

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

API 47 - 069 - 00240 County OHIO District TRIADELPHIA  
Quad VALLEY GROVE Pad Name MASON COTTRELL PAD Field/Pool Name PANHANDLE FIELD WET  
Farm name MELVIN W. & CAROL M. KAHLE Well Number MASON COTTRELL OHI 10H  
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 4,436,247.32 Easting 532,604.47  
Landing Point of Curve Northing 4,436,279.75 Easting 532,890.60  
Bottom Hole Northing 4,432,842.81 Easting 534,876.02

Elevation (ft) 1296.6 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

Date permit issued 09/07/2017 Date drilling commenced 10/26/2017 Date drilling ceased 12/18/2017  
Date completion activities began 03/23/2018 Date completion activities ceased 05/12/2018  
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 387 Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 752 Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 604 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

**Reviewed**  
*C. Hill 8/30/18*

Reviewed by  
*CB 8/30/18*  
**09/07/2018**

API 47-069 - 00240 Farm name MELVIN W. & CAROL M. KAHLE Well number MASON COTTRELL OHI 10H

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	661	NEW	J-55/54.5#	635'; 614'	Y
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	2039	NEW	J-55/36#		Y, 24
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	19950	NEW	HCP-110/23#		Y
Tubing		2.375	7071	NEW	L-80/4.7#		N
Packer type and depth set							

Comment Details Cmt bskt 20' top of j1 - 635; Cmt bskt 1' f/bottom - 614'

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	GROUT TO SURFACE				SURFACE	24
Surface	CLASS A	122	15.60	1.20	716.4	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	749	15.60	1.19	891.31	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	3702	15.60	1.19	4405.38	SURFACE	24
Tubing							

Drillers TD (ft) 19950 Loggers TD (ft) 19950  
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 5465

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 \_\_\_\_\_

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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

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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- 069 - 00240 Farm name MELVIN W. & CAROL M. KAHLE Well number MASON COTTRELL OHI 10H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>6353</u> TVD	<u>6781</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 2494 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST \_\_\_\_\_ hrs

OPEN FLOW Gas 4154 mcfpd Oil 423 bpd NGL \_\_\_\_\_ bpd Water 3 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H<sub>2</sub>S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
	<u>0</u>		<u>0</u>		
	<u>SEE</u>	<u>ATTACHMENT</u>	<u>3</u>		

Please insert additional pages as applicable.

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Drilling Contractor SWN DRILLING COMPANY  
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

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Logging Company WEATHERFORD  
Address 121 HILLPOINTE DRIVE STE 300 City CANONSBURG State PA Zip 15317

Cementing Company SCHLUMBERGER WELL SERVICES  
Address 110 SCHLUMBERGER DRIVE City SUGARLAND State TX Zip 77478

Stimulating Company HALLIBURTON ENERGY SERVICES  
Address 14851 MILNER ROAD, GATE 5A City HOUSTON State TX Zip 77032

Please insert additional pages as applicable.

Completed by BOBBY WILLIS Telephone 832-796-2884  
Signature  Title REGULATORY ANALYST Date 08/01/2018

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

09/07/2018



**MASON COTTRELL OHI 10H  
ATTACHMENT 1  
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	2/2/2018	19,833	19,726	42
2	3/21/2018	19,693	19,586	42
3	3/22/2018	19,553	19,446	42
4	3/22/2018	19,413	19,306	42
5	3/23/2018	19,273	19,166	42
6	3/24/2018	19,133	19,026	42
7	3/24/2018	18,993	18,886	42
8	3/24/2018	18,853	18,746	42
9	3/25/2018	18,713	18,606	42
10	3/25/2018	18,573	18,466	42
11	3/26/2018	18,433	18,326	42
12	3/26/2018	18,293	18,186	42
13	3/26/2018	18,153	18,046	42
14	3/26/2018	18,013	17,906	42
15	3/27/2018	17,873	17,766	42
16	3/27/2018	17,733	17,626	42
17	3/27/2018	17,593	17,486	42
18	3/28/2018	17,453	17,346	42
19	3/28/2018	17,313	17,206	42
20	3/29/2018	17,173	17,066	42
21	3/29/2018	17,033	16,926	42
22	3/29/2018	16,893	16,786	42
23	3/29/2018	16,753	16,646	42
24	3/30/2018	16,613	16,506	42
25	3/30/2018	16,473	16,366	42
26	3/30/2018	16,333	16,226	42
27	3/31/2018	16,193	16,086	42
28	3/31/2018	16,053	15,946	42
29	3/31/2018	15,913	15,806	42
30	3/31/2018	15,773	15,666	42
31	4/1/2018	15,633	15,526	42
32	4/1/2018	15,493	15,386	42
33	4/1/2018	15,353	15,246	42
34	4/2/2018	15,213	15,106	42
35	4/2/2018	15,073	14,966	42
36	4/2/2018	14,933	14,826	42
37	4/3/2018	14,793	14,686	42
38	4/3/2018	14,653	14,546	42
39	4/4/2018	14,513	14,406	42
40	4/5/2018	14,373	14,266	42
41	4/5/2018	14,233	14,126	66
42	4/7/2018	14,093	13,986	42
43	4/7/2018	13,953	13,846	42

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**MASON COTTRELL OHI 10H  
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PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
44	4/7/2018	13,813	13,706	42
45	4/7/2018	13,673	13,566	42
46	4/8/2018	13,533	13,426	42
47	4/8/2018	13,393	13,286	42
48	4/8/2018	13,253	13,146	42
49	4/9/2018	13,113	13,006	42
50	4/9/2018	12,973	12,872	42
51	4/9/2018	12,833	12,726	42
52	4/10/2018	12,693	12,586	42
53	4/10/2018	12,553	12,446	42
54	4/11/2018	12,413	12,306	42
55	4/11/2018	12,273	12,166	42
56	4/11/2018	12,133	12,026	42
57	4/12/2018	11,993	11,886	42
58	4/12/2018	11,853	11,746	42
59	4/13/2018	11,713	11,606	42
60	4/13/2018	11,573	11,466	42
61	4/14/2018	11,433	11,326	42
62	4/14/2018	11,293	11,186	42
63	4/15/2018	11,153	11,046	42
64	4/15/2018	11,013	10,906	42
65	4/16/2018	10,873	10,766	42

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 ATTACHMENT 2  
 STIM REPORT

STAGE NUM	Stim 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
1	3/21/2018	92.3	9,719	5,715	4,229	304,100	7,034	0
2	3/22/2018	97.4	10,238	5,561	4,455	279,545	6,335	0
3	3/22/2018	98.8	9,786	6,126	4,586	267,300	5,543	0
4	3/22/2018	99.8	10,678	6,038	4,800	284,205	5,796	0
5	3/24/2018	99.7	10,049	5,507	4,727	282,285	5,735	0
6	3/24/2018	83.5	9,685	6,555	4,320	282,845	5,192	0
7	3/24/2018	100.1	10,075	5,562	4,419	276,520	5,738	0
8	3/25/2018	100.1	10,074	5,806	4,798	280,240	5,367	0
9	3/25/2018	98.8	10,318	6,843	4,812	280,240	5,245	0
10	3/25/2018	96.9	10,177	5,408	4,508	282,870	5,426	0
11	3/26/2018	94.7	9,398	5,342	4,386	279,020	5,419	0
12	3/26/2018	100.4	9,853	5,261	4,750	278,800	4,993	0
13	3/26/2018	97.9	9,489	5,830	4,925	275,200	6,427	0
14	3/27/2018	100	9,757	5,976	4,744	275,040	5,252	0
15	3/27/2018	100.3	9,517	5,814	4,573	279,040	4,802	0
16	3/27/2018	100.5	9,728	5,580	5,000	289,910	5,175	0
17	3/28/2018	100.1	9,619	5,448	4,576	275,840	4,688	0
18	3/28/2018	99.9	9,557	5,531	4,878	274,940	4,641	0
19	3/28/2018	100.8	9,850	6,023	5,131	276,260	5,025	0
20	3/29/2018	94.4	10,338	5,348	4,168	275,980	4,814	0
21	3/29/2018	99.4	9,386	5,512	4,457	275,580	4,709	0
22	3/29/2018	100.3	9,463	5,965	4,857	251,610	5,096	0
23	3/29/2018	99.9	9,407	5,825	4,639	281,950	4,734	0
24	3/30/2018	98.9	9,484	7,155	4,984	273,000	4,536	0
25	3/30/2018	99.8	9,731	5,367	4,446	273,000	4,605	0
26	3/30/2018	99.8	9,260	5,442	4,725	267,880	4,614	0
27	3/31/2018	100.1	9,396	5,382	4,311	272,260	4,656	0
28	3/31/2018	94.7	8,614	5,608	4,893	270,960	4,641	0
29	3/31/2018	97.6	8,965	5,713	4,736	283,890	4,858	0
30	4/1/2018	99.8	9,108	5,768	4,893	291,150	4,585	0
31	4/1/2018	91.1	9,154	6,354	4,604	275,480	4,542	0
32	4/1/2018	93	8,796	5,494	4,969	295,399	5,444	0
33	4/1/2018	99.7	9,477	6,404	4,594	289,460	4,823	0
34	4/2/2018	83.6	8,699	7,180	4,561	270,040	4,344	0
35	4/2/2018	99.3	9,448	5,648	4,940	278,880	5,621	0
36	4/3/2018	99.4	9,886	5,873	4,828	274,440	4,607	0
37	4/3/2018	88.3	8,511	6,844	4,743	274,820	4,609	0
38	4/4/2018	81.1	8,095	6,082	4,899	282,920	6,509	0
39	4/4/2018	97	9,072	5,828	4,856	269,500	6,394	0
40	4/5/2018	84.6	8,401	5,581	4,977	272,020	8,026	0
41	4/6/2018	65.9	11,247	5,410	11,470	19,650	8,414	0
42	4/7/2018	93.7	8,233	5,120	4,692	287,830	6,550	0
43	4/7/2018	90.3	8,309	5,627	4,769	272,520	5,851	0
44	4/7/2018	98.5	8,757	6,320	4,535	272,780	4,890	0
45	4/8/2018	99.1	9,085	6,280	4,502	271,590	4,637	0
46	4/8/2018	94.8	8,583	6,199	4,465	275,380	4,861	0
47	4/8/2018	96.9	8,620	5,735	4,539	274,200	4,579	0
48	4/8/2018	88.7	8,052	6,531	4,598	272,540	6,780	0
49	4/9/2018	95.2	8,369	5,960	4,717	278,680	4,910	0
50	4/9/2018	87.5	7,789	5,279	4,669	271,400	6,095	0
51	4/10/2018	99.6	9,149	6,092	4,281	279,080	4,899	0
52	4/10/2018	99	8,264	6,050	4,038	281,260	5,421	0
53	4/11/2018	97.9	8,160	5,929	4,405	273,100	4,532	0
54	4/11/2018	99.7	8,064	5,799	4,696	274,780	4,688	0
55	4/11/2018	96.5	7,562	5,633	4,479	274,600	6,196	0
56	4/12/2018	99.3	7,673	5,703	4,610	278,020	5,130	0
57	4/12/2018	98.3	7,574	5,723	4,674	276,360	4,222	0
58	4/13/2018	100	7,564	5,033	4,295	267,700	4,606	0
59	4/13/2018	99.8	7,715	5,690	4,464	278,680	4,316	0
60	4/14/2018	98.8	7,483	6,146	4,749	290,000	4,658	0
61	4/14/2018	99.9	7,706	5,399	4,585	278,160	4,308	0
62	4/15/2018	100.3	8,255	5,785	4,612	272,540	4,265	0
63	4/16/2018	99.8	7,669	5,370	4,354	264,840	3,955	0
64	4/16/2018	99.8	7,662	5,707	4,343	276,060	3,964	0
65	4/16/2018	99.7	8,232	5,440	4,678	274,600	4,179	0

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Well Name: Mason Cottrell OHI 10H

47069002400000

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	387.00	387.00	
Top of Salt Water	752.00	752.00	NA	NA	
Pittsburgh Coal	604.00	604.00	NA	NA	
Pottsville (ss)	744.00	744.00	806.00	806.00	
Mauch Chunk (shale)	NA	NA	NA	NA	
Raven Cliff (ss)	1057.00	1057.00	1284.00	1284.00	
Maxton (ss)	1486.00	1486.00	1762.00	1762.00	
Greenbriar (ls)	NA	NA	NA	NA	
Big Injun (ss)	1762.00	1762.00	1967.00	1967.00	
Berea (siltstone)	NA	NA	NA	NA	
Rhinestreet (shale)	NA	NA	NA	NA	
Cashaqua (shale)	NA	NA	NA	NA	
Middlesex (shale)	6297.00	6124.00	6384.00	6182.00	
Burket (shale)	6384.00	6182.00	6400.00	6192.00	
Tully (ls)	6400.00	6192.00	6467.00	6232.00	
Mahantango (shale)	6467.00	6232.00	6781.00	6353.00	
Marcellus (shale)	6781.00	6353.00	NA	NA	GAS

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/21/2018
Job End Date:	4/29/2018
State:	West Virginia
County:	Ohio
API Number:	47-069-00240-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Mason Cottrell 10H
Latitude:	40.07579835
Longitude:	-80.61766667
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,423
Total Base Water Volume (gal):	17,972,811
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
Fresh Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	84.01781	Density = 8.340
Ingredients	Listed Above	Listed Above	Water	7732-18-5	100.00000	1.60557	

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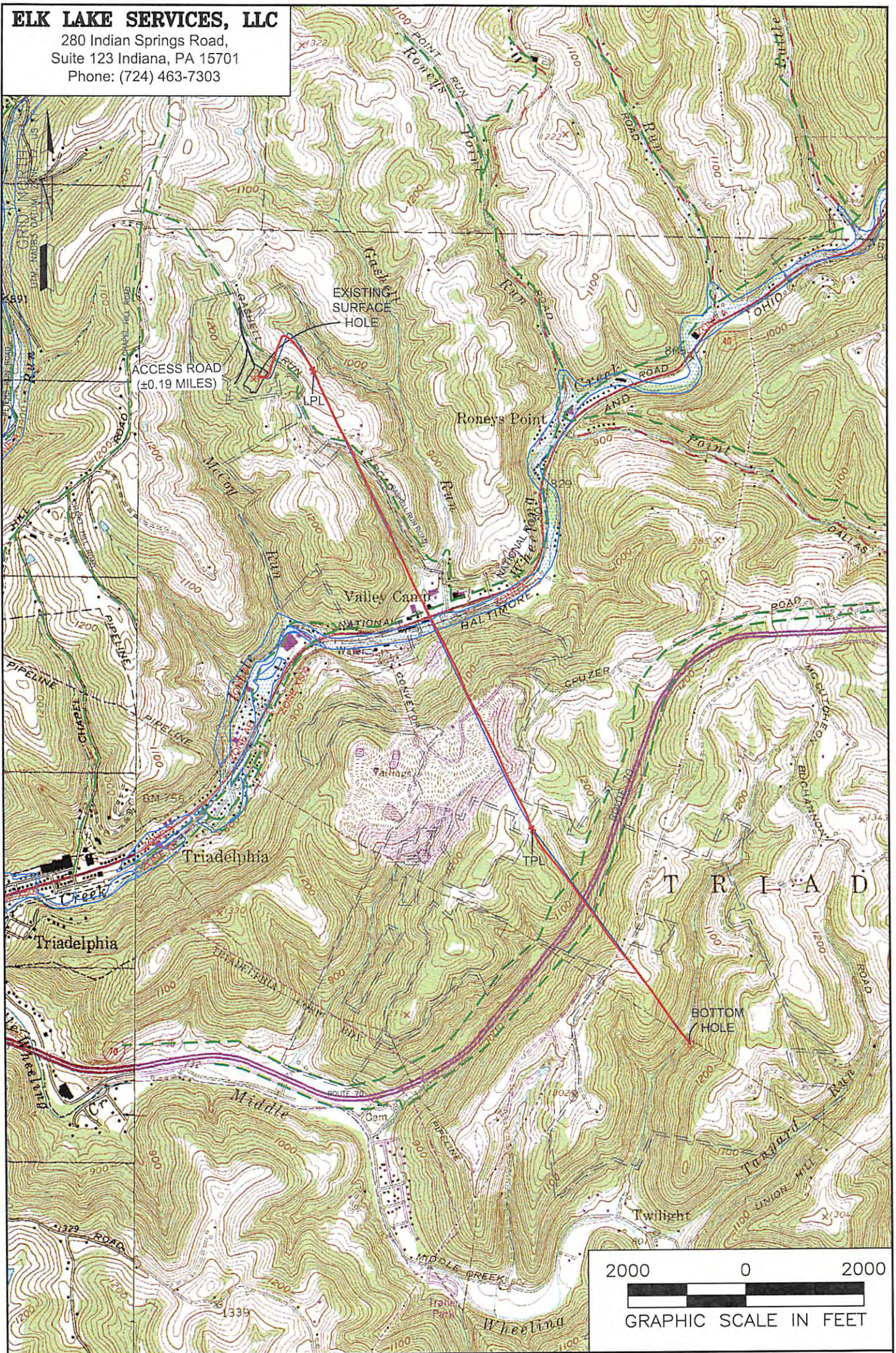






**ELK LAKE SERVICES, LLC**

280 Indian Springs Road,  
Suite 123 Indiana, PA 15701  
Phone: (724) 463-7303



**NOTES ON SURVEY**

1. 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.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

**LEGEND:**

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- ✱ EXISTING / PRODUCING WELLHEAD
- LPL ✱ LANDING POINT LOCATION
- FLOOD PLAIN
- ACCESS ROAD
- - - PUBLIC ROAD
- ACCESS ROAD TO PREV. SITE
- = = = = LEASE BOUNDARY
- ASDRILLED PATH
- PROPOSED PATH

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: MASON COTTRELL OHI	WELL # 10H	SERIAL # XXXX
ADDRESS: P.O. BOX 1300 JANE LEW, WV 26378	COUNTY OHIO COUNTY - 69	DISTRICT: TRIADELPHIA	
SURFACE OWNER: LOUIS COTTRELL, JR. AS TRUSTEE FOR MASON LOUIS COTTRELL TRUST	USGS 7 1/2 QUADRANGLE MAP NAME VALLEY GROVE, WV		

09/07/2018



Latitude: 40°05'00" SURFACE HOLE 9592'

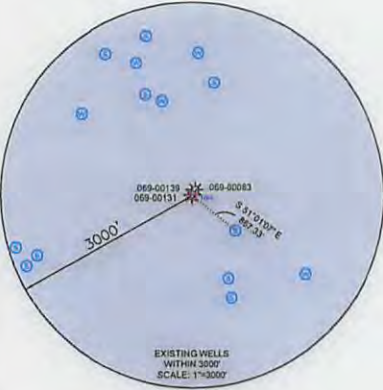
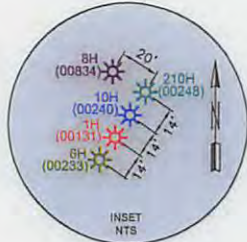
Latitude: 40°05'00" BOTTOM HOLE 2189'

**ELK LAKE SERVICES, LLC**

280 Indian Springs Road,  
Suite 123 Indiana, PA 15701  
Phone: (724) 463-7303

<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,436,247.32 EASTING: 532,604.47
<b>LANDING POINT (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,436,279.75 EASTING: 532,890.60
<b>TURNING POINT (TPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,433,941.86 EASTING: 534,049.48
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,432,842.81 EASTING: 534,876.02

<b>SURFACE HOLE LOCATION (SHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,436,247.30 EASTING: 532,604.49
<b>LANDING POINT (LPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,436,326.31 EASTING: 532,862.08
<b>TURNING POINT (TPL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,433,936.51 EASTING: 534,059.74
<b>BOTTOM HOLE LOCATION (BHL):</b>
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,432,843.45 EASTING: 534,877.15



**WELL RESTRICTIONS**

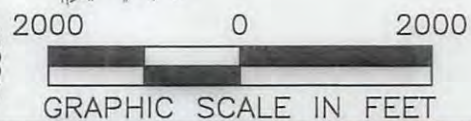
1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
3. WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 868 FEET OF PROPOSED WELL.
4. PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS ARE WITHIN THE LIMITS OF DISTURBANCE.
5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
6. 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**

1. 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.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
3. 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. 2164



COMPANY: **SWN** Production Company, LLC

<p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP OFFICE OF OIL &amp; GAS 601 57TH STREET CHARLESTON, WV 25034</p>	MINIMUM DEGREE OF ACCURACY: 1/200	MASON COTTRELL OH
	PROVEN SURVEY SOURCE OF ELEVATION: GRADE GPS (NAVD 88, US FT)	OPERATOR'S WELL #: 10H
	API WELL #: 47 069 00240	STATE COUNTY PERMIT

WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input checked="" type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>	ELEVATION: 1296.6'
WATERSHED: UPPER OHIO SOUTH	QUADRANGLE: VALLEY GROVE, WV
DISTRICT: TRIADELPHIA COUNTY: OHIO COUNTY	ACREAGE: ±37.475
SURFACE OWNER: LOUIS COTTRELL, JR. AS TRUSTEE FOR MASON LOUIS COTTRELL TRUST	ACREAGE: ±37.475
OIL & GAS ROYALTY OWNER: LOUIS COTTRELL, JR. AS TRUSTEE FOR MASON LOUIS COTTRELL TRUST	
DRILL <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/>	
CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input checked="" type="checkbox"/> (SPECIFY) AS-DRILLED	
TARGET FORMATION: MARCELLUS	ESTIMATED DEPTH: 6,495' TMD 19,950' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	DESIGNATED AGENT: BRITTANY WOODY
ADDRESS: P.O. BOX 1300	ADDRESS: P.O. BOX 1300
CITY: JANE LEW STATE: WV ZIP CODE: 26378	CITY: JANE LEW STATE: WV ZIP CODE: 26378

<b>LEGEND:</b>	<b>REVISIONS:</b>	<b>DATE:</b> 7/27/2018
○ PROPOSED SURFACE HOLE / BOTTOM HOLE	— SURVEYED BOUNDARY	FILE NO: 16-53
⊙ EXISTING / PRODUCING WELLHEAD	— DRILLING UNIT	DRAWN BY: JMB
LPL ⊙ LANDING POINT LOCATION	==== LEASE BOUNDARY	SCALE: 1" = 2000'
⊙ EXISTING WATER WELL	— AS DRILLED PATH	DRAWING NO: 1
⊙ EXISTING SPRING	— PROPOSED PATH	WELL LOCATION PLAT 1