

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

API 47 - 051 - 01943 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-1HM
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 4,406,358.52 Easting 527,300.35
Landing Point of Curve Northing 4,406,306.9 Easting 526,892.2
Bottom Hole Northing 4,408,664.3 Easting 525,544.6

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 6/22/2018 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/a 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 70' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2180' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 969' - 975'; 1054' - 1059' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
Jim Nicholas
7/7/2020

API 47-051 - 01943 Farm name Lawrence & Shirley Conkle, ests. Well number Ten High 1N-1HM

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"	1,126'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	1,126'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	9 5/8"	2,792'	NEW	36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	16,618'	NEW	20#	N/A	Y
Tubing		2 3/8"	8,309'	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	1151	15.6	1.19	1390	0	8
Coal	A	1151	15.6	1.19	1390	0	8
Intermediate 1	A	923	15.6	1.19	1264	0	8
Intermediate 2							
Intermediate 3							
Production	A	4048	14.5	1.17	4554	0	8
Tubing							

Drillers TD (ft) 16,642' Loggers TD (ft) _____
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

Kick off depth (ft) 7,025'

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-1HM
PEFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	12/17/2018	16,471	16,521	2	Marcellus
2	12/17/2018	16,244	16,390	48	Marcellus
3	12/18/2018	16,069	16,215	48	Marcellus
4	12/19/2018	15,894	16,040	48	Marcellus
5	12/20/2018	15,719	15,865	48	Marcellus
6	12/21/2018	15,544	15,690	48	Marcellus
7	12/21/2018	15,369	15,515	48	Marcellus
8	12/22/2018	15,194	15,340	48	Marcellus
9	12/23/2018	15,019	15,165	48	Marcellus
10	12/23/2018	14,844	14,990	48	Marcellus
11	12/24/2018	14,669	14,815	48	Marcellus
12	12/24/2018	14,494	14,640	48	Marcellus
13	12/25/2018	14,319	14,465	48	Marcellus
14	12/25/2018	14,144	14,290	48	Marcellus
15	12/25/2018	13,969	14,115	48	Marcellus
16	12/26/2018	13,794	13,940	48	Marcellus
17	12/26/2018	13,619	13,765	48	Marcellus
18	12/27/2018	13,444	13,590	48	Marcellus
19	12/27/2018	13,269	13,415	48	Marcellus
20	12/27/2018	13,094	13,240	48	Marcellus
21	12/28/2018	12,919	13,065	48	Marcellus
22	12/28/2018	12,744	12,890	48	Marcellus
23	12/29/2018	12,569	12,715	48	Marcellus
24	12/29/2018	12,394	12,540	48	Marcellus
25	12/30/2018	12,219	12,365	48	Marcellus
26	12/30/2018	12,044	12,190	48	Marcellus
27	12/31/2018	11,869	12,015	48	Marcellus
28	12/31/2018	11,694	11,840	48	Marcellus
29	12/31/2018	11,519	11,665	48	Marcellus
30	1/1/2019	11,344	11,490	48	Marcellus
31	1/1/2019	11,169	11,315	48	Marcellus
32	1/2/2019	10,994	11,140	48	Marcellus
33	1/2/2019	10,819	10,965	48	Marcellus
34	1/3/2019	10,644	10,790	48	Marcellus
35	1/3/2019	10,469	10,615	48	Marcellus
36	1/5/2019	10,294	10,440	48	Marcellus
37	1/5/2019	10,119	10,265	48	Marcellus
38	1/6/2019	9,944	10,090	48	Marcellus
39	1/6/2019	9,769	9,915	48	Marcellus
40	1/6/2019	9,594	9,740	48	Marcellus
41	1/7/2019	9,419	9,565	48	Marcellus

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42	1/7/2019	9,244	9,390	48	Marcellus
43	1/8/2019	9,069	9,215	48	Marcellus
44	1/8/2019	8,894	9,040	48	Marcellus
45	1/9/2019	8,719	8,865	48	Marcellus
46	1/9/2019	8,544	8,690	48	Marcellus
47	1/10/2019	8,369	8,515	48	Marcellus
48	1/10/2019	8,194	8,340	48	Marcellus
49	1/11/2019	8,019	8,165	48	Marcellus
50	1/12/2019	7,844	7,990	48	Marcellus
51	1/12/2019	7,669	7,815	48	Marcellus
52	1/13/2019	7,494	7,640	48	Marcellus

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Ten High 1N-1HM

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 (bbbls)	Amount of Nitrogen/other (units)
1	80	8070	5094	2916	342560	7845	0
2	82	8389	5764	3529	441480	7653	0
3	79.3	8263	5491	3477	440860	7968	0
4	79.6	8143	5656	4305	442510	8083	0
5	76.3	8291	5722	4163	431435	7791	0
6	76.7	8148	5695	4079	440260	7537	0
7	84.9	8041	5670	3785	443760	7821	0
8	81.9	7791	5712	4298	442050	7809	0
9	85.1	8103	5522	3755	443390	7913	0
10	83.7	7824	5751	4213	436420	7771	0
11	85.1	7974	5526	3851	441230	7744	0
12	83.1	7743	5481	4842	440500	7840	0
13	84.9	7795	5608	3409	441770	7749	0
14	84.4	7777	5691	3833	442310	7769	0
15	84.9	7852	5336	4807	443230	7777	0
16	83.5	7648	5353	5003	440030	7907	0
17	82.7	7645	5204	4330	440830	7638	0
18	86.5	7808	5343	5020	441250	7745	0
19	82.1	7619	5270	4708	439740	7638	0
20	85	8047	5275	4136	445580	7661	0
21	88.5	7685	5453	5398	440310	7490	0
22	83.4	7603	4988	4382	441050	7596	0
23	88.4	7767	5413	3935	440050	7352	0
24	84.7	7705	5443	4824	400490	7133	0
25	81.7	7734	5243	4001	401890	8736	0
26	88	7592	5433	4241	440690	7546	0
27	88.6	7759	5237	3339	443080	8318	0
28	88.8	7681	5375	3744	441790	7572	0
29	89.7	7786	5383	4071	440280	7301	0
30	89.4	7685	5325	4611	422720	7228	0
31	88.6	7550	5449	4063	442710	7365	0
32	87.6	7584	5761	3972	441720	7790	0
33	89	7540	5281	4337	442660	7250	0

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34	88.8	7559	5413	4123	441780	7338	0
35	89.7	7539	5481	4322	442460	7725	0
36	89.8	7761	5692	4112	443780	7248	0
37	89.7	7412	5855	3905	443850	7828	0
38	89.8	7572	5209	4098	440120	7095	0
39	89.6	7284	5472	3460	440880	7760	0
40	88.8	7561	5452	3957	442580	7293	0
41	89.5	7436	5587	4187	440950	7667	0
42	88.7	7324	5092	4218	443120	7233	0
43	89.4	7141	5226	4252	436560	7536	0
44	84.8	7794	5394	3887	439220	7329	0
45	86.3	7603	5615	3781	439420	7491	0
46	88.5	7174	5213	4227	441720	7365	0
47	89.5	7381	5224	4265	448020	7610	0
48	87.7	7179	5184	3706	439720	7203	0
49	89.5	7055	5199	4019	440440	7873	0
50	82.6	6831	5488	3837	444750	7479	0
51	89.5	6796	5852	3798	436780	7640	0
52	89.2	6967	5709	4166	442420	7719	0

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TEN HIGH 1N-1HM

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	2036	2209	Sandstone
Big Lime	2207	2338	2209	2341	Limestone
Big Injun	2338	2633	2341	2637	Sandstone
Weir	2633	2831	2637	2835	Sandstone
Berea	2831	3093	2835	3098	Sandstone
Gordon	3093	3178	3098	3184	Sandstone
Fifty Foot	3178	3760	3184	3767	Sandstone
Speechley	3760	5221	3767	5288	Sandstone
Benson	5221	5593	5288	5692	Sandstone
Alexander	5593	6215	5692	6365	Siltstone
Rhinestreet	6215	6662	6365	6846	Black shale
Middlesex	6662	6738	6846	6953	Black shale
Geneseo/Burkett	6738	6763	6953	6999	Black shale
Tully	6763	6792	6999	7055	Limestone
Hamilton	6792	6875	7055	7335	Grey shale
Marcellus	6875	-	7335	-	Black shale

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Well: Ten High 1N-01HM (T)
Site: Ten High
Project: Marshall County, West Virginia.
Design: rev5

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	*N/S	+E/W	Dleg	TFac	V-Sect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1333.00	0.00	0.00	1333.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 1 1/100' build
3	1833.00	5.00	219.82	1832.37	-16.79	-13.90	1.00	219.62	0.00	Begin 5.00' tangent
4	4042.04	5.00	219.82	4033.00	-16.79	-13.90	1.00	219.62	0.00	Begin 2 1/100' buildturn
5	4835.38	22.87	219.82	4896.53	-326.67	-273.83	2.00	0.29	-97.10	Begin 22.87' tangent
6	6348.85	22.87	219.85	6198.75	-751.29	-625.74	0.00	0.00	-220.25	Begin 8 1/100' buildturn
7	6586.17	49.00	305.55	6737.65	-751.32	-922.00	8.00	104.62	-4.55	Begin 10 1/100' buildturn
8	7484.88	91.00	330.25	6900.00	-374.60	-1205.26	10.00	35.12	430.13	Begin 91.00' lateral
9	16623.07	91.00	330.25	6740.65	-5748.49	0.00	0.00	9509.92		PBHLTD 16623.07 MD/6740.65 TVD

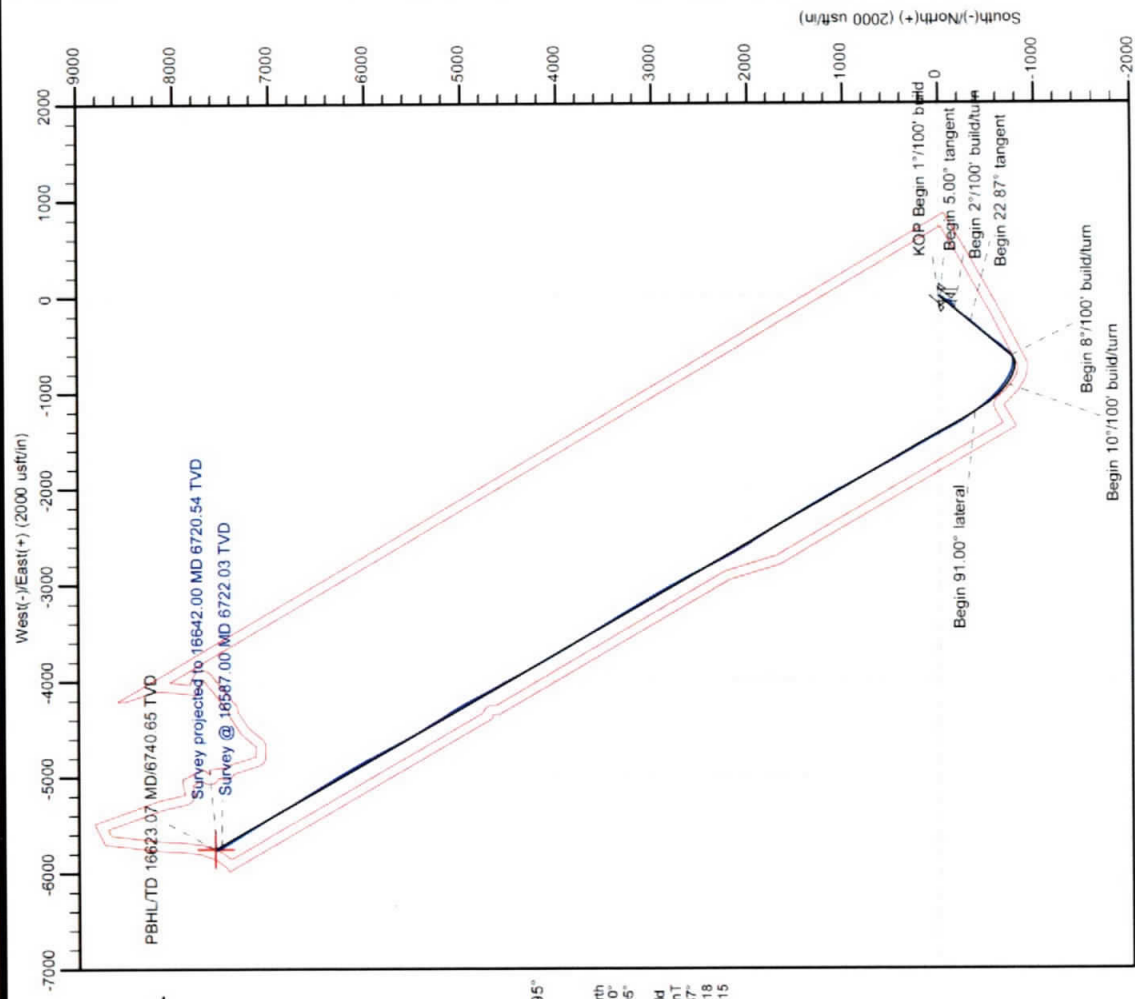
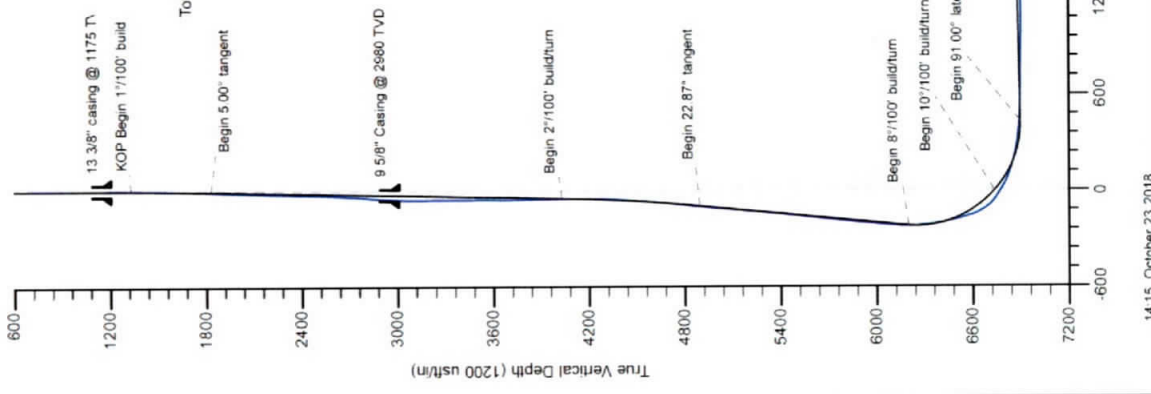
Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD83 West Virginia - HARN
 Ellipsoid: GRS 1980
 Zone: Zone 17N (84 W to 78 W)

System Datum: Mean Sea Level
 Depth Reference: RKB=1310+33 @ 1343.00usft (Nabors X08)
 Northing: 14456527.90
 Easting: 1725984.58
 Latitude: 39.80676042
 Longitude: -80.68107030

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: 3204 μ T/gT
 Dip Angle: 66.87°
 Date: 8/20/2018
 Model: IGRF2015



Survey projected to 16642.00 MD 6720.54 TVD
 Survey @ 16587.00 MD 6722.03 TVD

PBHLTD 16623.07 MD/6740.65 TVD

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/17/2018
Job End Date:	1/20/2019
State:	West Virginia
County:	Marshall
API Number:	47-051-01943-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Ten High 1HM
Latitude:	39.80676042
Longitude:	-80.68107030
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,906
Total Base Water Volume (gal):	15,188,731
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	84.09009	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.69523	

FR-A12	Halliburton	Additive							
						Listed Below			
SAND- PREMIUM WHITE-30/50, BULK	Halliburton	Proppant				Listed Below			
MC MX 2-2822	Halliburton	Scale Inhibitor				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant				Listed Below			
SAND- PREMIUM WHITE-40/70, BULK	Halliburton	Proppant				Listed Below			
MURIATIC ACID	Halliburton	Solvent				Listed Below			
MC MX 8-4543	Halliburton	Biocide				Listed Below			
OILPERM A	Halliburton	Non-ionic Surfactant				Listed Below			

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MX 5-2402	Halliburton	Scale Inhibitor			Listed Below			
					Listed Below			
LD-2850	Halliburton	Friction Reducer			Listed Below			
FDP-S1296-17	Halliburton	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	15.10167		
			Hydrochloric acid	7647-01-0	7.50000	0.05064		
			Calcium nitrate	13477-34-4	100.00000	0.03924		
			Ethanaminium, N,N,N-trimethyl 1-2-[(1-oxo-2propen-1-yl)oxy]-, polymer chlorine (1:1), polymer with 2-propenamide	69418-26-4	30.00000	0.01950		
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01950		
			Methanol	67-56-1	100.00000	0.00804		
			Sodium chloride	7647-14-5	10.00000	0.00780		
			Amines, polyethylenepoly-, ethoxylated, phosphonomethylated, sodium salts	70900-16-2	30.00000	0.00754		
			Amonium chloride	12125-02-9	10.00000	0.00650		
			9-Octadecenamide, n,n-bis-2(hydroxy-ethyl)-,(Z)	93-83-4	5.00000	0.00325		
			Ethanol	64-17-5	60.00000	0.00031		
			Proprietary Component	Proprietary	60.00000	0.00024		

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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	
	Naphthalene	91-20-3	5.00000	0.00003	
	Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	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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9,781' B.H. AS DRILLED

4,046' T.H. AS DRILLED

LATITUDE 39°50'00"

TEN HIGH 1N LEASE
WELL 1HM
TUG HILL OPERATING

B.H.

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

NAD'83 S.P.C.(FT) N. 478,144.32 E. 1,636,704.52
NAD'83 GEO. LAT.(N) 39.806760 LONG.(W) 80.681070
NAD'83 UTM (M) N. 4,406,358.52 E. 527,300.35

LANDING POINT

NAD'83 S.P.C.(FT) N. 477,753.6 E. 1,635,513.2
NAD'83 GEO. LAT.(N) 39.805645 LONG.(W) 80.685292
NAD'83 UTM (M) N. 4,406,233.4 E. 526,939.4

BOTTOM HOLE

NAD'83 S.P.C.(FT) N. 485,817.8 E. 1,631,081.5
NAD'83 GEO. LAT.(N) 39.827620 LONG.(W) 80.701449
NAD'83 UTM (M) N. 4,408,667.6 E. 525,548.2

LONGITUDE 80°40'00"

9,660' T.H. AS DRILLED

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.

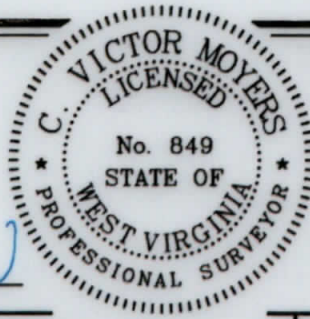


12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26351 | 304.462.5634
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.348.3952
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296
slswv.com

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-1HM
API WELL NO. 47 - 051 - 1943
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 8655P1HMADR.dwg
HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 2000'

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



WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___ IF "GAS" PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION : ELEVATION GROUND = 1,320.30' 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 X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___ OTHER ___
PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD: 6.865' / TMD: 16.501'

COUNTY NAME PERMIT

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

TUG HILL OPERATING
WELL 1HM
TEN HIGH IN LEASE

NAD83 UTM (M) N. 4408.887.8 E. 525.248.2
 NAD83 GEO. LAT. (N) 39.857820 LONG. (W) 80.701449
 NAD83 S.P.C. (FT) N. 482.817.8 E. 1.631.081.2
BOTTOM HOLE
 NAD83 UTM (M) N. 4408.233.4 E. 528.999.4
 NAD83 GEO. LAT. (N) 39.802842 LONG. (W) 80.692582
 NAD83 S.P.C. (FT) N. 477.723.8 E. 1.632.213.2
LANDING POINT
 NAD83 UTM (M) N. 4408.258.2 E. 527.200.2
 NAD83 GEO. LAT. (N) 39.800780 LONG. (W) 80.691070
 NAD83 S.P.C. (FT) N. 478.144.2 E. 1.636.704.2
 (S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

LATITUDE 39°50'00"

LONGITUDE 80°40'00"

4,046.1 H. AS DRILLED 9,781.1 B.H. AS DRILLED

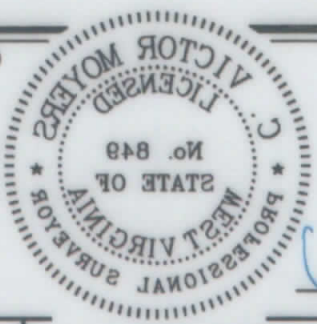
3,093.1 B.H. AS DRILLED 8,880.1 H. AS DRILLED



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 825' OF THE CENTER OF PROPOSED WELL PAD.
2. WELL SPOT CIRCLE & TOP MARK SCALE IS 1"=2000'
3. AS-DRILLED DATA PROVIDED BY TUG HILL OPERATING, LLC.
4. PLAT UPDATED TO SHOW AS-DRILLED PATH.

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
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-1HM
 API NO. 47-051-1943
 WELL NO. 47-051-1943
 PERMIT

CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)
 HORIZONTAL & VERTICAL SCALE 1" = 2000'
 FILE NO. 8655P1HMADR.dwg
 MINIMUM DEGREE OF ACCURACY 1:2500

WELL TYPE: OIL GAS LIQUID WASTE DISPOSAL "GAS" PRODUCTION STORAGE DEEP SHALLOW

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: 16.504'

ROYALTY OWNER ANDY PAUL & JACKIE KUHN, ET AL - SEE WW-6A1
SURFACE OWNER LAWRENCE & SHIRLEY CONKLE ESTS
DISTRICT MEADE COUNTY MARSHALL QUADRANGLE GREEN EASTON T.S.
ELEVATION PROPOSED = 1,310.06', WATERSHED MIDDLE BOWMAN RUN OF FISH CREEK (HUC-10)

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

PERMIT COUNTY NAME



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

9,781' B.H. AS DRILLED

4,046' T.H. AS DRILLED

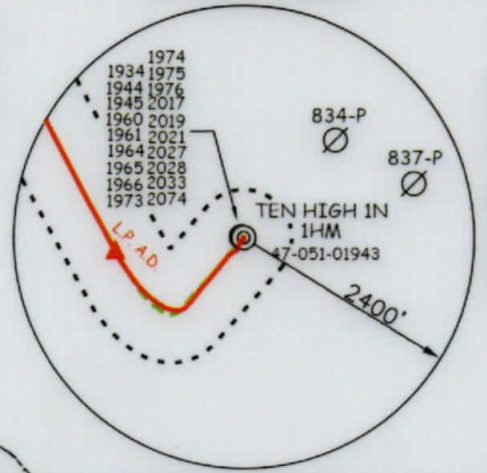
LATITUDE 39°50'00"

LONGITUDE 80°40'00"

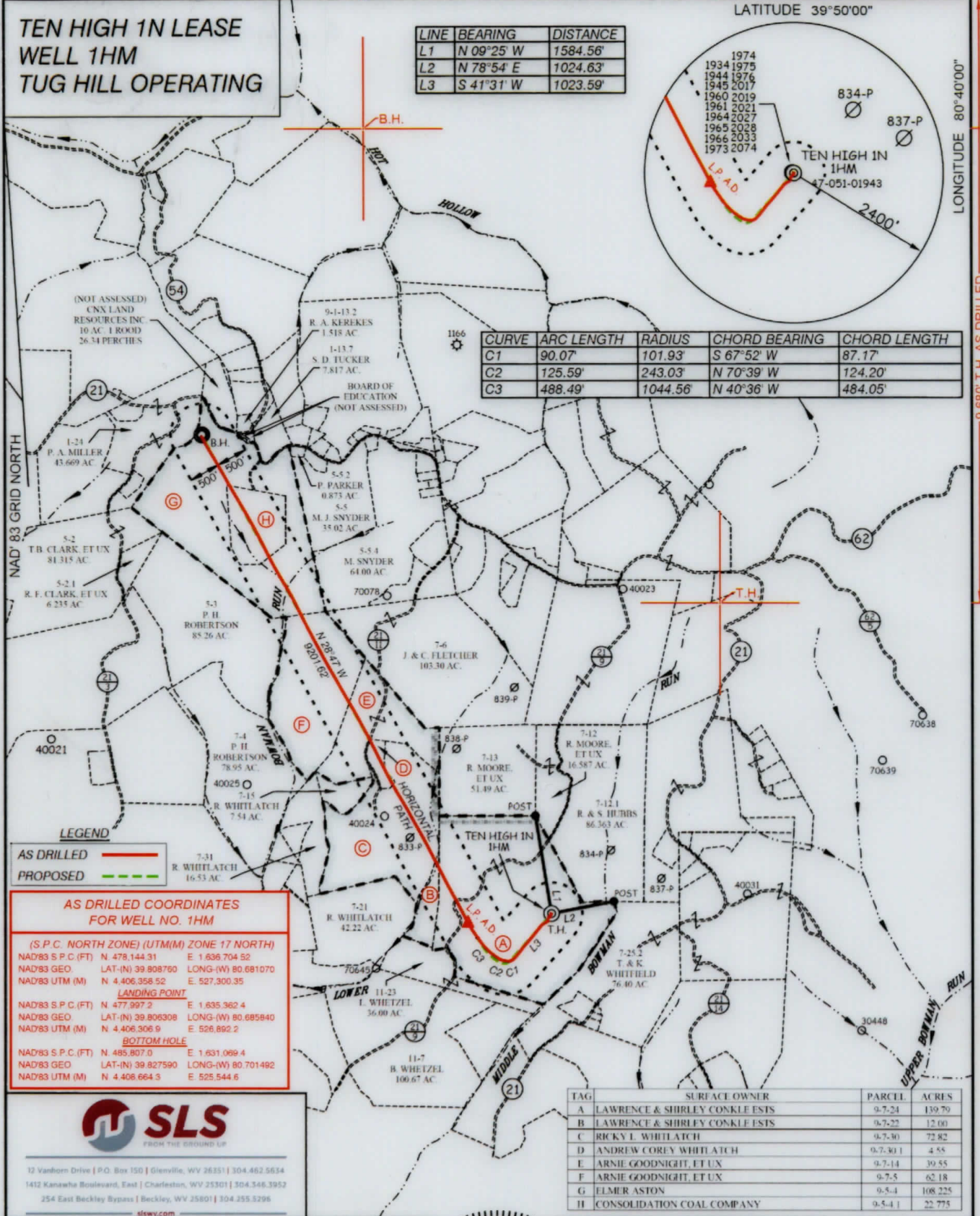
9,680' T.H. AS DRILLED

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

LINE	BEARING	DISTANCE
L1	N 09°25' W	1584.56'
L2	N 78°54' E	1024.63'
L3	S 41°31' W	1023.59'



CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	90.07'	101.93'	S 67°52' W	87.17'
C2	125.59'	243.03'	N 70°39' W	124.20'
C3	488.49'	1044.56'	N 40°36' W	484.05'



AS DRILLED COORDINATES FOR WELL NO. 1HM

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

NAD'83 S.P.C.(FT) N. 478,144.31 E. 1,636,704.52
 NAD'83 GEO. LAT-(N) 39.808760 LONG-(W) 80.681070
 NAD'83 UTM (M) N. 4,406,358.52 E. 527,300.35

LANDING POINT

NAD'83 S.P.C.(FT) N. 477,997.2 E. 1,635,362.4
 NAD'83 GEO. LAT-(N) 39.806308 LONG-(W) 80.685840
 NAD'83 UTM (M) N. 4,406,306.9 E. 526,892.2

BOTTOM HOLE

NAD'83 S.P.C.(FT) N. 485,807.0 E. 1,631,069.4
 NAD'83 GEO. LAT-(N) 39.827590 LONG-(W) 80.701492
 NAD'83 UTM (M) N. 4,406,664.3 E. 525,544.6

TAG	SURFACE OWNER	PARCEL	ACRES
A	LAWRENCE & SHIRLEY CONKLE ESTS	9-7-24	139.70
B	LAWRENCE & SHIRLEY CONKLE ESTS	9-7-22	12.00
C	RICKY L. WHITLATCH	9-7-30	72.82
D	ANDREW COREY WHITLATCH	9-7-30.1	4.55
E	ARNIE GOODNIGHT, ET UX	9-7-14	39.55
F	ARNIE GOODNIGHT, ET UX	9-7-5	62.18
G	ELMER ASTON	9-5-4	108.225
H	CONSOLIDATION COAL COMPANY	9-5-4.1	22.775



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 | 304.255.3296
 sls.wv.com

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

NAD'83 S.P.C.(FT) N. 478,144.32 E. 1,636,704.52
 NAD'83 GEO. LAT-(N) 39.808760 LONG-(W) 80.681070
 NAD'83 UTM (M) N. 4,406,358.52 E. 527,300.35

LANDING POINT

NAD'83 S.P.C.(FT) N. 477,753.6 E. 1,635,513.2
 NAD'83 GEO. LAT-(N) 39.805645 LONG-(W) 80.685292
 NAD'83 UTM (M) N. 4,406,233.4 E. 526,939.4

BOTTOM HOLE

NAD'83 S.P.C.(FT) N. 485,817.8 E. 1,631,081.5
 NAD'83 GEO. LAT-(N) 39.827620 LONG-(W) 80.701449
 NAD'83 UTM (M) N. 4,408,667.6 E. 525,548.2



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

P.S. 849 *C. Victor Moyers*

SCALE 1" = 2000' FILE NO. 8655P1HMADR.dwg

DATE JANUARY 17, 20 19

REVISED MARCH 24, 20 20

OPERATORS WELL NO. TEN HIGH 1N-1HM

API WELL NO. 47 - 051 - 1943

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)
- 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

