

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

API 47 - 103 - 03369 County WETZEL District PROCTOR
Quad WILEYVILLE, WV Pad Name WILLIAM RITCHEA-WTZ-PAD11 Field/Pool Name VICTORY FIELD WET
Farm name WILLIAM D. RITCHEA & SHIRLEY E. RITCHEA Well Number WILLIAM RITCHEA WTZ 6H
Operator (as registered with the OOG) SWN PRODUCTION COMPANY, LLC
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,391,141.997 Easting 529,222.818
Landing Point of Curve Northing 4,390,798.517 Easting 528,860.983
Bottom Hole Northing 4,389,096.794 Easting 530,723.196

Elevation (ft) 1563.4' 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

RECEIVED
Office of Oil and Gas
SEP 01 2021

WV Department of
Environmental Protection

Date permit issued 1/26/2021 Date drilling commenced 4/13/2021 Date drilling ceased 4/25/2021
Date completion activities began 5/13/2021 Date completion activities ceased 6/11/2021
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 541' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1,556' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1,492' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
[Signature]
10/01/2021

API 47- 103 - 03369 Farm name WILLIAM D. RITCHEA & SHIRLEY E. RITCHEA Well number WILLIAM RITCHEA WTZ 6H

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	24	20	126	NEW	J-55/94#		Y
Surface	17.5	13.375	591	NEW	J-55/54.5#		Y; 39 BBLs
Coal							
Intermediate 1	12.25	9.625	2,962	NEW	J-55/36#		Y; 30 BBLs
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	16,680	NEW	P-110/20#		Y
Tubing							
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	CLASS A	GROUT TO SURFACE				SURFACE	24
Surface	CLASS A	586	15.60	1.19	697.34	SURFACE	8
Coal							
Intermediate 1	CLASS A	975	15.60	1.18	1,150.50	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	3,343	15.00	1.23	4,111.89	SURFACE	24
Tubing							

Drillers TD (ft) 16,680' Loggers TD (ft) 16,680'
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6,910'

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 _____

SURFACE: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 INTERMEDIATE: 24 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 PRODUCTION: 181 CENTRALIZERS - EVERY THIRD JOINT FROM SURFACE TO TOP OF CURVE, THEN EVERY JOINT UNTIL TD

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 _____

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/13/2021
Job End Date:	6/3/2021
State:	West Virginia
County:	Wetzel
API Number:	47-103-03369-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	WILLIAM RITCHEA WTZ 6
Latitude:	39.66959489
Longitude:	-80.65928770
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,630
Total Base Water Volume (gal):	14,361,826
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
Base Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	89.90319	Density = 8.345
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	85.00000	0.39147	

Ecopol-FEAC	SWN Well Services	Iron Control					
				Listed Below			
Econo-CI200	SWN Well Services	Corrosion Inhibitor					
				Listed Below			
Plexaid 655WG	SWN Well Services	Scale Inhibitor					
				Listed Below			
Tolicide PS 50A	SWN Well Services	Biocide					
				Listed Below			
HCL	SWN Well Services	Solvent					
				Listed Below			
SWN FRW-11LC	SWN Well Services	Friction Reducer					
				Listed Below			
Sand	SWN Well Services	Proppant					
				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	9.59913	
			Hydrochloric Acid	7647-01-0	15.00000	0.04873	
			Petroleum Distillates, Hydrotreated	64742-47-8	25.00000	0.03830	
			Tetrakis	55566-30-8	55.00000	0.00612	
			Glycerin	56-81-5	50.00000	0.00313	

			Ammonium Chloride	12125-02-9	2.00000	0.00306	
			Alcohols, C12-1, ethoxylated	68551-12-2	1.50000	0.00230	
			Oleic Acid Diethanolamide	93-83-4	1.50000	0.00230	
			Acetic Acid	64-19-7	37.50000	0.00065	
			Diethylenetriamine penta	15827-60-8	10.00000	0.00063	
			Methanol	67-56-1	80.00000	0.00040	
			Citric Acid	77-92-9	22.50000	0.00039	
			Acrylic acid terpolymer	397256-50-7	1.00000	0.00011	
			Oxyalkylated fatty acid	68951-67-7	9.67400	0.00005	
			Fatty acids	61790-12-3	5.02700	0.00003	
			Modified thiourea polymer	68527-49-1	4.74600	0.00002	
			Potassium acetate	127-08-2	0.02200	0.00000	
			Formaldehyde	50-00-0	0.00400	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)



Well Name:

William Ritchea WTZ 6H

47103033690000

LITHOLOGY/FORMATION	TOP DEPTH, MD (FT)	TOP DEPTH, TVD (FT)	BOTTOM DEPTH, MD (FT)	BOTTOM DEPTH, TVD (FT)	QUANTITY AND TYPE OF FLUID
Base of Fresh Water	0.00	0.00	541.00	541.00	
Top of Salt Water	1556.00	1556.00	NA	NA	
Pittsburgh Coal	1492.00	1492.00	1499.00	1499.00	
Raven Cliff (ss)	1973.00	1973.00	2507.00	2507.00	
Maxton (ss)	2507.00	2507.00	2663.00	2663.00	
Big Injun (ss)	2663.00	2663.00	2907.00	2907.00	
Berea (siltstone)	3354.00	3247.00	3337.00	3307.00	
Rhinestreet (shale)	7197.00	6890.00	7527.00	7190.00	
Cashaqua (shale)	7527.00	7190.00	7662.00	7299.00	
Middlesex (shale)	7662.00	7299.00	7794.00	7393.00	
Burket (shale)	7794.00	7393.00	7841.00	7421.00	
Tully (ls)	7841.00	7421.00	7883.00	7444.00	
Mahantango (shale)	7883.00	7444.00	8078.00	7529.00	
Marcellus (shale)	8078.00	7529.00	NA	NA	GAS

**WILLIAM RITCHEA WTZ 6H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
1	5/6/2021	16,611	16,514	36
2	5/13/2021	16,480	16,233	32
3	5/14/2021	16,200	15,953	32
4	5/14/2021	15,920	15,673	32
5	5/15/2021	15,640	15,393	32
6	5/15/2021	15,360	15,113	32
7	5/16/2021	15,083	14,833	32
8	5/16/2021	14,800	14,558	32
9	5/17/2021	14,520	14,273	32
10	5/18/2021	14,240	13,993	32
11	5/19/2021	13,960	13,713	32
12	5/21/2021	13,680	13,429	32
13	5/21/2021	13,400	13,153	32
14	5/22/2021	13,120	12,873	32
15	5/23/2021	12,841	12,593	32
16	5/24/2021	12,560	12,313	32
17	5/25/2021	12,280	12,033	24
18	5/26/2021	12,000	11,753	24
19	5/27/2021	11,720	11,473	24
20	5/28/2021	11,440	11,193	24
21	5/28/2021	11,160	10,913	24
22	5/29/2021	10,876	10,633	24
23	5/29/2021	10,600	10,353	24
24	5/30/2021	10,322	10,073	24
25	5/31/2021	10,040	9,793	24
26	6/1/2021	9,760	9,513	24
27	6/1/2021	9,480	9,233	24
28	6/1/2021	9,200	8,953	24
29	6/2/2021	8,920	8,673	24
30	6/2/2021	8,640	8,393	24
31	6/3/2021	8,360	8,113	42

**WILLIAM RITCHEA WTZ 6H
ATTACHMENT 2
STIM REPORT**

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
1	5/13/2021	72.8	7,714	7,589	4,023	176,080	6,035	0
2	5/13/2021	77	7,914	6,125	4,731	420,400	11,587	0
3	5/14/2021	93.6	8,899	6,318	4,905	446,020	12,382	0
4	5/15/2021	88.1	9,070	5,528	8,890	420,780	11,419	0
5	5/15/2021	96.1	8,745	6,755	5,192	418,940	11,659	0
6	5/16/2021	99	9,028	6,130	4,978	424,900	11,600	0
7	5/16/2021	93.7	8,820	6,345	4,902	422,880	11,773	0
8	5/17/2021	96.7	8,894	6,647	5,307	426,880	11,587	0
9	5/18/2021	96.6	9,031	6,601	4,661	403,840	11,518	0
10	5/19/2021	99.9	8,428	5,929	5,156	420,560	11,463	0
11	5/20/2021	97.3	8,856	6,324	5,124	420,150	10,929	0
12	5/21/2021	98.9	8,633	6,349	4,861	399,420	10,966	0
13	5/22/2021	95.1	8,697	6,320	3,988	422,530	11,276	0
14	5/23/2021	97	8,497	6,211	4,435	422,230	11,351	0
15	5/24/2021	99	8,286	6,045	4,607	422,230	11,355	0
16	5/25/2021	94.6	8,994	6,182	5,112	422,780	11,312	0
17	5/25/2021	98.1	8,995	5,832	4,451	421,300	11,079	0
18	5/27/2021	93	8,563	6,312	4,226	422,730	11,356	0
19	5/28/2021	94.7	8,345	6,013	4,062	422,540	10,881	0
20	5/28/2021	99.6	8,964	6,192	4,212	415,220	10,947	0
21	5/29/2021	91.1	8,302	6,534	4,160	423,370	11,228	0
22	5/29/2021	89.3	9,078	6,399	4,109	421,990	10,873	0
23	5/30/2021	96.9	8,816	6,614	3,984	415,360	11,098	0
24	5/30/2021	94.6	8,615	6,615	4,223	419,370	10,879	0
25	5/31/2021	99.4	8,496	6,021	4,261	421,970	11,216	0
26	6/1/2021	99.3	9,061	6,045	4,333	423,110	11,094	0
27	6/1/2021	96.7	8,482	6,074	4,282	423,850	10,983	0
28	6/2/2021	95.3	8,144	5,821	4,438	415,380	10,512	0
29	6/2/2021	98.8	8,452	6,614	4,506	418,620	10,878	0
30	6/3/2021	96.9	8,270	6,330	4,475	421,860	10,578	0
31	6/3/2021	92	7,912	7,021	4,028	419,260	11,289	0

Latitude: 39°42'30"

SURFACE HOLE 9647'

Latitude: 39°40'00"

BOTTOM HOLE 4755'

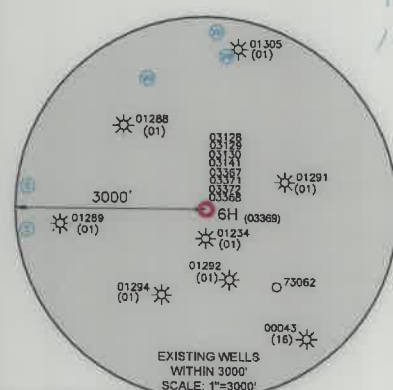
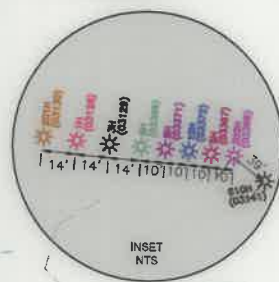
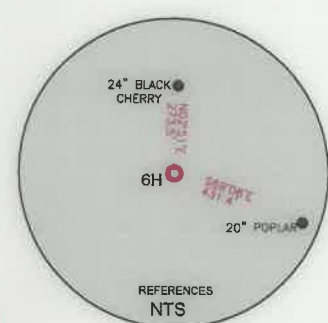
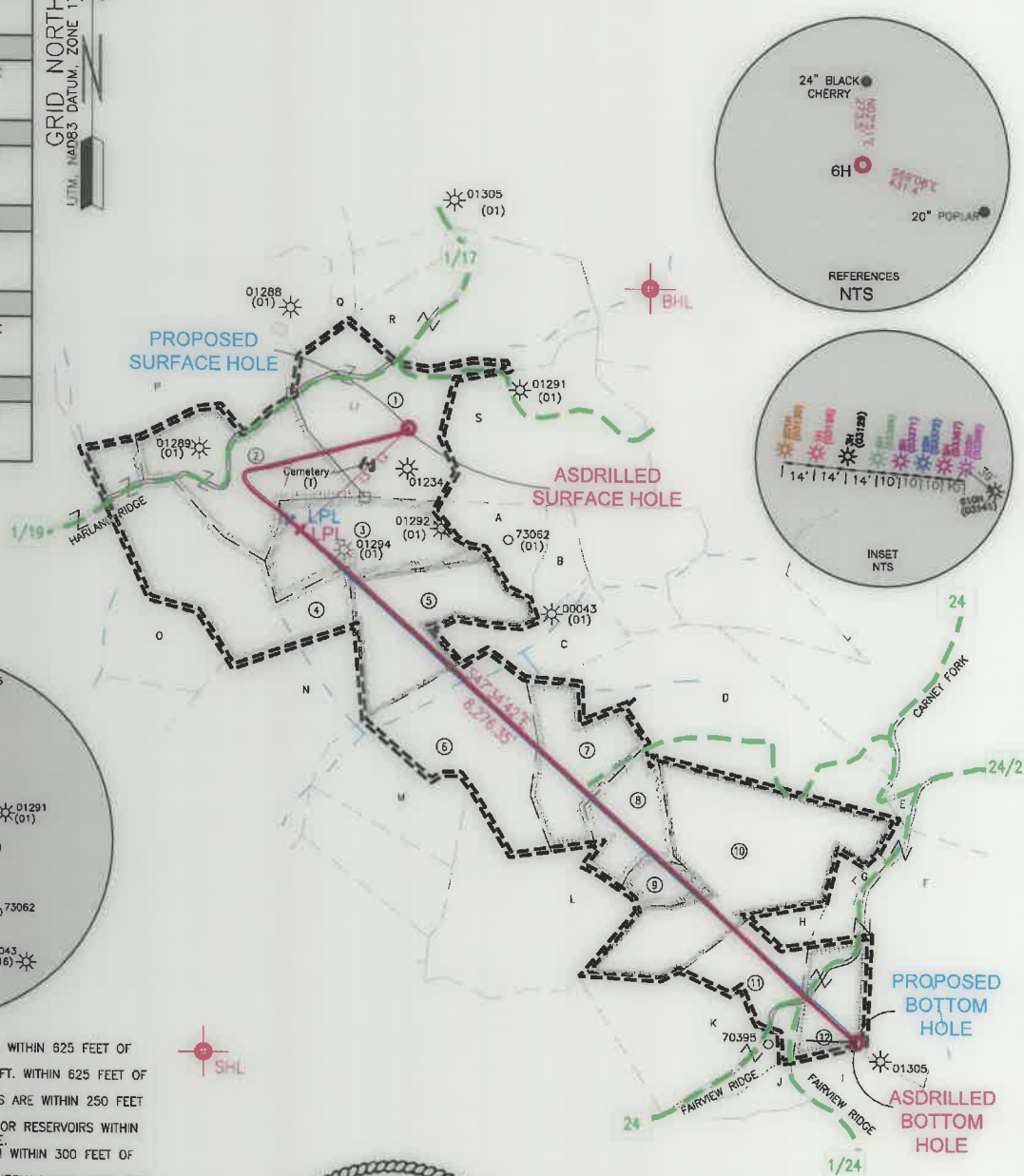
JACKSON SURVEYING INC.

2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 73°44'53" W	1,335.19'	SHL TO LANDMARK	FD. 1" IRON PIN
L2	S 32°09'20" W	905.55'	SHL TO LANDMARK	FOUND STONE
LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
L3	S 46°29'27" W	1,636.81'	2,777.44'	SHL TO LPL

SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,391,141.997 EASTING: 529,222.818
LANDING POINT (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,390,798.517 EASTING: 528,860.983
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,389,086.794 EASTING: 530,723.196
SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,391,142.056 EASTING: 529,222.656
LANDING POINT (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,390,829.060 EASTING: 528,825.485
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,389,088.530 EASTING: 530,723.945

GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT



WELL RESTRICTIONS

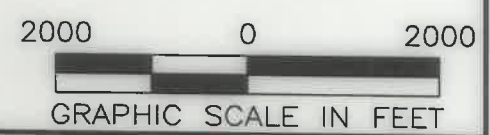
- NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
- NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
- NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

NOTES ON SURVEY

- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 708 *David L Jackson*



COMPANY: **SWN** Production Company, LLC

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034	MINIMUM DEGREE OF ACCURACY: 1/200 PROVEN SURVEY GRADE GPS SOURCE OF ELEVATION: (NAVD 88, US FT)	COMPANY: WILLIAM RITCHEA WTZ OPERATOR'S WELL #: 6H API WELL #: 47 103 03369 STATE COUNTY PERMIT
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WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW

WATERSHED: FISH CREEK (HUC-10) ELEVATION: 1563.4'

DISTRICT: PROCTOR COUNTY: WETZEL QUADRANGLE: WILEYVILLE, WV

SURFACE OWNER: WILLIAM D. RITCHEA & SHIRLEY E. RITCHEA ACREAGE: ±62.00

OIL & GAS ROYALTY OWNER: WILLIAM D. RITCHEA & SHIRLEY E. RITCHEA ACREAGE: ±62.00

DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION

CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) ASDRILLED

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 10/01/2021 TMD



WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: BRITTANY WOODY
 ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200 ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200
 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

LEGEND:	<input checked="" type="checkbox"/> PROPOSED SURFACE HOLE / BOTTOM HOLE <input checked="" type="checkbox"/> EXISTING / PRODUCING WELLHEAD <input checked="" type="checkbox"/> LPL: LANDING POINT LOCATION <input checked="" type="checkbox"/> EXISTING WATER WELL <input checked="" type="checkbox"/> EXISTING SPRING	<input checked="" type="checkbox"/> SURVEYED BOUNDARY <input checked="" type="checkbox"/> DRILLING UNIT <input checked="" type="checkbox"/> LEASE BOUNDARY <input checked="" type="checkbox"/> ASDRILLED PATH <input checked="" type="checkbox"/> PROPOSED PATH	REVISIONS: DATE: 08-18-2021 DRAWN BY: N. MANO SCALE: 1" = 2000' DRAWING NO: WELL LOCATION PLAT
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JACKSON SURVEYING
 INC.
 2413 EAST PIKE ST. # 112
 Clarksburg, WV 26302
 304-623-5851

WELL BORE TRACTS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	RITCHEA WILLIAM D & SHIRLEY E (S/R)	12 0015 21
TRACT	SURFACE OWNER (S)	TAX PARCEL
2	PITOSCIA WILLIAM R(S)	12 0014 27
3	DUELLEY BERNARD LEE ET AL & HALL SUSAN (S)	12 0015 25
4	PITOSCIA ANTHONY A & PITOSCIA DAVID T (S)	12 0014 26
5	LEMASTERS HAROLD E & BETTY S; LEMASTERS KEYSTONE TRUST & STANSBERRY LINDA SNIDER & SNIDER JAMES F. (S)	12 0015 31
6	MELLOTT TERREL (S)	01 0009 14
7	A&D WOODLANDS LTD(S)	01 0009 15
8	RITCHEA WILLIAM D ; RITCHEA SHIRLEY (S)	01 0009 16
9	RITCHEA WILLIAM D ; RITCHEA SHIRLEY (S)	01 0009 05
10	LEMASTERS HAROLD E & BETTY S; LEMASTERS KEYSTONE TRUST & STANSBERRY LINDA SNIDER & SNIDER JAMES F.(S)	01 0010 21
11	JARRELL WILMA & JARRELL (S)	01 0010 45
12	WYKERT WAYNE (S)	01-0010-45.1

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	DUELLEY BERNARD LEE ET AL & HALL SUSAN	12-0015-26
B	BROWN SANDY K	12-0015-27
C	LEMASTERS HAROLD E. & BETTY S.; LEMASTERS KEYSTONE TRUST & STANSBERRY LINDA SNIDER & SNIDER JAMES F.	12-0015-32
D	MELLOTT TERREL LEMOYN	01-0010-22
E	WYKERT ERIC D	01-0010-23
F	MCCRAY LINDA ETAL	01-0010-33
G	RICHTER ROMEO & CAROL	01-0010-33.1
H	WYKERT WAYNE	01-0010-45.2
I	CAIN SAMUEL EST & CAIN GLEN JR.	01-0010-46
J	JARRELL WILMA & JEFFREY	01-0009-13
K	JARRELL WILMA & JEFFREY	01-0009-12
L	MELLOTT EDWARD NOEL HRS	01-0009-06
M	RICHMAN TROY M	01-0009-01
N	CECIL ROBERT LEE	12-0015-33
O	RIDGETOP CAPITAL LP	12-0014-25
P	PITOSCIA WILLIAM R	12-0014-16
Q	URBANEK SCOTT J & CHRYSTAL A	12-0015-13
R	LEMASTERS H C HRS & MANKER CHARLES V REVOCABLE LIVING TRUST	12-0015-18
S	DUELLEY BERNARD LEE ET AL & HALL SUSAN	12-0015-22
T	LEMASTERS CEMETERY	12-15-20

REVISIONS:	COMPANY:		10/01/2021	
				
	OPERATOR'S	WILLIAM RITCHEA WTZ	API#	DATE: 08-18-2021
	WELL #:	6H	47-103-03369	DRAWN BY: N. MANO
	DISTRICT:	COUNTY:	STATE:	SCALE: N/A
PROCTOR	WETZEL	WV	DRAWING NO:	
				WELL LOCATION PLAT 2