

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

API 47 - 051 - 02023 County Marshall District Franklin
Quad Powhatan Point 7.5' Pad Name Old Crow Field/Pool Name _____
Farm name Donna Vivian Yoho (TOD) Gary Lance Yoho Well Number Old Crow S-9HM
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 4,403,182.87 Easting 520,300.80
Landing Point of Curve Northing 4,403,713.3 Easting 519,940.6
Bottom Hole Northing 4,401,851.8 Easting 521,037.2

Elevation (ft) 1286.0' 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 6/18/2018 Date drilling commenced 4/15/2019 Date drilling ceased 11/21/2019
Date completion activities began 4/3/2021 Date completion activities ceased 4/9/2021
Verbal plugging (Y/N) N Date permission granted N/A Granted by _____

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

Freshwater depth(s) ft 912' Open mine(s) (Y/N) depths _____
Salt water depth(s) ft 1346' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 814-820', 906-912' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
RS
~~08-27-2021~~
8-11-21

API 47-051 - 02023 Farm name Donna Vivian Yoho (TOD) Gary Lance Yoho Well number Old Crow S-9HM

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"	100'	NEW	94.5#	N/A	Y
Surface	17 1/2"	13 3/8"	1,012'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	1,012'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	9 5/8"	2,871'	NEW	36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	14,798'	NEW	20#	N/A	Y
Tubing		2 3/8"	7,399'	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	1073	15.6	1.19	1296	0	8
Coal	A	1073	15.6	1.19	1296	0	8
Intermediate 1	A	830	15.6	1.19	1143	0	8
Intermediate 2							
Intermediate 3							
Production	A	3515	14.5	1.17	4096	0	8
Tubing							

Drillers TD (ft) 14,830' Loggers TD (ft) n/a
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

Kick off depth (ft) 6,296'

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 _____

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	*see attached				

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	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)
	*attached							

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Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>6590'-6651'</u> TVD	<u>7745'-14830'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1132 psi Bottom Hole _____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 0 mcfpd Oil 0 bpd NGL 0 bpd Water 600 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP DEPTH IN FT NAME TVD</u>	<u>BOTTOM DEPTH IN FT TVD</u>	<u>TOP DEPTH IN FT MD</u>	<u>BOTTOM DEPTH IN FT MD</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>0</u>		<u>0</u>		
<u>*attached</u>					

Please insert additional pages as applicable.

Drilling Contractor Nabors Drilling USA
Address 505 West Greens Road, Suite 1000 City Houston State TX Zip 77067

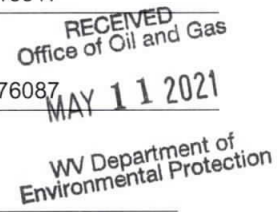
Logging Company n/a
Address _____ City _____ State _____ Zip _____

Cementing Company Halliburton Energy Services, Inc.
Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 15317

Stimulating Company PRO-FRAC
Address 333 Shops Boulevard City Willow Park State TX Zip 76087

Please insert additional pages as applicable.

Completed by Amy L. Morris Telephone 304-376-0111
Signature *Amy L. Morris* Title Permitting Specialist - Appalachia Region Date 4-15-2021



**Old Crow S-9HM
PERFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	4/3/2021	14,608	14,657	48	Marcellus
2	4/4/2021	14,412	14,571	48	Marcellus
3	4/4/2021	14,239	14,398	48	Marcellus
4	4/4/2021	14,066	14,224	48	Marcellus
5	4/4/2021	13,892	14,051	48	Marcellus
6	4/4/2021	13,719	13,878	48	Marcellus
7	4/4/2021	13,546	13,705	48	Marcellus
8	4/5/2021	13,373	13,532	48	Marcellus
9	4/5/2021	13,200	13,358	48	Marcellus
10	4/5/2021	13,026	13,185	48	Marcellus
11	4/5/2021	12,853	13,012	48	Marcellus
12	4/5/2021	12,680	12,839	48	Marcellus
13	4/5/2021	12,507	12,666	48	Marcellus
14	4/6/2021	12,334	12,492	48	Marcellus
15	4/6/2021	12,160	12,319	48	Marcellus
16	4/6/2021	11,987	12,146	48	Marcellus
17	4/6/2021	11,814	11,973	48	Marcellus
18	4/6/2021	11,641	11,800	48	Marcellus
19	4/6/2021	11,468	11,626	48	Marcellus
20	4/6/2021	11,294	11,453	48	Marcellus
21	4/7/2021	11,121	11,280	48	Marcellus
22	4/7/2021	10,948	11,107	48	Marcellus
23	4/7/2021	10,775	10,934	48	Marcellus
24	4/7/2021	10,602	10,760	48	Marcellus
25	4/7/2021	10,428	10,587	48	Marcellus
26	4/7/2021	10,255	10,414	48	Marcellus
27	4/7/2021	10,082	10,241	48	Marcellus
28	4/8/2021	9,909	10,068	48	Marcellus
29	4/8/2021	9,736	9,894	48	Marcellus
30	4/8/2021	9,562	9,721	48	Marcellus
31	4/8/2021	9,389	9,548	48	Marcellus
32	4/8/2021	9,216	9,375	48	Marcellus
33	4/8/2021	9,043	9,202	48	Marcellus
34	4/8/2021	8,870	9,028	48	Marcellus
35	4/9/2021	8,696	8,855	48	Marcellus
36	4/9/2021	8,523	8,682	48	Marcellus
37	4/9/2021	8,350	8,509	48	Marcellus
38	4/9/2021	8,177	8,336	48	Marcellus
39	4/9/2021	8,004	8,162	48	Marcellus
40	4/9/2021	7,830	7,989	48	Marcellus
41	4/9/2021	7,657	7,816	48	Marcellus

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OLD CROW S-9HM
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	84	7912	7966	3,890	252100	6705	0
2	90	7796	5443	4,513	440160	8671	0
3	90	7554	5512	5,401	433400	8252	0
4	90	7572	5411	5,501	443540	8306	0
5	90	7606	5519	5,437	439660	8345	0
6	90	7477	5546	5,953	440700	8441	0
7	89	7357	5747	5,775	436760	8358	0
8	90	7442	5893	5,459	435640	8305	0
9	88	7341	5592	5,512	445200	8330	0
10	88	7259	5653	5,077	440880	8264	0
11	90	7404	5663	5,319	445386	8358	0
12	90	7340	5469	5,479	439220	8306	0
13	90	7363	5302	5,656	438320	8469	0
14	90	7367	5956	5,375	445400	8478	0
15	90	7199	5663	5,575	442660	8485	0
16	90	7260	5776	5,570	442340	8383	0
17	90	7198	5576	5,856	441060	8273	0
18	90	7246	5558	6,240	449860	8354	0
19	90	7092	5660	5,383	447700	8343	0
20	89	7093	5936	4,945	441460	8339	0
21	90	7120	5233	5,157	435460	8214	0
22	89	7054	5327	5,269	446380	8234	0
23	90	7071	5502	5,159	445400	8277	0
24	90	6968	5497	5,550	434960	8159	0
25	90	6881	6062	5,395	444460	8286	0
26	90	6901	5721	5,468	448080	8503	0
27	90	6967	5632	5,467	441940	8285	0
28	90	7027	5807	5,440	444320	8401	0
29	90	6961	5859	5,410	435300	8057	0
30	89	7142	5663	5,357	395040	7733	0
31	90	6944	5775	5,468	446660	8160	0
32	90	6936	6123	5,142	446580	8121	0

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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	90	6929	5999	5,425	437840	8208	0
34	90	6846	5741	4,854	444100	8172	0
35	90	6697	5460	5,673	444300	8156	0
36	90	6826	5908	5,315	440300	8036	0
37	91	6537	5864	5,522	441700	8127	0
38	90	6549	5756	5,218	444700	8118	0
39	90	6688	5829	5,402	440020	8075	0
40	90	6544	5399	4,971	443840	8100	0
41	90	6714	5649	4,174	444109	8819	0

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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	2013	2103	2022	2114	Sandstone
Big Lime	2103	2173	2114	2186	Limestone
Big Injun	2173	2457	2186	2485	Sandstone
Weir	2457	2652	2485	2699	Sandstone
Berea	2652	2997	2699	3105	Sandstone
Gordon	2997	3051	3105	3175	Sandstone
Fifty Foot	3051	3599	3175	3890	Sandstone
Speechley	3599	5021	3890	5719	Sandstone
Benson	5021	5376	5719	6166	Sandstone
Alexander	5376	5970	6166	6820	Siltstone
Rhinestreet	5970	6365	6820	7232	Black shale
Middlesex	6365	6440	7232	7326	Black shale
Geneseo/Burkett	6440	6470	7326	7368	Black shale
Tully	6470	6508	7368	7430	Limestone
Hamilton	6508	6556	7430	7537	Grey shale
Marcellus	6556	-	7537	-	Black shale

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/3/2021
Job End Date:	4/9/2021
State:	West Virginia
County:	Marshall
API Number:	47-051-02023-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Old Crow S 9HM
Latitude:	39.77834361
Longitude:	-80.76293838
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,628
Total Base Water Volume (gal):	14,196,252
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	86.53451	None
Sand (40/70 White Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	8.67805	None
Sand (100 Mesh Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	3.19358	None
Sand (30/50 White Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	1.19384	None
Hydrochloric Acid (7.5%)	PVS	Acidizing					
			Water	7732-18-5	85.00000	0.23726	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.10328	None
Chemstream FR 9400	Chemstream	Friction Reducer					
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.01845	None
			Butene, homopolymer	9003-29-6	25.00000	0.01845	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00221	None

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MC MX 9-4743	Multi-Chem	Biocide					
			Sodium Nitrate	7631-99-4	60.00000	0.02202	None
LD-7750W	Multi-Chem	Scale Inhibitor					
			Methanol	67-56-1	60.00000	0.00506	None
			Phosphonic Acid Salt	Proprietary	5.00000	0.00042	None
ProFE 105	ProFrac	Iron Control					
			Citric Acid	77-92-9	100.00000	0.00107	None
ProHib 100	ProFrac	Acid Inhibitor					
			2-Propyn-1-ol compound w/ methyloxirane	38172-91-7	15.00000	0.00013	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	0.23726	
			Butene, homopolymer	9003-29-6	25.00000	0.01845	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00221	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00042	

* 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)

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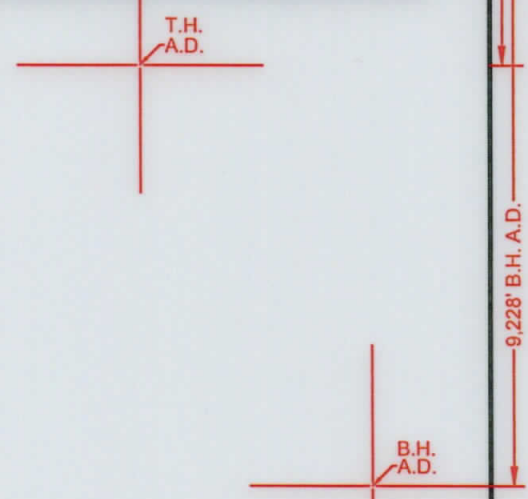
**OLD CROW S LEASE
WELL 9HM
TUG HILL OPERATING**

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

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

NAD'83 S.P.C.(FT)	N. 468,107.27	E. 1,613,561.45
NAD'83 GEO.	LAT-(N) 39.778344	LONG-(W) 80.762938
NAD'83 UTM (M)	N. 4,403,182.87	E. 520,300.80
<u>LANDING POINT</u>		
NAD'83 S.P.C.(FT)	N. 469,784.1	E. 1,612,455.9
NAD'83 GEO.	LAT-(N) 39.782904	LONG-(W) 80.766956
NAD'83 UTM (M)	N. 4,403,688.1	E. 519,955.5
<u>BOTTOM HOLE</u>		
NAD'83 S.P.C.(FT)	N. 463,689.1	E. 1,615,889.9
NAD'83 GEO.	LAT-(N) 39.766305	LONG-(W) 80.754435
NAD'83 UTM (M)	N. 4,401,848.7	E. 521,032.7

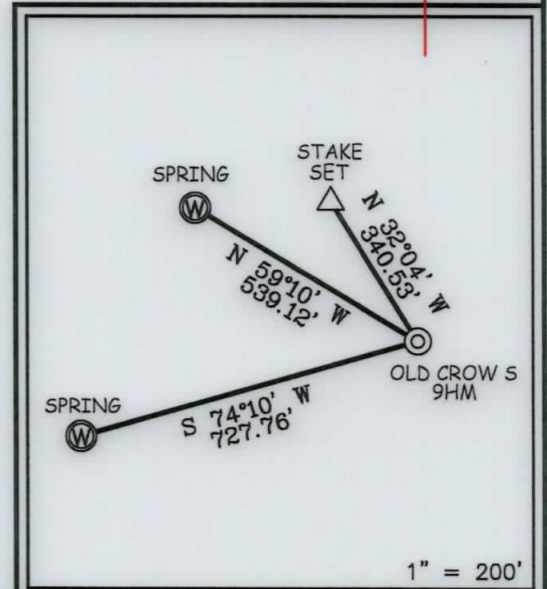
T.H. LONGITUDE 80°45'00"
B.H. LONGITUDE 80°45'00"
4,854' T.H. A.D.
9,228' B.H. A.D.



NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS > 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'
3. AS-DRILLED DATA PROVIDED BY TUG HILL OPERATING, LLC.
4. PLAT UPDATED TO SHOW AS-DRILLED PATH.

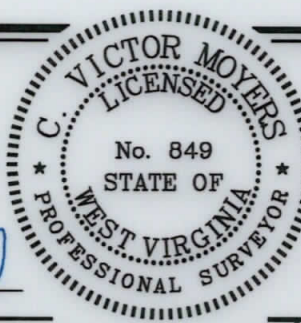
REFERENCES



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

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*



STATES TOPOGRAPHIC MAPS.
DATE JUNE 10, 20 20
REVISED _____, 20 ____
OPERATORS WELL NO. OLD CROW S-9HM
API WELL NO. 47 - 051 - 2023
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8796P9HMAD.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 LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: GROUND = 1,286.00' ELEVATION PROPOSED = 1,265.49' WATERSHED TRIBUTARY OF FISH CREEK (HUC-10)

DISTRICT FRANKLIN COUNTY MARSHALL QUADRANGLE POWHATAN POINT 7.5'

SURFACE OWNER DONNA VIVIAN YOHO (TOD) GARY LANCE YOHO ACREAGE 71.205±

ROYALTY OWNER DONNA VIVIAN YOHO, ET AL ACREAGE 71.205±

PROPOSED WORK: LEASE NO. SEE WW-6A1

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

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS

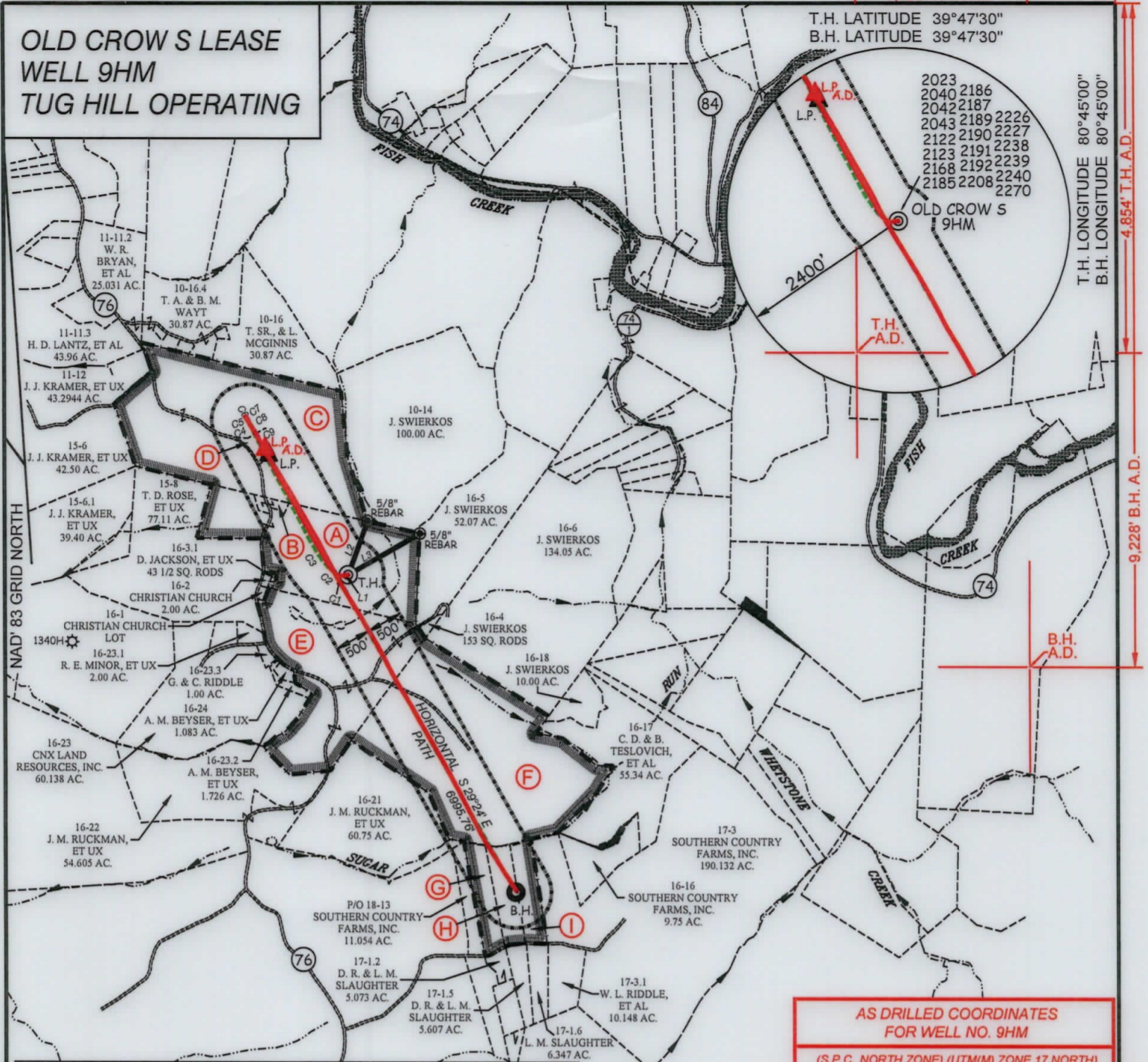
ESTIMATED DEPTH TVD: 6,681' / TMD: 14,723'

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

**OLD CROW S LEASE
WELL 9HM
TUG HILL OPERATING**



2023 2186
2042 2187
2043 2189 2226
2122 2190 2227
2123 2191 2238
2168 2192 2239
2185 2208 2240
2270

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

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

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	90.31'	161.12'	N 80°51' W	89.14'
C2	156.71'	440.01'	N 53°02' W	155.88'
C3	450.41'	1762.86'	N 34°19' W	449.19'
C4	128.44'	2933.94'	N 26°35' W	128.43'
C5	29.88'	173.65'	N 21°04' W	29.85'
C6	2.97'	1.17'	N 70°12' E	2.23'
C7	21.19'	101.93'	S 39°12' E	21.15'
C8	60.08'	1418.18'	S 33°13' E	60.08'
C9	480.78'	12249.49'	S 30°20' E	480.75'

AS DRILLED COORDINATES FOR WELL NO. 9HM

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

NAD'83 S.P.C.(FT)	N. 468,107.27	E. 1,613,561.45
NAD'83 GEO.	LAT-(N) 39.778344	LONG-(W) 80.762938
NAD'83 UTM (M)	N. 4,403,182.87	E. 520,300.80

LANDING POINT

NAD'83 S.P.C.(FT)	N. 469,867.5	E. 1,612,408.7
NAD'83 GEO.	LAT-(N) 39.783131	LONG-(W) 80.767128
NAD'83 UTM (M)	N. 4,403,713.3	E. 519,940.6

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 463,699.0	E. 1,615,905.1
NAD'83 GEO.	LAT-(N) 39.766333	LONG-(W) 80.754381
NAD'83 UTM (M)	N. 4,401,851.8	E. 521,037.2

LEGEND
AS DRILLED ———
PROPOSED - - - - -

TAG	SURFACE OWNER	PARCEL	ACRES
A	DONNA VIVIAN YOHO (TOD) GARY LANCE YOHO	5-16-3	71.205
B	JIMMY OSTRANDER, SR., ET UX	5-16-3.2	1.435
C	PAUL ANDREW & DEBRA A. RINE	5-10-15	120.805
D	DONALD T. MILLER	5-10-15.1	2.095
E	JOHN SWIERKOS	5-16-25	79.04
F	BETHANY A. REDO & ROBERT W. RAHM	5-16-19	129.16
G	GLEN GUNTO	5-17-15	10.220
H	GLEN GUNTO	5-16-15.1	10.170
I	GLEN GUNTO	5-17-16	9.702

12 Vanhorn Drive | P.O. Box 150 | Glenview, 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
slsww.com

LINE	BEARING	DISTANCE
L1	S 80°57' W	62.62'
L2	N 20°00' E	798.12'
L3	N 60°14' E	1154.52'

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

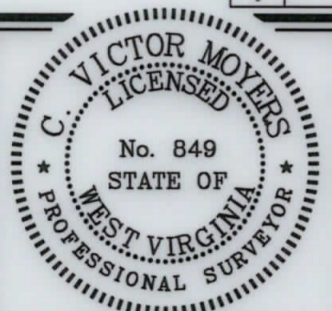
NAD'83 S.P.C.(FT)	N. 468,107.27	E. 1,613,561.45
NAD'83 GEO.	LAT-(N) 39.778344	LONG-(W) 80.762938
NAD'83 UTM (M)	N. 4,403,182.87	E. 520,300.80

LANDING POINT

NAD'83 S.P.C.(FT)	N. 469,784.1	E. 1,612,455.9
NAD'83 GEO.	LAT-(N) 39.782904	LONG-(W) 80.766956
NAD'83 UTM (M)	N. 4,403,688.1	E. 519,955.5

BOTTOM HOLE

NAD'83 S.P.C.(FT)	N. 463,689.1	E. 1,615,889.9
NAD'83 GEO.	LAT-(N) 39.766305	LONG-(W) 80.754435
NAD'83 UTM (M)	N. 4,401,848.7	E. 521,032.7



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

P.S. 849 *C. Victor Moyers*

LEGEND

LEASE LINE	———
SURFACE LINE	———
WELL LATERAL	———
OFFSET LINE	———
TIE LINE	———
CREEK	~~~~~
ROAD	———
COUNTY ROUTE	⊙
PROPOSED WELL	⊙
EXISTING WELL	⊙
PERMITTED WELL	⊙
TAX MAP-PARCEL	00-00
SURFACE OWNER (SEE TABLE)	Ⓐ
LEASE # (SEE WW-6A1)	

SCALE 1" = 2000' FILE NO. 8796P9HMD.dwg
DATE JUNE 10, 20 20
REVISED _____, 20 ____
OPERATORS WELL NO. OLD CROW S-9HM
API WELL NO. 47 — 051 — 2023
NO. STATE COUNTY PERMIT

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

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