

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 - 02268 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-12HU  
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 4,402,276.64 Easting 525,229.52  
Landing Point of Curve Northing 4,402,537.3 Easting 525,174.5  
Bottom Hole Northing 4,406,053.1 Easting 523,166.6

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 1/9/2020 Date drilling commenced spud:4/6/2020 big rig: 12/17/2020 Date drilling ceased 1/28/2020  
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:  
SG-10/11/22  
10/21/2022  
Stef G...

API 47- 051 - 02268 Farm name David Lee Franklin Well number Knob Creek N-12HU

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"	2,260'	NEW	54.5#	N/A	Y
Intermediate 2	12 1/4"	9 5/8"	10,002'	NEW	47#	N/A	Y
Intermediate 3							
Production	8 1/2"	5 1/2"	24,984'	NEW	23#	N/A	Y
Tubing		2 7/8"	12,492'	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	15.6	1.18	646	0	8
Surface	A	891	15.6	1.19	1060.29	0	8
Coal							
Intermediate 1	A	1773	15.6	1.19	2109.87	0	8
Intermediate 2	A	3835	14.5	1.353	5188.75	0	8
Intermediate 3							
Production	A	6110	17.2	1.02	6232.2	0	8
Tubing							

Drillers TD (ft) 25,041' Loggers TD (ft) n/a  
 Deepest formation penetrated Trenton Plug back to (ft) n/a  
 Plug back procedure n/a

Kick off depth (ft) 10,440'

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 N-12HU**  
**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	80.00	12036	11812	7119	496320	9,184	0
2	85.00	12263	9848	7134	496640	8,176	0
3	82.00	12506	8620	7402	502429	9,301	0
4	85.00	12421	9188	7683	510720	8,372	0
5	84.00	12128	10168	7844	493100	8,022	0
6	88.00	12119	8902	7792	500480	8,171	0
7	87.00	11860	8839	7859	491960	8,096	0
8	88.00	12013	9767	8028	501020	8,099	0
9	88.00	11892	9364	8109	497680	8,042	0
10	88.00	12071	8575	7957	504460	8,872	0
11	89.00	11747	7609	7160	500440	8,243	0
12	88.00	11527	7069	7653	493200	8,016	0
13	90.00	11783	7648	7164	506360	8,515	0
14	88.00	11368	7642	8004	497020	8,031	0
15	88.00	11572	8366	7976	501280	8,113	0
16	90.00	11602	7740	7492	497840	8,047	0
17	84.00	11301	8259	7772	508720	8,039	0
18	86.00	11542	8302	7633	495920	8,012	0
19	88.00	11699	11420	7881	504340	8,125	0
20	88.00	11782	8251	8305	493100	7,959	0
21	86.00	12111	8770	7941	441480	8,021	0
22	87.00	11875	8599	8080	509380	8,198	0
23	88.00	11582	8509	8527	495200	7,945	0
24	87.00	11496	8514	8265	491800	7,907	0
25	86.00	10968	7514	7729	493920	7,991	0
26	88.00	11266	7887	8073	500840	8,057	0
27	89.00	11764	8275	7827	501840	8,070	0
28	89.00	11880	8521	7956	491840	7,883	0
29	88.00	11765	8546	7794	497520	8,137	0
30	88.00	11378	8282	7782	498700	8,310	0
31	89.00	11675	8321	8087	496820	7,954	0
32	88.00	11725	8562	8129	466130	8,281	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	84.00	11413	9250	8138	505200	10,482	0
34	87.00	11229	8773	8031	482340	7,946	0
35	88.00	11409	8256	8375	508060	9,899	0
36	89.00	11043	8116	7981	506040	7,937	0
37	89.00	11335	8944	7906	500580	7,937	0
38	87.00	11301	9222	8455	505700	8,946	0
39	88.00	11477	9387	8359	499680	7,814	0
40	87.00	11302	9868	8554	508540	7,905	0
41	88.00	11089	9068	8329	504400	7,936	0
42	89.00	11119	9335	8041	502860	7,872	0
43	89.00	10978	9423	8052	500520	7,765	0
44	89.00	11181	9226	8140	509300	7,888	0
45	88.00	10977	9224	7926	500640	9,442	0
46	88.00	11052	9233	8174	499720	7,798	0
47	87.00	11006	9564	8458	502340	8,746	0
48	88.00	11023	9542	7907	497880	7,844	0
49	88.00	10977	9732	8398	502580	7,800	0
50	88.00	10827	9525	8369	504620	7,914	0
51	87.00	10656	9420	8557	516240	7,963	0
52	88.00	10655	8924	7727	503360	7,867	0
53	87.00	10563	8839	8503	501860	7,750	0
54	90.00	10440	9360	8083	503340	7,689	0
55	88.00	10255	8690	8094	496940	7,568	0
56	88.00	10138	8465	8740	498440	7,804	0
57	88.00	10211	9087	8605	498980	7,752	0
58	89.00	10119	8727	7821	503080	7,702	0
59	89.00	10115	8902	8223	504460	7,649	0
60	89.00	10034	8796	8278	497060	7,647	0
61	89.00	9920	8396	7824	506200	7,800	0
62	89.00	10018	8814	8376	496460	7,627	0
63	88.00	9994	9250	8537	497820	7,836	0
64	89.00	10111	9050	8047	498360	7,542	0
65	89.00	9871	8649	8752	498080	7,602	0
66	90.00	9844	8492	8103	498060	7,599	0



## Knob Creek N-12HU

### 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	2468	Sandstone
Fifty Foot	2468	3054	2468	3054	Sandstone
Speechley	3054	4500	3054	4502	Sandstone
Benson	4500	4917	4502	4920	Sandstone
Alexander	4917	5546	4920	5549	Siltstone
Rhonestreet	5546	6016	5549	6019	Black Shale
Middlesex	6016	6085	6019	6088	Black Shale
Geneseo/Burkett	6085	6118	6088	6121	Black Shale
Tully	6118	6151	6121	6154	Limestone
Hamilton	6151	6220	6154	6223	Gray Shale
Marcellus	6220	6270	6223	6273	Black Shale
Onondaga	6270	6503	6273	6506	Limestone
Oriskany	6503	6626	6506	6629	Sandstone
Helderberg	6626	6981	6629	6985	Limestone
Salina	6981	8107	6985	8112	Salt/Anhydrite/LS
Lockport	8107	8481	8112	8486	Dolomite
Rose Hill	8481	8759	8486	8764	Shale
Packer Shell	8759	8980	8764	8985	Limestone
Clinton/Tuscarora	8980	9087	8985	9092	Sandstone
Juniata/Queenston	9087	9879	9092	9888	Red Shale
Reedsville	9879	10859	9888	10926	Gray Shale
Utica	10859	11112	10926	11407	Black Shale
Point Pleasant	11112	-	11407	-	Shale/Limestone

**Knob Creek N-12HU  
PERFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	1/20/2022	24,583	24,759	48	Utica
2	1/20/2022	24,382	24,559	48	Utica
3	1/21/2022	24,182	24,358	48	Utica
4	1/21/2022	23,982	24,158	48	Utica
5	1/22/2022	23,782	23,958	48	Utica
6	1/22/2022	23,581	23,758	48	Utica
7	1/22/2022	23,381	23,557	48	Utica
8	1/23/2022	23,181	23,357	48	Utica
9	1/23/2022	22,981	23,157	48	Utica
10	1/24/2022	22,780	22,957	48	Utica
11	1/25/2022	22,580	22,756	48	Utica
12	1/25/2022	22,380	22,556	48	Utica
13	1/25/2022	22,180	22,356	48	Utica
14	1/26/2022	21,979	22,155	48	Utica
15	1/26/2022	21,779	21,955	48	Utica
16	1/27/2022	21,579	21,755	48	Utica
17	1/27/2022	21,378	21,555	48	Utica
18	1/28/2022	21,178	21,354	48	Utica
19	1/28/2022	20,978	21,154	48	Utica
20	1/28/2022	20,778	20,954	48	Utica
21	1/29/2022	20,577	20,754	48	Utica
22	1/29/2022	20,377	20,553	48	Utica
23	1/29/2022	20,177	20,353	48	Utica
24	1/31/2022	19,977	20,153	48	Utica
25	1/31/2022	19,776	19,953	48	Utica
26	1/31/2022	19,576	19,752	48	Utica
27	2/1/2022	19,376	19,552	48	Utica
28	2/1/2022	19,175	19,352	48	Utica
29	2/2/2022	18,975	19,151	48	Utica
30	2/2/2022	18,775	18,951	48	Utica
31	2/3/2022	18,575	18,751	48	Utica
32	2/3/2022	18,374	18,551	48	Utica
33	2/3/2022	18,174	18,350	48	Utica
34	2/5/2022	17,974	18,150	48	Utica
35	2/6/2022	17,774	17,950	48	Utica
36	2/6/2022	17,573	17,750	48	Utica
37	2/7/2022	17,373	17,549	48	Utica
38	2/7/2022	17,173	17,349	48	Utica
39	2/7/2022	16,973	17,149	48	Utica
40	2/8/2022	16,772	16,948	48	Utica
41	2/8/2022	16,572	16,748	48	Utica



Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	2/9/2022	16,372	16,548	48	Utica
43	2/9/2022	16,171	16,348	48	Utica
44	2/9/2022	15,971	16,147	48	Utica
45	2/10/2022	15,771	15,947	48	Utica
46	2/10/2022	15,571	15,747	48	Utica
47	2/11/2022	15,370	15,547	48	Utica
48	2/11/2022	15,170	15,346	48	Utica
49	2/11/2022	14,970	15,146	48	Utica
50	2/12/2022	14,770	14,946	48	Utica
51	2/12/2022	14,569	14,746	48	Utica
52	2/13/2022	14,369	14,545	48	Utica
53	2/13/2022	14,169	14,345	48	Utica
54	2/14/2022	13,968	14,145	48	Utica
55	2/14/2022	13,768	13,944	48	Utica
56	2/15/2022	13,568	13,744	48	Utica
57	2/15/2022	13,368	13,544	48	Utica
58	2/15/2022	13,167	13,344	48	Utica
59	2/16/2022	12,967	13,143	48	Utica
60	2/16/2022	12,767	12,943	48	Utica
61	2/16/2022	12,567	12,743	48	Utica
62	2/17/2022	12,366	12,543	48	Utica
63	2/17/2022	12,166	12,342	48	Utica
64	2/17/2022	11,966	12,142	48	Utica
65	2/18/2022	11,765	11,942	48	Utica
66	2/18/2022	11,565	11,741	48	Utica

# 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:	47-051-02268-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Knob Creek 12HU
Latitude:	39.77004661
Longitude:	-80.70541895
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	11,051
Total Base Water Volume (gal):	22,489,194
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					
Sand (40/70 White Proppant)	Tug Hill Operating	Proppant	Water	7732-18-5	100.00000	84.72428	None
Sand (100 Mesh Proppant)	Tug Hill Operating	Proppant	Silica Substrate	14808-60-7	100.00000	11.81594	None
Hydrochloric Acid (7.5%)	CNR	Acidizing	Silica Substrate	14808-60-7	100.00000	3.05395	None
StimStream FR 9800	Chemstream	Friction Reducer	Water	7732-18-5	85.00000	0.23274	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.10131	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.02156	None
			Butene, homopolymer	9003-29-6	25.00000	0.02156	None
			Ethoxylated alcohols (C12-18)	58213-23-0	3.00000	0.00259	None
MC MX 9-4743	Multi-Chem	Biocide					
LD-7750W	Multi-Chem	Scale Inhibitor	Sodium Nitrate	7631-99-4	60.00000	0.02147	None





KNOB CREEK N LEASE
UTICA UNIT - 385.63 AC±
WELL 12HU
TUG HILL OPERATING

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

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

NAD'83 S.P.C.(FT) N. 464,863.27 E. 1,629,685.28
NAD'83 GEO. LAT-(N) 39.770047 LONG-(W) 80.705419
NAD'83 UTM (M) N. 4,402,276.64 E. 525,229.52

LANDING POINT

NAD'83 S.P.C.(FT) N. 465,600.0 E. 1,629,596.6

NAD'83 GEO. LAT-(N) 39.772066 LONG-(W) 80.705769

NAD'83 UTM (M) N. 4,402,500.6 E. 525,198.8

BOTTOM HOLE

NAD'83 S.P.C.(FT) N. 477,384.4 E. 1,623,144.8

NAD'83 GEO. LAT-(N) 39.804175 LONG-(W) 80.729295

NAD'83 UTM (M) N. 4,406,058.0 E. 523,173.2

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

Table with columns: MAP/PARCEL, ADJOINING SURFACE OWNER LIST, ACRES. Lists adjacent landowners and their respective acreages.

Table with columns: TAG, SURFACE OWNER, PARCEL, ACRES. Lists all parcels within the well pad area.

NOTES ON SURVEY

- 1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL...
2. SEE REFERENCES FOR DWELLINGS LOCATED WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD...
3. WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'.

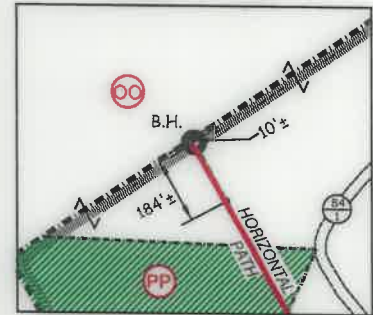
A.D. T.H.

A.D. B.H.

AS DRILLED COORDINATES FOR WELL NO. 12HU

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
NAD'83 S.P.C.(FT) N. 464,863.27 E. 1,629,685.28
NAD'83 GEO. LAT-(N) 39.770047 LONG-(W) 80.705419
NAD'83 UTM (M) N. 4,402,276.64 E. 525,229.52

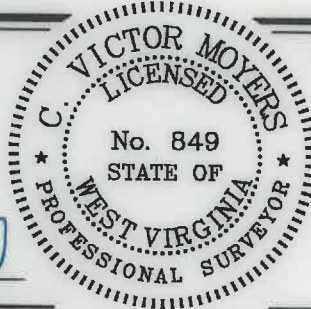
DETAIL SCALE: 1" = 500'



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5634
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. 849 [Signature: C. Victor Moyers]



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE MAY 21, 20 21
REVISED
OPERATORS WELL NO. KNOB CREEK N-12HU
API WELL NO. 47 - 051 - 02268
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8789P12HUAD.dwg
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 X INJECTION WASTE DISPOSAL "GAS" PRODUCTION X STORAGE DEEP X SHALLOW

LOCATION: GROUND = 732.20' 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 WW-6A1 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: 11,279' TMD: 24,952'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 CT CORPORATION SYSTEM

FORT WORTH, TX 76107 ADDRESS 5400 D BIG TYLER ROAD

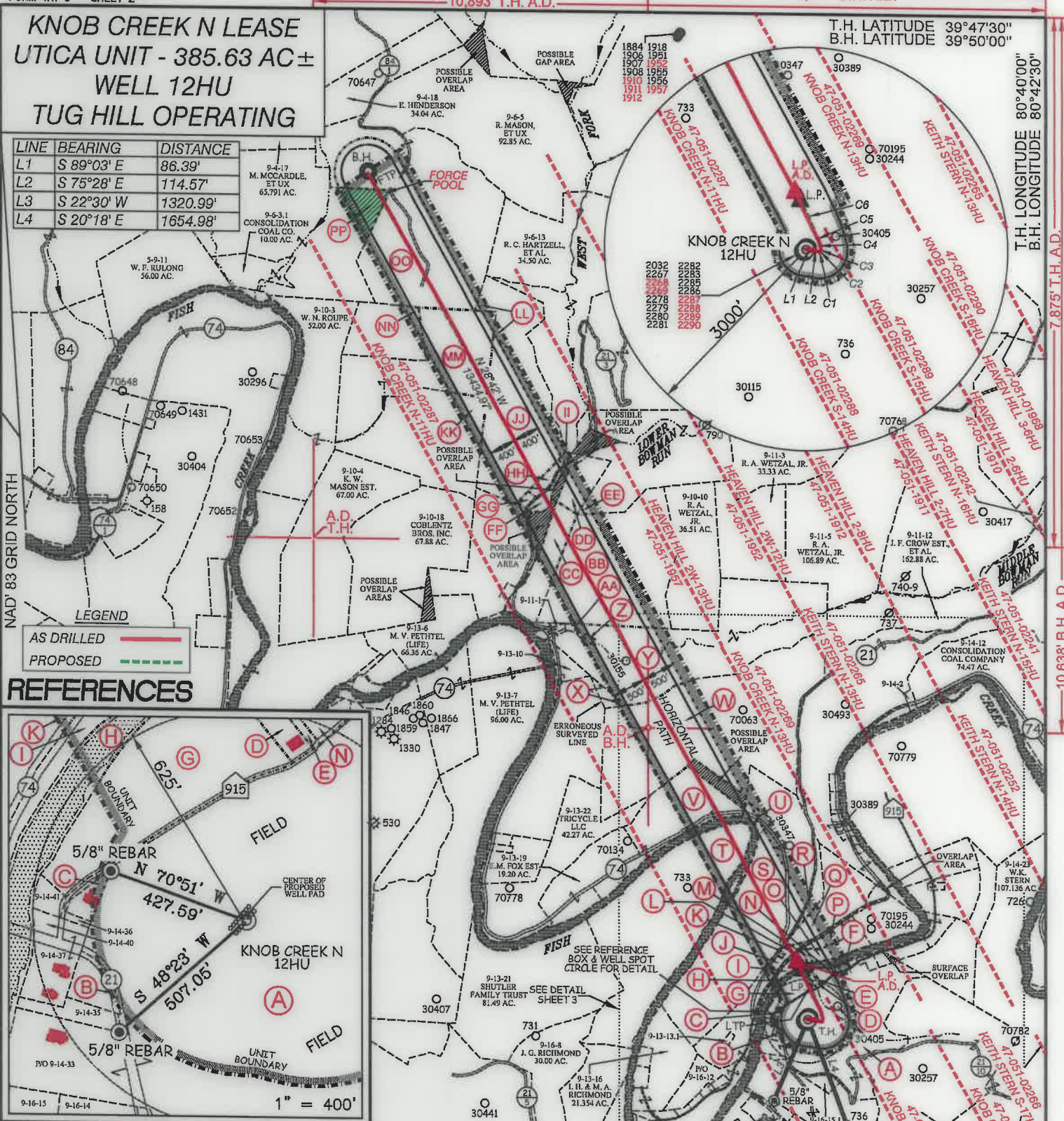
CHARLESTON, WV 25313

COUNTY NAME PERMIT

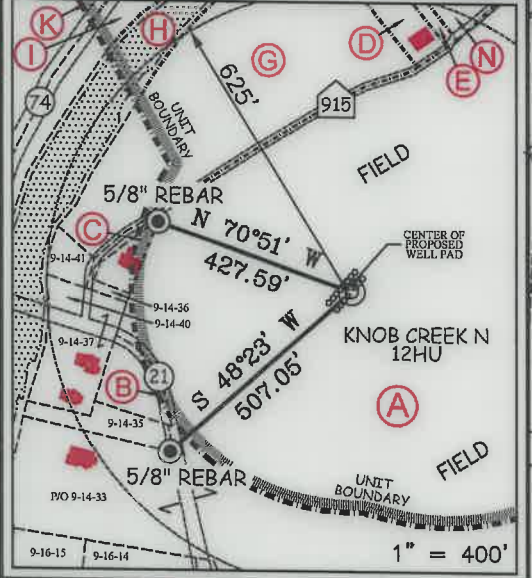


**KNOB CREEK N LEASE  
UTICA UNIT - 385.63 AC ±  
WELL 12HU  
TUG HILL OPERATING**

LINE	BEARING	DISTANCE
L1	S 89°03' E	86.39'
L2	S 75°28' E	114.57'
L3	S 22°30' W	1320.99'
L4	S 20°18' E	1654.98'



**REFERENCES**



**SLS**  
FROM THE GROUND UP

12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5534  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
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CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	10.17'	9.95'	N 76°40' E	9.73'
C2	12.77'	22.25'	N 22°37' E	12.59'
C3	34.85'	141.39'	N 02°29' W	34.76'
C4	79.29'	659.09'	N 13°19' W	79.24'
C5	148.79'	2213.68'	N 18°41' W	148.76'
C6	552.29'	3807.35'	N 24°57' W	551.80'

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

NAD'83 S.P.C.(FT)	N. 464,863.27	E. 1,629,685.28
NAD'83 GEO.	LAT-(N) 39.770047	LONG-(W) 80.705419
NAD'83 UTM (M)	N. 4,402,276.64	E. 525,229.52

**LANDING POINT**

NAD'83 S.P.C.(FT)	N. 465,600.0	E. 1,629,596.6
NAD'83 GEO.	LAT-(N) 39.772066	LONG-(W) 80.705789
NAD'83 UTM (M)	N. 4,402,500.6	E. 525,198.8

**BOTTOM HOLE**

NAD'83 S.P.C.(FT)	N. 477,384.4	E. 1,623,144.8
NAD'83 GEO.	LAT-(N) 39.804175	LONG-(W) 80.729295
NAD'83 UTM (M)	N. 4,406,058.0	E. 523,173.2



(+) 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)

SCALE 1" = 2000' FILE NO. 8789P12HUAD.dwg  
KNOB CREEK N-12HU REV5  
DATE MAY 21, 20 21  
REVISED  
OPERATORS WELL NO. KNOB CREEK N-12HU  
API WELL NO. 47 - 051 - 02268  
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 DIANNA STAMPER CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY NAME PERMIT

10/21/2022



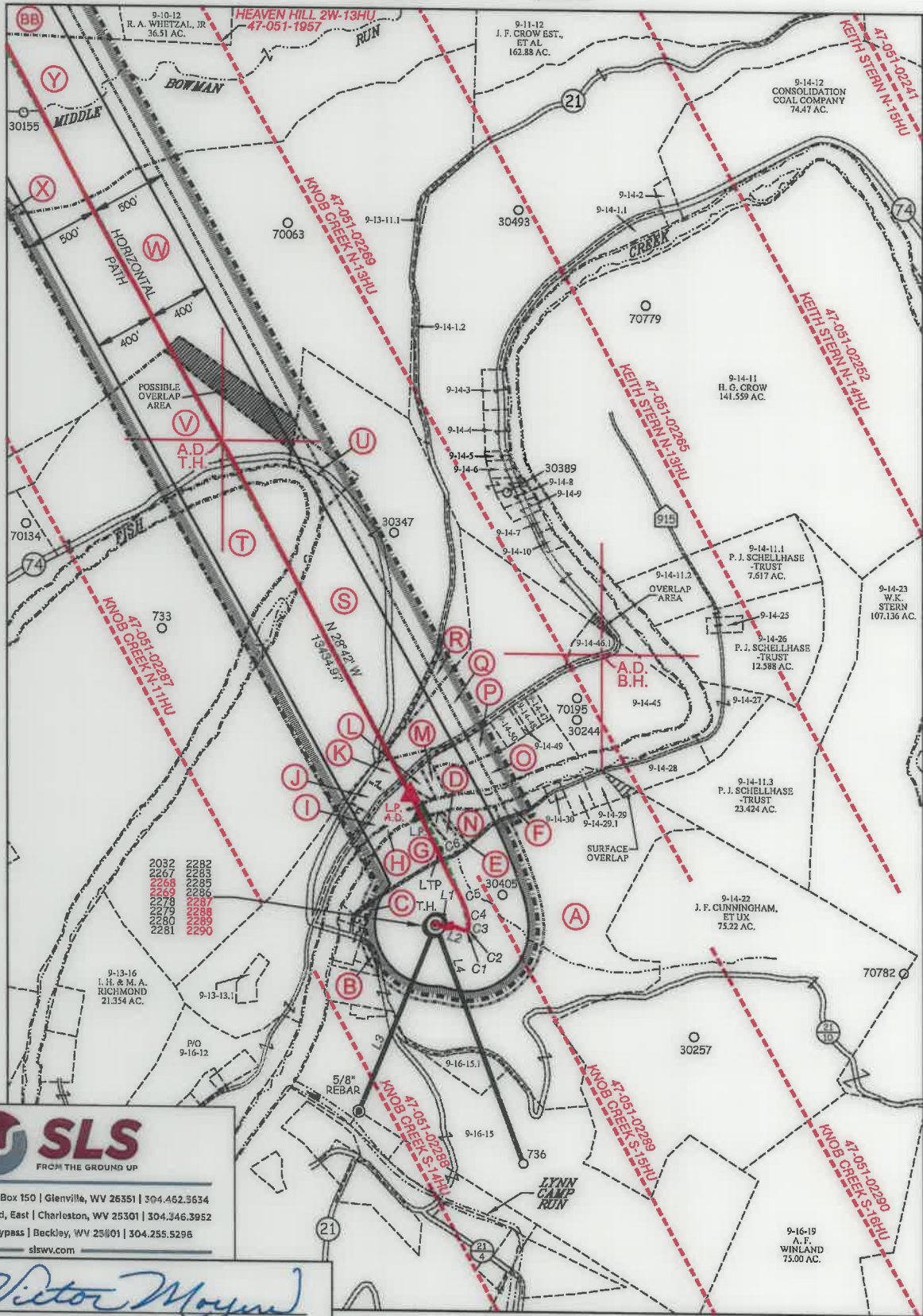
**Knob Creek N Lease  
Utica Unit - 385.63 AC ±  
Well 12HU  
Tug Hill Operating**

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

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

**SHEET 3 DETAIL  
SCALE - 1" = 1,000'**

NAD'83 GRID NORTH



7,875' T.H. A.D.  
10,638' B.H. A.D.



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 slswv.com

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**LEGEND**

- UNIT BOUNDARY
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- SURFACE LINE
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SCALE 1" = 1000' FILE NO. 8789P12HUAD.dwg  
 DATE MAY 21, 20 21  
 OPERATORS WELL NO. Knob Creek N-12HU  
 API WELL NO. 47 — 051 — 02268  
 NO. STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
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**KNOB CREEK N LEASE  
UTICA UNIT - 385.63 AC ±  
WELL 12HU  
TUG HILL OPERATING**



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1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
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slsw.com

NO.	Lease ID	Tag	Parcel	Grantor, Lessor, Etc.	Deed Book/Page
1	10*47051.219.1	A	9-14-33	DAVID LEE FRANKLIN	937 385
2	10*47051.243.1	B	9-14-38	MARY A FOX, ET AL	879 332
3	10*47051.219.1	C	9-14-39	DAVID LEE FRANKLIN	937 385
4	10*47051.219.1	D	9-14-32	DAVID LEE FRANKLIN	937 385
5	10*47051.219.1	E	9-14-32.1	DAVID LEE FRANKLIN	937 385
6	10*47051.219.1	F	9-14-31	DAVID LEE FRANKLIN	937 385
7	10*47051.219.1	G	9-14-44	DAVID LEE FRANKLIN	937 385
8	10*23458	H	FISH CREEK - WV	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	1019 373
9	10*19538	I	9-14-42	JOHN C LAGOS AND CYNTHIA M LAGOS, ET AL	936 531
10	10*18732	J	9-14-43	SHERRILL M LEAVERS AND JAMES H LEAVERS, ET AL	938 245
11	10*18732	K	9-13-13	SHERRILL M LEAVERS AND JAMES H LEAVERS, ET AL	938 245
12	10*19565	L	9-14-53	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, ET AL	947 566
13	10*19565	M	9-14-52	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, ET AL	947 566
14	10*15523	N	9-14-54	RICHARD L HARVETH AND SANDRA J HARVETH	729 638
15	10*19565	O	9-14-44.1	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, ET AL	947 566
16	10*19565	P	9-14-51	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS, ET AL	947 566
17	10*18298	Q	9-14-46	MAURSEN GREGG, ET AL	929 273
18	10*47051.243.1	R	9-13-14	MARY A FOX, ET AL	879 332
19	10*24858	S	9-13-12	NILA JEAN FROHNAPFEL	1028 119
20	10*17193	T	9-13-20	JOHN P. ICARD, ET AL	716 12
21	10*19942	U	9-13-12.1	ROBERT T ANKROM & BARBARA A ANKROM	949 207
22	10*18351	V	9-13-18	MARK ALLEN LENENBERG, ET AL	931 399
23	10*18265	W	9-13-11	KENNETH NELSON SMERTNECK AND TERESA ANN SMERTNECK	933 103
24	10*28299	X	9-13-8	SHUTLER FAMILY TRUST	1070 425
25	10*47051.243.1	Y	9-11-2	MARY A FOX, ET AL	879 332
26	10*47051.272.0	Z	9-11-2.1	KENNETH P GATEWOOD AND MARY M GATEWOOD	888 600
27	10*16526	AA	9-11-2.2	JUDITH PADLOW AKA JUDI L PADLOW	957 134
28	10*15567	BB	9-10-13	VICKIE MASON, ET AL	680 409
29	10*15600	CC	9-10-14	WILLIAM D MCCONNELL	715 447
30	10*15510	DD	9-10-9	ELAINE PHELPS ET VIR, ET AL	718 326
31	10*15510	EE	9-10-11	ELAINE PHELPS ET VIR, ET AL	718 326
32	10*47051.117.1	FF	9-10-15	JOSEPH MICHAEL BONENE	940 359
33	10*47051.117.1	GG	9-10-7	JOSEPH MICHAEL BONENE	940 359
34	10*47051.117.1	HH	9-10-8	JOSEPH MICHAEL BONENE	940 359
35	10*15525	II	9-6-12	RONALD KEITH MASON ET AL	772 445
36	10*15504	JJ	9-10-6	JAMES MASON ET AL	692 461
37	10*15504	KK	9-10-5	JAMES MASON ET AL	692 461
38	10*15504	LL	9-6-14	JAMES MASON ET AL	692 461
39	10*15510	MM	9-6-15	ELAINE PHELPS ET AL	718 326
40	10*15464	NN	9-6-16	MARY ALICE THOMAS MELLOTT ET AL	906 527
41	10*19116	OO	9-6-4	ROBERT LEE CARN EY AND BONNIE ANNE CARN EY	682 255
42	10*18839	PP	9-6-3	MARGARET DARLENE DUTTON, ET AL	937 607

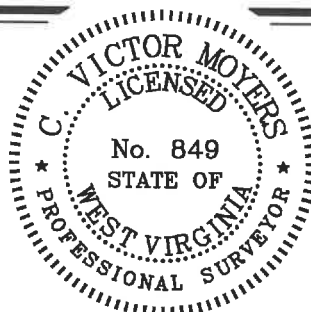
FILE NO. 8789P12HUAD.dwg  
KNOB CREEK N-12HU REV5

DATE MAY 21, 20 21

REVISED \_\_\_\_\_

OPERATORS WELL NO. KNOB CREEK N-12HU

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STATE OF WEST VIRGINIA  
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