

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

API 47 - 051 - 01970 County Marshall District Franklin
Quad Powhatan Point Pad Name Corley Field/Pool Name _____
Farm name Corley, James A. and Jill C. Well Number Corley N-5HM
Operator (as registered with the OOG) Tug Hill Operating, LLC
Address 1320 S. University Drive, Suite 215 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 4,400,363.59 Easting 520,283.72
Landing Point of Curve Northing 4,400,713.42 Easting 519,582.64
Bottom Hole Northing 4,403,133.92 Easting 518,172.46

Elevation (ft) 1254.22' 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 RECEIVED
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Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other JUN 10 2020
Drilled with Cable Rotary

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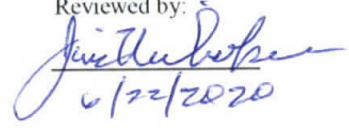
Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

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 1/2/2018 Date drilling commenced 5/16/2018 Date drilling ceased 6/23/2019
Date completion activities began 12/21/2018 Date completion activities ceased 2/23/2019
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 1073' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1595' Void(s) encountered (Y/N) depths N
Coal depth(s) ft Sewickley 974' TVD, Pittsburgh 1064' TVD Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: 
6/22/2020

API 47-051 - 01970 Farm name Corley, James A. and Jill C. Well number Corley N-5HM

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	YES
Surface	17 1/2"	13 3/8"	1,014'	NEW	54.5#	N/A	YES
Coal	17 1/2"	13 3/8"	1,014'	NEW	54.5#	N/A	YES
Intermediate 1	12 1/4"	9 5/8"	2,664'	NEW	36#	N/A	YES
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	16,723'	NEW	20#	N/A	YES
Tubing		2 3/8"	7,339'	NEW	4.7#	N/A	YES
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	1058	15.6	1.19	1278	0	8
Coal	A	1058	15.6	1.19	1278	0	8
Intermediate 1	A	934	15.6	1.19	1121	0	8
Intermediate 2							
Intermediate 3							
Production	A	4683	14.5	1.17	5456	0	8
Tubing							

Drillers TD (ft) 16,769' Loggers TD (ft) _____
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

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Kick off depth (ft) 6,494'

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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 _____

API 47- 051 - 01970 Farm name Corley, James A. and Jill C. Well number Corley N-5HM

PRODUCING FORMATION(S)	DEPTHS	
Marcellus	6,577'-6,548'	TVD 7,412'-16,769' 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

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
*see attached					

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Please insert additional pages as applicable.

Drilling Contractor Precision Drilling
Address 10350 Richmond Avenue, Suite 700 City Houston State TX Zip 77042

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

Cementing Company C&J Well Services
Address 380 Southpointe Boulevard, Suite 210 City Canonsburg State PA Zip 15317

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

Please insert additional pages as applicable.

Completed by Amy L. Miller Telephone 304-376-0111
Signature *Amy L. Miller* Title Permitting Specialist Date 5-23-2020

**Corley N-5HM
PEFORATION RECORD**

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Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s) WV Department of Environmental Protection
1	1/17/2019	16,571	16,622	16	Marcellus
2	1/17/2019	16,311	16,457	48	Marcellus
3	1/18/2019	16,136	16,282	48	Marcellus
4	1/18/2019	15,961	16,107	48	Marcellus
5	1/18/2019	15,786	15,932	48	Marcellus
6	1/18/2019	15,611	15,757	48	Marcellus
7	1/18/2019	15,436	15,582	48	Marcellus
8	1/19/2019	15,261	15,407	48	Marcellus
9	1/19/2019	15,086	15,232	48	Marcellus
10	1/19/2019	14,911	15,057	48	Marcellus
11	1/19/2019	14,736	14,882	48	Marcellus
12	1/20/2019	14,561	14,707	48	Marcellus
13	1/20/2019	14,386	14,532	48	Marcellus
14	1/20/2019	14,211	14,357	48	Marcellus
15	1/21/2019	14,036	14,182	48	Marcellus
16	1/21/2019	13,861	14,007	48	Marcellus
17	1/21/2019	13,686	13,832	48	Marcellus
18	1/21/2019	13,511	13,657	48	Marcellus
19	1/22/2019	13,336	13,482	48	Marcellus
20	1/22/2019	13,161	13,307	48	Marcellus
21	1/22/2019	12,986	13,132	48	Marcellus
22	1/22/2019	12,811	12,957	48	Marcellus
23	1/22/2019	12,636	12,782	48	Marcellus
24	1/23/2019	12,461	12,607	48	Marcellus
25	1/23/2019	12,286	12,432	48	Marcellus
26	1/30/2019	12,111	12,257	48	Marcellus
27	1/31/2019	11,936	12,082	48	Marcellus
28	2/1/2019	11,761	11,907	48	Marcellus
29	2/2/2019	11,586	11,732	48	Marcellus
30	2/3/2019	11,411	11,557	48	Marcellus
31	2/3/2019	11,236	11,382	48	Marcellus
32	2/4/2019	11,061	11,207	48	Marcellus
33	2/4/2019	10,886	11,032	48	Marcellus
34	2/5/2019	10,711	10,857	48	Marcellus
35	2/6/2019	10,536	10,682	48	Marcellus
36	2/6/2019	10,361	10,507	48	Marcellus
37	2/7/2019	10,186	10,332	48	Marcellus
38	2/7/2019	10,011	10,157	48	Marcellus
39	2/8/2019	9,836	9,982	48	Marcellus
40	2/8/2019	9,661	9,807	48	Marcellus
41	2/9/2019	9,486	9,632	48	Marcellus

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
42	2/10/2019	9,311	9,457	48	Marcellus
43	2/11/2019	9,136	9,282	48	Marcellus
44	2/12/2019	8,961	9,107	48	Marcellus
45	2/12/2019	8,786	8,932	48	Marcellus
46	2/13/2019	8,611	8,757	48	Marcellus
47	2/14/2019	8,436	8,582	48	Marcellus
48	2/15/2019	8,261	8,407	48	Marcellus
49	2/16/2019	8,086	8,232	48	Marcellus
50	2/17/2019	7,911	8,057	48	Marcellus
51	2/17/2019	7,736	7,882	48	Marcellus
52	2/18/2019	7,561	7,707	48	Marcellus
53	2/19/2019	7,386	7,532	48	Marcellus

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Corley N-5HM

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	85	5704	4106	2945	354200	8241	0
2	82.8	6896	5714	3578	438915	7993	0
3	82.2	6786	5160	3701	446095	9392	0
4	85	6835	5182	4788	436240	8948	0
5	84.8	6982	5156	4874	436210	8467	0
6	85	6774	5091	4683	440940	8578	0
7	85.8	6852	5313	4883	438170	8600	0
8	85	6625	5261	4530	443810	8661	0
9	84.9	6824	4847	4810	441030	8654	0
10	84.9	7147	4903	4652	438210	8402	0
11	83.8	6561	4980	4836	437530	8507	0
12	83.7	6540	4720	4820	438020	8446	0
13	86.2	6837	4677	4474	442690	8574	0
14	87.6	6926	4898	4615	440520	8671	0
15	85.4	6560	5298	4718	401290	8425	0
16	86	6729	4483	4508	440820	8954	0
17	86.4	6607	4644	4183	437900	8379	0
18	85.5	6504	5163	4160	338250	9096	0
19	84.1	6456	5279	4765	434960	7914	0
20	83.4	6699	4415	4906	433740	7722	0
21	85.2	6519	4810	4547	446360	7640	0
22	85.1	6488	4548	4774	437360	7577	0
23	85.1	6556	5245	4862	438030	7872	0
24	85.2	6453	5165	4844	439550	7790	0
25	85.2	6608	4853	4316	440550	7587	0
26	85.2	6627	5364	4972	439840	7930	0
27	85.7	6618	5507	4752	440340	7884	0
28	85.1	6679	5385	4829	436220	9695	0
29	86.2	6871	4982	4652	434460	7394	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)
30	85	6378	4658	4861	442880	7378	0
31	86	6436	5226	4994	438600	7364	0
32	85.2	6124	5028	4528	439930	7354	0
33	85.7	6379	5652	5076	435180	7225	0
34	85.7	6238	5242	4627	442010	7293	0
35	85.1	6406	5108	4875	444110	7261	0
36	85.5	6574	5283	4990	447660	7472	0
37	85.1	6351	5230	5119	428630	7027	0
38	85.6	6283	5446	4970	434150	7180	0
39	84.8	6323	5199	5060	435140	7546	0
40	85.2	6334	5088	5147	437770	7656	0
41	85.9	6393	5068	5047	435130	7532	0
42	84.8	6305	4830	4546	439280	7560	0
43	84.9	6377	4844	5042	438780	7555	0
44	85.1	6429	5074	5328	442660	7404	0
45	85.2	6298	4899	4747	435960	7286	0
46	85.1	6308	5201	4920	438200	7811	0
47	85.1	6499	5205	4781	442070	7555	0
48	84.5	6654	4999	5123	444780	7466	0
49	82	6383	5055	4760	436650	8169	0
50	85.2	6469	5169	5088	441220	7468	0
51	85.4	6254	4732	4944	446280	7643	0
52	84.5	6318	4981	5180	440700	7324	0
53	84.3	6221	5380	5176	441310	7522	0

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CORLEY N-5HM

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	1946	2040	1952	2049	Sandstone
Big Lime	2040	2082	2049	2092	Limestone
Big Injun	2082	2399	2092	2422	Sandstone
Weir	2399	2578	2422	2607	Sandstone
Berea	2578	2858	2607	2902	Sandstone
Gordon	2858	2922	2902	2973	Sandstone
Fifty Foot	2922	3522	2973	3633	Sandstone
Speechley	3522	4936	3633	5204	Sandstone
Benson	4936	5312	5204	5621	Sandstone
Alexander	5312	5944	5621	6319	Siltstone
Rhinestreet	5944	6373	6319	6831	Black shale
Middlesex	6373	6441	6831	6939	Black shale
Geneseo/Burkett	6441	6470	6939	6992	Black shale
Tully	6470	6507	6992	7073	Limestone
Hamilton	6507	6561	7073	7244	Grey shale
Marcellus	6561	-	7244	-	Black shale

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Tug Hill Operating LLC
Well: Corley N-05HM (slot F)
Site: Corley Pad
Project: Marshall County, WV
Design: rev7

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	VFace	VSection	Annotation
1	3575.00	25.33	270.39	3469.02	26.23	-605.73	0.00	0.00	387.66	Tie in survey @ 3575 MD
2	3584.00	25.56	270.80	3477.14	26.27	-609.59	3.22	37.63	390.04	S/T Begin 2'100' droplum
3	4225.70	25.79	300.69	4057.91	99.77	-869.16	2.00	102.51	605.71	Begin 25.79° tangent
4	5577.49	25.79	300.69	5275.00	400.00	-1375.00	0.00	0.00	1150.94	Begin 2'100' build/turn
5	5822.41	25.96	289.46	5495.49	445.08	-1471.42	2.00	-93.14	1245.21	Begin 25.96° tangent
6	6599.18	25.96	289.46	6193.90	558.35	-1792.02	0.00	0.00	1529.49	Begin 10'100' build/turn
7	7313.35	91.00	329.64	6557.00	973.72	-2170.12	10.00	42.89	2088.99	Begin 91.00° lateral section
8	16770.36	91.00	329.64	6392.00	9132.70	-6949.12	0.00	0.00	1475.91	PBHLTD 16770.36 MD/6392.00 TVD

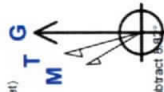
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSection	Annotation
3475.00	23.58	268.54	3378.11	26.55	-564.07	362.71	Tie into original hole @ 3475 MD
16722.00	90.95	328.42	6548.48	9068.00	-6926.71	11427.58	Survey @ 16722.00 MD/6548.48 TVD
16769.00	90.95	328.42	6547.70	9129.03	-6951.32	11474.32	Survey projected to 16769.00 MD/6547.70 TVD

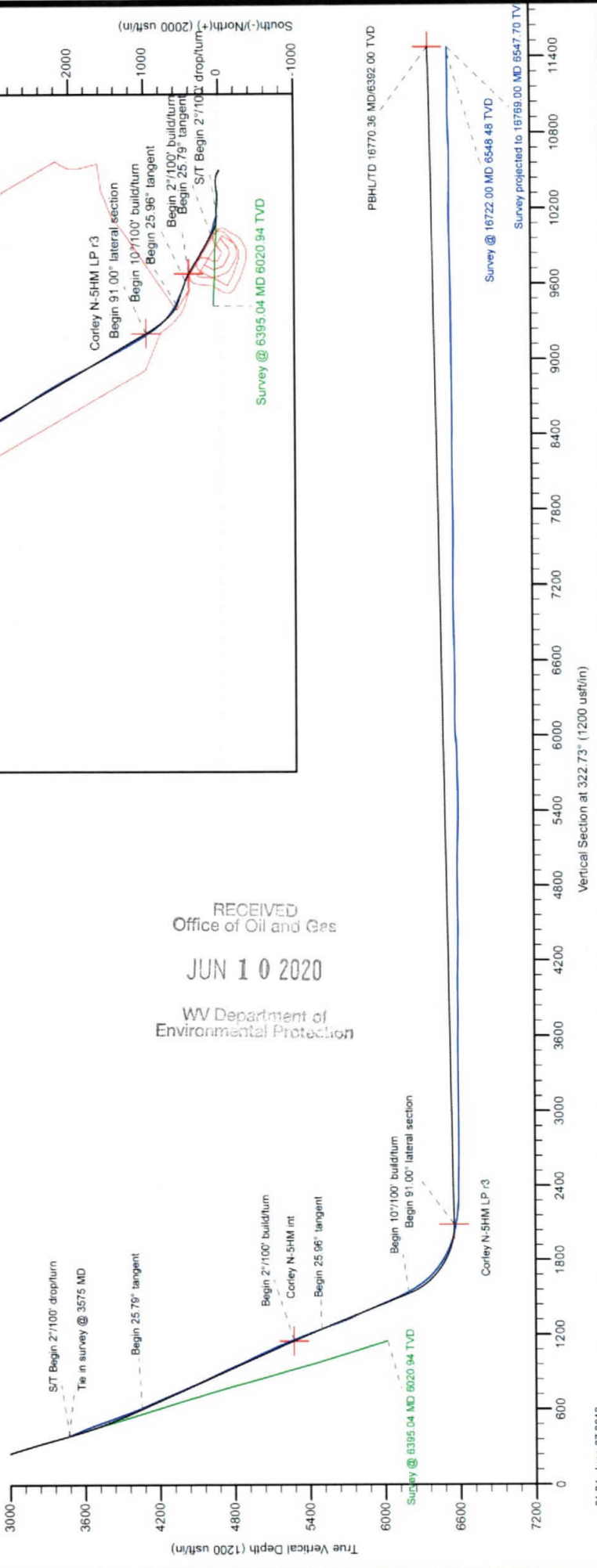
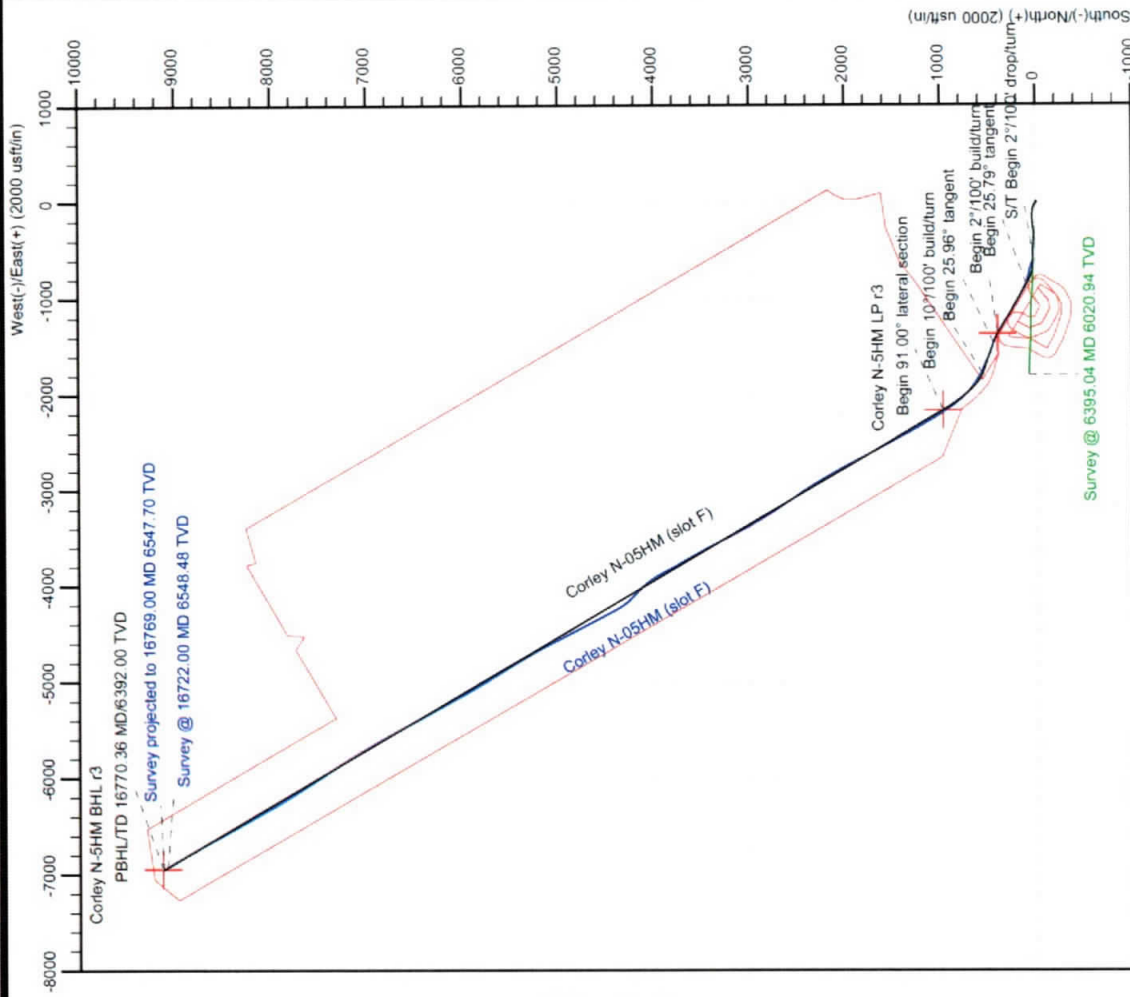
Geocentric System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD83 West Virginia - HARN
 Ellipsoid: GRS 1980 (84 W to 78 W)
 Zone: 17N (84 W to 78 W)

System Datum: Mean Sea Level
 Depth Reference: RKBa1254+28 @ 1282.00usft (Precision 110)
 Surface location: Latitude: Longitude
 1443689.23 1706864.03 39 7529419.80 76322624

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.82°



Azimuths to Grid North
 True North: -0.15°
 Magnetic North: -8.82°
 Strength: 52051 gaT
 Dip Angle: 66.86°
 Date: 8/22018
 Model: IGRF2015



Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/17/2019
Job End Date:	2/19/2019
State:	West Virginia
County:	Marshall
API Number:	47-051-01970-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Corley N 5HM
Latitude:	39.75294119
Longitude:	-80.76322524
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,601
Total Base Water Volume (gal):	18,360,264
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	68.47079	Density = 8.330
Produced Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	17.97735	Density = 9.000

Ingredients	Listed Above	Listed Above	Listed Above						
				Water		7732-18-5	100.00000	0.57947	
HYDROCHLORIC ACID	Halliburton	Solvent			Listed Below				
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant				Listed Below			
LD-2850	multi-chem	Friction Reducer				Listed Below			
FDP-S1296-17	Halliburton	Corrosion Inhibitor				Listed Below			
SCALECHECK LP-50	Halliburton	Scale Inhibitor				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			

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MC MX 8-4743	multi-chem	Biocide			Listed Below			
					Listed Below			
CALCIUM CHLORIDE - FLAKE	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	12.83340		
			Hydrochloric acid	7647-01-0	7.50000	0.04344		
			Sodium chloride	7647-14-5	30.00000	0.02488		
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02486		
			Sodium nitrate	7631-99-4	60.00000	0.02047		
			Methanol	67-56-1	100.00000	0.00662		
			Phosphonic acid salt	Proprietary	30.00000	0.00619		
			Ammonium chloride	12125-02-9	5.00000	0.00414		
			Alcohols, C12-16, ethoxylated	68551-12-2	5.00000	0.00414		
			9-Octadecenamide,n,n-bis-2(hydroxy-ethyl)-,(Z)	93-83-4	5.00000	0.00414		
			Calcium chloride	10043-52-4	100.00000	0.00070		
			Ethanol	64-17-5	60.00000	0.00027		
			Oxyalkylated phenolic resin	Proprietary	30.00000	0.00018		
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00013		

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			Modified thiourea polymer	Proprietary	30.00000	0.00013	
			Potassium chloride	7447-40-7	5.00000	0.00003	
			Strontium chloride	10476-85-4	5.00000	0.00003	
			Naphthalene	91-20-3	5.00000	0.00002	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-, omega-hydroxy-, branched	127087-87-0	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	
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00000	

* 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%

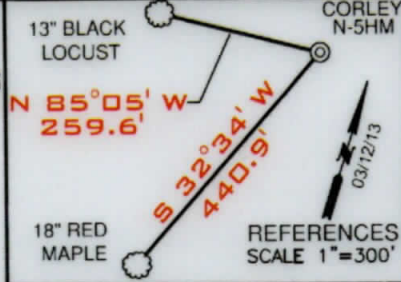
*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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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(BH) 10,678' (TH) 3,753'

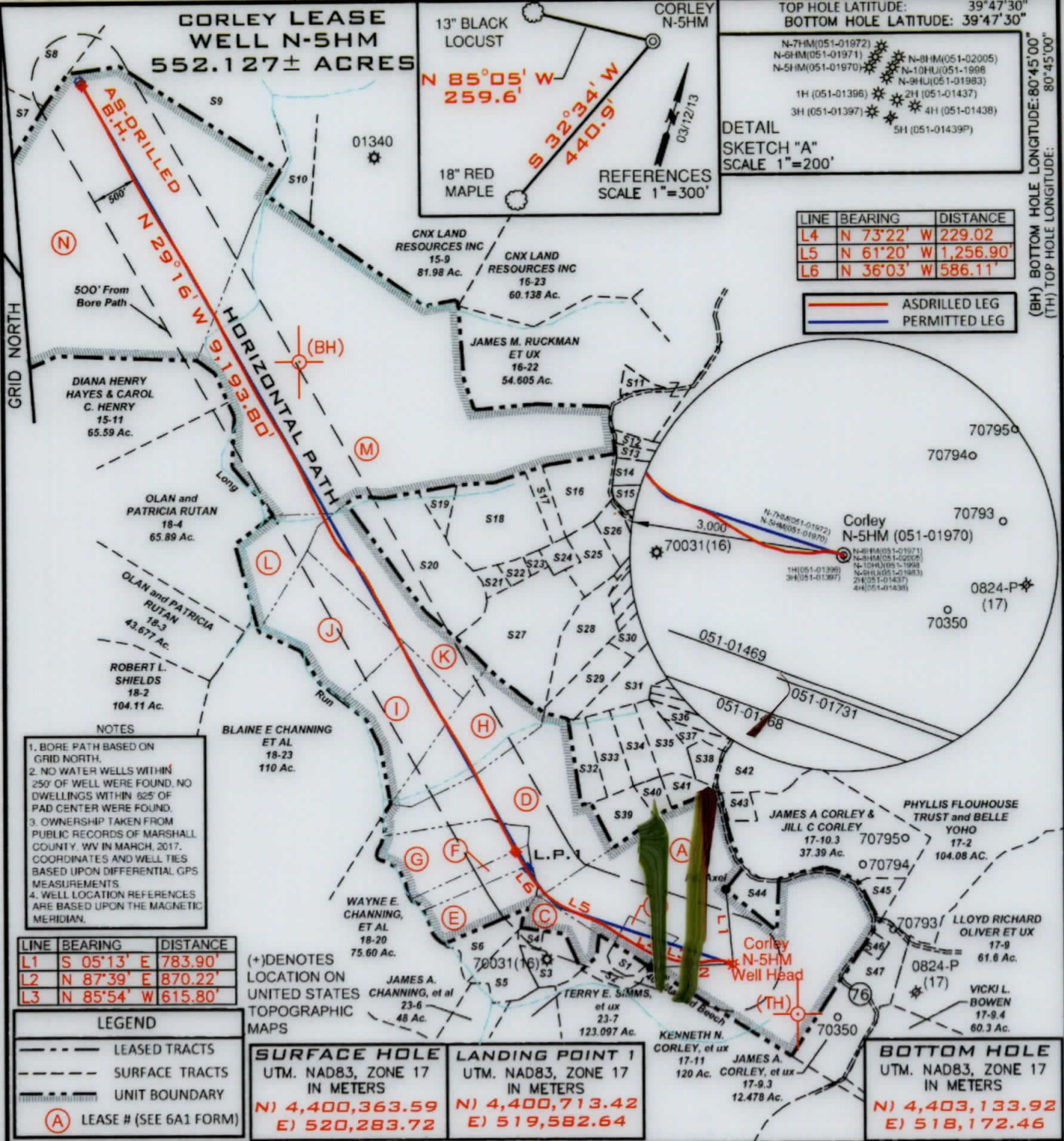
CORLEY LEASE WELL N-5HM
552.127± ACRES



TOP HOLE LATITUDE: 39°47'30"
BOTTOM HOLE LATITUDE: 39°47'30"
N-7HM(051-01972) N-8HM(051-01971) N-9HM(051-01970) N-10HM(051-01983) N-11HM(051-01983) N-12HM(051-01983) N-13HM(051-01983) N-14HM(051-01983) N-15HM(051-01983) N-16HM(051-01983) N-17HM(051-01983) N-18HM(051-01983) N-19HM(051-01983) N-20HM(051-01983) N-21HM(051-01983) N-22HM(051-01983) N-23HM(051-01983) N-24HM(051-01983) N-25HM(051-01983) N-26HM(051-01983) N-27HM(051-01983) N-28HM(051-01983) N-29HM(051-01983) N-30HM(051-01983) N-31HM(051-01983) N-32HM(051-01983) N-33HM(051-01983) N-34HM(051-01983) N-35HM(051-01983) N-36HM(051-01983) N-37HM(051-01983) N-38HM(051-01983) N-39HM(051-01983) N-40HM(051-01983) N-41HM(051-01983) N-42HM(051-01983) N-43HM(051-01983) N-44HM(051-01983) N-45HM(051-01983) N-46HM(051-01983) N-47HM(051-01983) N-48HM(051-01983) N-49HM(051-01983) N-50HM(051-01983) N-51HM(051-01983) N-52HM(051-01983) N-53HM(051-01983) N-54HM(051-01983) N-55HM(051-01983) N-56HM(051-01983) N-57HM(051-01983) N-58HM(051-01983) N-59HM(051-01983) N-60HM(051-01983) N-61HM(051-01983) N-62HM(051-01983) N-63HM(051-01983) N-64HM(051-01983) N-65HM(051-01983) N-66HM(051-01983) N-67HM(051-01983) N-68HM(051-01983) N-69HM(051-01983) N-70HM(051-01983) N-71HM(051-01983) N-72HM(051-01983) N-73HM(051-01983) N-74HM(051-01983) N-75HM(051-01983) N-76HM(051-01983) N-77HM(051-01983) N-78HM(051-01983) N-79HM(051-01983) N-80HM(051-01983) N-81HM(051-01983) N-82HM(051-01983) N-83HM(051-01983) N-84HM(051-01983) N-85HM(051-01983) N-86HM(051-01983) N-87HM(051-01983) N-88HM(051-01983) N-89HM(051-01983) N-90HM(051-01983) N-91HM(051-01983) N-92HM(051-01983) N-93HM(051-01983) N-94HM(051-01983) N-95HM(051-01983) N-96HM(051-01983) N-97HM(051-01983) N-98HM(051-01983) N-99HM(051-01983) N-100HM(051-01983)

LINE	BEARING	DISTANCE
L4	N 73°22' W	229.02
L5	N 61°20' W	1,256.90'
L6	N 36°03' W	586.11'

ASDRILLED LEG
PERMITTED LEG



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

LINE	BEARING	DISTANCE
L1	S 05°13' E	783.90'
L2	N 87°39' E	870.22'
L3	N 85°54' W	615.80'

LEGEND

- LEASED TRACTS
- SURFACE TRACTS
- UNIT BOUNDARY
- (A) LEASE # (SEE 6A1 FORM)

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,363.59
E) 520,283.72

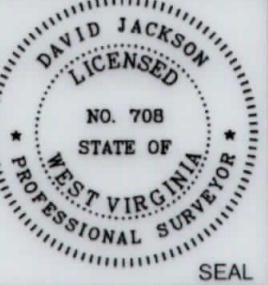
LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,400,713.42
E) 519,582.64

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,403,133.92
E) 518,172.46

FILE NUMBER _____
DRAWING NUMBER CORLEY_WP_N-5HM
SCALE 1" = 1500'
MINIMUM DEGREE OF ACCURACY 1/200
PROVEN SOURCE OF ELEVATION SUBMETER MAPPING
GRADE GPS

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

P.S. 708
David L Jackson
JACKSON SURVEYING INC.
P.O. Box 1460
Clarksburg, WV 26302
304-623-5851



DATE: OCTOBER 22, 2019
OPERATORS WELL NO. CORLEY N-5HM
API WELL NO. 47-051-01970
STATE COUNTY PERMIT

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

LOCATION ELEVATION 1255.2' WATERSHED (HUC 10) Fish Creek
DISTRICT Franklin COUNTY Marshall
QUADRANGLE Powhatan Point 7.5' LEASE NUMBER SEE 6A1 Form

SURFACE OWNER James A. & Jill C. Corley, et al ACREAGE 92.61
OIL & GAS ROYALTY OWNER James A. & Jill C. Corley, et al LEASE ACREAGE 92.61
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___
PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE (SPECIFY) AS-DRILLED
PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
TARGET FORMATION Marcellus ESTIMATED DEPTH TVD: 6,602' TMD: 16,769'

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

COUNTY NAME
PERMIT

PG 2 OF 2 **CORLEY LEASE**
WELL N-5HM
552.127± ACRES

GRID NORTH

Number	TAX MAP -PARCEL	ADJOINER OWNER	ACRES
S1	17-12	James A. & Jill C. Corley	3.33
S2	17-12.1	Williams Ohio Valley Midstream LLC	1.67
S3	18-13.8	Lori D. Carpenter	5.545
S4	18-29	Carl G Berg	5.319
S5	18-32	Kenneth E Rastall	5.335
S6	18-32.1	Lori D. Carpenter	1.165
S7	15-15	Robert L. Shields et al	4.90
S8	15-1	Marcus Sharp & David Schlabach	121.0
S9	15-14	John David Petrock et ux	25.0
S10	15-13	CNX Land Resources Inc.	11.0
S11	16-22.1	Heather Burgy	1.465
S12	18-56	William E. O'Hara	3.965
S13	18-55	William E. O'Hara	3.202
S14	18-28	Dotson Harrison et ux	6.36
S15	18-28.1	Carol Diane Helmick	5.696
S16	18-11	Benjamin Robinson	10.883
S17	18-11.2	Edward Lee Burge Jr.	2.0
S18	18-11.1	Edward Lee Burge Jr.	18.0
S19	18-15	Edward Lee Burge Jr.	2.495
S20	18-15.4	Edward Lee Burge Jr.	22.34
S21	18-10.1	David V Anderson Et Ux	1.65
S22	18-10.2	David V Anderson Et Ux	1.377
S23	18-10	David & Nancy Anderson	0.907
S24	18-12	William L Wayne Et Ux	2.270
S25	18-15.1	Jason Blair	5.948
S26	18-15.2	Edward L. Burge	4.171
S27	18-15.5	Darrell & Teresa Boley	23.547
S28	18-13.3	Robert G Closterman	9.813
S29	18-17	Michael Fincham & Kezia Winters	6.555
S30	18-14	Michael Fincham & Kezia Winters	6.386
S31	18-13.1	Cory A Holt	9.248
S32	18-34	Jodi A & Gary A Hall	5.002
S33	18-13.13	Glenn E & Sandra K Whisler	5.59
S34	18-13.6	Glenn Eugene Whisler Et Ux	5.384
S35	18-13.7	Victor W. Woods Jr. & Jessica L. Woods	5.255
S36	18-61	Roger White Jr.	2.984
S37	18-57	Marvin Roberts	2.228
S38	18-18	Linda J. Coen	3.0
S39	18-33	Sandra K & Glenn E Whisler	5.343
S40	18-13.14	Glenn E. & Sandra K. Whisler	2.116
S41	18-48	Marvin Dean Roberts et ux & Brad & Bridget Williams	2.920
S42	18-19	Roger D. White Jr.	10.0
S43	17-10.4	Ron & Winnie Murrin et al	2.01
S44	17-10.1	James A. & Jill C. Corley	4.51
S45	17-10.2	Sidney Pozell Et Ux Ests	2.6
S46	17-9.1	Jeri J White	1.0

PERMITTED

SURFACE HOLE

UTM. NAD83, ZONE 17
IN METERS

N) 4,400,363.49
E) 520,283.68

LANDING POINT 1

UTM. NAD83, ZONE 17
IN METERS

N) 4,400,660.28
E) 519,622.23

BOTTOM HOLE

UTM. NAD83, ZONE 17
IN METERS

N) 4,403,147.15
E) 518,165.59



P.S.
708

David L Jackson



TUG HILL
OPERATING

OPERATOR'S

WELL #: Corley N-5HM

DISTRICT: Franklin

COUNTY: Marshall

STATE: WV

API #: 47-051-01970

WELL PLAT

PAGE 2 OF 2

DATE: 10/22/2019