

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

API 47 - 051 - 01944 County Marshall District Meade  
Quad Glen Easton 7.5' Pad Name Ten High Field/Pool Name \_\_\_\_\_  
Farm name Lawrence & Shirley Conkle, ests. Well Number Ten High 1N-3HM  
Operator (as registered with the OOG) Tug Hill Operating, LLC  
Address 1320 S. University Drive, Suite 500 City Ft. Worth State TX Zip 76107

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,406,356.83 Easting 527,307.78  
Landing Point of Curve Northing 4,406,498.4 Easting 527,330.0  
Bottom Hole Northing 4,408,654.2 Easting 526,072.6

Elevation (ft) 1310' 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 9/18/2017 Date drilling commenced 9/21/2018 Date drilling ceased 11/8/2018  
Date completion activities began 12/15/2018 Date completion activities ceased 2/9/2019  
Verbal plugging (Y/N) N Date permission granted n/a Granted by n/a

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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 70' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1595' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft Sewickely Coal - 968' - 974' and Pittsburgh Coal - 1053' - 1058' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:  
*Jim Nicholas*  
6/23/2020

API 47-051 - 01944 Farm name Lawrence & Shirley Conkle, ests. Well number Ten High 1N-3HM

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	17 1/2"	13 3/8"	1,135'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	1,135'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	13 3/8"	2,863'	NEW	36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	15,521'	NEW	20#	N/A	Y
Tubing		2 3/8"	7,761'	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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	A		15.6	1.19		0	8
Surface	A	1158	15.6	1.19	1399	0	8
Coal	A	1158	15.6	1.19	1399	0	8
Intermediate 1	A	954	15.6	1.19	1259	0	8
Intermediate 2							
Intermediate 3							
Production	A	3966	14.5	1.17	4438	0	8
Tubing							

Drillers TD (ft) 15,543' Loggers TD (ft) \_\_\_\_\_  
 Deepest formation penetrated Marcellus Plug back to (ft) n/a  
 Plug back procedure n/a

Kick off depth (ft) 5,978'

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.

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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 \_\_\_\_\_





**Ten High 1N-3HM  
PEFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	12/16/2018	15,369	15,420	2	Marcellus
2	12/17/2018	15,148	15,294	48	Marcellus
3	12/18/2018	14,973	15,119	48	Marcellus
4	12/19/2018	14,798	14,944	48	Marcellus
5	12/20/2018	14,623	14,769	48	Marcellus
6	12/20/2018	14,448	14,594	48	Marcellus
7	12/21/2018	14,273	14,419	48	Marcellus
8	12/22/2018	14,098	14,244	48	Marcellus
9	12/22/2018	13,923	14,069	48	Marcellus
10	12/23/2018	13,748	13,908	48	Marcellus
11	12/23/2018	13,573	13,719	48	Marcellus
12	12/24/2018	13,398	13,544	48	Marcellus
13	12/24/2018	13,223	13,369	48	Marcellus
14	12/25/2018	13,048	13,194	48	Marcellus
15	12/26/2018	12,873	13,019	48	Marcellus
16	12/26/2018	12,698	12,844	48	Marcellus
17	12/27/2018	12,523	12,669	48	Marcellus
18	12/28/2018	12,348	12,494	48	Marcellus
19	12/29/2018	12,173	12,319	48	Marcellus
20	12/29/2018	11,998	12,144	48	Marcellus
21	12/30/2018	11,823	11,969	48	Marcellus
22	12/30/2018	11,648	11,794	48	Marcellus
23	12/31/2018	11,800	11,953	48	Marcellus
24	12/31/2018	11,298	11,444	48	Marcellus
25	1/1/2019	11,123	11,269	48	Marcellus
26	1/1/2019	10,948	11,094	48	Marcellus
27	1/1/2019	10,773	10,919	48	Marcellus
28	1/2/2019	10,598	10,744	48	Marcellus
29	1/2/2019	10,423	10,569	48	Marcellus
30	1/3/2019	10,248	10,394	48	Marcellus
31	1/3/2019	10,073	10,219	48	Marcellus
32	1/5/2019	9,898	10,044	48	Marcellus
33	1/5/2019	9,723	9,869	48	Marcellus
34	1/6/2019	9,548	9,694	48	Marcellus
35	1/6/2019	9,373	9,519	48	Marcellus
36	1/7/2019	9,198	9,344	48	Marcellus
37	1/7/2019	9,023	9,169	48	Marcellus
38	1/8/2019	8,848	8,994	48	Marcellus
39	1/8/2019	8,673	8,819	48	Marcellus
40	1/8/2019	8,498	8,644	48	Marcellus
41	1/9/2019	8,323	8,469	48	Marcellus

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42	1/9/2019	8,148	8,294	48	Marcellus
43	1/10/2019	7,973	8,119	48	Marcellus
44	1/11/2019	7,798	7,944	48	Marcellus
45	1/11/2019	7,623	7,769	48	Marcellus
46	1/12/2019	7,448	7,594	48	Marcellus

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**Ten High 1N-3HM**  
**STIMULATION INFORMATION PER STAGE**

Stage No.	Ave. Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	81.1	8122	5665	2744	339590	8741	0
2	75.1	8491	5292	4882	438670	8424	0
3	81.7	8460	5914	3573	439270	7567	0
4	77.8	7988	5384	4396	441320	7629	0
5	82.3	8316	5465	4323	441560	7841	0
6	74.7	7683	5334	4425	440490	8578	0
7	79.1	7800	5391	4028	440300	7633	0
8	85.7	7909	5551	3366	439940	7684	0
9	80.9	8058	5820	4276	441480	9868	0
10	83.6	7720	5478	3529	439090	7743	0
11	85.6	7808	5669	3730	440930	8004	0
12	82.6	7591	5493	4132	440080	7816	0
13	83.7	7711	6023	3833	440760	7628	0
14	84.7	7469	5461	4532	441970	7766	0
15	86.7	7733	5949	4409	441030	7629	0
16	86.2	7734	5390	6593	439210	7638	0
17	82.9	7361	5301	3894	441300	7572	0
18	84.6	4706	5297	4118	440450	7473	0
19	83.7	7459	5382	4203	439610	7416	0
20	88.1	7737	5537	4511	440270	7515	0
21	84.7	7461	5409	4392	441390	7518	0
22	88.8	7691	5518	3803	439340	7311	0
23	89.9	7452	5355	4958	443480	7435	0
24	88.2	7711	5282	3777	441170	7417	0
25	88.8	7721	5508	4149	441230	7166	0
26	89.9	7560	5292	4300	442050	7458	0
27	88.7	7460	5283	4113	440930	7267	0
28	86.8	7456	5795	4259	440400	7757	0
29	88.9	7634	5268	4224	440470	7264	0

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30	89.7	7547	5494	3859	447910	7907	0
31	88.7	7627	5371	4291	441100	7448	0
32	89.4	7467	5451	4180	439860	7784	0
33	88.9	7725	5464	4237	441310	7306	0
34	88.7	7649	9769	4373	439090	7320	0
35	89.5	7392	5472	3819	441460	7717	0
36	88.6	7601	5289	4109	440860	7281	0
37	89.3	7363	5330	3955	439630	7577	0
38	88.1	7694	5201	4087	442370	7255	0
39	89.4	7489	5680	3912	435720	8149	0
40	84.4	7652	5493	4058	438240	7309	0
41	89.6	7229	5794	3888	436520	7839	0
42	88.2	7150	5355	4046	436820	7268	0
43	89.3	7372	5213	4173	440210	7566	0
44	82.8	7157	5163	8600	377790	6125	0
45	81.9	6698	5329	3947	437760	7500	0
46	89.5	6863	5303	4083	442150	7667	0

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TEN HIGH 1N-3HM

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 QUQANTITY AND TYPE OF FLUID
Maxton	2035	2207	2036	2208	Sandstone
Big Lime	2207	2338	2208	2340	Limestone
Big Injun	2338	2633	2340	2635	Sandstone
Weir	2633	2831	2635	2834	Sandstone
Berea	2831	3093	2834	3096	Sandstone
Gordon	3093	3178	3096	3181	Sandstone
Fifty Foot	3178	3760	3181	3763	Sandstone
Speechley	3760	5221	3763	5234	Sandstone
Benson	5221	5593	5234	5625	Sandstone
Alexander	5593	6215	5625	6272	Siltstone
Rhinestreet	6215	6678	6272	6782	Black shale
Middlesex	6678	6752	6782	6890	Black shale
Geneseo/Burkett	6752	6777	6890	6931	Black shale
Tully	6777	6805	6931	6980	Limestone
Hamilton	6805	6886	6980	7172	Grey shale
Marcellus	6886	-	7172	-	Black shale

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/16/2018
Job End Date:	1/20/2019
State:	West Virginia
County:	Marshall
API Number:	47-051-01944-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Ten High 3HM
Latitude:	39.80674496
Longitude:	-80.68098361
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,920
Total Base Water Volume (gal):	15,188,731
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
Fresh Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	85.66591	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.63389	

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SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
SAND-PREMIUM WHITE-30/50, BULK	Halliburton	Proppant					
				Listed Below			
MURIATIC ACID	Halliburton	Solvent					
				Listed Below			
FDP-S1296-17	Halliburton	Additive					
				Listed Below			
MX 5-2402	Halliburton	Scale Inhibitor					
				Listed Below			
MC MX 2-2822	Halliburton	Scale Inhibitor					
				Listed Below			
LD-2850	Halliburton	Friction Reducer					

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				Listed Below			
MC MX 8-4543	Halliburton	Biocide					
				Listed Below			
FR-A12	Halliburton	Additive					
				Listed Below			
OILPERM A	Halliburton	Non-ionic Surfactant					
				Listed Below			

Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.

			Crystalline silica, quartz	14808-60-7	100.00000	13.59077	
			Hydrochloric acid	7647-01-0	7.50000	0.04618	
			Calcium nitrate	13477-34-4	100.00000	0.03530	
			Ethanaminium, N,N,N-trimethyl 1-2-[(1-oxo-2-propen-1-yl)oxy]-, chlorine (1:1), polymer with 2-propenamide	69418-26-4	30.00000	0.01986	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01986	
			Sodium chloride	7647-14-5	10.00000	0.00780	
			Methanol	67-56-1	100.00000	0.00725	
			Amines, polyethylenepoly-, ethoxylated, phosphonomethylated, sodium salts	70900-16-2	30.00000	0.00680	
			Amonium chloride	12125-02-9	10.00000	0.00662	
			9-Octadecenamide, n,n-bis-2(hydroxy-ethyl)-,(Z)	93-83-4	5.00000	0.00331	
			Ethanol	64-17-5	60.00000	0.00029	
			Proprietary Component	Proprietary	60.00000	0.00025	

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			Oxyalkylated phenolic resin	Proprietary	30.00000	0.00019	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00014	
			Modified thiourea polymer	Proprietary	30.00000	0.00014	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00002	
			Naphthalene	91-20-3	5.00000	0.00002	
			Ethoxylated alcohols	Proprietary	5.00000	0.00002	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Propargyl alcohol	107-19-7	5.00000	0.00002	
			Glycerine	56-81-5	5.00000	0.00002	
			Formaldehyde	50-00-0	0.09000	0.00002	
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00000	
			Contains no hazardous substances	CAS Not Assigned			

\* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

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

\*\*\* If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)

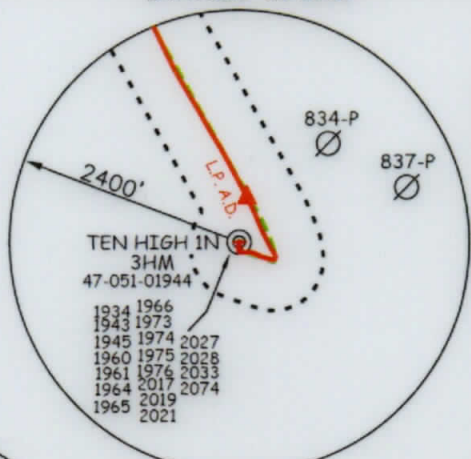
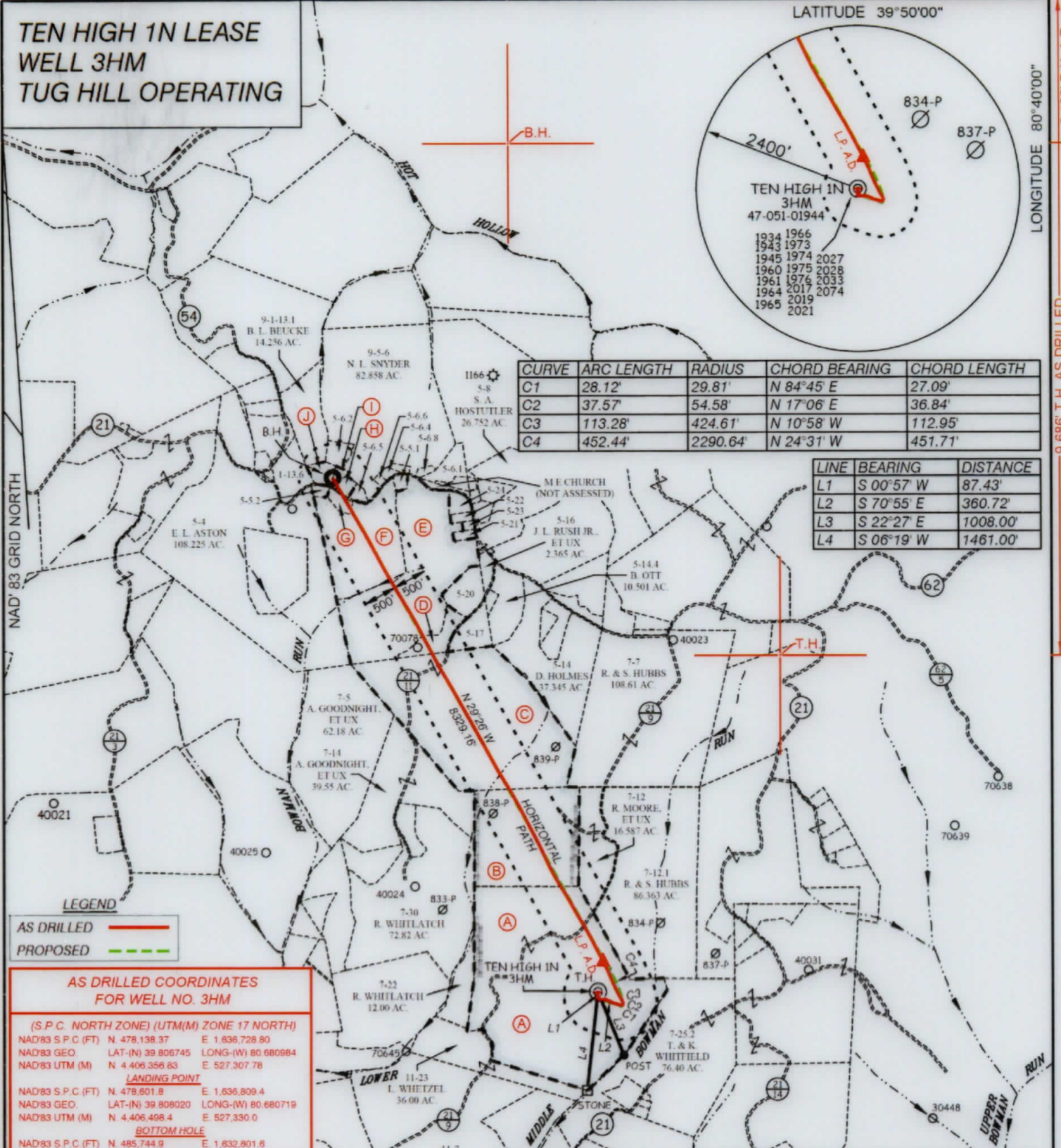
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**TEN HIGH 1N LEASE  
WELL 3HM  
TUG HILL OPERATING**

8.048' B.H. AS DRILLED  
4.022' T.H. AS DRILLED

LATITUDE 39°50'00"

LONGITUDE 80°40'00"



CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	28.12'	29.81'	N 84°45' E	27.09'
C2	37.57'	54.58'	N 17°06' E	36.84'
C3	113.28'	424.61'	N 10°58' W	112.95'
C4	452.44'	2290.64'	N 24°31' W	451.71'

LINE	BEARING	DISTANCE
L1	S 00°57' W	87.43'
L2	S 70°55' E	360.72'
L3	S 22°27' E	1008.00'
L4	S 06°19' W	1461.00'

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

**AS DRILLED COORDINATES FOR WELL NO. 3HM**

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

NAD'83 S.P.C. (FT) N. 478,138.37 E. 1,636,728.80  
 NAD'83 GEO. LAT. (N) 39.806745 LONG. (W) 80.680984  
 NAD'83 UTM (M) N. 4,406,356.83 E. 527,307.78

**LANDING POINT**

NAD'83 S.P.C. (FT) N. 478,601.8 E. 1,636,809.4  
 NAD'83 GEO. LAT. (N) 39.808020 LONG. (W) 80.680719  
 NAD'83 UTM (M) N. 4,406,498.4 E. 527,330.0

**BOTTOM HOLE**

NAD'83 S.P.C. (FT) N. 485,744.9 E. 1,632,801.8  
 NAD'83 GEO. LAT. (N) 39.827483 LONG. (W) 80.695322  
 NAD'83 UTM (M) N. 4,408,654.2 E. 526,072.6

TAG	SURFACE OWNER	PARCEL	ACRES
A	LAWRENCE & SHIRLEY CONKLE ESTS	9-7-24	139.79
B	RONALD MOORE, ET UX	9-7-13	51.49
C	TERESA L. HORNER WITH JERRY G. & CAROLYN K. FLETCHER (LIFE ESTATE)	9-7-6	103.30
D	KELLY WILSON WITH DONLD E. LEACH (LIFE ESTATE)	9-5-18	5.807
E	MICHAEL JOSEPH SNYDER	9-5-5.4	64.00
F	MICHAEL JOSEPH SNYDER	9-5-5	35.02
G	MICHAEL JOSEPH SNYDER & NANCY L. SNYDER	9-5-5.3	1.870
H	DELTCHE BANK NATIONAL TRUST CO	9-5-6.3	1.191
I	ALICE J. & DOUGLAS J. MARTIN	9-1-14.1	0.905
J	ALICIA JANE MARTIN	9-1-14	2.4602



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5534  
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.348.3952  
 254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
 slswv.com

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

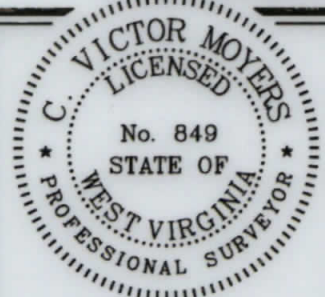
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 NAD'83 GEO. LAT. (N) 39.806745 LONG. (W) 80.680984  
 NAD'83 UTM (M) N. 4,406,356.83 E. 527,307.78

**LANDING POINT**

NAD'83 S.P.C. (FT) N. 478,492.6 E. 1,636,897.2  
 NAD'83 GEO. LAT. (N) 39.807723 LONG. (W) 80.680401  
 NAD'83 UTM (M) N. 4,406,485.6 E. 527,357.3

**BOTTOM HOLE**

NAD'83 S.P.C. (FT) N. 485,746.3 E. 1,632,803.5  
 NAD'83 GEO. LAT. (N) 39.827487 LONG. (W) 80.695315  
 NAD'83 UTM (M) N. 4,408,654.7 E. 526,073.2



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

P.S. 849 *C. Victor Moyers*

SCALE 1" = 2000' FILE NO. 8655P3HMADR.dwg  
 DATE JANUARY 17, 20 19  
 REVISED MARCH 24, 20 20  
 OPERATORS WELL NO. TEN HIGH 1N-3HM  
 API WELL NO. 47 — 051 — 1944  
 NO. STATE COUNTY PERMIT

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

**LEGEND**

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

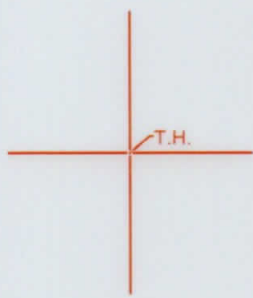
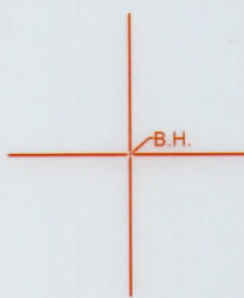
WELL OPERATOR TUG HILL OPERATING, LLC ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107  
 DESIGNATED AGENT DIANNA STAMPER CT CORPORATION SYSTEM ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

**TEN HIGH 1N LEASE  
WELL 3HM  
TUG HILL OPERATING**

LATITUDE 39°50'00"

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

NAD'83 S.P.C.(FT)	N. 478,138.37	E. 1,636,728.80
NAD'83 GEO.	LAT (N) 39.806745	LONG (W) 80.680984
NAD'83 UTM (M)	N. 4,406,356.83	E. 527,307.78
<b>LANDING POINT</b>		
NAD'83 S.P.C.(FT)	N. 478,492.6	E. 1,636,897.2
NAD'83 GEO.	LAT (N) 39.807723	LONG (W) 80.680401
NAD'83 UTM (M)	N. 4,406,465.6	E. 527,357.3
<b>BOTTOM HOLE</b>		
NAD'83 S.P.C.(FT)	N. 485,746.3	E. 1,632,803.5
NAD'83 GEO.	LAT (N) 39.827487	LONG (W) 80.695315
NAD'83 UTM (M)	N. 4,408,654.7	E. 526,073.2



MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
9-1-13.6	GERALD E. LOGSDON, ET UX	7.621
9-5-5.1	DAVID M. TOLER, ET UX	0.985
9-5-5.2	PETER PARKER	0.873
9-5-6.1	JON B. CRAWFORD	4.679
9-5-6.2	MICHAEL JOSEPH SNYDER	2.82
9-5-6.4	NANCY L. SNYDER	0.694
9-5-6.5	LINDA GORBY DELBERT	1.087
9-5-6.6	NANCY L. SNYDER	0.420
9-5-6.8	NANCY L. SNYDER	0.691
9-5-17	CARLA SUE CROW	6.341
9-5-20	KEITH WILSON - DONALD E. LEACH (LIFE ESTATE)	6.924
9-5-21	RALPHE WELLMAN, ET UX	1.00
9-5-22	RALPHE WELLMAN, ET UX	0.5
9-5-23	RALPHE WELLMAN, ET UX	1.00
9-5-24	ALVIE & MARCELLA DARRAH	1.986

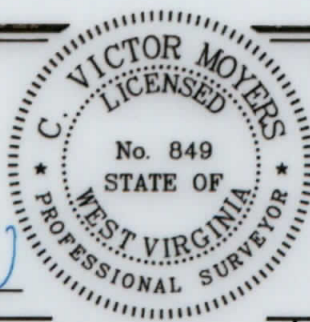
**NOTES ON SURVEY**

- 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.
- WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'
- AS-DRILLED DATA PROVIDED BY TUG HILL OPERATING, LLC.
- PLAT UPDATED TO SHOW AS-DRILLED PATH.



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26331 | 304.462.5634  
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.5952  
 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 *C. Victor Moyers*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE JANUARY 17, 20 19  
 REVISED MARCH 24, 20 20  
 OPERATORS WELL NO. TEN HIGH 1N-3HM  
 API WELL NO. 47 - 051 - 1944  
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8655P3HMADR.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  INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION GROUND = 1,321.20' PROPOSED = 1,310.06' WATERSHED MIDDLE BOWMAN RUN OF FISH CREEK (HUC-10)  
 DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GLEN EASTON 7.5'

SURFACE OWNER LAWRENCE & SHIRLEY CONKLE ESTS ACREAGE 139.79±  
 ROYALTY OWNER ANDY PAUL & JACKIE KUHN, ET AL - SEE WW-6A1 ACREAGE 139.79±

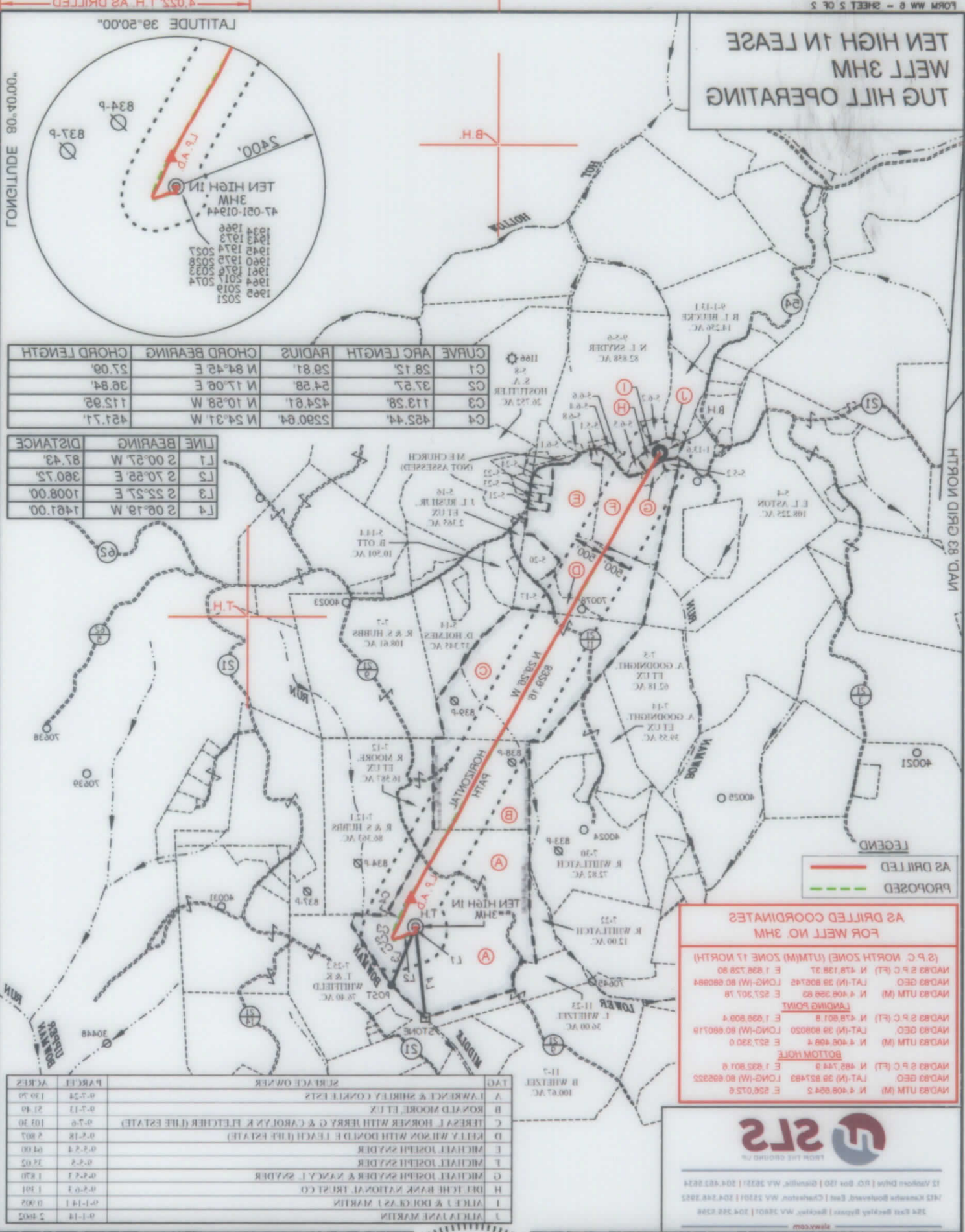
PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION MARCELLUS  
 ESTIMATED DEPTH TVD: 6.865' / TMD: 15.465'

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

LONGITUDE 80°40'00"  
 8,048' B.H. AS DRILLED  
 4,022' T.H. AS DRILLED  
 9,686' T.H. AS DRILLED

**TEN HIGH IN LEASE  
WELL 3HM  
TUG HILL OPERATING**



CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	28.15	28.81	N 84.43 E	27.08
C2	37.57	34.58	N 17.08 E	38.84
C3	113.28	424.81	N 10.28 W	112.92
C4	452.44	2280.84	N 24.31 W	451.71

LINE	BEARING	DISTANCE
L1	S 00.27 W	87.43
L2	S 70.25 E	380.72
L3	S 22.27 E	1008.00
L4	S 06.19 W	1461.00

**AS DRILLED COORDINATES  
FOR WELL NO. 3HM**

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

NAD83 S.P.C. (FT) N: 478,128.37 E: 1,838,728.80

NAD83 GEO. LAT (N): 38.80245 LONG (W): 80.88084

NAD83 UTM (M) N: 4,408,258.83 E: 252,307.78

**LANDING POINT**

NAD83 S.P.C. (FT) N: 478,801.8 E: 1,838,808.4

NAD83 GEO. LAT (N): 38.80820 LONG (W): 80.88079

NAD83 UTM (M) N: 4,408,488.4 E: 252,320.0

**BOTTOM HOLE**

NAD83 S.P.C. (FT) N: 482,748.2 E: 1,832,801.8

NAD83 GEO. LAT (N): 38.82788 LONG (W): 80.88222

NAD83 UTM (M) N: 4,408,824.2 E: 252,072.6

TAG	SURFACE OWNER	ACRES
A	LAWRENCE & SHIRLEY CONLEY ESTATE	9.7-24
B	RONALD MOORE ET UX	0.7-13
C	TERESA L. HORNER WITH HERRY G. & CAROLYN R. FLETCHER (THE ESTATE)	0.7-8
D	KELLY WILSON WITH DONALD LEACH (THE ESTATE)	0.2-18
E	MICHAEL JOSEPH SNYDER	0.2-24
F	MICHAEL JOSEPH SNYDER	0.2-2
G	MICHAEL JOSEPH SNYDER & NANCY L. SNYDER	0.2-7
H	DEUTSCHE BANK NATIONAL TRUST CO.	0.2-3
I	ALICE & DON (AS) MARTIN	0.1-14

12 Golden Drive | P.O. Box 100 | Glenview, WV 25821 | 304.483.8824  
 1412 Keweenaw Boulevard, East | Charleston, WV 25301 | 304.248.2822  
 324 East Beckley Highway | Beckley, WV 25801 | 304.222.2288  
 www.sls.com

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

NAD83 S.P.C. (FT) N: 478,128.37 E: 1,838,728.80

NAD83 GEO. LAT (N): 38.80245 LONG (W): 80.88084

NAD83 UTM (M) N: 4,408,258.83 E: 252,307.78

**LANDING POINT**

NAD83 S.P.C. (FT) N: 478,801.8 E: 1,838,807.2

NAD83 GEO. LAT (N): 38.80773 LONG (W): 80.88040

NAD83 UTM (M) N: 4,408,488.8 E: 252,327.3

**BOTTOM HOLE**

NAD83 S.P.C. (FT) N: 482,748.2 E: 1,832,803.2

NAD83 GEO. LAT (N): 38.82787 LONG (W): 80.88212

NAD83 UTM (M) N: 4,408,824.2 E: 252,072.6

SCALE 1" = 2000'

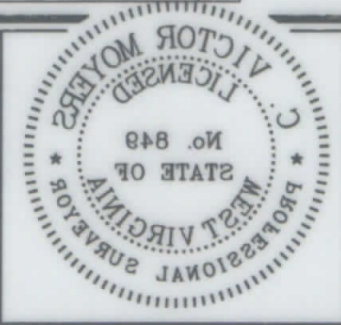
DATE JANUARY 17, 2019

REVISED MARCH 24, 2020

OPERATORS WELL NO. TEN HIGH IN-3HM

WELL NO. 47 - 051 - 1944

COUNTY PERMIT



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

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

P.S. 848  
*C. Victor Moyers*

**LEGEND**

- LEASE LINE
- SURFACE LINE
- WELL LATERAL
- OFFSET LINE
- THE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- TAX MAP-PARCEL
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE W-8A1)

DIANNA STAMPER  
 CT CORPORATION SYSTEM  
 5400 D BIG TYLER ROAD  
 CHARLESTON, WV 25313

WELL OPERATOR TUG HILL OPERATING, LLC  
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE SUITE 500  
 FORT WORTH, TX 76102

DESIGNATED AGENT  
 ADDRESS 5400 D BIG TYLER ROAD  
 CHARLESTON, WV 25313

PERMIT COUNTY NAME COUNTY NAME  
 5.135 B.H. AS DRILLED 8.888 T.H. AS DRILLED  
 80.40.00.00 LONGITUDE 38.50.00.00 LATITUDE  
 8.048 B.H. AS DRILLED 4.022 T.H. AS DRILLED



