

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

RECEIVED
Office of Oil and Gas

AUG 27 2021

WV Department of
Environmental Protection

API 47 - 051 - 02063 County Marshall District Franklin
Quad New Martinsville 7.5' Pad Name Simms Field/Pool Name _____
Farm name Terry E. & Deborah Simms Well Number Hillrock S-8HM
Operator (as registered with the OOG) Tug Hill Operating, LLC
Address 380 Southpointe Boulevard, Plaza II, Suite 200 City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,399,591.96 Easting 519,682.50
Landing Point of Curve Northing 4,399,491.25 Easting 519,740.00
Bottom Hole Northing 4,396,492.02 Easting 521,474.64

Elevation (ft) 1,219.4' 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

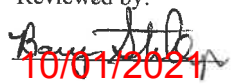
Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

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 8/10/2018 Date drilling commenced conduc. 8/25/19 tophole 2/8/20 Date drilling ceased 3/6/2020
Date completion activities began 5/23/2021 Date completion activities ceased 6/8/2021
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 830' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1365' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 724-730', 824-830' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

10/01/2021

API 47-051 - 02063 Farm name Terry E. & Deborah Simms Well number Hillrock S-8HM

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"	956'	NEW	54.5#	N/A	Y
Coal	17 1/2"	13 3/8"	956'	NEW	54.5#	N/A	Y
Intermediate 1	12 1/4"	9 5/8"	2,820'	NEW	36#	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 3/4"	5 1/2"	18,296'	NEW	20#	N/A	Y
Tubing		2 3/8"	9,148'	NEW	4.7#	N/A	Y
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	400	15.6	1.18	472	0	8
Surface	A	1,036	15.6	1.18	1,223	0	8
Coal	A	1,036	15.6	1.18	1,223	0	8
Intermediate 1	A	988	15.6	1.18	1,166	0	8
Intermediate 2							
Intermediate 3							
Production	A	4,371	14.5	1.16	5,088	0	8
Tubing							

Drillers TD (ft) 18,357' Loggers TD (ft) n/a
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

Kick off depth (ft) 5,809'

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 - 02063 Farm name Terry E. & Deborah Simms Well number Hillrock S-8HM

PERFORATION RECORD

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

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
	*attached							

Please insert additional pages as applicable.

API 47- 051 - 02063 Farm name Terry E. & Deborah Simms Well number Hillrock S-8HM

PRODUCING FORMATION(S)	DEPTHS	
MARCELLUS	6538'-6637'	TVD 6886'-18357' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1300 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		
*attached					

Please insert additional pages as applicable.

Drilling Contractor Precision
Address 10350 Richmond Avenue, Suite 700 City Houston State TX Zip 77067

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

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

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

Please insert additional pages as applicable.

Completed by Amy L. Morris Telephone 304-376-0111
Signature Amy L. Morris Title Permitting Specialist - Appalachia Region Date 8/20/2021

**HILLROCK S-8HM
PEFORATION RECORD**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD. Ft.	Number of Perforations	Formation(s)
1	5/23/2021	17,981	18,126	48	Marcellus
2	5/22/2021	17,805	17,952	48	Marcellus
3	5/23/2021	17,629	17,775	48	Marcellus
4	5/23/2021	17,452	17,599	48	Marcellus
5	5/23/2021	17,276	17,423	48	Marcellus
6	5/23/2021	17,100	17,247	48	Marcellus
7	5/24/2021	16,924	17,071	48	Marcellus
8	5/24/2021	16,748	16,894	48	Marcellus
9	5/24/2021	16,571	16,718	48	Marcellus
10	5/24/2021	16,395	16,542	48	Marcellus
11	5/25/2021	16,219	16,366	48	Marcellus
12	5/25/2021	16,043	16,190	48	Marcellus
13	5/25/2021	15,867	16,013	48	Marcellus
14	5/25/2021	15,690	15,837	48	Marcellus
15	5/26/2021	15,514	15,661	48	Marcellus
16	5/26/2021	15,338	15,485	48	Marcellus
17	5/26/2021	15,162	15,309	48	Marcellus
18	5/26/2021	14,986	15,132	48	Marcellus
19	5/27/2021	14,809	14,956	48	Marcellus
20	5/27/2021	14,633	14,780	48	Marcellus
21	5/27/2021	14,457	14,604	48	Marcellus
22	5/28/2021	14,281	14,428	48	Marcellus
23	5/28/2021	14,105	14,251	48	Marcellus
24	5/28/2021	13,928	14,075	48	Marcellus
25	5/28/2021	13,752	13,899	48	Marcellus
26	5/29/2021	13,576	13,723	48	Marcellus
27	5/29/2021	13,400	13,547	48	Marcellus
28	5/29/2021	13,224	13,370	48	Marcellus
29	5/29/2021	13,047	13,194	48	Marcellus
30	5/30/2021	12,871	13,018	48	Marcellus
31	5/30/2021	12,695	12,842	48	Marcellus
32	5/30/2021	12,519	12,666	48	Marcellus
33	5/31/2021	12,343	12,489	48	Marcellus
34	5/31/2021	12,166	12,313	48	Marcellus
35	5/31/2021	11,990	12,137	48	Marcellus
36	5/31/2021	11,814	11,961	48	Marcellus
37	6/1/2021	11,638	11,785	48	Marcellus
38	6/1/2021	11,462	11,608	48	Marcellus
39	6/1/2021	11,285	11,432	48	Marcellus
40	6/2/2021	11,109	11,256	48	Marcellus
41	6/2/2021	10,933	11,080	48	Marcellus

10/01/2021

42	6/2/2021	10,757	10,904	48	Marcellus
43	6/3/2021	10,581	10,727	48	Marcellus
44	6/3/2021	10,404	10,551	48	Marcellus
45	6/3/2021	10,228	10,375	48	Marcellus
46	6/3/2021	10,052	10,199	48	Marcellus
47	6/4/2021	9,876	10,023	48	Marcellus
48	6/4/2021	9,700	9,846	48	Marcellus
49	6/4/2021	9,523	9,670	48	Marcellus
50	6/4/2021	9,347	9,494	48	Marcellus
51	6/5/2021	9,171	9,318	48	Marcellus
52	6/5/2021	8,995	9,142	48	Marcellus
53	6/5/2021	8,819	8,965	48	Marcellus
54	6/6/2021	8,642	8,789	48	Marcellus
55	6/6/2021	8,466	8,613	48	Marcellus
56	6/6/2021	8,290	8,437	48	Marcellus
57	6/6/2021	8,114	8,261	48	Marcellus
58	6/7/2021	7,938	8,084	48	Marcellus
59	6/7/2021	7,761	7,908	48	Marcellus
60	6/7/2021	7,585	7,732	48	Marcellus
61	6/8/2021	7,409	7,556	48	Marcellus
62	6/8/2021	7,233	7,380	48	Marcellus
63	6/8/2021	7,057	7,203	48	Marcellus
64	6/8/2021	6,880	7,027	48	Marcellus

10/01/2021

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/23/2021
Job End Date:	6/8/2021
State:	West Virginia
County:	Marshall
API Number:	47-051-02063-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Hillrock S 8HM
Latitude:	39.74600178
Longitude:	-80.77026474
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,574
Total Base Water Volume (gal):	22,420,650
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Tug Hill Operating	Carrier/Base Fluid	Water	7732-18-5	100.00000	86.56626	None
Sand (40/70 White Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	8.81712	None
Sand (100 Mesh Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	3.04551	None
Sand (30/50 White Proppant)	ProFrac	Proppant	Silica Substrate	14808-60-7	100.00000	1.18941	None
Hydrochloric Acid (7.5%)	PVS	Acidizing	Water	7732-18-5	85.00000	0.22855	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.09949	None
StimStream FR 9800	Chemstream	Friction Reducer	Butene, homopolymer	9003-29-6	25.00000	0.01650	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.01650	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00198	None

MC MX 9-4743	Multi-Chem	Biocide					
			Sodium Nitrate	7631-99-4	60.00000	0.02196	None
LD-7750W	Multi-Chem	Scale Inhibitor					
			Methanol	67-56-1	60.00000	0.00502	None
			Phosphonic Acid Salt	Proprietary	5.00000	0.00042	None
ProFE 105	ProFrac	Iron Control					
			Citric Acid	77-92-9	100.00000	0.00101	None
ProHib 100	ProFrac	Acid Inhibitor					
			2-Propyn-1-ol compound w/ methyloxirane	38172-91-7	15.00000	0.00013	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Water	7732-18-5	85.00000	0.22855	
			Butene, homopolymer	9003-29-6	25.00000	0.01650	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00198	
			Phosphonic Acid Salt	Proprietary	5.00000	0.00042	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

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

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

HILLROCK S-8HM
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	89	8454	5598	4,518	445120	8,754	0
2	90	7900	6312	4,826	442840	8,523	0
3	89	7682	5931	4,896	443900	8,795	0
4	89	7746	5897	4,851	449540	8,720	0
5	90	7962	5789	5,135	445240	8,517	0
6	90	7772	5601	5,401	444220	8,531	0
7	89	7702	5976	4,296	447460	8,679	0
8	90	7665	5895	4,919	436320	8,404	0
9	90	7530	5718	4,909	440540	8,434	0
10	90	7593	5215	4,624	440460	8,466	0
11	89	7562	5914	5,162	443600	8,448	0
12	89	7462	5512	5,062	442340	8,426	0
13	90	7580	5922	5,371	445560	8,621	0
14	90	7756	5571	4,842	445980	8,441	0
15	90	7599	5700	5,479	441080	8,413	0
16	88	7409	5609	5,067	437540	8,440	0
17	90	7522	5764	5,131	436980	8,273	0
18	90	7425	5721	4,855	440400	8,363	0
19	89	7427	5729	5,068	435820	8,279	0
20	88	7305	5453	5,279	435800	8,305	0
21	90	7422	5853	5,031	451780	8,428	0
22	90	7379	5614	5,316	435000	8,220	0
23	89	7276	5374	5,477	444590	8,508	0
24	89	7328	5626	5,417	437420	9,096	0
25	90	7543	5338	4,911	437380	8,989	0
26	89	7454	5500	4,800	435920	8,208	0
27	89	7481	5796	5,391	434500	8,194	0
28	90	7506	5273	5,278	445380	8,367	0
29	90	7587	5827	4,705	443720	8,442	0
30	90	7365	5249	5,101	448580	8,308	0
31	89	7273	5587	4,960	446360	8,363	0
32	90	7113	5542	4,974	442760	8,319	0

Stage No.	Ave. Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
33	90	7261	5347	4,788	443800	8,414	0
34	90	7230	5615	4,971	438120	8,212	0
35	89	7090	5751	4,856	424540	8,045	0
36	90	7019	5710	4,901	437360	8,204	0
37	89	6974	5146	4,997	436180	8,110	0
38	90	6992	5658	5,137	440600	8,136	0
39	89	6909	5526	5,178	438120	8,176	0
40	89	7079	5893	4,154	395080	9,981	0
41	89	6703	5274	5,711	438900	8,188	0
42	89	6715	6302	4,593	440100	8,171	0
43	89	6735	6274	4,968	446380	8,305	0
44	89	6702	5958	5,016	444000	8,165	0
45	89	6719	5511	4,803	446660	8,219	0
46	90	6661	5357	5,427	445920	8,194	0
47	89	6848	5303	4,596	445780	8,205	0
48	88	6790	5521	4,890	440600	8,147	0
49	89	6762	5670	4,982	445540	8,213	0
50	89	6588	5564	4,845	448300	8,279	0
51	89	6638	5598	5,508	434380	8,065	0
52	89	6815	5958	5,436	437920	7,842	0
53	89	6839	5619	5,299	463940	8,438	0
54	89	6789	5916	4,763	403360	7,730	0
55	89	6585	5507	5,242	447040	8,199	0
56	89	6345	5362	5,012	439740	8,055	0
57	89	6451	5590	5,274	445240	8,090	0
58	89	6609	5195	5,552	446700	8,137	0
59	88	6460	5853	5,613	441640	8,017	0
60	88	6467	5304	5,387	438980	8,061	0
61	88	6443	5718	5,452	438440	8,152	0
62	87	6320	5140	5,018	447840	8,164	0
63	88	6351	5467	6,181	446640	8,073	0
64	89	6495	5792	4,947	438120	8,164	0

HILLROCK S-8HM

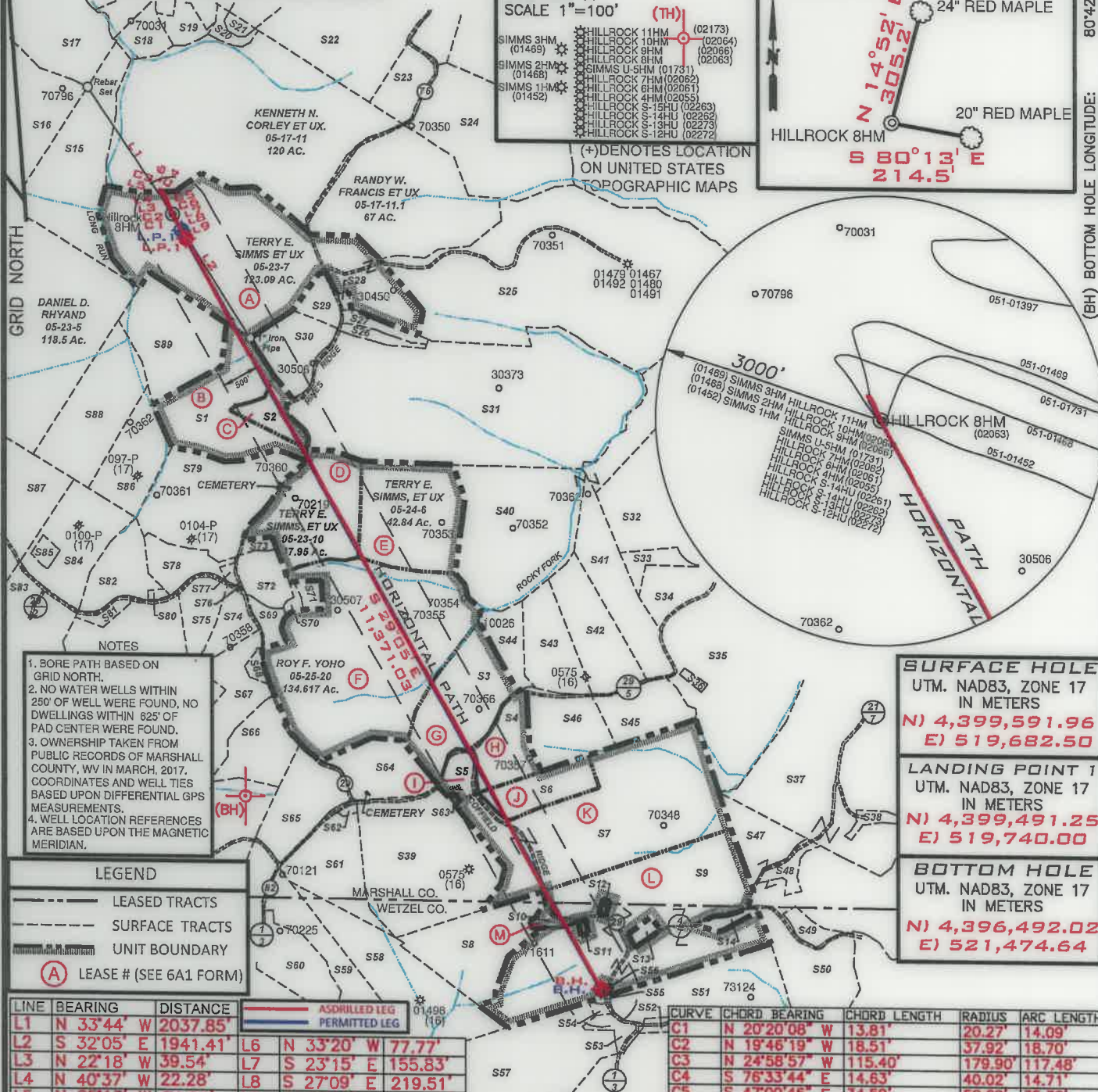
LITHOLOGY/FORMATION	TOP DEPTH IN FT/ Name TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUQANTITY AND TYPE OF FLUID
Maxton	1931	2025	1932	2026	Sandstone
Big Lime	2025	2067	2026	2068	Limestone
Big Injun	2067	2384	2068	2386	Sandstone
Weir	2384	2599	2386	2601	Sandstone
Berea	2599	2841	2601	2844	Sandstone
Gordon	2841	2907	2844	2910	Sandstone
Fifty Foot	2907	3507	2910	3511	Sandstone
Speechley	3507	4921	3511	4933	Sandstone
Benson	4921	5297	4933	5311	Sandstone
Alexander	5297	5899	5311	5916	Siltstone
Rhinestreet	5899	6317	5916	6386	Black shale
Middlesex	6317	6392	6386	6505	Black shale
Geneseo/Burkett	6392	6418	6505	6553	Black shale
Tully	6418	6456	6553	6625	Limestone
Hamilton	6456	6511	6625	6760	Grey shale
Marcellus	6511	-	6760	-	Black shale

HILLROCK LEASE WELL 8HM 659.406± ACRES

DETAIL SKETCH "A"
SCALE 1"=100'

(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

REFERENCES SCALE 1"=400'



- NOTES**
1. BORE PATH BASED ON GRID NORTH.
 2. NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 825' OF PAD CENTER WERE FOUND.
 3. OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN MARCH, 2017. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
 4. WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.

SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,399,591.96
E) 519,682.50

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
N) 4,399,491.25
E) 519,740.00

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
N) 4,396,492.02
E) 521,474.64

LEGEND

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

LINE	BEARING	DISTANCE	AS DRILLED LEG	PERMITTED LEG
L1	N 33°44' W	2037.85'		
L2	S 32°05' E	1941.41'		
L3	N 22°18' W	39.54'		
L4	N 40°37' W	22.28'		
L5	N 25°13' W	71.26'		
L6	N 33°20' W	77.77'		
L7	S 23°15' E	155.83'		
L8	S 27°09' E	219.51'		
L9	S 28°55' E	142.05'		

CURVE	CHORD BEARING	CHORD LENGTH	RADIUS	ARC LENGTH
C1	N 20°20'08" W	13.81'	20.27'	14.09'
C2	N 19°46'19" W	18.51'	37.92'	18.70'
C3	N 24°58'57" W	115.40'	179.90'	117.48'
C4	S 76°33'44" E	14.63'	40.02'	14.71'
C5	S 47°00'46" E	34.59'	50.89'	35.30'
C6	S 25°04'12" E	178.57'	741.54'	179.01'

FILE NUMBER _____

DRAWING NUMBER HILLROCK_WP_8HM

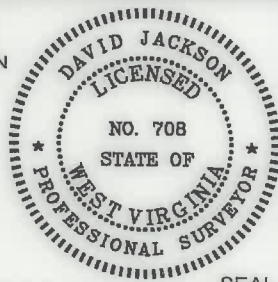
SCALE 1" = 2000'

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

David L Jackson



JACKSON SURVEYING INC.
P.O. Box 1460
Clarksburg, WV 26302
304-623-5851

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET, SE
CHARLESTON, WV 25304

DATE: APRIL 07, 2021

OPERATORS WELL NO. HILLROCK 8HM

API WELL NO. 47-051-02063

STATE WV COUNTY MARSHALL PERMIT _____

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

LOCATION ELEVATION 1219.4' WATERSHED (HUC 10) FISH CREEK

DISTRICT FRANKLIN COUNTY MARSHALL

QUADRANGLE NEW MARTINSVILLE 7.5' LEASE NUMBER _____ SEE WW-6A1 Form

SURFACE OWNER TERRY E. & DEBORAH SIMMS ACREAGE 10.01 **10/01/2021**

OIL & GAS ROYALTY OWNER TERRY E. & DEBORAH L. SIMMS, ET AL - SEE WW-6A1 FORM LEASE ACREAGE 319.91

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: 6,637' TMD: 18,357'

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

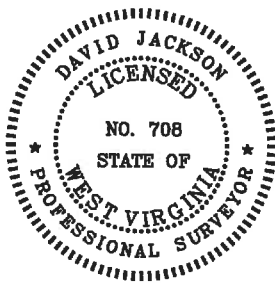
COUNTY NAME
PERMIT

form wv6

**HILLROCK LEASE
WELL BHM
659.406± ACRES**

Number	TAX MAP-PARCEL	ADJOINER OWNER	ACRES
S1	05-24-5.4	Thomas V. Tuttle, et ux	38.224
S2	05-24-5.3	Thomas V. Tuttle, et ux	8.543
S3	05-25-01	Michael L. Mason	35.43
S4	05-25-13	Nicolas J. & Debra L. Klug	16.014
S5	05-25-13.2	David A. Klug	5.89
S6	05-25-12.1	Kent & Betty Mason	15.0
S7	05-25-12	Marion Parsons Jr., et al	85.16
S8	05-25-11.4	Edward W. Klug, et ux	32.787
S9	05-25-11.2	James W. Klug	114.305
S10	05-25-11.1	Edward W. Klug et ux	2.343
S11	12-03-44	James A. & Jo C. Estep	1.10
S12	12-03-47	Wetzel County Emergency Ambulance	0.50
S13	12-03-43	Adam W. Ferrell & Brittany M. Loy	1.97
S14	12-03-42	J. M. Klug	2.617
S15	05-23-06	James A. Channing, et al	48.0
S16	05-18-21	Curtis E. & Michelle J. Hall	43.119
S17	05-18-20	Wayne E. Channing, et al	75.6
S18	05-18-31	Kenneth E. Rastall	6.94
S19	05-18-32	Kenneth E. Rastall	5.335
S20	05-17-12	James A. & Jill C. Corley	3.33
S21	05-17-12.1	Williams Ohio Valley Midstream, LLC	1.67
S22	05-17-10	James A. Corley, et al	92.61
S23	05-17-9.3	James A. Corley, et ux	12.478
S24	05-17-9.4	Vicki L. Bowen	60.3
S25	05-24-1	Linda L. Hendrickson	175.0
S26	05-24-5.2	James D. Watkins, et ux	3.151
S27	05-24-5.1	James D. Watkins, et ux	4.6
S28	05-23-7.1	H.J. Weigand, et ux	0.549
S29	05-23-7.2	H.J. Weigand, et ux	6.354
S30	05-24-5.5	H.J. Weigand, et ux	17.194
S31	05-24-5	Robert C. Francis et ux (Life)	145.788
S32	05-24-3.2	T.H. Exploration II, LLC	49.0
S33	05-24-3.1	T.H. Exploration II, LLC	5.50
S34	05-25-2.2	John G. Klug, Sr. et ux	10.0
S35	05-25-2	James W. Klug	122.3
S36	05-25-2.1	Nancy Jackson	1.0
S37	05-25-3	S.D. Fertitta, et ux	181.548
S38	05-25-3.1	S.D. Fertitta, et ux	3.022
S39	05-25-14.1	Bernard R. Weigand, et ux	65.0
S40	05-24-04	Terry E. Simms, et ux	84.05
S41	05-25-1.4	Samantha J. & Philip A. Namlik	100.7235
S42	05-25-1.3	Michael E. & Annie A. Chapman	26.2
S43	05-25-1.2	William Jr. & Andrea J. Dubiel	20.1
S44	05-25-1.1	Ryan A. & Jacqueline E. Layman	9.79
S45	05-25-13.3	William M. Sr. & Cynthia A. Ferda	17.21

Number	TAX MAP-PARCEL	ADJOINER OWNER	ACRES
S46	05-25-1.5	Ryan J. Bratton	21.35
S47	05-25-10	Terry L. & Tammy J. Kirkland	18.75
S48	05-25-10.1	Terry L. & Tammy J. Kirkland (Life)	5.250
S49	12-03-41	Carl L. Kirkland	4.102
S50	12-03-41.1	Terry L. & Tammy J. Kirkland	74.138
S51	12-03-4	Albert L. & Mary Hohman et al	85.0
S52	12-03-02	Robert Lee & Diana G. Smith	2.48
S53	12-03-4.3	Joseph P. & Barbara A. Cain	3.619
S54	12-03-4.6	Steven P. Wayman	1.009
S55	12-03-4.5	Hazel M. Blair	0.451
S56	12-03-01	James W. Klug	0.375
S57	12-03-4.7	Joseph P. & Barbara A. Cain	67.3
S58	12-02-14	David L. Cunningham	56.23
S59	12-02-14.2	Donald Lee Anderson, et al	4.2
S60	12-02-14.1	Richard Joseph Otte, et ux	1.25
S61	15-25-16.1	David L. Cunningham	6.34
S62	05-25-16.2	Rodney J. Loy	1.087
S63	05-25-13.1	Morgan Chad Gump, et ux	0.9
S64	05-25-14	Roy F. Yoho	23.0
S65	05-25-16	Emily Jones Irrevocable Trust	23.5
S66	05-25-17	Emily Jones Irrevocable Trust	22.79
S67	05-25-18	Joseph Johnson, et ux (Life)	37.746
S68	05-25-19	Joseph Johnson, et ux (Life)	1.973
S69	05-25-20.3	James A. & Jo C. Estep	4.49
S70	05-25-20.2	James M. Zombotti	1.347
S71	05-25-20.1	James M. Zombotti	2.746
S72	05-23-11	Roy F. Yoho	3.445
S73	05-23-11.7	Bryan L. Huggins	1.835
S74	05-23-11.5	Roy F. Yoho	9.25
S75	05-23-11.3	Colin R. Yoho	11.29
S76	05-23-11.6	T.H. Exploration II, LLC & Atinum Marcellus I, LLC	0.094
S77	05-23-11.2	Evelyn Hudson	1.154
S78	05-23-11.4	Evelyn Hudson	10.879
S79	05-23-11.1	John H. & Sonya D. Holliday	46.482
S80	05-23-13.1	James R. & Pamela J. Ferrell	0.7625
S81	05-23-12	Mark A. Yoho	3.05
S82	05-23-13	Linda D. Greathouse	14.24
S83	05-23-9.1	John W. Van Orden et ux	23.376
S84	05-23-9.2	Linda D. Greathouse	25.58
S85	05-23-9.4	Jackson R. Sr. & Deanna L. Davis	2.087
S86	05-23-9.3	Linda D. Greathouse	17.5
S87	05-23-14	Dominion Transmission, Inc.	59.5
S88	05-23-08	Carl David & Suzanne L. Guseman	29.5
S89	05-23-8.1	William & Virginia Roupe	34.0



P.S. 708

David L Jackson

SURFACE HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,399,591.75 E) 519,682.61
LANDING POINT 1 UTM. NAD83, ZONE 17 IN METERS N) 4,399,524.62 E) 519,720.46
BOTTOM HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,396,490.73 E) 521,471.85

10/01/2021



**TUG HILL
OPERATING**

OPERATOR'S
WELL #: HILLROCK 8HM
DISTRICT: Franklin
COUNTY: Marshall
STATE: WV
API #: 47-051-02063

WELL PLAT
PAGE 2 OF 2
DATE: 04/07/2021