

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

API 47-051-02147 County Marshall District Franklin
Quad Powhatan Point 7.5' Pad Name Woodford Field/Pool Name _____
Farm name CNX RCPC, LLC Well Number Woodford 7HU
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 4,406,043.62 Easting 516,095.64
Landing Point of Curve Northing 4,405,948.46 Easting 515,747.49
Bottom Hole Northing 4,404,228.96 Easting 516,737.78

Elevation (ft) 1237.60' 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 3/11/2019 Date drilling commenced 5/31/2019 Date drilling ceased 11/13/2019
Date completion activities began 12/25/2019 Date completion activities ceased 1/5/2020
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 838' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1595' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 734-740', 832-838' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
Jane T. Delaney
8/12/2020

API 47-051 - 02147 Farm name CNX RCPC, LLC Well number Woodford 7HU

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/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"	934'	NEW	106.5#	N/A	Y
Coal							
Intermediate 1	17 1/2"	13 3/8"	2,775'	NEW	54.5#	N/A	Y
Intermediate 2	12 1/4"	9 5/8"	10,057'	NEW	47#	N/A	Y
Intermediate 3							
Production	8 3/4"	5 1/2"	18,275'	NEW	20#	N/A	Y
Tubing		2 7/8"	9,138'	NEW	4.7#	N/A	
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		15.6	1.19		0	8
Surface	A	1799	15.6	1.19	2249	0	8
Coal						0	8
Intermediate 1	A	1940	15.6	1.19	2555	0	8
Intermediate 2	A	3563	14.5	1.19	4151	0	8
Intermediate 3							
Production	A	4069	14.5	1.17	4556	0	8
Tubing							

Drillers TD (ft) 18,289' Loggers TD (ft) n/a
 Deepest formation penetrated Trenton
 Plug back procedure n/a

Kick off depth (ft) 10,559'

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

**WOODFORD 7HU
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	2009	2097	2009	2097	Sandstone
Big Lime	2097	2139	2097	2140	Limestone
Big Injun	2139	2485	2140	2486	Sandstone
Weir	2485	2611	2486	2612	Sandstone
Berea	2611	2834	2612	2835	Sandstone
Gordon	2834	2881	2835	2882	Sandstone
Fifty Foot	2881	3441	2882	3443	Sandstone
Spechley	3441	4813	3443	4846	Sandstone
Benson	4813	5182	4846	5229	Sandstone
Alexander	5182	5803	5229	5867	Siltstone
Rhinestreet	5803	6160	5867	6233	Black shale
Middlessex	6160	6184	6233	6257	Black shale
Geneseo/Burkett	6184	6269	6257	6344	Black shale
Tully	6269	6294	6344	6370	Limestone
Hamilton	6294	6330	6370	6407	Grey shale
Marcellus	6330	6384	6407	6462	Black shale
Onondaga	6384	6606	6462	6689	Limestone
Oriskany	6606	6690	6689	6776	Sandstone
Heldberg	6690	7049	6776	7146	Limestone
Salina	7049	8055	7146	8185	Salt/Anhydrite/LS
Lockport	8055	8425	8185	8565	Dolomite
Rose Hill	8425	8681	8565	8832	Shale
Packer Shell	8681	8886	8832	9045	Limestone
Clinton/Tuscarora	8886	8984	9045	9147	Sandstone
Junata/Queenston	8984	9712	9147	9897	Red Shale
Reedsville	9712	10683	9897	10938	Grey Shale
Utica	10683	10924	10938	11353	Black Shale
Point Pleasant	10924	-	11353	-	Shale/Limestone

Woodford 7HU

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	83.7	11986	8903	6331	503340	10223	0
2	82.4	12025	8049	7046	501060	9954	0
3	84.4	12047	7963	7413	497400	10222	0
4	86.5	12242	7276	6921	506320	10073	0
5	87.8	11793	6524	6821	503660	10260	0
6	90.1	10964	7211	7314	504820	10193	0
7	90.3	10846	7126	7960	505380	10115	0
8	86.6	11753	7543	7234	500420	10217	0
9	90.8	10557	7413	7872	508100	10125	0
10	90.3	10566	7645	8423	497560	10040	0
11	89.7	10576	7599	7851	507040	10925	0
12	90.7	10841	7994	8018	497060	10057	0
13	89.8	10579	8155	7162	500980	10113	0
14	89.8	10567	7510	7731	508620	10792	0
15	88.7	10550	7713	8098	496000	9922	0
16	90.4	10655	7954	7906	505940	9986	0
17	90	11523	7572	6856	501600	9996	0
18	90	11160	7163	6929	503580	11088	0
19	87.1	11371	7820	7503	498020	10242	0
20	90.8	10373	7922	7207	504800	9947	0
21	90	10086	8122	7625	510580	9937	0
22	90.5	10144	7604	7640	500140	10003	0
23	90.1	10142	8140	7760	500160	10022	0
24	91.8	10233	7731	7503	502360	10092	0
25	89.6	9970	7095	7608	505120	10372	0
26	90.2	10064	7215	7481	500620	9849	0
27	89.7	10085	8139	7633	500340	9889	0
28	90.4	10171	7530	7673	499160	10039	0
29	90.6	10796	7557	6519	505200	10115	0

33	89	10998	7686	7540	504360	9983	0
32	87.3	11645	7143	6648	497820	9701	0
31	89.1	11398	7704	7383	502900	9822	0
30	89.9	11027	7715	7119	500400	9847	0

**Woodford 7HU
PERFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	12/25/2019	17862	18037	48	Utica
2	12/25/2019	17663	17838	48	Utica
3	12/25/2019	17464	17639	48	Utica
4	12/26/2019	17265	17440	48	Utica
5	12/26/2019	17066	17241	48	Utica
6	12/27/2019	16868	17043	48	Utica
7	12/27/2019	16669	16844	48	Utica
8	12/27/2019	16470	16645	48	Utica
9	12/28/2019	16271	16446	48	Utica
10	12/28/2019	16072	16247	48	Utica
11	12/29/2019	15874	16049	48	Utica
12	12/29/2019	15675	15850	48	Utica
13	12/29/2019	15476	15651	48	Utica
14	12/29/2019	15277	15452	48	Utica
15	12/30/2019	15078	15253	48	Utica
16	12/30/2019	14880	15055	48	Utica
17	12/31/2019	14681	14856	48	Utica
18	12/31/2019	14482	14657	48	Utica
19	12/31/2019	14283	14458	48	Utica
20	1/1/2020	14084	14259	48	Utica
21	1/1/2020	13886	14061	48	Utica
22	1/1/2020	13687	13862	48	Utica
23	1/1/2020	13488	13663	48	Utica
24	1/2/2020	13289	13464	48	Utica
25	1/2/2020	13090	13265	48	Utica
26	1/2/2020	12892	13067	48	Utica
27	1/3/2020	12693	12868	48	Utica
28	1/3/2020	12494	12669	48	Utica
29	1/3/2020	12295	12470	48	Utica
30	1/4/2020	12096	12271	48	Utica
31	1/4/2020	11898	12073	48	Utica
32	1/4/2020	11699	11874	48	Utica
33	1/5/2020	11500	11675	48	Utica



Well: Woodford 07HU (G)
Site: Woodford
Project: Marshall County, West Virginia
Design: rev4
Rig: Nabors X08

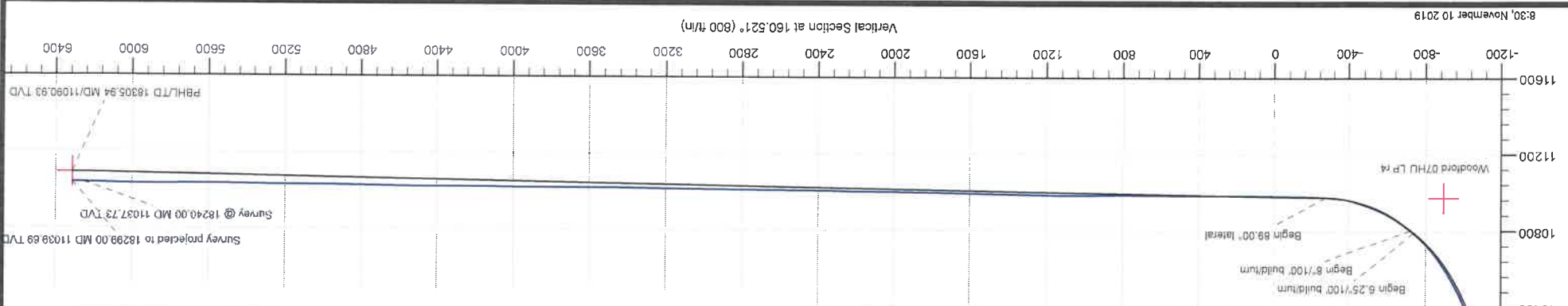
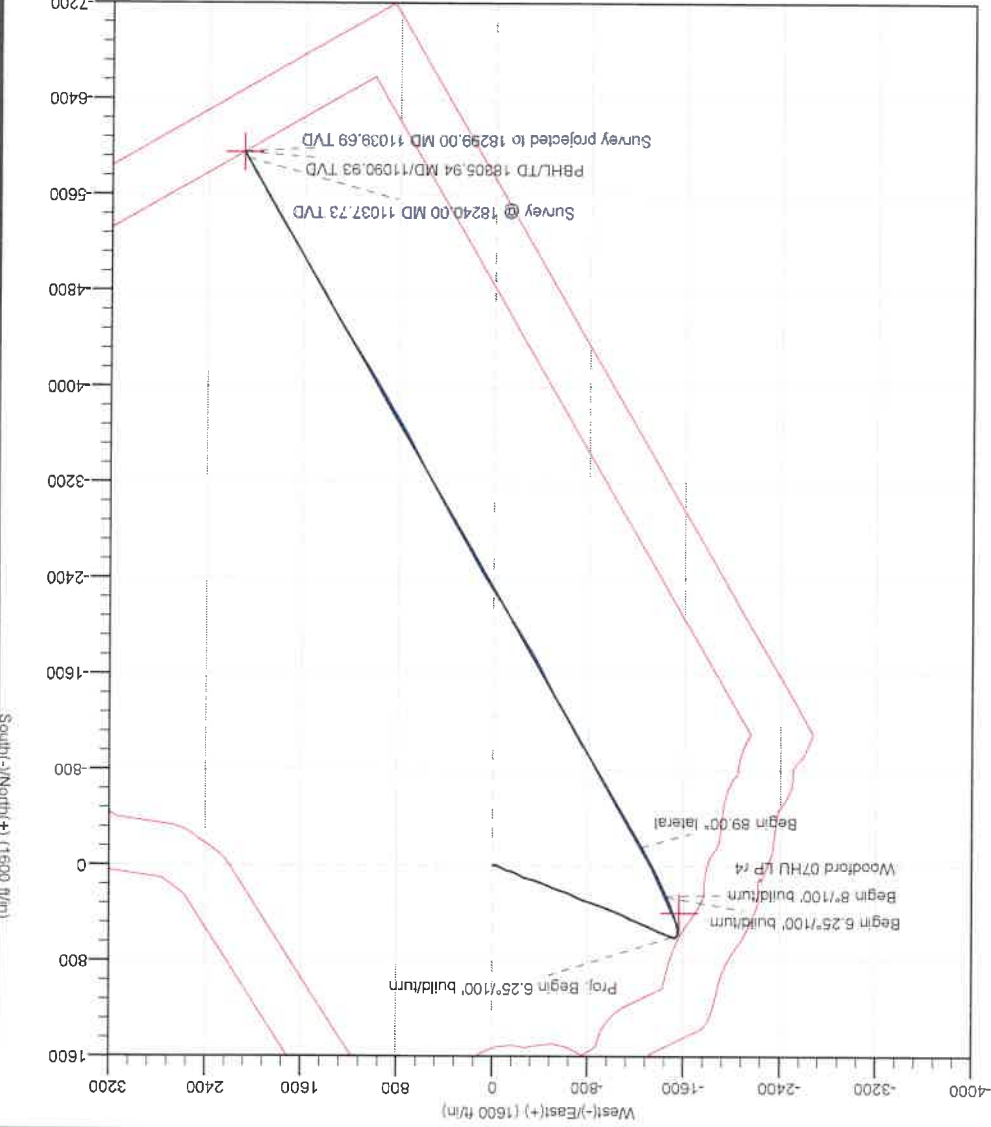
SECTION DETAILS

MD	Inc	Azi	TVD	+N/S	+E/W	Vsect	Annotation
1 10015.00	14.23	290.640	9826.02	-1478.97	0.00	0.00	Survey @ 10015.00 MD 9826.02 TVD
2 10115.00	14.23	290.640	9922.95	-1501.98	0.00	0.00	Proj. Begin 6.25°/100' build/turn
3 11092.19	50.46	155.714	10791.55	-1454.85	6.25	-141.418	Begin 6.25°/100' build/turn
4 11111.66	50.00	157.180	10804.00	-1448.87	6.25	112.535	Begin 8°/100' build/turn
5 11605.95	89.00	149.999	10973.98	-152.13	8.00	-11.321	Begin 89.00° lateral
6 18305.94	89.00	149.999	11090.93	-5953.57	0.00	0.000	BH/LTD 18305.94 MD/11090.93 TVD
MD	Inc	Azi	TVD	+N/S	+E/W	Vsect	Annotation
18240.00	88.09	149.570	11037.73	-5902.76	2076.89	6257.47	Survey @ 18240.00 MD 11037.73 TVD
18299.00	88.09	149.570	11039.69	-5953.60	2106.75	6315.36	Survey projected to 18299.00 MD 11039.69 TVD

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD83 West Virginia - HARN
Ellipsoid: GRS 1980 (84 W to 78 W)
Zone: Zone 17N (84 W to 78 W)
System Datum: Mean Sea Level
Depth Reference: RKB=1235+33 @ 1268.00ft (Nabors X08)
Northing 14455494.64
Easting 1693223.18
Latitude 39.80420873
Longitude -80.81197566
Azimuths to Grid North
True North: -0.12°
Magnetic North: -8.81°
Magnetic Field
Strength: 51920.3nT
Dip Angle: 66.79°
Date: 10/31/2019
Model: IGRF2015



Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.815°



Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date	12/25/2019
Job End Date	1/5/2020
State	West Virginia
County	Marshall
API Number	47-051-02147-00-00
Operator Name	Tug Hill Operating, LLC
Well Name and Number	Woodford 7HU
Latitude	39.80420873
Longitude	-80.81197566
Datum	NAD27
Federal Well	NO
Indian Well	NO
True Vertical Depth	11,012
Total Base Water Volume (gal)	14,034,695
Total Base Non Water Volume	0

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Tug Hill Operating	Carrier/Base Fluid	Water	7732-18-5	100.00000	87.08460	None
Sand (40/70 White Proppant)	Profrac	Proppant					
Sand (100 Mesh Proppant)	Profrac	Proppant	Silica Substrate	14808-60-7	100.00000	9.84931	None
Hydrochloric Acid (7.5%)	PVS	Acidizing	Water	7732-18-5	85.00000	0.38365	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.16700	None
Prostick 710	Malco	Friction Reducer	Hydrotreated Light Petroleum Distillate	64742-47-8	30.00000	0.02585	None
			inorganic salt	PROPRIETARY	10.00000	0.00862	None
			Oxalkylated alcohol	PROPRIETARY	5.00000	0.00431	None
MC MX 9-4743	Multi-Chem	Biocide	Sodium Nitrate	7631-99-4	60.00000	0.02249	None



LD-7750W	Multi-Chem	Scale Inhibitor	Methanol	67-56-1	60.00000	0.00518	None
			Phosphonic Acid Salt	Proprietary	5.00000	0.00043	None
PROFE 105	ProFrac	Iron Control					
			Citric Acid	77-92-9	100.00000	0.00164	None
PROhib 100	ProFrac	Acid Inhibitor					
			2-Propyn-1-ol compound w/ methylxirane	38172-91-7	15.00000	0.00021	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	0.38366	
			Inorganic salt	PROPRIETARY	10.00000	0.00862	
			Oxyalkylated alcohol	PROPRIETARY	5.00000	0.00431	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00043	

* 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)

RECEIVED
Office of Oil and Gas

JUL 28 2020

WV Department of
Environmental Protection

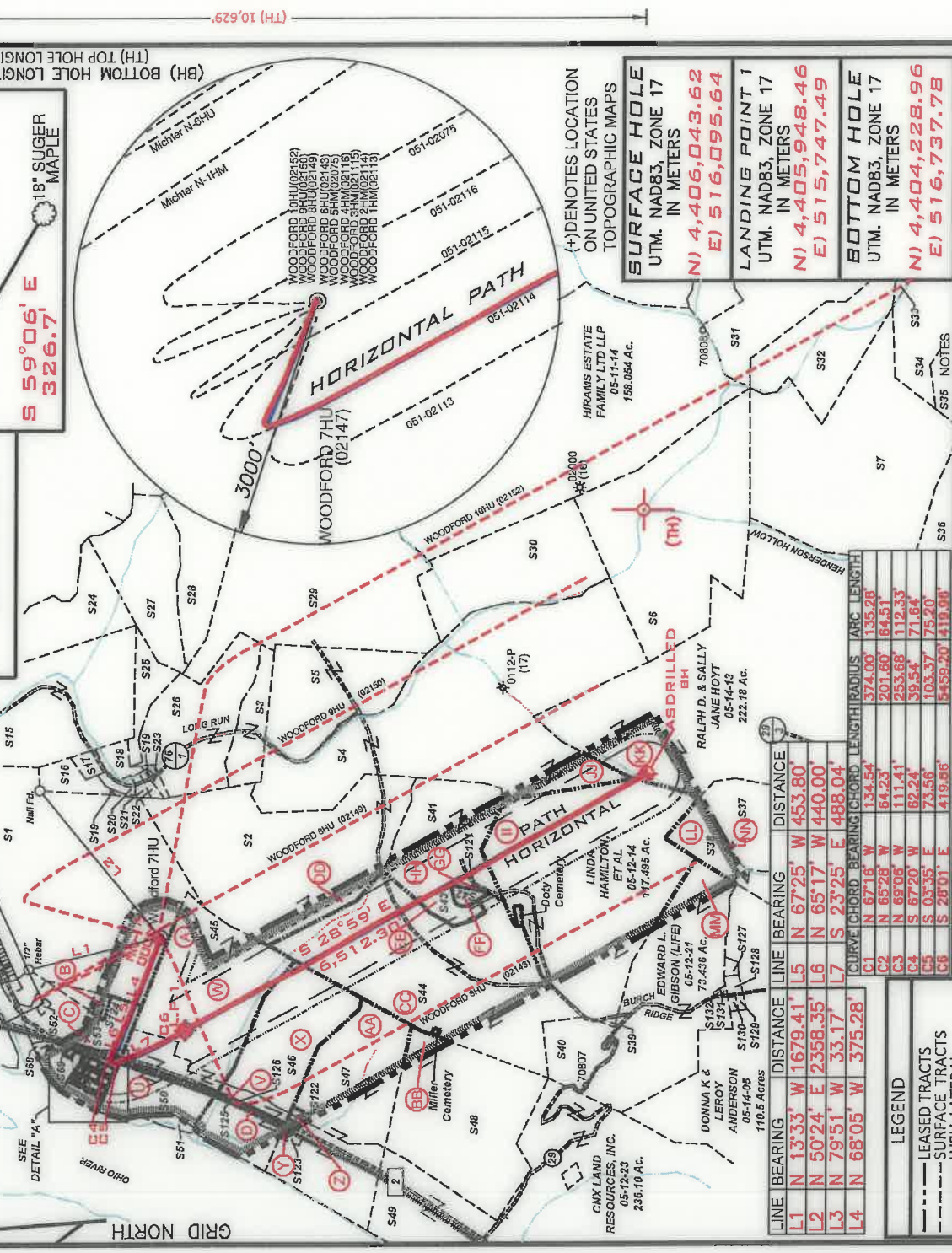
**WOODFORD LEASE
WELL 7HU
456.5281 ± ACRES**

TOP HOLE LATITUDE: 39°50'00"
BOTTOM HOLE LATITUDE: 39°47'30"
TOP HOLE LONGITUDE: 80°47'30"
BOTTOM HOLE LONGITUDE: 80°47'30"
(BH) 1.418' (TH) 10.629'

REFERENCES
SCALE 1"=400'
20" BLACK CHERRY
382.5'
N 30°57' W
(BH) 1.418'

SCALE 1"=100'
S 59°06' E
326.7'

DETAIL SKETCH "A"
SCALE 1"=100'
WOODFORD 10HU (02152)
WOODFORD 9HU (02149)
WOODFORD 7HU (02147)
WOODFORD 6HU (02145)
WOODFORD 5HU (02143)
WOODFORD 4HU (02141)
WOODFORD 3HU (02139)
WOODFORD 2HU (02137)
WOODFORD 1HU (02135)
WOODFORD THM (02113)



(*) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

SURFACE HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,406,043.62 E) 516,095.64
LANDING POINT 1 UTM. NAD83, ZONE 17 IN METERS N) 4,405,948.46 E) 515,747.49
BOTTOM HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,404,228.96 E) 516,737.78

LINE	BEARING	DISTANCE	LINE BEARING	DISTANCE	
L1	N 13°33' W	1679.41'	L5	N 67°25' W	453.80'
L2	N 50°24' E	2358.35'	L6	N 65°17' W	440.00'
L3	N 79°51' W	33.17'	L7	S 23°25' E	488.04'
L4	N 68°05' W	375.28'	L8	S 28°01' E	419.86'

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 67°16' W	135.26'	374.00'	135.26'
C2	N 65°28' W	64.23'	201.60'	64.23'
C3	N 69°08' W	111.41'	253.68'	112.33'
C4	S 67°20' W	62.24'	39.54'	71.64'
C5	S 03°35' E	73.56'	103.37'	75.20'
C6	S 28°01' E	419.86'	5459.20'	419.98'

- LEGEND**
- LEASE TRACTS
 - SURFACE TRACTS
 - WELL LATERAL
 - POINT PLEASANT LEGS
 - 400' BORE PATH OFFSET
 - 500' WELL BORE OFFSET
 - UNIT BOUNDARY

SURFACE HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,406,043.58 E) 516,095.45	LANDING POINT 1 UTM. NAD83, ZONE 17 IN METERS N) 4,406,010.42 E) 515,708.77	BOTTOM HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,404,228.93 E) 516,737.92
---------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------

1. BORE PATH BASED ON GRID NORTH.
2. NO WATER WELLS WITHIN 250' OF WELL WERE FOUND. NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
3. OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 2017. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
4. WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.

FILE NUMBER _____

DRAWING NUMBER **WOODFORD_7HU**

SCALE **1" = 2000'**

MINIMUM DEGREE OF ACCURACY **1/200**

PROVEN SOURCE OF ELEVATION **SUBMETER MAPPING**

GRADE **GPS**

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

P.S. 708
David L Jackson
JACKSON SURVEYING INC.
P.O. Box 1460
Clarksburg, WV 26302
304-623-5651



WVDEP
OFFICE OF OIL & GAS
601 57TH STREET, SE
CHARLESTON, WV 26304

DATE: **JULY 27, 2020**

OPERATORS WELL NO. **Woodford 7HU**

API WELL NO. **47-051-02147**

STATE **WV** COUNTY **MARSHALL**

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

LOCATION ELEVATION **1237.60'** WATERSHED (HUC 10) **FRENCH CREEK - OHIO RIVER**

DISTRICT **FRANKLIN** COUNTY **MARSHALL**

QUADRANGLE **POWHATAN POINT 7.5'** LEASE NUMBER **SEE WW-6A1 Form**

SURFACE OWNER **CNX LAND, LLC** ACREAGE **155.7119**

OIL & GAS ROYALTY OWNER **COLUMBIAN CHEMICALS COMPANY** LEASE ACREAGE **456.5281**

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) **ASDRILLED**

TARGET FORMATION **POINT PLEASANT** PLUG & ABANDON CLEAN OUT & REPLUG

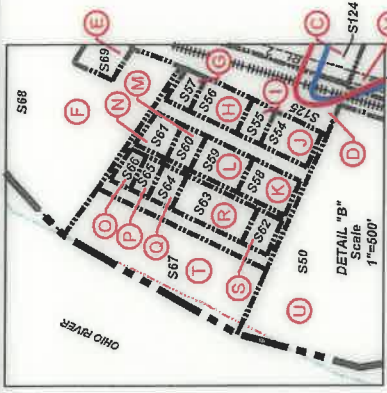
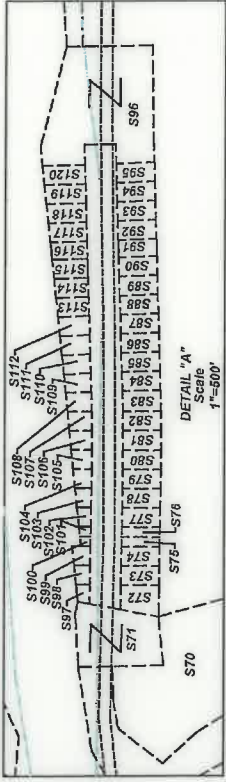
ESTIMATED DEPTH **TVD: 11,040'** TMD: **18,299'**

DESIGNATED AGENT **DIANNA STAMPER**

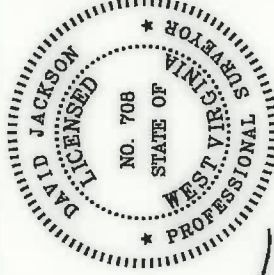
ADDRESS **5400 D BIG TYLER ROAD**

CHARLESTON, WV **25313**

**WOODFORD LEASE
WELL 7HU
456.5281 ± ACRES**



Number	TAX MAP-PARCEL	SURFACE OWNER	ACRES
S1	05-07-43	CNX LAND, LLC	155.7119
S2	05-12-08	Anita Rae Miller (Life)	100.35
S3	05-12-10	Consolidation Coal Co., Murray Energy	13.76
S4	05-12-12.1	Lionel L. Persinger, Et Ux.	148.09
S5	05-12-12	Lionel L. Persinger, Et Ux.	45
S6	05-11-15	Lionel L. Persinger, Et Ux.	93
S7	05-15-01	Marcus Sharp & David Schlabach, Hrs.	121
S8	05-7B-49	Cassidy Rain Carpenter	1.1441
S9	05-7B-48	Cassidy Rain Carpenter	1.325
S10	05-07-43.3	M. Frank Mason	0.327
S11	05-07-43.2	M. Frank Mason	1.36
S12	05-07-38	John K. Persinger, Et Ux.	2.65
S13	05-07-36	John Persinger	4.329
S14	05-07-35	Samuel L. Persinger	10.708
S15	05-07-39	Lionel L. Persinger, et ux	57
S16	05-07-42.1	Holly Rice	5.99
S17	05-07-41	James A. Wade	1
S18	05-07-42.5	Matthew V. Conner, et al	3.791
S19	05-07-42	Tracy M. Kesterson	0.54
S20	05-07-44	Crystal B. Darrah	1.726
S21	05-07-42.2	Steven & Rhonda Lloyd	0.85
S22	05-07-42.3	Joshua David Hartley	0.886
S23	05-07-42.4	Lionel & Mary Lee Persinger	0.94
S24	05-07-33	Lionel & Mary Lee Persinger	24.6
S25	05-12-09	Lionel & Mary Lee Persinger	10.15
S26	05-12-10.1	Consolidation Coal Co./ Murray Energy	38.48
S27	05-11-1.4	Larry W. Dunlap, et al	32.493
S28	05-11-1.1	Larry W. Dunlap & Charles Leroy Dunlap	34.405
S29	05-11-21	Karen Reed, et al	112.67
S30	05-12-11	Wesley B. Bryan & Wesley R. Bryan II	52.478
S31	05-15-04	Joseph J. Kramer, et ux	41.106
S32	05-15-03	Joseph J. Kramer, et ux	36.10
S33	05-15-02	John David Petrock, et ux	5
S34	05-15-14	John David Petrock, et ux	25
S35	05-15-12	John David Petrock, et ux	150.23
S36	05-15-15	Robert L. Shields, et al	49
S37	05-14-12	Dale R. Gallaher, et al	135.100
S38	05-14-10	Wanda P. Rine (Life)	107.372
S39	05-12-15	Woodland Hills Church of God Trs.	0.375
S40	05-12-21.1	Robert W. Jr. & Wendy L. Riggenbach	14.222
S41	05-12-13	Linda Hamilton, et al	41.887
S42	05-12-7.1	Raymond K. Miller	1.609
S43	05-12-7.2	Raymond K. Miller	4.66
S44	05-12-07	Robert Wm. Riggenbach, et ux	104.231
S45	05-12-02	CNX LAND, LLC	60.68
S46	05-12-03	CNX LAND, LLC	62.30
S47	05-12-05	CNX LAND, LLC	61.883
S48	05-12-06	CNX LAND, LLC	70.81
S49	05-12-6.2	Consolidation Coal Co./ Murray Energy	25.50
S50	05-12-2.1	Consolidation Coal Co./ Murray Energy	22
S51	05-12-01	US of America	1.68
S52	05-07-43.4	Ida Campbell	0.29
S53	05-07-43.1	State Road Commission	1.48
S54	05-7A-17	Carol Martin & Harry L. Yoho	0.3067
S55	05-7A-18	Barbara Anderson	0.1530
S56	05-7A-19	Barbara Anderson	0.3060



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David L. Jackson

Number	TAX MAP-PARCEL	SURFACE OWNER	ACRES
S57	05-7A-20	Betty Sexton	0.1204
S58	05-7A-24	Rick A. Kosky	0.3152
S59	05-7A-23	Harold S. Young, et ux	0.3067
S60	05-7A-22	Richard Hyer, et ux	0.1530
S61	05-7A-21	David A. Beyser	0.1866
S62	05-7A-25	Rick A. Kosky	0.1638
S63	05-7A-26	Lance Clark	0.4531
S64	05-7A-27	Paul W. Barrett	0.1495
S65	05-7A-28	Richard Hyer, et ux	0.1093
S66	05-7A-29	Richard Hyer, et ux	0.1085
S67	05-7A-30	Richard Hyer, et ux	1.9
S68	05-7A-31	WVA Dept. of Natural Resources	3.18
S69	05-7A-32	Dawn Thompson Tennant	0.3091
S70	05-7A-02	CNX LAND, LLC	2.23
S71	05-7A-01	Lucille Myers	0.529
S72	05-7B-25	Cindy D. Aliff	0.1673
S73	05-7B-26	Cindy D. Aliff	0.1148
S74	05-7B-27	Patricia A. Johnson	0.1148
S75	05-7B-28	Patricia A. Johnson	0.0574
S76	05-7B-28.1	Patricia A. Johnson	0.0574
S77	05-7B-29	Patricia A. Johnson	0.1148
S78	05-7B-30	Cindy D. Aliff, et al	0.1148
S79	05-7B-31	Cindy D. Aliff, et al	0.1148
S80	05-7B-32	Albert J. Anderson, Jr.	0.1148
S81	05-7B-33	Albert J. Anderson, Jr.	0.1182
S82	05-7B-34	Albert J. Anderson, Jr.	0.1148
S83	05-7B-35	Albert J. Anderson, Jr.	0.1217
S84	05-7B-36	Albert J. Anderson, Jr.	0.1148
S85	05-7B-37	Teresa & Thomas Goulsberry	0.1148
S86	05-7B-38	Teresa & Thomas Goulsberry	0.1148
S87	05-7B-39	Teresa & Thomas Goulsberry	0.1148
S88	05-7B-40	Teresa & Thomas Goulsberry	0.1148
S89	05-7B-41	Teresa & Thomas Goulsberry	0.1148
S90	05-7B-42	Teresa & Thomas Goulsberry	0.1194
S91	05-7B-43	Teresa & Thomas Goulsberry	0.1148
S92	05-7B-44	Teresa & Thomas Goulsberry	0.1148
S93	05-7B-45	Daniel D. & Mary E. Robinson	0.1148
S94	05-7B-46	Daniel D. Robinson, et ux	0.1148
S95	05-7B-47	Daniel D. Robinson, et ux	0.1148
S96	05-7B-01	Patricia L. Robinson	1.257
S97	05-7B-24	Cindy D. Aliff	0.0354
S98	05-7B-23	Cindy D. Aliff	0.0471
S99	05-7B-22	Patricia A. Johnson	0.0505
S100	05-7B-21	Patricia A. Johnson	0.0287
S101	05-7B-21.1	Patricia A. Johnson	0.0296
S102	05-7B-20	Patricia A. Johnson	0.0626
S103	05-7B-19	Cindy D. Aliff, et al	0.0712
S104	05-7B-18	Cindy D. Aliff, et al	0.0763
S105	05-7B-17	Albert J. Anderson, Jr.	0.0849
S106	05-7B-16	Albert J. Anderson, Jr.	0.0903
S107	05-7B-15	Albert J. Anderson, Jr.	0.0970
S108	05-7B-14	Albert J. Anderson, Jr.	0.0991
S109	05-7B-13	Albert J. Anderson, Jr.	0.1067
S110	05-7B-12	Teresa & Thomas Goulsberry	0.1113
S111	05-7B-11	Teresa & Thomas Goulsberry	0.1159
S112	05-7B-10	Teresa & Thomas Goulsberry	0.1199
S113	05-7B-09	Teresa & Thomas Goulsberry	0.1240
S114	05-7B-08	Teresa & Thomas Goulsberry	0.1286
S115	05-7B-07	Teresa & Thomas Goulsberry	0.1331
S116	05-7B-06	Teresa & Thomas Goulsberry	0.1377
S117	05-7B-05	Daniel D. & Mary E. Robinson	0.1418
S118	05-7B-04	Daniel D. & Mary E. Robinson	0.1458
S119	05-7B-03	Daniel D. Robinson, et ux	0.1504
S120	05-7B-02	Daniel D. Robinson, et ux	0.1550
S121	05-12-13.1	Raymond K. Miller	0.113
S122	05-12-5.1	CNX LAND, LLC	0.52
S123	05-12-04	CNX LAND, LLC	0.93
S124	Rt. 2	State Road Commission	17.62(Calc.)
S125	R.R.	CSX Transportation	5.01(Calc.)
S126	Rt. 2	WV DOT	4.18(Calc.)
S127	05-12-17	Hilda Deloris Baxter	0.752
S128	05-12-18	Hilda Deloris Baxter	1.018
S129	05-12-19	Delores J. Myers (Life)	0.457
S130	05-12-20	Delores J. Myers (Life)	0.457
S131	05-12-16.1	Gary E. Gibson, et al	0.146
S132	05-12-16	Gary E. Gibson, et al	0.104



TUG HILL
OPERATING

OPERATOR'S

WELL #: Woodford 7HU

DISTRICT: Franklin

COUNTY: Marshall

STATE: WV

API# 47-051-02147

WELL PLAT

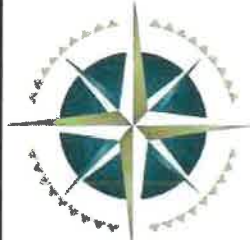
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**WOODFORD LEASE
WELL 7HU
456.5281 ± ACRES**

LEASE NO.	TAGS	PARCEL	OIL & GAS ROYALTY OWNER	DEED BOOK	PAGE
041112	A	5-7-43	COLUMBIAN CHEMICALS COMPANY	691	363
0075763000	B	5-7-43.1	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	797	642
0068417001	C	RTE 2- STATE ROAD COMMISS	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	845	332
041112	C	ION	COLUMBIAN CHEMICALS COMPANY	691	363
0095360000	D	R. R. CSX TRANSPO RTATION	CSX TRANSPORTATION INC	879	251
0088417001	D	CSX TRANSPO RTATION	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	845	332
10*24559	E	5-7A-32	DAWN THOMPSON, TENANT AKA DAWN THOMPSON	865	558
0091960000	F	5-7A-31	WEST VIRGINIA DIVISION OF NATURAL RESOURCES	860	498
10*24534	G	5-7A-20	MICHAEL SEXTON	860	498
0091280000	H	5-7A-19	BARBARA ANDERSON	860	498
0091280000	I	5-7A-18	BARBARA ANDERSON	820	514
0081130000	J	5-7A-17	CLARA B YOHO	828	252
10*24587	K	5-7A-24	RICK A KOSKY	833	501
0083451000	L	5-7A-23	HAROLD S YOUNG AND CHARLENE S YOUNG	828	252
0091091000	M	5-7A-22	RICHARD HYER AND PATRICIA HYER	859	500
0090307000	N	5-7A-21	DAVID A BEYSER AND SUSAN M BEYSER	859	260
0091091000	O	5-7A-29	RICHARD HYER AND PATRICIA HYER	859	500
0091091000	P	5-7A-28	RICHARD HYER AND PATRICIA HYER	859	500
0085232000	Q	5-7A-27	PALLI W BARRETT	838	469
0085150002	R	5-7A-26	ROBERT ROSS AND ORPHEA L ROSS	833	501
0085150003	R	5-7A-26	FRMA CARNEY	833	496
0085150004	R	5-7A-26	MICKEY L WHITE AND CAROLE WHITE	833	503
0085150005	R	5-7A-26	TWILA ADAMS	833	486
0085150006	R	5-7A-26	CONNIE CURRENT	834	127
0085150008	R	5-7A-26	NANCY BRUMBAUGH	836	451
0085150012	R	5-7A-26	N'ORA RICH WOOD	839	196
0085150007	R	5-7A-26	BOBBIE SUF WOOD	839	204
0085150013	R	5-7A-26	CEOLA TRIJAX AKA CECIL TRUEX	836	453
0085150014	R	5-7A-26	NIKA WOOD AKA NIKA GERALD WOOD	839	220
0085150015	R	5-7A-26	JOSEPH WOOD	839	198
0085150016	R	5-7A-26	SAM NICKI WOOD AKA SAM WOOD AND NICKI WOOD	839	202
0085150017	R	5-7A-26	CHARLES JAN WOOD AKA CHARLES WOOD	841	360
0085150018	R	5-7A-26	BILL LEANNE WOOD AKA BILL WOOD AND LEANNE E WOOD	844	464
0085150021	R	5-7A-26	THOMAS BETH WOOD AKA THOMAS WOOD AND REGINA	842	347
0085150020	R	5-7A-26	RONALD L NESTOR	842	349
0085150022	R	5-7A-26	KAREN L RIDENOUR AND JAMES RIDENOUR	842	351
10*24577	S	5-7A-25	RICK A KOSKY	842	351
0091091000	T	5-7A-30	RICHARD HYER AND PATRICIA HYER	859	502
0095360000	U	5-12-2.1	CSX TRANSPORTATION INC	860	504
041112	V	RTE 2- WV DOT	COLUMBIAN CHEMICAL COMPANY	859	500
0088417001	V	WV DOT	COLUMBIAN CHEMICAL COMPANY	879	251
41112	W	5-12-2	WEST VIRGINIA DEPARTMENT OF TRANSPORTATION	691	363
041112	X	5-12-3	COLUMBIAN CHEMICALS COMPANY	845	332
041112	Y	5-12-4	COLUMBIAN CHEMICALS COMPANY	691	363
0095360000	Y	5-12-4	COLUMBIAN CHEMICALS COMPANY	691	363
041112	Z	5-12-5.1	CSX TRANSPORTATION INC	879	251
041112	AA	5-12-5.1	COLUMBIAN CHEMICALS COMPANY	691	363
10*19255	CC	5-12-7	COLUMBIAN CHEMICALS COMPANY	691	363
10*23969	DD	5-12-8	ROBERT W. RIGGENBACH & SHARON RIGGENBACH, HUSBAN	772	450
10*24588	DD	5-12-8	MARK A. JOHNSON ET AL	1020	195
10*24577	DD	5-12-8	MICHAEL POWDERLY	1025	287
10*23895	DD	5-12-8	LYNN A. YATES & WALTER R. YATES	1017	489
10*18927	DD	5-12-8	MOLLY MCMAHON AND JOHN D. MCMAHON	937	626
10*18835	DD	5-12-8	ERIN E SCHOLL	937	405
10*18968	DD	5-12-8	REBECCA LYNN KIER AND ERIC JAMES KIER	940	291
10*18969	DD	5-12-8	E SHELIA PAVLOVICH	941	289
10*19500	DD	5-12-8	JEANNE MARIE VAN GROLAND RICHARD ARTHUR VAN GRO	942	608
10*19825	DD	5-12-8	JAMES CONTRERAS AND CATHERINE CONTRERAS	942	608
10*19826	DD	5-12-8	TERRANCE V POWDERLY SR	945	637
10*18827	DD	5-12-8	THOMAS A POWDERLY	945	635
10*19828	DD	5-12-8	CORINNE E VERNA AND JONATHAN C VERNA SR	945	635
10*19829	DD	5-12-8	ANNE M AND JOHN LEACH	945	633
10*19830	DD	5-12-8	MARGARET J WHITFORD AND LANCE W WHITFORD	945	631
10*21002	DD	5-12-8	DAVID POWDERLY AND NANCY A POWDERLY	945	629
10*21045	DD	5-12-8	STANLEY EUGENE STOWE	951	215
10*21190	DD	5-12-8	SANDRA J HARMON AND WALTER D HARMON	951	217
10*21223	DD	5-12-8	MARGARET CLONKER	941	283
10*21607	DD	5-12-8	EUGENE C GRIEB AND SHIRLEY K GRIEB	961	468
10*21694	DD	5-12-8	SHERLEY R STOWE & KAREN M STOWE	959	474
10*21926	DD	5-12-8	BEVERLY A MILLER	953	533
10*21929	DD	5-12-8	VIOLA JANE BREON AND JAMES RONALD BREON	960	177
10*21980	DD	5-12-8	BENNY MILLER	953	263
10*21989	DD	5-12-8	JAMES A GRENOBLE AND MARY JANE GRENOBLE	960	91
10*22051	DD	5-12-8	SEAN M GRENOBLE AND CHERYLA GRENOBLE	960	96
10*22309	DD	5-12-8	NOELA PARKS	960	509
10*22311	DD	5-12-8	AARON D LUTMAN AND BETTY J LUTMAN	963	408
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10*22349	DD	5-12-8	RICHARD WOOD AND VICKI WOOD	962	528
10*22408	DD	5-12-8	ANITA RAE MILLER	910	152
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10*22604	DD	5-12-8	SHARON TOLER WILLIAMS & HERVY WILLIAMS	966	194
10*22605	DD	5-12-8	WILLIAM LEESON	966	489
10*22744	DD	5-12-8	MICHAEL R LEESON AND BRENDA R LEESON	966	496
10*22858	DD	5-12-8	BRIDGET A POWDERLY	968	206
10*23004	DD	5-12-8	THOMAS C DAVIS AND MARY ELLEN DAVIS	977	63
			KLOVA A MORRIS	977	382

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**TUG HILL
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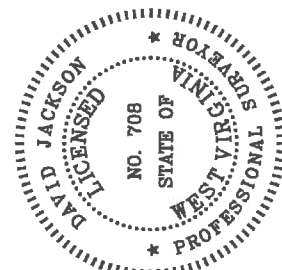
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LEASE NO.	TAGS	PARCEL	OIL & GAS ROYALTY OWNER	DEED BOOK	PAGE
0083768001	DD	5-12-8	SANDRA WINSLOW	831	54
0083768002	DD	5-12-8	XERMIT REED HUBBS ET UX	831	163
0083768003	DD	5-12-8	DOUGLAS G DERRROW	831	165
0083768004	DD	5-12-8	FERN A PICKENPAUGH	831	167
0083768005	DD	5-12-8	JEAN GAUTHIER	832	228
0083768006	DD	5-12-8	SONDRA SUE RULONG ET VIR	832	230
0083768007	DD	5-12-8	V FEA SHIRLENE WORKMAN ET VIR	832	232
0083768008	DD	5-12-8	CHARLOTTE A MERSELS ET VIR	833	14
0083768009	DD	5-12-8	PHYLLIS JEAN OSTRANDER	833	472
0083768010	DD	5-12-8	JAMES A KOLL	832	584
0083768011	DD	5-12-8	MICHAEL W DERRROW	833	484
0083768012	DD	5-12-8	WILLIAM L WILLIAMS ET UX	833	574
0083768013	DD	5-12-8	KELLY KERN	839	206
0083768014	DD	5-12-8	SHIRLEY GRUB	863	189
0083768015	DD	5-12-8	NORMAN L DERRROW ET UX	863	191
0083768016	DD	5-12-8	BETTY JUNE CAMPBELL ET VIR	832	580
0083768017	DD	5-12-8	LAMOYNE S BAKER	834	632
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0083768020	DD	5-12-8	SARA BRADLEY	836	38
0083768021	DD	5-12-8	MARY S FOGLESONG ET VIR	837	352
0083768024	DD	5-12-8	JIMMIE WILLIAMS ET UX	837	143
0083768025	DD	5-12-8	LUDY ANN MCCHESEY ET VIR	840	291
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0083768036	DD	5-12-8	JACK M FOREMAN	850	503
0083768037	DD	5-12-8	ANITA M MASON	851	5
0083768038	DD	5-12-8	BONNIE H GRISELL ET VIR	850	646
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0083768042	DD	5-12-8	JACQUELYN JOHNSON ET VIR	860	523
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0083768048	DD	5-12-8	FRANCES E RUTLEDGE ET VIR	860	513
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0083768056	DD	5-12-8	RODNEY F PETERSON	866	342
0083768057	DD	5-12-8	PRISCILLA ANN MILLER HADEN	873	545
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0083768059	DD	5-12-8	RICHARD S MULLEN ET UX	869	98
0083768060	DD	5-12-8	JAMES BCROW ET UX	869	108
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0083768062	DD	5-12-8	HAROLD B CROW ET UX	869	102
0083768063	DD	5-12-8	BRIAN K CROW	869	104
0083768064	DD	5-12-8	TIMOTHY HOWARD MANCHEGO	873	104
0083768065	DD	5-12-8	KATHLEEN HOBBS YOUNG	869	356
0083768066	DD	5-12-8	DENNIS FISCHER ET UX	869	358
0083768067	DD	5-12-8	DAVID C MULLEN ET UX	870	360
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0083768069	DD	5-12-8	FRANCIS F FISCHER ET UX	871	494
0083768070	DD	5-12-8	JOYCE A FIORILLI ET VIR	873	114
0083768071	DD	5-12-8	BARBARA L VOGLER ET VIR	873	112
0083768073	DD	5-12-8	HARRIET C HERMAN ET VIR	873	116
0083768074	DD	5-12-8	EUGENIA A KERR	873	118
0083768075	DD	5-12-8	JANE H BARNSTEINER ET UX	873	93
0083768076	DD	5-12-8	EDWARD F POWDERLY ET UX	873	91
0083768077	DD	5-12-8	NORA C POWDERLY	873	89
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0083768079	DD	5-12-8	MARY F WEILAND	873	124
0083768080	DD	5-12-8	JAMES E HERMAN	873	128
0083768081	DD	5-12-8	ANTHONY T POWDERLY ET UX	878	363
0083768082	DD	5-12-8	SHARON L SCHOIL	878	379
0083768083	DD	5-12-8	JAMES T SCHOLL	878	376
0083768084	DD	5-12-8	ANNE GALBALLY ET VIR	878	354
0083768085	DD	5-12-8	CLARK D CHASE ET UX	878	357
0083768086	DD	5-12-8	BRIDGET A POWDERLY	881	29
0083768086	DD	5-12-8	NORA K POWDERLY	881	23
0083768087	DD	5-12-8	KEVIN M POWDERLY	890	518
0083768088	DD	5-12-8	MARY S SCHOLL	890	569
0083768089	DD	5-12-8	BRIAN P POWDERLY ET UX	890	563
0083768091	DD	5-12-8	SUSANNE'S QUARTERMAN	890	560
0083768099	DD	5-12-8	HARRIET C VENTURA ET VIR	894	541
10*239356	EE	5-12-7.2	RAYMOND K AND MICHELE A MILLER	873	81
0082567000	FF	5-12-7.1	RAYMOND K MILLER MICHELE A MILLER	988	484
0082567000	GG	5-12-13.1	RAYMOND K MILLER MICHELE A MILLER	866	340
10*21769	HH	5-12-13	BETTY HAMILTON	866	340
10*21770	HH	5-12-13	SUSAN WINLAND AND PAUL MICHAEL WINLAND	957	419
10*21776	HH	5-12-13	LINDA HAMILTON	957	421
10*21769	II	5-12-14	BETTY HAMILTON	957	419
10*21770	II	5-12-14	SUSAN WINLAND AND PAUL MICHAEL WINLAND	957	421
10*21776	II	5-12-14	LINDA HAMILTON	957	417
10*16918	JJ	5-12-12.1	LONELL AND MARY LEE PERSINGER	976	617
10*14067	KK	5-14-13	REVA FRANZE	666	51
10*14420	LL	5-14-10	ELLIS V. RINE AND WANDA P. RIN ET UX	725	141
10*24492	MM	5-12-21	EDWARD L GIBSON ET UX	930	112
10*14928	NN	5-14-12	JOSEPH D PARRIOTT AND NELLIE B	660	517

P.S.
708
David L Jackson



TUG HILL
OPERATING

OPERATOR'S
WELL #1: Woodford 7HU
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API# 47-051-02147

WELL PLAT
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DATE: 07/27/2020