

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

API 47 - 051 - 01934 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-2HM
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 4,406,357.67 Easting 527,304.07
Landing Point of Curve Northing 4,406,507.0 Easting 527,061.2
Bottom Hole Northing 4,408,511.6 Easting 525,892.3

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 8/10/2017 Date drilling commenced 10/6/2018 Date drilling ceased 10/24/2018
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 RECEIVED Office of Oil and Gas

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 - 935' and Pittsburgh Coal - 1020' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by: June Helms
6/23/2020

API 47-051 - 01934 Farm name Lawrence & Shirley Conkle, ests. Well number Ten High 1N-2HM

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"	1,145'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	1,145'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	9 5/8"	2,944'	NEW	36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	15,323'	NEW	20#	N/A	Y
Tubing		2 3/8"	7,662'	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	1165	15.6	1.19	1408	0	8
Coal	A	1165	15.6	1.19	1408	0	8
Intermediate 1	A	947	15.6	1.19	1297	0	8
Intermediate 2							
Intermediate 3							
Production	A	3802	14.5	1.17	4255	0	8
Tubing							

Drillers TD (ft) 15,345' Loggers TD (ft) _____
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

Kick off depth (ft) 6,080'

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 _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

**Ten High 1N-2HM
PERFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	12/16/2018	15,176	15,227	2	Marcellus
2	12/17/2018	14,950	15,103	48	Marcellus
3	12/18/2018	14,775	14,928	48	Marcellus
4	12/19/2018	14,600	14,753	48	Marcellus
5	12/20/2018	14,425	14,578	48	Marcellus
6	12/21/2018	14,250	14,403	48	Marcellus
7	12/21/2018	14,075	14,228	48	Marcellus
8	12/22/2018	13,900	14,053	48	Marcellus
9	12/23/2018	13,725	13,878	48	Marcellus
10	12/23/2018	13,550	13,703	48	Marcellus
11	12/24/2018	13,375	13,528	48	Marcellus
12	12/25/2018	13,200	13,353	48	Marcellus
13	12/26/2018	13,025	13,178	48	Marcellus
14	12/27/2018	12,850	13,003	48	Marcellus
15	12/28/2018	12,675	12,828	48	Marcellus
16	12/28/2018	12,500	12,653	48	Marcellus
17	12/29/2018	12,325	12,478	48	Marcellus
18	12/30/2018	12,150	12,303	48	Marcellus
19	12/30/2018	11,975	12,128	48	Marcellus
20	12/31/2018	11,790	11,953	96	Marcellus
21	12/31/2018	11,625	11,778	48	Marcellus
22	1/1/2019	11,450	11,603	48	Marcellus
23	1/1/2019	11,275	11,428	48	Marcellus
24	1/2/2019	11,100	11,253	48	Marcellus
25	1/2/2019	10,925	11,078	48	Marcellus
26	1/3/2019	10,750	10,903	48	Marcellus
27	1/3/2019	10,575	10,728	48	Marcellus
28	1/4/2019	10,400	10,553	48	Marcellus
29	1/5/2019	10,225	10,378	48	Marcellus
30	1/5/2019	10,050	10,214	48	Marcellus
31	1/6/2019	9,875	10,028	48	Marcellus
32	1/6/2019	9,700	9,853	48	Marcellus
33	1/7/2019	9,525	9,678	48	Marcellus
34	1/7/2019	9,350	9,503	48	Marcellus
35	1/8/2019	9,175	9,328	48	Marcellus
36	1/8/2019	9,000	9,153	48	Marcellus
37	1/9/2019	8,825	8,978	48	Marcellus
38	1/9/2019	8,650	8,803	48	Marcellus
39	1/10/2019	8,475	8,628	48	Marcellus
40	1/10/2019	8,300	8,453	48	Marcellus
41	1/11/2019	8,125	8,278	48	Marcellus

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42	1/11/2019	7,950	8,103	48	Marcellus
43	1/12/2019	7,775	7,928	48	Marcellus
44	1/13/2019	7,600	7,753	48	Marcellus
45	1/13/2019	7,425	7,578	48	Marcellus

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Ten High 1N-2HM

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	79.1	7790	5660	2802	334590	7714	0
2	83.1	8071	6222	3369	440440	8148	0
3	81.8	8389	5960	3812	440540	7602	0
4	78.5	7880	5852	3966	441790	7923	0
5	81.8	8349	5619	4544	315555	6832	0
6	74.1	7812	5514	3858	437980	9453	0
7	79.8	7811	5630	3977	440300	8299	0
8	82.5	8046	5498	4097	400770	7227	0
9	85.4	7813	5310	4023	440980	7957	0
10	83.9	7795	5474	3965	440260	8039	0
11	86	7666	5348	4790	440500	7642	0
12	83.2	7823	5378	4878	440830	8393	0
13	82.5	7604	5385	4438	441370	7821	0
14	83.1	7547	5493	5127	441310	7672	0
15	88.1	7654	5387	4070	439380	7637	0
16	88.2	7726	5314	4335	439630	7314	0
17	85.1	7596	5344	4228	441050	7625	0
18	88.1	7733	5527	4050	441810	7339	0
19	83.9	7573	5568	4320	401690	7072	0
20	88.9	7370	5458	3581	444100	8441	0
21	88.8	7780	5543	4164	442300	7325	0
22	89.5	7654	5496	4515	440090	7386	0
23	89.3	7567	5498	4445	441770	7543	0
24	89.1	7591	5437	4007	437700	7257	0
25	87.6	7414	5570	4360	440950	7843	0
26	89.1	7625	5596	4352	440570	7208	0
27	89.7	7456	5550	4415	437080	7766	0
28	89	7487	5285	4096	442330	7836	0
29	89.6	7455	5475	4256	444260	7828	0
30	89.2	7639	5269	4121	440520	7111	0
31	89.6	7401	5404	3905	441470	7776	0
32	89.6	7293	5626	4136	441090	7683	0
33	89.3	7271	5272	3709	444280	7723	0

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34	88.6	7335	5168	4359	438780	7115	0
35	88.6	7200	5340	4586	437690	7244	0
36	86.5	7242	5453	4367	438200	7629	0
37	86.7	7527	5863	4206	435840	7305	0
38	89.6	6972	5378	3770	439620	7764	0
39	89.4	7024	5113	4269	436920	7537	0
40	88.5	7124	5366	4041	442520	7702	0
41	89.5	6977	5443	3916	440390	7697	0
42	89.5	6885	5428	4493	441700	7665	0
43	86.3	6683	5220	4303	442780	7343	0
44	89.5	6888	5150	4180	443830	7847	0
45	89.3	6760	5256	3887	448000	8042	0

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TEN HIGH 1N-2HM

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	2035	2207	2037	2210	Sandstone
Big Lime	2207	2338	2210	2341	Limestone
Big Injun	2338	2633	2341	2637	Sandstone
Weir	2633	2831	2637	2836	Sandstone
Berea	2831	3093	2836	3100	Sandstone
Gordon	3093	3178	3100	3185	Sandstone
Fifty Foot	3178	3760	3185	3768	Sandstone
Speechley	3760	5221	3768	5236	Sandstone
Benson	5221	5593	5236	5614	Sandstone
Alexander	5593	6215	5614	6249	Siltstone
Rhinestreet	6215	6669	6249	6809	Black shale
Middlesex	6669	6741	6809	6944	Black shale
Geneseo/Burkett	6741	6766	6944	6996	Black shale
Tully	6766	6793	6996	7058	Limestone
Hamilton	6793	6871	7058	7300	Grey shale
Marcellus	6871	-	7300	-	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:	47-051-01934-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Ten High 2HM
Latitude:	39.80675268
Longitude:	-80.68102695
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,907
Total Base Water Volume (gal):	14,923,052
Total Base Non Water Volume:	0

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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	85.75022	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.68547	

SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant		Listed Below				
MURIATIC ACID	Halliburton	Solvent						
SAND- PREMIUM WHITE-40/70, BULK	Halliburton	Proppant		Listed Below				
MX 5-2402	Halliburton	Scale Inhibitor						
FR-A12	Halliburton	Additive		Listed Below				
MC MX 2-2822	Halliburton	Scale Inhibitor		Listed Below				
MC MX 8-4543	Halliburton	Biocide		Listed Below				
FDP-S1296-17	Halliburton	Surfactant		Listed Below				

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LD-2850	Halliburton	Friction Reducer											
					Listed Below								
OILPERM A	Halliburton	Non-ionic Surfactant											
					Listed Below								
SAND- PREMIUM WHITE-30/50, BULK	Halliburton	Proppant											
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				13.45291			
			Hydrochloric acid	7647-01-0		7.50000				0.05005			
			Calcium nitrate	13477-34-4		100.00000				0.03535			
			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				0.02041			
			Hydrotreated light petroleum distillate	64742-47-8		30.00000				0.02041			
			Sodium chloride	7647-14-5		10.00000				0.00798			
			Methanol	67-56-1		100.00000				0.00730			
			Amines, polyethylenepoly-, ethoxylated, phosphonomethylated, sodium salts	70900-16-2		30.00000				0.00681			
			Amonium chloride	12125-02-9		10.00000				0.00680			
			9-Octadecenamide, n,n-bis-2(hydroxy-ethyl)-, (Z)	93-83-4		5.00000				0.00340			
			Ethanol	64-17-5		60.00000				0.00031			
			Proprietary Component	Proprietary		60.00000				0.00022			

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	Oxyalkylated phenolic resin	Proprietary	30.00000	0.00021	
	Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00016	
	Modified thiourea polymer	Proprietary	30.00000	0.00015	
	Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00003	
	Naphthalene	91-20-3	5.00000	0.00003	
	Propargyl alcohol	107-19-7	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
	Formaldehyde	50-00-0	0.09000	0.00002	
	Glycerine	56-81-5	5.00000	0.00002	
	1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00001	
	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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TUG HILL
OPERATING

Well: Ten High 1N-02HM (J)
Site: Ten High
Project: Marshall County, West Virginia.
Design: rev8
Rig: Nabors X08

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	VFace	VSect	Annotation
1	5930.00	11.42	197.72	5903.51	-439.29	-114.09	0.00	-304.87	0.00	Survey @ 5930.00 MD 5903.51 TVD
2	6030.00	11.42	197.72	6001.53	-458.15	-120.12	0.00	-317.34	0.00	KOP Begin 6'/100' buildthurn
3	6047.25	11.26	202.92	6018.45	-461.33	-121.30	6.00	-319.36	101.18	Begin 11.26° tangent
4	6173.42	11.26	202.92	6142.18	-484.03	-130.90	0.00	-333.08	0.00	Begin 8'/100' buildthurn
5	6901.30	51.00	329.61	6784.40	-288.40	-318.06	8.00	-66.86	132.86	Begin 10'/100' buildthurn
6	7301.30	51.00	329.61	6912.00	-31.26	-505.53	10.00	303.25	0.00	Begin 91.00° lateral
7	15480.00	91.00	329.61	6769.61	7067.90	-4632.25	0.00	8450.62	0.00	PBHL/JD 15480.02 MD/6769.61 TVD

ANNOTATIONS SURVEYS

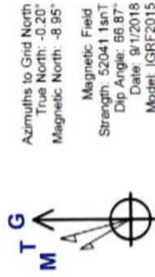
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Annotation
188.00	0.53	95.68	188.00	-0.09	0.87	-0.55	MWD surveys
15287.00	91.82	330.48	6735.79	7016.40	-4603.21	8391.63	Survey @ 15287.00 MD 6735.79 TVD
15345.00	91.82	330.48	6733.95	7066.84	-4631.78	8449.48	Survey projected to 15345.00 MD 6733.95 TVD

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD83, West Virginia - HARN
Ellipsoid: GRS 1980
Zone: Zone 17N (84 W to 78 W)

System Datum: Mean Sea Level
Depth Reference: RKB=1310+33 @ 1343 00usft (Nabors X08)

Northing 14456525.13 Easting 1729996.76
Latitude 39.80675268 Longitude -80.68102695

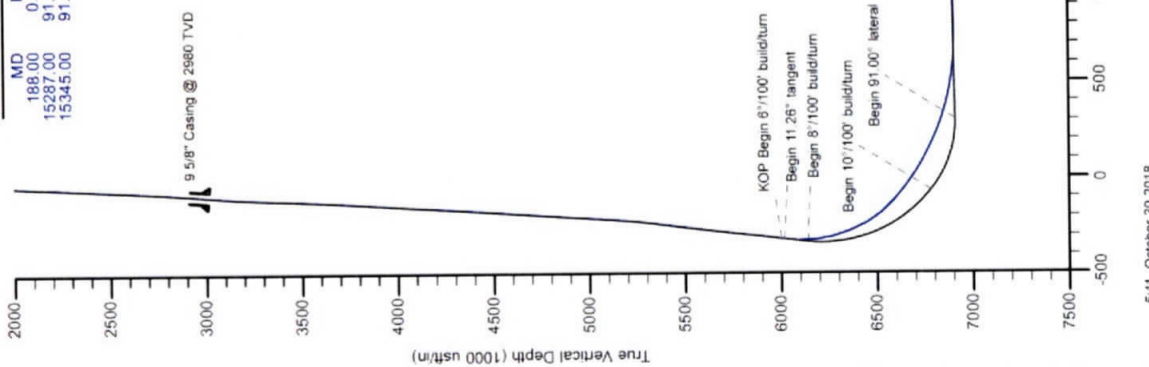
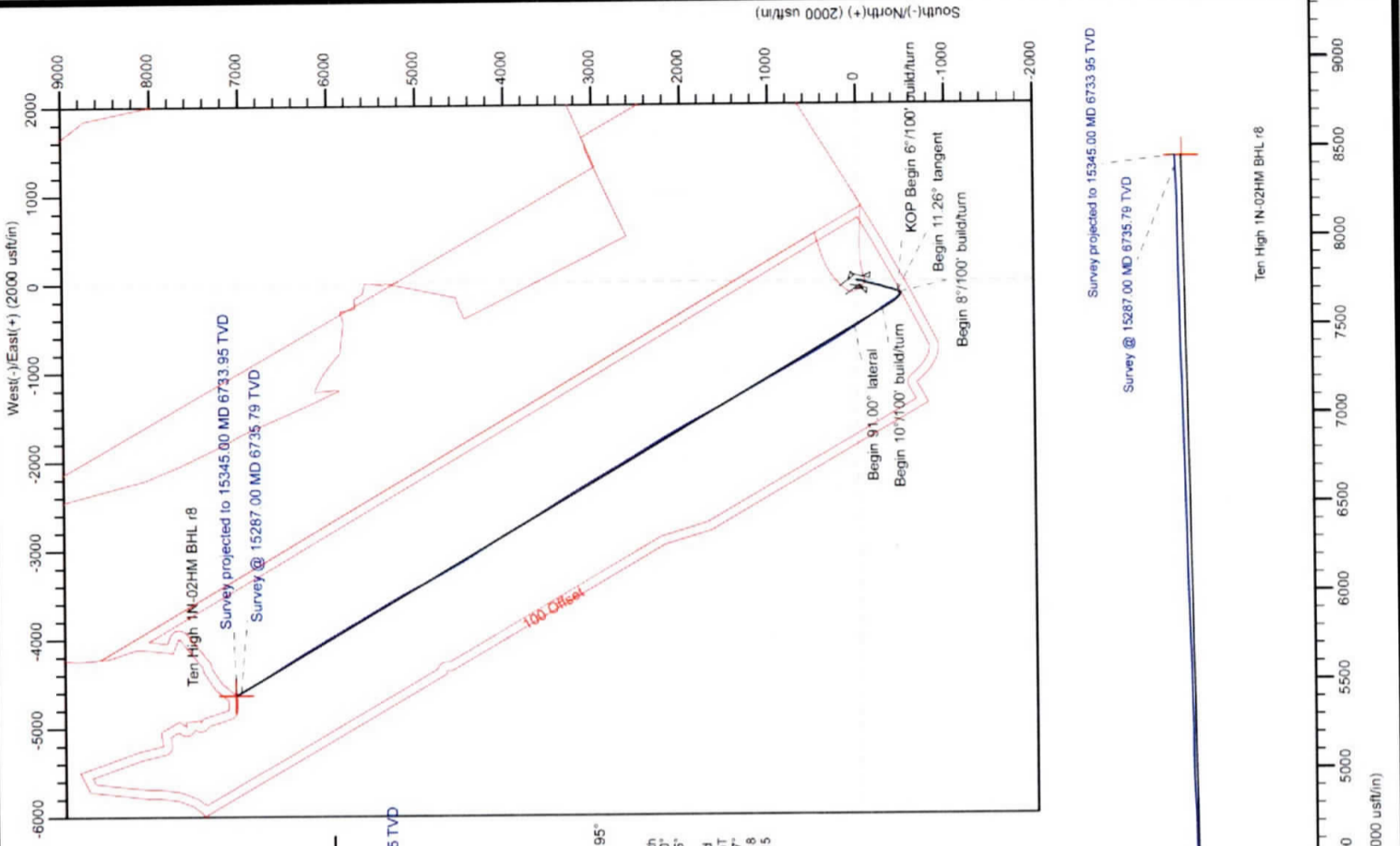
Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.95°



Azimuths to Grid North
True North: -0.20°
Magnetic North: -8.95°
Magnetic Field
Strength: 52041.1nT
Dip Angle: 66.87°
Date: 8/1/2018
Model: IGRF2015



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**TEN HIGH 1N LEASE
WELL 2HM
TUG HILL OPERATING**

8,641' B.H. AS DRILLED
4,034' T.H. AS DRILLED

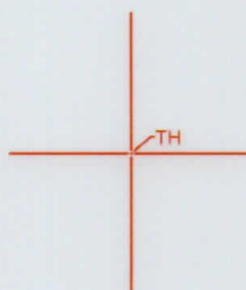
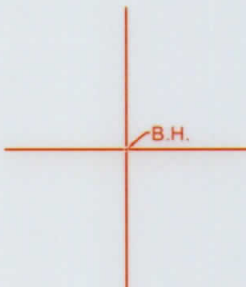
LATITUDE 39°50'00"

LONGITUDE 80°40'00"

2,597' B.H.A.D.

9,683' T.H. AS DRILLED

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'83 S.P.C.(FT) N. 478,141.34 E. 1,636,716.66
 NAD'83 GEO. LAT-(N) 39.806753 LONG-(W) 80.681027
 NAD'83 UTM (M) N. 4,406,357.67 E. 527,304.07
LANDING POINT
 NAD'83 S.P.C.(FT) N. 478,128.4 E. 1,636,241.3
 NAD'83 GEO. LAT-(N) 39.806700 LONG-(W) 80.682718
 NAD'83 UTM (M) N. 4,406,351.3 E. 527,159.3
BOTTOM HOLE
 NAD'83 S.P.C.(FT) N. 485,288.1 E. 1,632,201.6
 NAD'83 GEO. LAT-(N) 39.826207 LONG-(W) 80.697436
 NAD'83 UTM (M) N. 4,408,512.0 E. 525,892.2



MAP/PARCEL	ADJOINING SURFACE OWNER LIST	ACRES
9-1-13.2	RANDALL A. KEREKES	1.518
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
9-5-5.3	MICHAEL J. & NANCY L. SNYDER	1.870
9-5-6.1	JON B. CRAWFORD	4.679
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	RALPH E. WELLMAN, ET UX	1.00
9-5-22	RALPH E. WELLMAN, ET UX	0.5
9-5-23	RALPH E. WELLMAN, ET UX	1.00
9-5-24	ALVIE & MARCELLA DARRAH	1.986
9-7-30.1	ANDREW COREY WHITLATCH	4.55

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.



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26331 | 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*

(+) 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-2HM
 API WELL NO. 47 - 051 - 1934
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8655P2HMADR.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 = 1,321.00' 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: 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: 6,865' / TMD: 15,329'

COUNTY NAME

PERMIT

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

TUG HILL OPERATING WELL 2HM TEN HIGH IN LEASE

NAD83 UTM (M) N 4408215.0 E 5252885.2
 NAD83 GEO. LAT (N) 39.882507 LONG (W) 80.887438
 NAD83 S.P.C.(FT) N 482288.1 E 1825201.8
BOTTOM HOLE
 NAD83 UTM (M) N 4408351.3 E 5251289.3
 NAD83 GEO. LAT (N) 39.806700 LONG (W) 80.882318
 NAD83 S.P.C.(FT) N 478128.4 E 1826241.3
LANDING POINT
 NAD83 UTM (M) N 4408352.8 E 525204.0
 NAD83 GEO. LAT (N) 39.806723 LONG (W) 80.881027
 NAD83 S.P.C.(FT) N 478147.34 E 1826716.88
 (S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

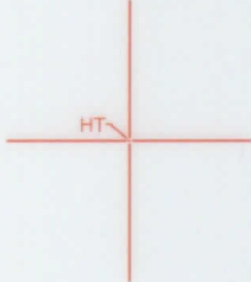


8' 883.1 H AS DRILLED
 5' 203.6 B.H. A.D.

LONGITUDE 80.40.00"

LATITUDE 39.50.00"

ADJOINING SURFACE OWNER LIST	ACRES
APRORW COREY WHITFACH	1.22
ALVE & MARLETTA DARAH	1.88
RALPH WELLMAN ETX	1.00
RALPH WELLMAN ETX	0.5
RALPH WELLMAN ETX	1.00
KEITH WILSON - DONALD E. LEACH (THE ESTATE)	0.51
CARLA SUE CROW	0.21
NANCY L. SNYDER	0.61
NANCY L. SNYDER	0.13
LINDA GORBY DELBERT	1.87
NANCY L. SNYDER	0.61
JOHN CRAWFORD	4.79
MICHAEL J. & NANCY L. SNYDER	1.70
PETER PARKER	0.71
DAVID M. FORER ETX	0.87
GERALD E. LOGSDON, ETX	7.51
RANDALL A. KERRIZ	1.18



NOTES ON SURVEY

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



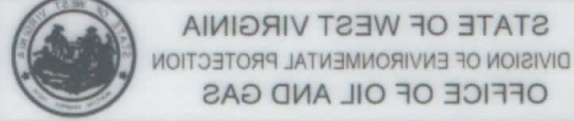
1200 East Beckley Highway | Beckley, WV 26201 | 204.282.2288
 1412 Kanawha Boulevard, East | Charleston, WV 25301 | 204.348.3852
 12000 North Drive | Box 150 | Glenville, WV 26031 | 204.463.2824
 sls.com



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

P. S. 848
C. Victor Moyers

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE JANUARY 17, 2019
 REVISED MARCH 24, 2020
 OPERATORS WELL NO. TEN HIGH IN-2HM
 AP# 1934
 WELL NO. 47 - 051 - 1934
 STATE COUNTY PERMIT



CONTROL DETERMINED BY HORIZONTAL & VERTICAL SCALE 1" = 2000' FILE NO. 88525HMADR.dwg
 MINIMUM DEGREE OF ACCURACY 1/2500
 WELLS: OIL GAS LIQUID WASTE INJECTION DISPOSAL "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION: PROPOSED = 1,310.06', WATERSHED MIDDLE BOWMAN RUN OF FISH CREEK (HUC-10)
 ELEVATION: PROPOSED = 1,321.00', GROUND = 1,321.00'

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) _____
 ESTIMATED DEPTH TVD: 8865' \ TMD: 12359'
 TARGET FORMATION MARCELLUS

SURFACE OWNER: LAWRENCE & SHIRLEY CONKLE ESTS
 ROYALTY OWNER: ANDY PAUL & JACKIE KUHN, ET AL - SEE WW-6A1
 LEASE NO. SEE WW-6A1
 COUNTY: MEADE
 DISTRICT: MEADE
 COUNTY: MARSHALL
 QUADRANGLE: GLEN EASTON 7 S
 ACREAGE: 139.73±
 ACREAGE: 139.73±

WELL OPERATOR TUG HILL OPERATING, LLC
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76102
 DESIGNATED AGENT DIANNA STAMPER
 CT CORPORATION SYSTEM
 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

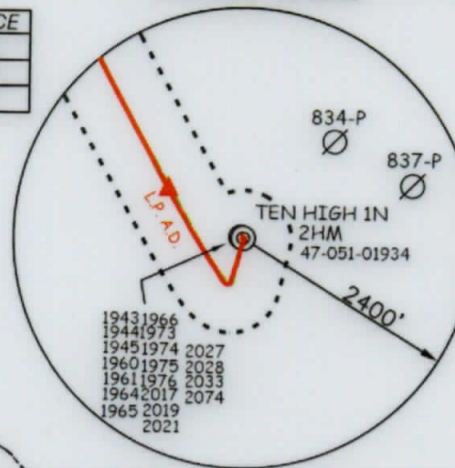
COUNTY NAME
 PERMIT

**TEN HIGH 1N LEASE
WELL 2HM
TUG HILL OPERATING**

LINE	BEARING	DISTANCE
L1	N 09° 49' W	1589.53'
L2	N 78° 36' E	1013.30'
L3	S 13° 37' W	482.19'

8,641' B.H. AS DRILLED
4,034' T.H. AS DRILLED

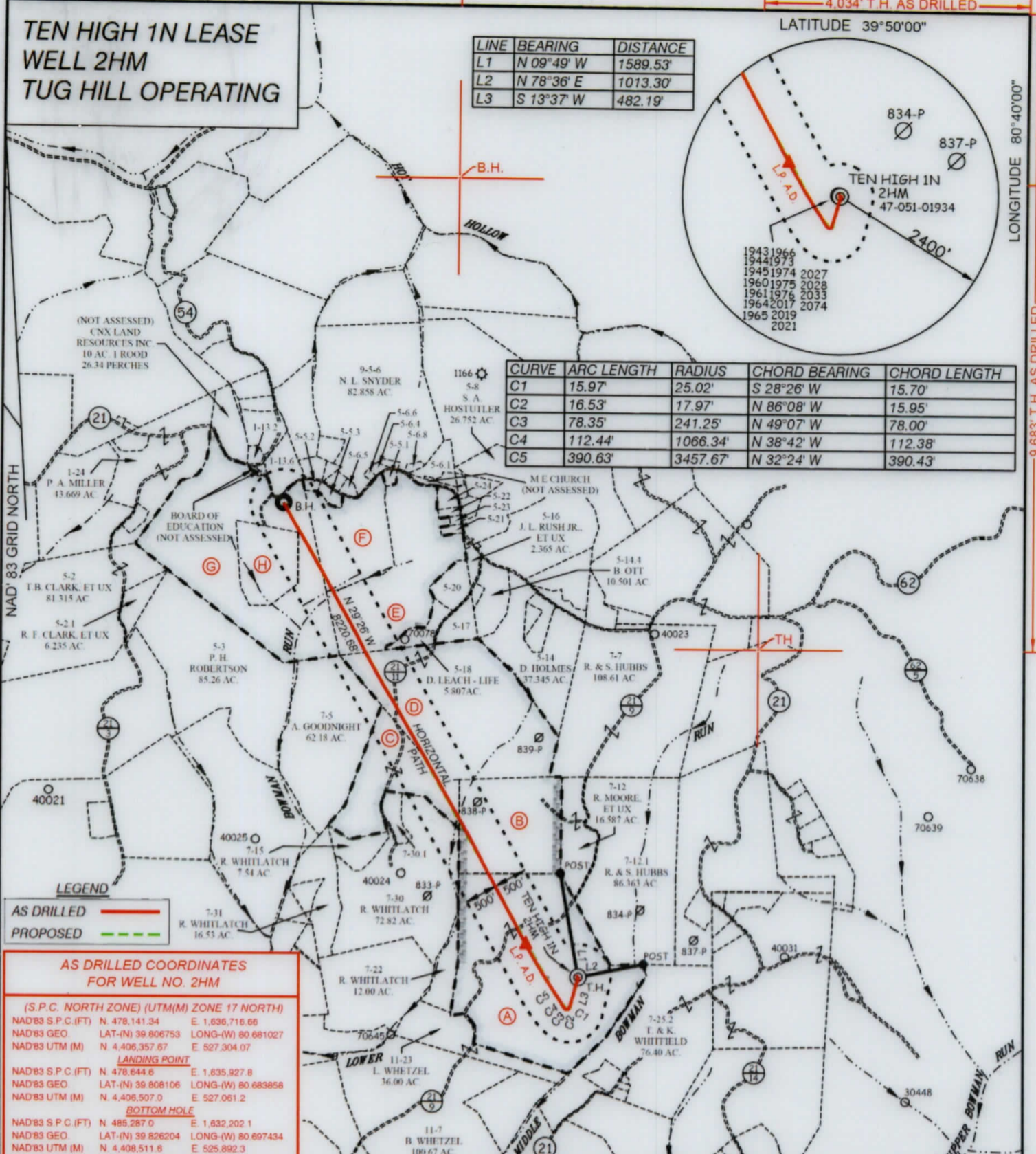
LATITUDE 39° 50' 00"



LONGITUDE 80° 40' 00"

9,683' T.H. AS DRILLED

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	15.97'	25.02'	S 28° 26' W	15.70'
C2	16.53'	17.97'	N 86° 08' W	15.95'
C3	78.35'	241.25'	N 49° 07' W	78.00'
C4	112.44'	1066.34'	N 38° 42' W	112.38'
C5	390.63'	3457.67'	N 32° 24' W	390.43'



LEGEND

AS DRILLED ——— (Red line)

PROPOSED - - - - - (Green dashed line)

AS DRILLED COORDINATES FOR WELL NO. 2HM

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

NAD83 S.P.C.(FT) N. 478,141.34 E. 1,636,716.66

NAD83 GEO. LAT-(N) 39.806753 LONG-(W) 80.681027

NAD83 UTM (M) N. 4,406,357.67 E. 527,304.07

LANDING POINT

NAD83 S.P.C.(FT) N. 478,644.6 E. 1,635,927.8

NAD83 GEO. LAT-(N) 39.808106 LONG-(W) 80.683858

NAD83 UTM (M) N. 4,406,507.0 E. 527,061.2

BOTTOM HOLE

NAD83 S.P.C.(FT) N. 485,287.0 E. 1,632,202.1

NAD83 GEO. LAT-(N) 39.826204 LONG-(W) 80.697434

NAD83 UTM (M) N. 4,408,511.8 E. 525,892.3



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 | 304.295.5296
slsvv.com

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	ARNIE GOODNIGHT ET UX	9-7-14	39.55
D	TERESA L. HORNER WITH JERRY G. & CAROLYN K. FLETCHER (LIFE ESTATE)	9-7-6	103.30
E	MICHAEL JOSEPH SNYDER	9-5-4	64.00
F	MICHAEL JOSEPH SNYDER	9-5-5	35.02
G	ELMER ASTON	9-5-4	108.225
H	CONSOLIDATION COAL COMPANY	9-5-1	22.775

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

NAD83 S.P.C.(FT) N. 478,141.34 E. 1,636,716.66

NAD83 GEO. LAT-(N) 39.806753 LONG-(W) 80.681027

NAD83 UTM (M) N. 4,406,357.67 E. 527,304.07

LANDING POINT

NAD83 S.P.C.(FT) N. 478,128.4 E. 1,636,241.3

NAD83 GEO. LAT-(N) 39.806700 LONG-(W) 80.682718

NAD83 UTM (M) N. 4,406,351.3 E. 527,159.3

BOTTOM HOLE

NAD83 S.P.C.(FT) N. 485,288.1 E. 1,632,201.6

NAD83 GEO. LAT-(N) 39.826207 LONG-(W) 80.697436

NAD83 UTM (M) N. 4,408,512.0 E. 525,892.2



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

P.S. 849 *C. Victor Moyers*

SCALE 1" = 2000' FILE NO. 8655P2HMADR.dwg

DATE JANUARY 17, 2019

REVISED MARCH 24, 2020

OPERATORS WELL NO. TEN HIGH 1N-2HM

API WELL NO. 47 - 051 - 1934

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 00-00

SURFACE OWNER (SEE TABLE) ⊙

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 5HM
TUG HILL OPERATING**

FORM WW 8 - SHEET 2 OF 2

LINE	BEARING	DISTANCE
L1	N 09.49 W	1589.53
L2	N 78.38 E	1013.30
L3	S 13.37 W	485.19

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	15.97	55.05	S 28.58 W	18.70
C2	18.53	17.97	N 88.08 W	18.95
C3	78.35	541.55	N 49.07 W	78.00
C4	115.44	1088.34	N 38.45 W	115.38
C5	390.93	3457.67	N 35.54 W	390.43



AS DRILLED	PROPOSED

AS DRILLED COORDINATES FOR WELL NO. 5HM

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

POINT	NAD83 UTM (M)	NAD83 GEO. LAT (N)	NAD83 GEO. LONG (W)
BOTTOM HOLE	N 488,257.0 E 527,202.1	38 528204	80 887438
LANDING POINT	N 488,257.0 E 527,202.1	38 528204	80 887438
NAD83 S.P.C. (FT)	N 478,142.4 E 1,898,241.3	38 528204	80 887438

324 East Buckley Square | Suite 200 | Fort Worth, TX 76102 | 817.332.2288

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

POINT	NAD83 UTM (M)	NAD83 GEO. LAT (N)	NAD83 GEO. LONG (W)
BOTTOM HOLE	N 488,257.0 E 1,898,241.3	38 528204	80 887438
LANDING POINT	N 478,142.4 E 1,898,241.3	38 528204	80 887438

NO. STATE COUNTY PERMIT

APR 47 - 051 - 1934

OPERATORS WELL NO. TEN HIGH 1N-5HM

REVISED MARCH 24

DATE JANUARY 17

SCALE 1" = 2000'

FILE NO. 888252SHMADR.dwg

WELL OPERATOR TUG HILL OPERATING, LLC
Address 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
FORT WORTH, TX 76107

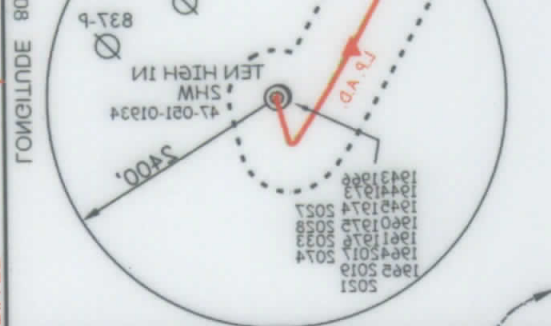
DESIGNATED AGENT CT CORPORATION SYSTEM
Address 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

VICTOR MOYERS
No. 849
STATE OF WEST VIRGINIA
PROFESSIONAL SURVEYOR

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

PERMIT

4.03' T.H. AS DRILLED
8.41' B.H. AS DRILLED



PARCEL	ACRES	GRACE OWNER
A	0.754	LAWRENCE & SHIRLEY CONKLE ESTS
B	0.713	RONALD MOORE ET AL
C	0.714	ARNIE GOODRIGHT ET AL
D	0.76	TERESA L HORNER WITH BERRY G & CAROLYN R FLETCHER (THE ESTATE)
E	0.574	MICHAEL JOSEPH SWYDER
F	0.23	MICHAEL JOSEPH SWYDER
G	0.4	ELMER ASTON
H	0.211	CONSOLIDATION COAL COMPANY

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

P.S. 849
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 WW-8A1)

CONTOUR NAME

PERMIT

DIANA STAMPER
DESIGNATED AGENT CT CORPORATION SYSTEM
Address 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

PERMIT