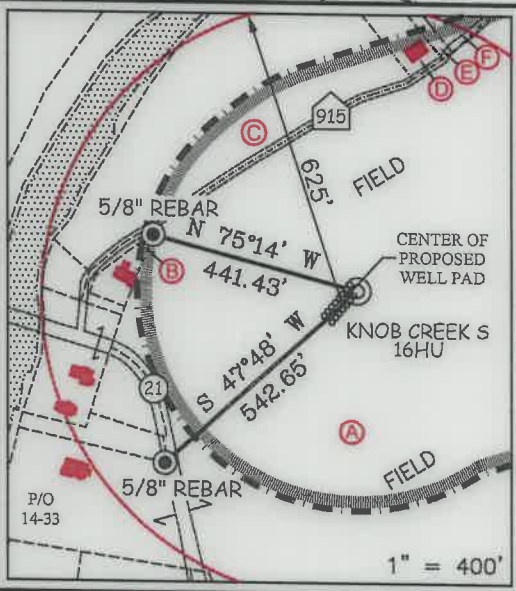
COUNTY NAME PERMIT



**KNOB CREEK S LEASE  
UTICA UNIT - 325.12 AC±  
WELL 16HU  
TUG HILL OPERATING**



**REFERENCES**



**LEGEND**

AS DRILLED ———  
PROPOSED - - - - -

LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 50°58' E	52.35'
L2	N 72°02' E	1183.45'
L3	S 22°57' W	1355.45'
L4	S 19°14' E	1673.35'

CHORD BEARING				
CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	84.77'	192.50'	N 87°26' E	84.09'
C2	105.13'	371.28'	S 71°22' E	104.78'
C3	244.70'	848.35'	S 53°59' E	243.85'
C4	443.09'	1552.92'	S 36°47' E	441.59'

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 25501 | 304.255.5295  
slsvw.com

P.S. 849 *C. Victor Moyers*

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

NAD'83 S.P.C.(FT)	N. 464,891.03	E. 1,629,708.20
NAD'83 GEO.	LAT-(N) 39.770124	LONG-(W) 80.705339
NAD'83 UTM (M)	N. 4,402,285.21	E. 525,236.36
<b>LANDING POINT</b>		
NAD'83 S.P.C.(FT)	N. 464,762.1	E. 1,631,519.6
NAD'83 GEO.	LAT-(N) 39.769836	LONG-(W) 80.698889
NAD'83 UTM (M)	N. 4,402,255.2	E. 525,788.9
<b>BOTTOM HOLE</b>		
NAD'83 S.P.C.(FT)	N. 457,002.2	E. 1,635,850.5
NAD'83 GEO.	LAT-(N) 39.748692	LONG-(W) 80.683119
NAD'83 UTM (M)	N. 4,399,913.1	E. 527,147.8



SCALE 1" = 2000' FILE NO. 8789P16HUAD.dwg  
KNOB CREEK S-16HU REV4

DATE MAY 21, 20 21  
REVISED \_\_\_\_\_, 20 \_\_\_\_\_

OPERATORS WELL NO. KNOB CREEK S-16HU

API WELL NO. **47 — 051 — 02290**

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
- CREEK
- ROAD
- FORCE POOL TRACT
- 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 DIANNA STAMPER CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313
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T.H. LATITUDE 39°47'30"  
B.H. LATITUDE 39°45'00"  
T.H. LONGITUDE 80°40'00"  
B.H. LONGITUDE 80°40'00"  
10.870' T.H. A.D.  
4,618' B.H. A.D.  
7,847' T.H. A.D.  
472' B.H. A.D.



**KNOB CREEK S LEASE  
UTICA UNIT - 325.12 AC±  
WELL 16HU  
TUG HILL OPERATING**



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1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.2952  
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*47051.219.1	9-14-39	B	DAVID LEE FRANKLIN	937	385
3	10*47051.219.1	9-14-44	C	DAVID LEE FRANKLIN	937	385
4	10*47051.219.1	9-14-32	D	DAVID LEE FRANKLIN	937	385
5	10*47051.219.1	9-14-32.1	E	DAVID LEE FRANKLIN	937	385
6	10*15523	9-14-54	F	RICHARD L HARVETH AND SANDRA J HARVETH	729	638
7	10*22394	9-14-29.1	G	THE ANDREW & KAREN FASOULETOS 2017 IRREVOCABLE TRUST DATED SEPT 14 2017	964	513
8	10*22394	9-14-29	H	THE ANDREW & KAREN FASOULETOS 2017 IRREVOCABLE TRUST DATED SEPT 14 2017	964	513
9	10*23053	9-14-28	I	C E YOUNG	63	146
10	10*23053	9-14-11.3	J	CE YOUNG	63	146
11	10*16479	9-14-22	K	JOHN F CUNNINGHAM AND BERNEICE K CUNNINGHAM	826	88
12	10*15812	9-14-23	L	WILLIAM K STERN AND BETTY L STERN, ET AL	687	220
13	10*23112	9-16-15	M	JOHN V AND RACHEL M SHEPHERD	63	219
14	10*18424	9-16-19	N	BRENDA J LOHRUM, ET AL	932	590
15	*FORCE POOL* 10*23112	9-16-19	N	JOHN V AND RACHEL M SHEPHERD	63	219
16	10*17135	9-17-1	O	ELLEN K NYLES	919	625
17	10*17136	9-17-1	O	DAVID P WARSINSKY	919	627
18	10*15910	9-17-2	P	SHIRLEY KOONTZ, ET AL	701	303
19	*FORCE POOL*	9-18-9	Q	CATHARINE V B YOUNG AND A J YOUNG	164	534
20	PENDING	9-17-41	R	JOHN T GALLAHER AND EMILY J GALLAHER	68	471
21	10*15938	9-18-11	S	MARK W YOHO, ET AL	695	157
22	10*15938	9-18-10	T	MARK W YOHO, ET AL	695	157
23	*FORCE POOL* 10*23194	9-17-40	U	ALBERT HARTLEY AND CHRISTOPHER HARTLEY	60	160
24	10*15937	9-19-1	V	SHIRLEY KOONTZ, ET AL	707	619
25	10*18610	9-19-2	W	NEIL ROBERT YOUNG, ET AL	934	636

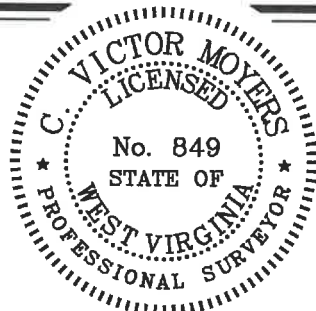
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DATE MAY 21, 20 21

REVISED \_\_\_\_\_, 20 \_\_\_\_\_

OPERATORS WELL NO. KNOB CREEK S-16HU

API WELL NO. **47** — **051** — **02290**  
STATE COUNTY PERMIT



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



10/21/2022

P.S. 849 *C. Victor Moyers*

WELL OPERATOR TUG HILL OPERATING, LLC  
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COUNTY NAME  
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