

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

API 47 - 069 - 00234 County OHIO District LIBERTY
Quad BETHANY Pad Name THELMA HAYS OHI PAD Field/Pool Name PANHANDLE
Farm name SHARON L GARRISON (LIFE ESTATE), TIMOTHY R HAYS & THELMA C HAYS (REMAINDER) Well Number THELMA HAYS OHI 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 4,444,649.297 Easting 537,958.244
Landing Point of Curve Northing 4,444,344.323 Easting 537,794.701
Bottom Hole Northing 4,442,203.184 Easting 538,719.289

Elevation (ft) 1244.1 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

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Date permit issued 09/15/2017 Date drilling commenced 9/28/2017 Date drilling ceased 11/14/2017
Date completion activities began 03/23/2018 Date completion activities ceased 05/02/2018
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 427' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 750' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 586' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed

C. J. [Signature] 8/30/18

Reviewed by:
SB 8/30/18
09/07/2018

API 47-069 - 00234 Farm name SHARON L GARRISON (LIFE ESTATE), TIMOTHY R HAYS & THELMA C HAYS Well number THELMA HAYS OHI 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	26	20	126'	NEW	J-55/94#		Y
Surface	17.5	13.375	650'	NEW	J-55/54.50#	593.7',514.4'	Y, 30 bbls
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1874'	NEW	J-55/36#		Y, 21 bbls
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	14572'	NEW	HCP-110/20#		Y
Tubing		2.375	6744'	NEW	P-110/4.70#		N
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	608	15.60	1.19	723.52	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	710	15.60	1.18	837.8	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	2676	15.60	1.18	3157.68	SURFACE	24
Tubing							

Drillers TD (ft) 14572' Loggers TD (ft) 14572'
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

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Kick off depth (ft) 5912'

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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 _____

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 _____

API 47- 069 - 00234

Farm name SHARON L GARRISON (LIFE ESTATE), TIMOTHY R HAYS & THELMA C HAYS Well number THELMA HAYS OHI 6H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	SEE	ATTACHMENT	1		

Please insert additional pages as applicable.

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STIMULATION INFORMATION PER STAGE

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Complete a separate record for each stimulation stage.

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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)
		SEE	ATTACHMENT	2				

Please insert additional pages as applicable.

API 47- 069 - 00234 Farm name SHARON L GARRISON (LIFE ESTATE), TIMOTHY R HAYS & THELMA C HAYS (RE) Well number THELMA HAYS OHI 6H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>			
<u>MARCELLUS</u>	<u>6368'</u>	<u>TVD</u>	<u>6712'</u>	<u>MD</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2703 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 1,664 mcfpd Oil 337 bpd NGL _____ bpd Water 148 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	
	<u>0</u>		<u>0</u>		
	<u>SEE</u>	<u>ATTACHMENT</u>	<u>3</u>		
					RECEIVED Office of Oil and Gas
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Please insert additional pages as applicable.

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

Logging Company BAKER HUGHES
Address 17021 ALDINE WESTFIELD City HOUSTON State TX Zip 77073

Cementing Company BJ SERVICES
Address 2228 PHILIPPI PIKE City CLARKSBURG State WV Zip 26301

Stimulating Company HALLIBURTON ENERGY SERVICES
Address 5146 ELK RIVER ROAD City BLUE CREEK State WV Zip 25026

Please insert additional pages as applicable.

Completed by Bobby Willis Telephone 832-796-2884
Signature [Signature] Title Regulatory Analyst Date 6/19/2018

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

**THELMA HAYS OHI 6H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	1/26/2018	14,358	14,464	42
2	3/22/2018	14,212	14,319	42
3	3/23/2018	14,072	14,179	42
4	3/23/2018	13,933	14,039	42
5	3/24/2018	13,792	13,899	42
6	3/24/2018	13,652	13,759	42
7	3/25/2018	13,512	13,619	42
8	3/25/2018	13,372	13,479	42
9	3/26/2018	13,232	13,339	42
10	3/26/2018	13,092	13,199	42
11	3/26/2018	12,952	13,059	42
12	3/28/2018	12,812	12,919	42
13	3/28/2018	12,678	12,774	42
14	3/29/2018	12,532	12,639	42
15	3/29/2018	12,392	12,499	42
16	3/29/2018	12,252	12,359	42
17	3/30/2018	12,112	12,219	42
18	3/30/2018	11,972	12,079	42
19	3/31/2018	11,832	11,939	42
20	3/31/2018	11,692	11,799	42
21	4/1/2018	11,552	11,657	42
22	4/1/2018	11,412	11,519	42
23	4/2/2018	11,272	11,379	42
24	4/3/2018	11,132	11,239	42
25	4/3/2018	10,992	11,099	42
26	4/5/2018	10,852	10,959	42
27	4/6/2018	10,712	10,819	42
28	4/6/2018	10,572	10,679	42
29	4/6/2018	10,432	10,539	42
30	4/7/2018	10,292	10,399	42
31	4/7/2018	10,152	10,259	42
32	4/8/2018	10,012	10,119	42
33	4/8/2018	9,872	9,979	42
34	4/9/2018	9,732	9,839	42
35	4/9/2018	9,592	9,699	42
36	4/9/2018	9,452	9,559	42
37	4/10/2018	9,312	9,419	42
38	4/10/2018	9,172	9,279	42
39	4/10/2018	9,032	9,139	42
40	4/11/2018	8,892	8,999	42
41	4/11/2018	8,752	8,859	42
42	4/11/2018	8,612	8,719	42

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THELMA HAYS OHI 6H
ATTACHMENT 1
PERF REPORT

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
43	4/12/2018	8,469	8,579	42
44	4/13/2018	8,332	8,443	42
45	4/13/2018	8,192	8,299	42
46	4/13/2018	8,052	8,159	42
47	4/14/2018	7,912	8,013	42
48	4/14/2018	7,772	7,879	42
49	4/15/2018	7,632	7,742	42
50	4/15/2018	7,492	7,599	42
51	4/17/2018	7,352	7,459	42
52	4/18/2018	7,212	7,319	42
53	4/18/2018	7,072	7,179	42
54	4/18/2018	6,932	7,039	42
55	4/19/2018	6,792	6,899	42

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THELMA HAYS OHI 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	3/22/2018	81	7,587	7,915	3,599	277,750	7,710	
2	3/22/2018	87	8,210	8,525	4,472	276,440	6,265	
3	3/23/2018	86	8,110	8,517	4,244	289,380	5,610	
4	3/23/2018	83	7,972	8,811	4,206	289,920	5,028	
5	3/24/2018	89	8,118	8,538	4,668	277,600	4,957	
6	3/24/2018	85	7,906	8,400	4,766	271,940	4,414	
7	3/25/2018	84	8,024	8,630	4,518	272,580	4,371	
8	3/26/2018	88	8,292	8,701	4,774	277,200	4,717	
9	3/26/2018	90	8,396	8,804	4,395	280,680	5,076	
10	3/27/2018	88	8,228	8,556	4,135	282,560	4,469	
11	3/28/2018	84	8,217	8,665	4,598	266,960	4,059	
12	3/28/2018	95	8,072	8,653	4,513	304,920	5,238	
13	3/29/2018	86	7,474	7,986	4,080	269,020	4,364	
14	3/29/2018	94	7,963	8,472	4,134	312,940	5,358	
15	3/29/2018	89	7,761	8,269	4,132	277,560	4,311	
16	3/30/2018	86	7,573	8,586	4,273	314,260	5,347	
17	3/30/2018	94	8,067	8,573	4,172	296,240	4,164	
18	3/31/2018	89	7,445	7,740	4,330	270,300	4,106	
19	3/31/2018	87	7,630	8,111	4,788	269,580	4,142	
20	4/1/2018	98	8,215	8,497	4,349	306,200	4,002	
21	4/1/2018	93	7,943	8,270	4,504	273,580	4,054	
22	4/2/2018	98	7,978	8,351	4,791	263,080	3,978	
23	4/2/2018	92	7,944	8,418	4,304	271,240	3,976	
24	4/3/2018	96	8,076	8,511	4,400	308,780	4,130	
25	4/4/2018	98	7,835	8,522	4,543	304,620	4,263	
26	4/6/2018	99	7,679	8,284	4,362	304,360	4,294	
27	4/6/2018	99	7,855	9,127	4,999	305,820	4,031	
28	4/6/2018	99	7,670	8,161	4,401	278,460	4,490	
29	4/7/2018	86	7,863	9,066	4,725	311,600	3,856	
30	4/7/2018	97	7,676	8,047	4,320	320,180	4,588	
31	4/7/2018	89	7,125	7,650	4,367	278,880	4,107	
32	4/8/2018	96	7,626	8,533	4,532	273,460	3,831	RECEIVED
33	4/9/2018	99	7,696	8,186	3,393	276,340	4,045	Office of Oil and Gas
34	4/9/2018	98	7,495	8,134	4,902	271,060	3,737	JUN 21 2018
35	4/9/2018	96	7,435	7,973	4,396	295,370	4,161	WV Department of
36	4/10/2018	91	7,598	8,008	4,365	272,080	3,659	Environmental Protection
37	4/10/2018	93	7,404	7,775	4,162	293,840	3,990	
38	4/10/2018	99	6,766	7,984	4,642	293,780	3,717	
39	4/11/2018	100	7,649	7,958	4,214	274,600	3,717	
40	4/11/2018	94	7,500	7,956	4,297	275,200	3,539	
41	4/11/2018	94	7,223	7,851	4,574	277,440	3,623	
42	4/12/2018	97	7,437	8,158	4,862	275,680	3,648	
43	4/12/2018	93	6,861	7,436	4,231	277,840	3,780	
44	4/13/2018	91	6,618	7,071	4,230	292,630	3,670	
45	4/13/2018	93	6,788	7,799	5,521	276,160	3,575	
46	4/14/2018	98	7,099	7,507	4,586	286,340	3,773	
47	4/14/2018	95	7,047	7,815	4,219	268,660	3,475	
48	4/15/2018	99	7,102	7,673	4,298	267,640	3,538	
49	4/15/2018	100	7,002	7,436	4,187	279,500	3,503	
50	4/17/2018	91	6,916	7,622	4,358	270,860	3,596	
51	4/17/2018	100	6,987	7,446	4,422	270,660	3,479	
52	4/18/2018	98	6,737	7,064	4,280	278,740	3,549	
53	4/18/2018	88	6,568	7,321	4,250	277,000	3,268	

09/07/2018

THELMA HAYS OHI 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
54	4/19/2018	97	6,913	8,428	4,262	273,740	3,510	

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ATTACHMENT 3

47069002340000

THELMA HAYS OHI 6H

Well Name:

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	427.00	42.00	
Top of Salt Water	750.00	750.00	NA	NA	
Pittsburgh Coal	586.00	586.00	593.00	593.00	
Pottsville (ss)	734.00	734.00	845.00	845.00	
Mauch Chunk (shale)	846.00	846.00	1620.00	1620.00	
Raven Cliff (ss)	1152.00	1152.00	1313.00	1313.00	
Maxton (ss)	1463.00	1463.00	1620.00	1620.00	
Greenbriar (ls)	1620.00	1620.00	1782.00	1782.00	
Big Injun (ss)	1788.00	1782.00	1935.00	1928.00	
Berea (siltstone)	2293.00	2285.00	2308.00	2300.00	
Rhinstreet (shale)	5836.00	5759.00	6126.00	6033.00	
Cashaqua (shale)	6126.00	6033.00	6195.00	6093.00	
Middlesex (shale)	6195.00	6093.00	6293.00	6170.00	
Burket (shale)	6293.00	6170.00	6315.00	6186.00	
Tully (ls)	6315.00	6186.00	6378.00	6230.00	
Mahantango (shale)	6378.00	6230.00	6712.00	6368.00	
Marcellus (shale)	6712.00	6368.00	NA	NA	GAS

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/22/2018
Job End Date:	4/20/2018
State:	West Virginia
County:	Ohio
API Number:	47-069-00234-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	THELMA HAYS OHI 6H
Latitude:	40.15133500
Longitude:	-80.55433000
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,457
Total Base Water Volume (gal):	9,547,894
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	82.15745	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	1.67831	

SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant											
					Listed Below								
HYDROCHLORI C ACID	Halliburton	Solvent											
					Listed Below								
EXCELERATE LX-1	Halliburton	Friction Reducer											
					Listed Below								
SAND- PREMIUM WHITE-40/70, BULK	Halliburton	Proppant											
					Listed Below								
HAI-150E	Halliburton	Corrosion Inhibitor											
					Listed Below								
BIO-11219A	NALCO	Biocide											
					Listed Below								
SCAL 16486A	NALCO	Scale Inhibitor											
					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	16.10796					
					Hydrochloric acid	7647-01-0	15.00000	0.24448					

				Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02423	
				Polyacrylate	Proprietary	30.00000	0.02423	
				Fatty acid ester	Proprietary	5.00000	0.00808	
				Amine Triphosphate	Proprietary	30.00000	0.00553	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
				Ethylene Glycol	107-21-1	30.00000	0.00553	
				Ammonium chloride	12125-02-9	5.00000	0.00404	
				Ethoxylated fatty acid	Proprietary	5.00000	0.00404	
				Sodium chloride	7647-14-5	5.00000	0.00404	
				Methanol	67-56-1	60.00000	0.00302	
				Benzyl-(C12-C16 Alkyl)-Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00151	
				Glutaraldehyde	111-30-8	10.00000	0.00050	
				Non-hazardous food substance	Proprietary	100.00000	0.00050	

* 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

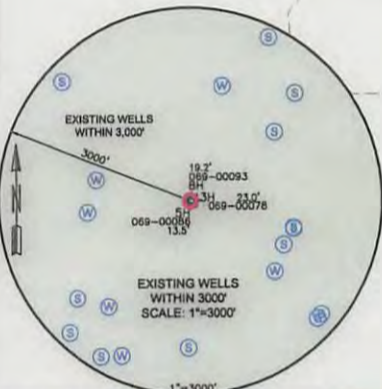
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

THRASHER

THE THRASHER GROUP, INC.
600 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 304-624-4108

TRACT	SURFACE OWNER	TAX PARCEL	ACRES
7	GEORGE E PORTER III	03-LB-9	19.638
8	SCOTT A DILLE & JILL L DILLE	03-LB-9.3	19.847
9	FRED E & JANET K FOSTER	03-LB-9.5	7.502

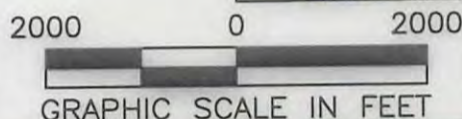
GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT



SURFACE HOLE LOCATION (SHL):	SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,444,649.297 EASTING: 537,958.244	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,444,649.297 EASTING: 537,958.244
LANDING POINT LOCATION (LPL):	LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,444,377.879 EASTING: 537,779.104	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,444,344.323 EASTING: 537,794.701
BOTTOM HOLE LOCATION (BHL):	BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,442,198.204 EASTING: 538,722.331	UTM (NAD83, ZONE 17, METERS): NORTHING: 4,442,203.184 EASTING: 538,719.289

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. 2270



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 SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)	OPERATOR'S WELL #: THELMA HAYS OHI 6H API WELL #: 47 069 00234 STATE COUNTY PERMIT
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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"/>	WATERSHED: BUFFALO CREEK DISTRICT: LIBERTY COUNTY: OHIO SURFACE OWNER: SHARON L GARRISON(LIFE ESTATE), TIMOTHY R HAYS, AND THELMA C HAYS(REMAINDER) ACREAGE: ± 102.00 OIL & GAS ROYALTY OWNER: TIMOTHY R HAYS, THELMA C HAYS, AND SHARON L GARRISON ACREAGE: ± 102.00	ELEVATION: 1244.1' QUADRANGLE: BETHANY
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	ESTIMATED DEPTH: 6,457' IVD 14,572' IMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378	DESIGNATED AGENT: DEE SOUTHALL ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378
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LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ☀ EXISTING / PRODUCING WELLHEAD LPL* LANDING POINT LOCATION W EXISTING WATER WELL S EXISTING SPRING --- SURVEYED BOUNDARY --- DRILLING UNIT ===== LEASE BOUNDARY --- PROPOSED PATH --- AS-DRILLED PATH TPL* TURNING POINT LOCATION	REVISIONS: DATE: 05-16-2018 DRAWN BY: K. POTH SCALE: 1" = 2000' DRAWING NO: 050-5660 WELL LOCATION PLAT
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- NOTES ON SURVEY**
- COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
 - SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
 - THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
 - NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
 - NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
 - NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
 - NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

TRACT	ADJOINER	TAX PARCEL
A	JASON T & SHEENA R HAYS	03-L2-12.2
B	ROONEY PLANTS	03-L9-2.2
C	ROONEY PLANTS	03-L9-2.3
D	DONALD WADDELL	03-L5-23.6
E	SUSAN SANDS	03-L5-23.2
F	JASON MILLER	03-L5-23.3
G	EDWARD LINK	03-L5-23.7
H	TRAVIS CHRISTOPHER RATCLIFFE	03-L5-12.1
I	JOSEPH C PRINCE	03-L5-11.2
J	GENE MONROE	03-L5-7.3
K	JOSEPH P & SHIRLEY J TAGGART	03-L5-7.1
L	GENE & S MONROE	03-L5-7.4
M	CHARLES W & CHRISTY D GRONDS	03-L5-4

