

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

API 47-069-00226 County OHIO District RICHLAND
Quad TILTONSVILLE Pad Name EDWARD DREMAK OHI PAD Field/Pool Name PANHANDLE
Farm name DREMAK, EDWARD W & JOANNE V Well Number EDWARD DREMAK OHI 1H
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 4445438.271 Easting 529671.827
Landing Point of Curve Northing 4445557.506 Easting 529401.289
Bottom Hole Northing 4447839.517 Easting 528747.286

Elevation (ft) 1078.7 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 07/27/2017 Date drilling commenced 09/02/2017 Date drilling ceased 10/12/2017
Date completion activities began 02/25/2018 Date completion activities ceased 03/21/2018
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 259' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 750' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 270' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed
C. Bell 5-10-18

Reviewed by: _____

API 47- 069 - 00226 Farm name DREMAK, EDWARD W & JOANNE V Well number EDWARD DREMAK OHI 1H

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	339'	NEW	J-55/54.5#	246', 251'	Y, 15 BBLS
Coal	SEE SURFACE						
Intermediate 1	12.25	9.625	1751'	NEW	J-55/36#		Y, 41 BBLS
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	14013'	NEW	HCP-110/20#		Y
Tubing		2.375	6058'	NEW	P-110/4.7#		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	346	15.60	1.20	415.20	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	694	15.60	1.18	818.92	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	2562	15.60	1.19	3048.78	SURFACE	24
Tubing							

Drillers TD (ft) 14018' Loggers TD (ft) 14018'
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5183'

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 _____

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>5760'</u> TVD	<u>6028'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1270 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 1268 mcfpd Oil 271 bpd NGL _____ bpd Water 750 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>		

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 184 SUMMERS STREET #200 City CHARLESTON State WV Zip 25301

Please insert additional pages as applicable.

Completed by Elizabeth Gee Telephone 832-796-7632
Signature  Title Staff Regulatory Analyst Date 04/25/2018

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**EDWARD DREMAK OHI 3H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	1/19/2018	15,069	15,176	42
2	2/25/2018	14,929	15,036	42
3	2/26/2018	14,789	14,896	42
4	2/26/2018	14,649	14,756	42
5	2/26/2018	14,509	14,616	42
6	2/27/2018	14,369	14,476	42
7	2/27/2018	14,229	14,333	42
8	2/27/2018	14,089	14,196	30
9	2/28/2018	13,949	14,056	42
10	2/28/2018	13,809	13,916	42
11	3/1/2018	13,529	13,636	42
12	3/1/2018	13,529	13,636	42
13	3/2/2018	13,389	13,496	42
14	3/2/2018	13,249	13,356	42
15	3/2/2018	13,109	13,216	42
16	3/2/2018	12,969	13,076	42
17	3/3/2018	12,829	12,936	42
18	3/3/2018	12,689	12,796	42
19	3/3/2018	12,549	12,656	42
20	3/3/2018	12,409	12,516	42
21	3/3/2018	12,269	12,376	42
22	3/3/2018	12,129	12,236	42
23	3/4/2018	11,989	12,096	42
24	3/4/2018	11,849	11,956	42
25	3/4/2018	11,709	11,816	42
26	3/5/2018	11,569	11,676	42
27	3/5/2018	11,429	11,536	42
28	3/5/2018	11,289	11,396	42
29	3/5/2018	11,149	11,256	42
30	3/6/2018	11,009	11,116	42
31	3/6/2018	10,869	10,976	43
32	3/6/2018	10,729	10,836	41
33	3/7/2018	10,589	10,696	42
34	3/7/2018	10,449	10,556	42
35	3/7/2018	10,309	10,416	42
36	3/8/2018	10,169	10,276	42
37	3/8/2018	10,029	10,136	42
38	3/8/2018	9,889	9,996	42
39	3/8/2018	9,749	9,856	42
40	3/9/2018	9,609	9,716	42
41	3/9/2018	9,469	9,576	42
42	3/9/2018	9,327	9,436	42
43	3/10/2018	9,189	9,297	42

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ATTACHMENT 1
PERF REPORT

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
44	3/10/2018	9,049	9,156	42
45	3/11/2018	8,909	9,016	42
46	3/12/2018	8,769	8,876	42
47	3/12/2018	8,629	8,736	42
48	3/12/2018	8,489	8,596	42
49	3/12/2018	8,349	8,456	42
50	3/13/2018	8,209	8,316	42
51	3/13/2018	8,069	8,176	42
52	3/13/2018	7,929	8,036	42
53	3/13/2018	7,789	7,896	42
54	3/13/2018	7,649	7,756	42
55	3/14/2018	7,509	7,616	42
56	3/14/2018	7,369	7,476	42
57	3/14/2018	7,229	7,336	42
58	3/14/2018	7,089	7,196	42
59	3/15/2018	6,949	7,056	42
60	3/15/2018	6,809	6,916	42
61	3/15/2018	6,669	6,776	42
62	3/15/2018	6,529	6,636	42
63	3/15/2018	6,391	6,496	42
64	3/16/2018	6,249	6,356	46
65	3/16/2018	6,109	6,216	46

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**EDWARD DREMAK OHI 3H
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	2/25/2018	91	8,350	8,843	3,488	274,207	6,124	
2	2/26/2018	94	8,188	8,576	3,987	279,093	5,149	
3	2/26/2018	99	8,294	8,641	4,221	279,460	5,885	
4	2/26/2018	98	8,166	8,235	4,040	298,460	5,547	
5	2/26/2018	97	8,077	8,519	4,422	284,350	5,303	
6	2/27/2018	97	7,924	8,503	3,973	277,050	5,488	
7	2/27/2018	97	7,907	8,981	4,174	284,647	5,217	
8	2/28/2018	92	8,248	9,107	4,093	286,093	4,950	
9	2/28/2018	97	7,683	8,040	4,226	281,940	5,071	
10	3/1/2018	95	7,669	8,353	4,275	277,120	5,217	
11	3/1/2018	93	8,074	8,748	4,381	284,960	5,695	
12	3/1/2018	94	7,657	8,529	4,511	281,760	4,827	
13	3/2/2018	97	8,122	8,691	4,419	284,230	4,839	
14	3/2/2018	86	7,536	8,503	4,139	290,090	5,617	
15	3/2/2018	100	7,995	8,375	4,462	291,980	4,653	
16	3/2/2018	100	7,958	8,347	4,460	285,000	7,240	
17	3/3/2018	99	7,955	8,422	4,384	271,540	4,787	
18	3/3/2018	88	7,668	8,523	4,454	287,660	4,373	
19	3/3/2018	95	7,891	8,659	4,481	284,050	4,281	
20	3/3/2018	99	7,729	8,167	4,406	284,290	4,062	
21	3/3/2018	100	7,877	8,276	4,521	286,080	4,325	
22	3/4/2018	98	8,151	8,515	4,464	292,860	4,625	
23	3/4/2018	88	7,886	8,920	4,378	279,070	4,175	
24	3/4/2018	100	7,994	8,424	4,283	292,430	4,311	
25	3/5/2018	97	7,846	8,983	4,124	290,220	4,453	
26	3/5/2018	91	7,632	8,804	4,195	287,780	4,007	
27	3/5/2018	100	7,581	7,722	4,214	283,710	3,944	
28	3/5/2018	100	7,394	7,626	4,409	286,590	4,269	
29	3/6/2018	99	7,323	7,669	4,359	287,100	4,348	
30	3/6/2018	92	7,227	8,536	4,373	286,200	4,096	
31	3/6/2018	100	7,996	8,582	4,202	293,450	3,960	
32	3/6/2018	99	7,477	7,909	4,191	289,350	4,705	
33	3/7/2018	89	6,967	8,154	4,460	282,330	3,822	
34	3/7/2018	91	6,853	8,246	4,303	284,050	3,973	
35	3/7/2018	100	7,442	8,232	4,119	285,370	4,374	
36	3/8/2018	100	7,398	8,340	4,154	286,030	5,024	
37	3/8/2018	88	7,005	8,307	4,436	285,790	3,464	
38	3/8/2018	93	7,086	8,276	4,438	292,010	3,669	
39	3/8/2018	98	7,209	9,660	4,308	295,240	8,994	

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**EDWARD DREMAK OHI 3H
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
40	3/9/2018	98	7,841	9,186	4,353	297,820	4,848	
41	3/9/2018	101	7,815	8,279	4,235	285,160	3,996	
42	3/10/2018	59	8,523	9,374	4,215	285,240	10,764	
43	3/10/2018	98	7,712	9,203	4,388	272,380	4,416	
44	3/11/2018	95	8,315	8,962	4,471	295,760	4,861	
45	3/11/2018	85	7,544	8,448	4,329	279,120	5,739	
46	3/12/2018	92	7,290	8,053	4,471	272,640	4,358	
47	3/12/2018	95	7,364	8,708	4,330	299,090	4,455	
48	3/12/2018	101	7,299	7,818	4,335	275,980	4,343	
49	3/12/2018	101	7,098	7,393	4,270	277,420	4,359	
50	3/13/2018	101	7,161	7,527	4,305	284,590	4,420	
51	3/13/2018	97	6,814	7,244	4,503	274,540	3,769	
52	3/13/2018	98	6,845	7,199	4,375	275,060	3,864	
53	3/13/2018	100	7,347	8,129	4,243	277,420	4,236	
54	3/14/2018	100	7,451	8,339	4,253	270,800	4,548	
55	3/14/2018	99	7,226	8,583	4,352	281,260	4,252	
56	3/14/2018	98	6,886	7,464	4,418	272,420	4,148	
57	3/14/2018	99	7,112	8,059	4,274	273,760	4,215	
58	3/14/2018	100	7,356	8,009	4,536	269,020	4,616	
59	3/15/2018	99	6,653	7,824	4,428	276,100	4,313	
60	3/15/2018	100	6,794	7,194	4,484	273,800	4,274	
61	3/15/2018	100	5,276	7,957	4,459	271,620	4,354	
62	3/15/2018	100	6,749	7,867	4,499	274,980	3,984	
63	3/15/2018	100	7,834	8,422	4,575	273,180	4,092	
64	3/16/2018	98	7,016	7,940	4,571	280,120	4,287	
65	3/16/2018	90	6,063	7,125	4,573	273,400	4,300	

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Well Name:

Edward Dremak OHI 3H

47069002130000

ATTACHMENT 3

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	259.00	259.00	
Top of Salt Water	750.00	750.00	NA	NA	
Pittsburgh Coal	270.00	270.00	NA	NA	
Pottsville (ss)	374.00	374.00	459.00	459.00	
Mauch Chunk (shale)	477.00	477.00	1300.00	1300.00	
Raven Cliff (ss)	777.00	777.00	912.00	912.00	
Maxton (ss)	1068.00	1068.00	1232.00	1232.00	
Greenbriar (ls)	1300.00	1300.00	1369.00	1369.00	
Big Injun (ss)	1369.00	1369.00	1576.00	1576.00	
Berea (siltstone)	1408.00	1408.00	NA	NA	
Rhinestreet (shale)	5296.00	5261.00	5556.00	5499.00	
Cashaqua (shale)	5556.00	5499.00	5614.00	5544.00	
Middlesex (shale)	5614.00	5544.00	5702.00	5609.00	
Burket (shale)	5702.00	5609.00	5722.00	5622.00	
Tully (ls)	5722.00	5622.00	5808.00	5674.00	
Mahantango (shale)	5808.00	5674.00	6031.00	5768.00	
Marcellus (shale)	6031.00	5768.00	NA	NA	GAS

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SOUTHWESTERN ENERGY



Location: Ohio County, WV
 Field: Ohio
 Facility: Edward Dremak OHI Pad

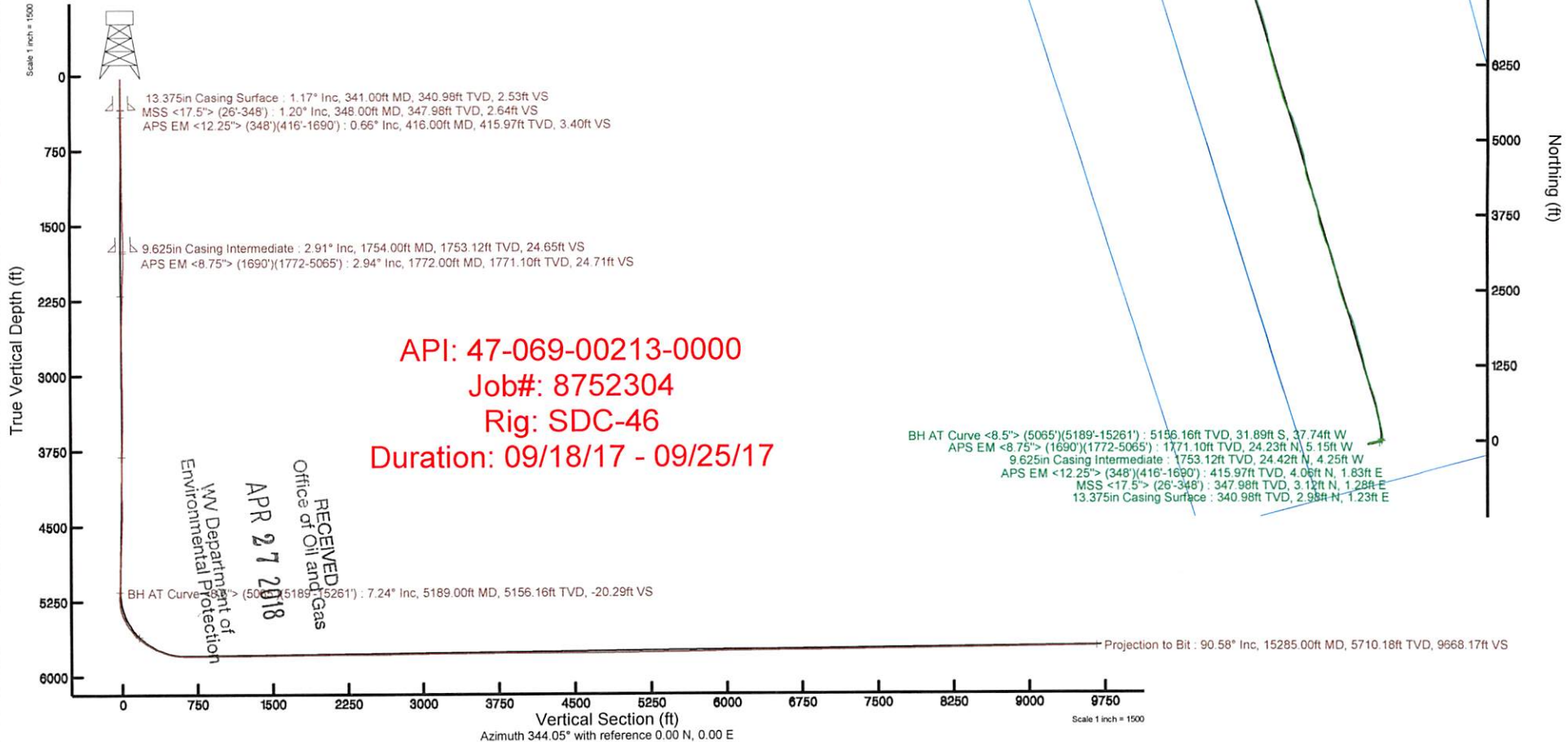
Slot: Slot #3H
 Well: Edward Dremak OHI 3H
 Wellbore: Edward Dremak OHI 3H PWB

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Edward Dremak OHI Pad	1737740.826	14584704.331	40°09'31.223"N	80°39'06.011"W
Slot	Local N (ft)	Local E (ft)	Grid North (US ft)	Latitude
Slot #3H	31.75	55.53	1737796.335	40°09'31.535"N
			14584736.070	80°39'05.294"W
SDC-46 (RKB) to Ground level (At Slot: Slot #3H)				26ft
Mean Sea Level to Ground level (At Slot: Slot #3H)				-1087.95ft
SDC-46 (RKB) to Mean Sea Level				1113.95ft

Plot reference wellpath is Edward Dremak OHI 3H PWP Rev-B.0	Grid System: NAD83 / UTM Zone 17 North, US feet
True vertical depths are referenced to SDC-46 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to SDC-46 (RKB)	North Reference: Grid north
SDC-46 (RKB) to Mean Sea Level: 1113.95 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: Slot #3H): -1087.95 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: thomsuzc on 2017-10-05
	Database: WA, Pennsylvania



User specified Dip 87.81° Field 5.2679 mT
 Magnetic North is 8.02 degrees West of True North (at 18-Sep-2017)
 Grid North is 0.22 degrees East of True North
 To correct azimuth from True to Grid subtract 0.22 degrees
 To correct azimuth from Magnetic to Grid subtract 8.24 degrees





Actual Wellpath Report

Edward Dremak OHI 3H AWP Proj: 15285'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #3H
Area	Ohio County, WV	Well	Edward Dremak OHI 3H
Field	Ohio	Wellbore	Edward Dremak OHI 3H AWP
Facility	Edward Dremak OHI Pad		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Thomsuzc
Scale	0.999611	Report Generated	05/Oct/2017 at 09:43
Convergence at slot	0.23° East	Database/Source file	WA_Pennsylvania/Edward_Dremak_OHI_3H_AWP_Proj_15285_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	31.75	55.53	1737796.34	14584736.07	40°09'31.535"N	80°39'05.294"W
Facility Reference Pt			1737740.83	14584704.33	40°09'31.223"N	80°39'06.011"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM

Calculation method	Minimum curvature	SDC-46 (RKB) to Facility Vertical Datum	1113.95ft
Horizontal Reference Pt	Slot	SDC-46 (RKB) to Mean Sea Level	1113.95ft
Vertical Reference Pt	SDC-46 (RKB)	SDC-46 (RKB) to Ground Level at Slot (Slot #3H)	26.00ft
MD Reference Pt	SDC-46 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	344.05°

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Actual Wellpath Report

Edward Dremak OHI 3H AWP Proj: 15285'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #3H
Area	Ohio County, WV	Well	Edward Dremak OHI 3H
Field	Ohio	Wellbore	Edward Dremak OHI 3H AWB
Facility	Edward Dremak OHI Pad		

WELLPATH DATA (176 stations) † = interpolated/extrapolated station															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
0.00†	0.000	22.400	0.00	0.00	0.00	0.00	1737796.33	14584736.07	40°09'31.535"N	80°39'05.294"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	22.400	26.00	0.00	0.00	0.00	1737796.33	14584736.07	40°09'31.535"N	80°39'05.294"W	0.00	0.000	0.00	0.00	0.00
348.00	1.200	22.400	347.98	2.64	3.12	1.28	1737797.62	14584739.19	40°09'31.565"N	80°39'05.277"W	3.37	22.400	0.37	0.37	6.96
416.00	0.660	44.430	415.97	3.40	4.06	1.83	1737798.16	14584740.12	40°09'31.575"N	80°39'05.270"W	4.45	24.292	0.94	-0.79	32.40
509.00	0.400	25.290	508.96	3.91	4.73	2.34	1737798.68	14584740.80	40°09'31.581"N	80°39'05.264"W	5.28	26.355	0.33	-0.28	-20.58
602.00	0.500	69.290	601.96	4.18	5.17	2.86	1737799.20	14584741.24	40°09'31.586"N	80°39'05.257"W	5.91	28.978	0.38	0.11	47.31
695.00	0.720	64.980	694.96	4.31	5.56	3.77	1737800.10	14584741.63	40°09'31.589"N	80°39'05.245"W	6.72	34.153	0.24	0.24	-4.63
788.00	0.780	72.460	787.95	4.42	6.00	4.90	1737801.24	14584742.06	40°09'31.594"N	80°39'05.231"W	7.75	39.277	0.12	0.06	8.04
881.00	1.490	54.270	880.93	4.85	6.89	6.49	1737802.82	14584742.96	40°09'31.602"N	80°39'05.210"W	9.47	43.270	0.85	0.76	-19.56
974.00	1.950	45.070	973.89	6.02	8.72	8.59	1737804.92	14584744.78	40°09'31.620"N	80°39'05.183"W	12.24	44.583	0.58	0.49	-9.89
1066.00	2.280	42.530	1065.82	7.74	11.17	10.94	1737807.27	14584747.24	40°09'31.645"N	80°39'05.153"W	15.63	44.391	0.37	0.36	-2.76
1159.00	2.590	36.800	1158.74	9.98	14.22	13.45	1737809.78	14584750.28	40°09'31.675"N	80°39'05.120"W	19.57	43.402	0.42	0.33	-6.16
1252.00	1.850	22.720	1251.67	12.42	17.28	15.28	1737811.61	14584753.35	40°09'31.705"N	80°39'05.096"W	23.07	41.485	0.98	-0.80	-15.14
1345.00	1.590	326.010	1344.63	14.82	19.74	15.14	1737811.47	14584755.80	40°09'31.729"N	80°39'05.098"W	24.88	37.493	1.77	-0.28	-60.98
1437.00	2.860	284.400	1436.57	17.19	21.37	12.21	1737808.54	14584757.43	40°09'31.745"N	80°39'05.136"W	24.61	29.735	2.15	1.38	-45.23
1530.00	3.370	280.840	1529.43	19.60	22.46	7.27	1737803.61	14584758.52	40°09'31.756"N	80°39'05.199"W	23.61	17.945	0.59	0.55	-3.83
1623.00	2.870	286.830	1622.29	22.09	23.65	2.36	1737798.69	14584759.71	40°09'31.768"N	80°39'05.263"W	23.77	5.701	0.64	-0.54	6.44
1690.00	3.010	279.040	1689.21	23.74	24.41	-0.98	1737795.35	14584760.47	40°09'31.776"N	80°39'05.306"W	24.43	357.696	0.63	0.21	-11.63
1772.00	2.940	255.820	1771.10	24.71	24.23	-5.15	1737791.19	14584760.29	40°09'31.774"N	80°39'05.359"W	24.77	348.008	1.46	-0.09	-28.32
1819.00	3.060	256.970	1818.03	24.82	23.65	-7.54	1737788.80	14584759.72	40°09'31.769"N	80°39'05.390"W	24.83	342.324	0.29	0.26	2.45
1911.00	3.170	215.750	1909.91	23.36	21.04	-11.42	1737784.92	14584757.10	40°09'31.743"N	80°39'05.440"W	23.93	331.510	2.39	0.12	-44.80
2004.00	3.010	208.860	2002.77	20.04	16.81	-14.10	1737782.24	14584752.87	40°09'31.701"N	80°39'05.475"W	21.94	320.016	0.43	-0.17	-7.41
2097.00	3.360	228.290	2095.63	17.12	12.86	-17.31	1737779.03	14584748.92	40°09'31.662"N	80°39'05.516"W	21.56	306.606	1.21	0.38	20.89
2189.00	3.760	234.960	2187.46	14.96	9.33	-21.79	1737774.55	14584745.40	40°09'31.628"N	80°39'05.574"W	23.71	293.183	0.63	0.43	7.25
2282.00	5.220	236.130	2280.17	12.66	5.22	-27.80	1737768.54	14584741.29	40°09'31.587"N	80°39'05.652"W	28.29	280.642	1.57	1.57	1.26
2375.00	8.160	239.760	2372.52	9.73	-0.46	-37.02	1737759.33	14584735.61	40°09'31.532"N	80°39'05.771"W	37.02	269.290	3.19	3.16	3.90
2467.00	9.340	239.010	2463.45	6.18	-7.59	-49.06	1737747.29	14584728.48	40°09'31.462"N	80°39'05.926"W	49.64	261.205	1.29	1.28	-0.82
2560.00	8.990	249.770	2555.27	3.68	13.99	-62.35	1737734.01	14584722.09	40°09'31.399"N	80°39'06.098"W	63.90	257.354	1.88	-0.38	11.57
2653.00	10.400	257.860	2646.95	3.70	18.27	-77.38	1737718.99	14584717.81	40°09'31.357"N	80°39'06.292"W	79.50	256.716	2.10	1.52	8.70
2746.00	10.540	258.900	2738.40	4.97	21.67	-93.98	1737702.44	14584714.41	40°09'31.324"N	80°39'06.505"W	96.40	257.008	0.25	0.15	1.12

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Area	Ohio County, WV	Well	Edward Dremak OHI 3H
Field	Ohio	Wellbore	Edward Dremak OHI 3H AWB
Facility	Edward Dremak OHI Pad		

WELLPATH DATA (176 stations)															
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
2842.00	9.790	259.690	2832.89	6.52	-24.82	-110.57	1737685.80	14584711.26	40°09'31.294"N	80°39'06.720"W	113.33	257.348	0.79	-0.78	0.82
2934.00	9.560	258.690	2923.58	7.91	-27.72	-125.76	1737670.62	14584708.36	40°09'31.266"N	80°39'06.915"W	128.78	257.570	0.31	-0.25	-1.09
3027.00	8.720	258.390	3015.40	9.06	-30.65	-140.24	1737656.15	14584705.43	40°09'31.237"N	80°39'07.102"W	143.55	257.670	0.90	-0.90	-0.32
3120.00	9.430	257.820	3107.23	10.10	-33.68	-154.59	1737641.80	14584702.40	40°09'31.208"N	80°39'07.287"W	158.22	257.710	0.77	0.76	-0.61
3213.00	10.000	258.140	3198.90	11.18	-36.95	-169.94	1737626.46	14584699.14	40°09'31.176"N	80°39'07.485"W	173.91	257.734	0.62	0.61	0.34
3306.00	9.820	257.350	3290.51	12.21	-40.34	-185.58	1737610.82	14584695.74	40°09'31.143"N	80°39'07.686"W	189.92	257.736	0.24	-0.19	-0.85
3398.00	8.000	252.720	3381.40	12.51	-43.96	-199.35	1737597.06	14584692.12	40°09'31.108"N	80°39'07.864"W	204.14	257.564	2.12	-1.98	-5.03
3491.00	5.330	244.700	3473.77	11.66	-47.73	-209.44	1737586.98	14584688.36	40°09'31.071"N	80°39'07.994"W	214.81	257.161	3.03	-2.87	-8.62
3581.00	3.650	234.010	3563.49	10.00	-51.20	-215.54	1737580.88	14584684.89	40°09'31.037"N	80°39'08.073"W	221.53	256.637	2.08	-1.87	-11.88
3674.00	3.660	229.080	3656.30	7.73	-54.89	-220.17	1737576.25	14584681.21	40°09'31.001"N	80°39'08.133"W	226.91	256.002	0.34	0.01	-5.30
3770.00	2.300	218.330	3752.17	5.31	-58.40	-223.68	1737572.74	14584677.69	40°09'30.966"N	80°39'08.178"W	231.18	255.367	1.53	-1.42	-11.20
3859.00	1.640	129.040	3841.13	3.23	-60.61	-223.80	1737572.62	14584675.49	40°09'30.944"N	80°39'08.180"W	231.86	254.847	3.16	-0.74	-100.33
3952.00	3.740	87.470	3934.03	1.43	-61.31	-219.74	1737576.68	14584674.78	40°09'30.937"N	80°39'08.127"W	228.13	254.410	2.94	2.26	-44.70
4045.00	5.850	75.020	4026.70	0.65	-59.95	-212.13	1737584.29	14584676.14	40°09'30.950"N	80°39'08.029"W	220.44	254.218	2.52	2.27	-13.39
4138.00	6.540	66.920	4119.16	1.22	-56.65	-202.68	1737593.74	14584679.44	40°09'30.983"N	80°39'07.907"W	210.45	254.383	1.20	0.74	-8.71
4231.00	7.240	68.250	4211.49	2.47	-52.40	-192.36	1737604.05	14584683.69	40°09'31.024"N	80°39'07.774"W	199.37	254.761	0.77	0.75	1.43
4323.00	8.740	71.550	4302.59	3.37	-48.04	-180.35	1737616.06	14584688.05	40°09'31.067"N	80°39'07.619"W	186.64	255.083	1.70	1.63	3.59
4416.00	10.720	75.350	4394.25	3.48	-43.62	-165.27	1737631.13	14584692.47	40°09'31.110"N	80°39'07.425"W	170.93	255.216	2.24	2.13	4.09
4509.00	11.680	83.750	4485.49	1.69	-40.41	-147.55	1737648.85	14584695.68	40°09'31.141"N	80°39'07.197"W	152.98	254.685	2.03	1.03	9.03
4601.00	12.230	83.020	4575.49	-1.39	-38.21	-128.62	1737667.77	14584697.88	40°09'31.162"N	80°39'06.953"W	134.17	253.455	0.62	0.60	-0.79
4694.00	10.780	84.590	4666.62	-4.52	-36.19	-110.18	1737686.20	14584699.89	40°09'31.181"N	80°39'06.715"W	115.97	251.816	1.59	-1.56	1.69
4787.00	8.900	90.510	4758.25	-8.15	-35.44	-94.33	1737702.05	14584700.65	40°09'31.188"N	80°39'06.511"W	100.76	249.410	2.29	-2.02	6.37
4880.00	8.760	90.270	4850.15	-12.17	-35.53	-80.05	1737716.32	14584700.55	40°09'31.187"N	80°39'06.327"W	87.58	246.065	0.16	-0.15	-0.26
4973.00	8.220	81.810	4942.13	-15.04	-34.62	-66.39	1737729.97	14584701.46	40°09'31.195"N	80°39'06.151"W	74.87	242.459	1.46	-0.58	-9.10
5065.00	7.990	75.770	5033.21	-16.12	-32.11	-53.68	1737742.68	14584703.97	40°09'31.219"N	80°39'05.987"W	62.55	239.113	0.96	-0.25	-6.57
5189.00	7.240	104.080	5156.16	-20.29	-31.89	-37.74	1737758.61	14584704.19	40°09'31.221"N	80°39'05.782"W	49.41	229.801	3.05	-0.60	22.83
5282.00	14.970	68.420	5247.45	-22.05	-28.89	-20.85	1737775.50	14584707.19	40°09'31.250"N	80°39'05.564"W	35.63	215.809	10.75	8.31	-38.34
5374.00	19.080	30.750	5335.65	-10.54	-11.54	-2.04	1737794.29	14584724.53	40°09'31.421"N	80°39'05.321"W	11.72	190.043	12.53	4.47	-40.95
5467.00	25.960	3.800	5421.74	19.16	21.96	7.11	1737803.44	14584758.02	40°09'31.751"N	80°39'05.201"W	23.08	17.945	13.16	7.40	-28.98
5560.00	34.490	355.650	5502.95	64.21	68.63	6.46	1737802.79	14584804.67	40°09'32.213"N	80°39'05.207"W	68.93	5.379	10.16	9.17	-8.76

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Area	Ohio County, WV	Well	Edward Dremak OHI 3H
Field	Ohio	Wellbore	Edward Dremak OHI 3H AWB
Facility	Edward Dremak OHI Pad		

WELLPATH DATA (176 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
5652.00	42.350	350.770	5574.09	120.61	125.29	-0.50	1737795.84	14584861.31	40°09'32.773"N	80°39'05.294"W	125.29	359.773	9.15	8.54	-5.30
5745.00	50.820	348.680	5637.95	187.77	191.68	-12.62	1737783.72	14584927.68	40°09'33.429"N	80°39'05.447"W	192.10	356.233	9.25	9.11	-2.25
5838.00	59.020	348.700	5691.36	263.56	266.25	-27.53	1737768.81	14585002.21	40°09'34.167"N	80°39'05.635"W	267.67	354.096	8.82	8.82	0.02
5884.00	64.400	348.960	5713.15	303.91	305.97	-35.37	1737760.98	14585041.92	40°09'34.560"N	80°39'05.734"W	308.01	353.405	11.71	11.70	0.57
5930.00	66.810	349.030	5732.15	345.65	347.09	-43.37	1737752.98	14585083.03	40°09'34.966"N	80°39'05.835"W	349.79	352.878	5.24	5.24	0.15
5977.00	68.570	348.020	5749.99	388.99	389.70	-52.02	1737744.33	14585125.62	40°09'35.388"N	80°39'05.945"W	393.16	352.396	4.24	3.74	-2.15
6023.00	71.130	347.830	5765.84	432.08	431.93	-61.06	1737735.30	14585167.83	40°09'35.805"N	80°39'06.059"W	436.22	351.954	5.58	5.57	-0.41
6070.00	77.620	347.790	5778.49	477.22	476.14	-70.61	1737725.75	14585212.03	40°09'36.243"N	80°39'06.180"W	481.35	351.565	13.81	13.81	-0.09
6116.00	81.310	347.850	5786.90	522.34	520.34	-80.15	1737716.22	14585256.21	40°09'36.680"N	80°39'06.300"W	526.48	351.244	8.02	8.02	0.13
6162.00	85.160	347.460	5792.31	567.92	564.96	-89.91	1737706.46	14585300.81	40°09'37.121"N	80°39'06.424"W	572.07	350.957	8.41	8.37	-0.85
6209.00	89.820	347.000	5794.37	614.79	610.74	-100.29	1737696.09	14585346.57	40°09'37.574"N	80°39'06.555"W	618.92	350.675	9.96	9.91	-0.98
6301.00	89.970	345.210	5794.54	706.72	700.04	-122.38	1737674.00	14585435.84	40°09'38.457"N	80°39'06.835"W	710.66	350.084	1.95	0.16	-1.95
6394.00	89.970	341.870	5794.59	799.71	789.22	-148.73	1737647.66	14585524.98	40°09'39.339"N	80°39'07.170"W	803.11	349.328	3.59	0.00	-3.59
6487.00	90.180	339.330	5794.47	892.53	876.93	-179.62	1737616.79	14585612.66	40°09'40.207"N	80°39'07.563"W	895.14	348.425	2.74	0.23	-2.73
6579.00	90.430	341.540	5793.98	984.34	963.61	-210.42	1737585.99	14585699.31	40°09'41.065"N	80°39'07.956"W	986.32	347.682	2.42	0.27	2.40
6672.00	90.370	344.500	5793.33	1077.31	1052.55	-237.58	1737558.85	14585788.21	40°09'41.945"N	80°39'08.301"W	1079.03	347.280	3.18	-0.06	3.18
6765.00	90.430	344.790	5792.68	1170.30	1142.22	-262.20	1737534.23	14585877.85	40°09'42.832"N	80°39'08.614"W	1171.93	347.071	0.32	0.06	0.31
6858.00	90.550	346.440	5791.88	1263.26	1232.30	-285.31	1737511.14	14585967.89	40°09'43.723"N	80°39'08.907"W	1264.90	346.964	1.78	0.13	1.77
6944.00	90.710	347.090	5790.94	1349.16	1316.01	-305.00	1737491.46	14586051.57	40°09'44.551"N	80°39'09.156"W	1350.89	346.952	0.78	0.19	0.76
7031.00	90.460	346.380	5790.05	1436.06	1400.69	-324.96	1737471.50	14586136.21	40°09'45.389"N	80°39'09.409"W	1437.89	346.939	0.87	-0.29	-0.82
7118.00	90.490	345.130	5789.33	1523.02	1485.01	-346.36	1737450.11	14586220.50	40°09'46.223"N	80°39'09.680"W	1524.87	346.871	1.44	0.03	-1.44
7205.00	90.550	343.690	5788.54	1610.01	1568.80	-369.74	1737426.74	14586304.26	40°09'47.052"N	80°39'09.977"W	1611.78	346.738	1.66	0.07	-1.66
7291.00	90.550	343.190	5787.71	1696.00	1651.23	-394.25	1737402.23	14586386.65	40°09'47.867"N	80°39'10.289"W	1697.64	346.571	0.58	0.00	-0.58
7378.00	90.590	345.070	5786.85	1782.99	1734.91	-418.04	1737378.46	14586470.30	40°09'48.695"N	80°39'10.591"W	1784.56	346.452	2.16	0.05	2.16
7465.00	90.590	346.810	5785.95	1869.94	1819.29	-439.18	1737357.33	14586554.65	40°09'49.530"N	80°39'10.859"W	1871.55	346.428	2.00	0.00	2.00
7552.00	90.460	345.480	5785.15	1956.87	1903.75	-460.01	1737336.51	14586639.08	40°09'50.365"N	80°39'11.123"W	1958.54	346.416	1.54	-0.15	-1.53
7639.00	90.590	340.580	5784.36	2043.83	1986.94	-485.39	1737311.13	14586722.23	40°09'51.188"N	80°39'11.446"W	2045.37	346.272	5.63	0.15	-5.63
7726.00	90.430	334.730	5783.58	2130.25	2067.37	-518.45	1737278.09	14586802.63	40°09'51.984"N	80°39'11.868"W	2131.38	345.922	6.73	-0.18	-6.72
7815.00	89.970	333.800	5783.27	2217.95	2147.54	-557.10	1737239.46	14586882.77	40°09'52.778"N	80°39'12.361"W	2218.62	345.457	1.17	-0.52	-1.04
7903.00	90.400	336.670	5782.99	2304.90	2227.44	-593.96	1737202.61	14586962.63	40°09'53.569"N	80°39'12.832"W	2305.27	345.069	3.30	0.49	3.26

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Facility	Edward Dremak OHI Pad		

WELLPATH DATA (176 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
7989.00	89.510	340.510	5783.05	2390.49	2307.49	-625.34	1737171.24	14587042.65	40°09'54.361"N	80°39'13.232"W	2390.72	344.837	4.58	-1.03	4.47
8076.00	89.880	342.410	5783.52	2477.40	2389.96	-653.00	1737143.59	14587125.10	40°09'55.177"N	80°39'13.585"W	2477.57	344.718	2.22	0.43	2.18
8163.00	90.520	345.830	5783.21	2564.39	2473.63	-676.81	1737119.79	14587208.73	40°09'56.005"N	80°39'13.887"W	2564.55	344.698	4.00	0.74	3.93
8249.00	90.920	348.160	5782.13	2650.26	2557.41	-696.16	1737100.45	14587292.48	40°09'56.834"N	80°39'14.132"W	2650.47	344.772	2.75	0.47	2.71
8336.00	90.800	345.880	5780.83	2737.13	2642.17	-715.69	1737080.92	14587377.21	40°09'57.672"N	80°39'14.379"W	2737.39	344.844	2.62	-0.14	-2.62
8423.00	90.740	343.520	5779.66	2824.11	2726.08	-738.65	1737057.98	14587461.08	40°09'58.502"N	80°39'14.671"W	2824.38	344.839	2.71	-0.07	-2.71
8510.00	90.830	347.330	5778.47	2911.06	2810.25	-760.53	1737036.10	14587545.23	40°09'59.335"N	80°39'14.949"W	2911.35	344.857	4.38	0.10	4.38
8596.00	90.740	349.520	5777.29	2996.79	2894.49	-777.79	1737018.85	14587629.43	40°10'00.168"N	80°39'15.167"W	2997.17	344.959	2.55	-0.10	2.55
8685.00	90.460	346.330	5776.36	3085.57	2981.51	-796.40	1737000.24	14587716.41	40°10'01.029"N	80°39'15.402"W	3086.04	345.045	3.60	-0.31	-3.58
8772.00	90.430	341.490	5775.68	3172.55	3065.07	-820.51	1736976.15	14587799.94	40°10'01.855"N	80°39'15.708"W	3172.99	345.014	5.56	-0.03	-5.56
8859.00	90.370	339.330	5775.07	3259.36	3147.03	-849.67	1736946.99	14587881.87	40°10'02.666"N	80°39'16.080"W	3259.71	344.891	2.48	-0.07	-2.48
8945.00	90.340	336.350	5774.54	3344.85	3226.67	-882.11	1736914.57	14587961.47	40°10'03.454"N	80°39'16.494"W	3345.07	344.710	3.47	-0.03	-3.47
9032.00	90.250	339.140	5774.09	3431.31	3307.18	-915.05	1736881.64	14588041.95	40°10'04.251"N	80°39'16.914"W	3431.43	344.534	3.21	-0.10	3.21
9119.00	90.740	341.940	5773.34	3518.14	3389.19	-944.03	1736852.67	14588123.94	40°10'05.063"N	80°39'17.283"W	3518.22	344.435	3.27	0.56	3.22
9206.00	90.620	341.490	5772.31	3605.06	3471.80	-971.33	1736825.39	14588206.51	40°10'05.880"N	80°39'17.631"W	3605.11	344.370	0.54	-0.14	-0.52
9293.00	90.250	341.670	5771.65	3691.97	3554.34	-998.82	1736797.91	14588289.02	40°10'06.697"N	80°39'17.981"W	3692.01	344.304	0.47	-0.43	0.21
9379.00	90.340	346.960	5771.20	3777.94	3637.10	-1022.06	1736774.68	14588371.75	40°10'07.516"N	80°39'18.276"W	3777.98	344.304	6.15	0.10	6.15
9466.00	90.430	350.930	5770.62	3864.60	3722.47	-1038.74	1736758.00	14588457.08	40°10'08.360"N	80°39'18.486"W	3864.68	344.409	4.56	0.10	4.56
9553.00	89.880	349.760	5770.38	3951.08	3808.24	-1053.33	1736743.42	14588542.82	40°10'09.208"N	80°39'18.670"W	3951.22	344.539	1.49	-0.63	-1.34
9639.00	89.940	346.650	5770.52	4036.84	3892.41	-1070.90	1736725.85	14588626.96	40°10'10.041"N	80°39'18.892"W	4037.04	344.617	3.62	0.07	-3.62
9726.00	90.120	344.330	5770.47	4123.81	3976.63	-1092.70	1736704.06	14588711.14	40°10'10.874"N	80°39'19.169"W	4124.02	344.635	2.67	0.21	-2.67
9813.00	90.060	341.830	5770.34	4210.79	4059.86	-1118.02	1736678.75	14588794.34	40°10'11.697"N	80°39'19.491"W	4210.98	344.603	2.87	-0.07	-2.87
9900.00	90.120	339.170	5770.20	4297.61	4141.86	-1147.06	1736649.73	14588876.31	40°10'12.509"N	80°39'19.861"W	4297.76	344.520	3.06	0.07	-3.06
9986.00	90.030	338.280	5770.09	4383.24	4222.00	-1178.26	1736618.53	14588956.41	40°10'13.302"N	80°39'20.259"W	4383.33	344.407	1.04	-0.10	-1.03
10073.00	90.090	339.870	5769.99	4469.91	4303.26	-1209.33	1736587.48	14589037.64	40°10'14.106"N	80°39'20.655"W	4469.95	344.303	1.83	0.07	1.83
10160.00	89.940	344.980	5769.97	4556.85	4386.17	-1235.59	1736561.22	14589120.52	40°10'14.926"N	80°39'20.989"W	4556.88	344.267	5.88	-0.17	5.87
10246.00	89.970	349.770	5770.04	4642.68	4470.06	-1254.39	1736542.44	14589204.38	40°10'15.756"N	80°39'21.227"W	4642.73	344.325	5.57	0.03	5.57
10333.00	90.280	352.360	5769.85	4729.02	4556.00	-1267.90	1736528.93	14589290.29	40°10'16.606"N	80°39'21.397"W	4729.13	344.449	3.00	0.36	2.98
10420.00	90.090	351.650	5769.57	4815.18	4642.15	-1280.00	1736516.84	14589376.41	40°10'17.458"N	80°39'21.548"W	4815.39	344.585	0.84	-0.22	-0.82
10507.00	90.860	349.910	5768.85	4901.57	4728.02	-1293.94	1736502.91	14589462.24	40°10'18.307"N	80°39'21.724"W	4901.88	344.694	2.19	0.89	-2.00

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Actual Wellpath Report

Edward Dremak OHI 3H AWP Proj: 15285'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #3H
Area	Ohio County, WV	Well	Edward Dremak OHI 3H
Field	Ohio	Wellbore	Edward Dremak OHI 3H AWB
Facility	Edward Dremak OHI Pad		

WELLPATH DATA (176 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
10594.00	90.650	343.020	5767.70	4988.44	4812.55	-1314.28	1736482.57	14589546.74	40°10'19.143"N	80°39'21.981"W	4988.78	344.725	7.92	-0.24	-7.92
10680.00	90.340	339.970	5766.96	5074.34	4894.09	-1341.57	1736455.29	14589628.24	40°10'19.949"N	80°39'22.329"W	5074.63	344.671	3.56	-0.36	-3.55
10767.00	90.250	345.000	5766.51	5161.28	4977.03	-1367.75	1736429.12	14589711.15	40°10'20.770"N	80°39'22.662"W	5161.54	344.634	5.78	-0.10	5.78
10854.00	90.740	348.840	5765.76	5248.15	5061.75	-1387.43	1736409.44	14589795.84	40°10'21.608"N	80°39'22.911"W	5248.46	344.672	4.45	0.56	4.41
10941.00	90.800	344.860	5764.59	5335.02	5146.44	-1407.22	1736389.67	14589880.50	40°10'22.446"N	80°39'23.162"W	5335.37	344.707	4.57	0.07	-4.57
11028.00	90.430	341.250	5763.65	5421.99	5229.65	-1432.57	1736364.32	14589963.67	40°10'23.269"N	80°39'23.484"W	5422.31	344.681	4.17	-0.43	-4.15
11114.00	90.400	342.410	5763.03	5507.92	5311.36	-1459.39	1736337.52	14590045.35	40°10'24.077"N	80°39'23.826"W	5508.20	344.636	1.35	-0.03	1.35
11203.00	90.920	334.930	5762.00	5596.46	5394.20	-1491.73	1736305.18	14590128.16	40°10'24.897"N	80°39'24.238"W	5596.66	344.542	8.42	0.58	-8.40
11290.00	90.890	333.330	5760.63	5682.14	5472.46	-1529.69	1736267.24	14590206.39	40°10'25.672"N	80°39'24.723"W	5682.24	344.383	1.84	-0.03	-1.84
11376.00	91.170	335.540	5759.08	5766.91	5550.03	-1566.79	1736230.15	14590283.93	40°10'26.440"N	80°39'25.198"W	5766.94	344.235	2.59	0.33	2.57
11463.00	91.230	337.290	5757.26	5853.12	5629.74	-1601.59	1736195.37	14590363.61	40°10'27.229"N	80°39'25.642"W	5853.13	344.120	2.01	0.07	2.01
11550.00	91.230	345.910	5755.39	5939.94	5712.20	-1629.02	1736167.95	14590446.03	40°10'28.045"N	80°39'25.991"W	5939.94	344.083	9.91	0.00	9.91
11637.00	90.950	347.970	5753.73	6026.81	5796.92	-1648.68	1736148.30	14590530.73	40°10'28.883"N	80°39'26.240"W	6026.81	344.124	2.39	-0.32	2.37
11724.00	90.430	343.670	5752.69	6113.74	5881.25	-1669.98	1736127.00	14590615.02	40°10'29.717"N	80°39'26.510"W	6113.75	344.148	4.98	-0.60	-4.94
11810.00	90.520	342.720	5751.97	6199.73	5963.57	-1694.85	1736102.15	14590697.31	40°10'30.532"N	80°39'26.827"W	6199.73	344.135	1.11	0.10	-1.10
11897.00	90.430	343.650	5751.25	6286.71	6046.85	-1720.01	1736076.99	14590780.55	40°10'31.355"N	80°39'27.147"W	6286.72	344.122	1.07	-0.10	1.07
11984.00	90.650	344.200	5750.43	6373.71	6130.44	-1744.10	1736052.92	14590864.11	40°10'32.182"N	80°39'27.453"W	6373.71	344.119	0.68	0.25	0.63
12071.00	90.490	343.680	5749.57	6460.70	6214.04	-1768.17	1736028.86	14590947.68	40°10'33.009"N	80°39'27.759"W	6460.71	344.117	0.63	-0.18	-0.60
12157.00	90.220	344.690	5749.03	6546.70	6296.78	-1791.61	1736005.43	14591030.39	40°10'33.828"N	80°39'28.057"W	6546.70	344.118	1.22	-0.31	1.17
12244.00	89.940	345.670	5748.91	6633.68	6380.89	-1813.86	1735983.19	14591114.46	40°10'34.660"N	80°39'28.339"W	6633.69	344.131	1.17	-0.32	1.13
12331.00	89.880	346.340	5749.05	6720.63	6465.31	-1834.90	1735962.15	14591198.85	40°10'35.495"N	80°39'28.606"W	6720.64	344.156	0.77	-0.07	0.77
12418.00	90.520	348.450	5748.75	6807.48	6550.20	-1853.88	1735943.18	14591283.71	40°10'36.335"N	80°39'28.846"W	6807.50	344.197	2.53	0.74	2.43
12504.00	91.200	352.300	5747.45	6892.93	6634.97	-1868.26	1735928.81	14591368.44	40°10'37.173"N	80°39'29.027"W	6892.98	344.274	4.55	0.79	4.48
12591.00	90.520	346.370	5746.15	6979.51	6720.42	-1884.35	1735912.72	14591453.86	40°10'38.018"N	80°39'29.230"W	6979.60	344.337	6.86	-0.78	-6.82
12678.00	90.710	344.390	5745.21	7066.48	6804.59	-1906.31	1735890.77	14591538.00	40°10'38.851"N	80°39'29.509"W	7066.57	344.350	2.29	0.22	-2.28
12765.00	90.620	344.660	5744.20	7153.47	6888.43	-1929.52	1735867.57	14591621.80	40°10'39.680"N	80°39'29.804"W	7153.57	344.352	0.33	-0.10	0.31
12852.00	90.800	345.480	5743.13	7240.44	6972.49	-1951.93	1735845.17	14591705.83	40°10'40.511"N	80°39'30.089"W	7240.55	344.361	0.96	0.21	0.94
12939.00	90.650	343.660	5742.02	7327.43	7056.34	-1975.08	1735822.03	14591789.65	40°10'41.341"N	80°39'30.383"W	7327.54	344.363	2.10	-0.17	-2.09
13027.00	90.650	340.400	5741.03	7415.36	7140.03	-2002.22	1735794.90	14591873.31	40°10'42.169"N	80°39'30.728"W	7415.45	344.335	3.70	0.00	-3.70
13114.00	90.740	339.780	5739.97	7502.14	7221.82	-2031.84	1735765.29	14591955.07	40°10'42.978"N	80°39'31.106"W	7502.21	344.286	0.72	0.10	-0.71

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Actual Wellpath Report

Edward Dremak OHI 3H AWP Proj: 15285'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #3H
Area	Ohio County, WV	Well	Edward Dremak OHI 3H
Field	Ohio	Wellbore	Edward Dremak OHI 3H AWB
Facility	Edward Dremak OHI Pad		

WELLPATH DATA (176 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
13201.00	90.950	344.580	5738.69	7589.06	7304.62	-2058.46	1735738.68	14592037.83	40°10'43.798"N	80°39'31.444"W	7589.11	344.262	5.52	0.24	5.52
13288.00	91.080	345.980	5737.15	7676.03	7388.74	-2080.56	1735716.59	14592121.92	40°10'44.630"N	80°39'31.725"W	7676.09	344.274	1.62	0.15	1.61
13375.00	90.890	341.850	5735.65	7762.99	7472.31	-2104.66	1735692.50	14592205.46	40°10'45.456"N	80°39'32.031"W	7763.05	344.270	4.75	-0.22	-4.75
13462.00	90.950	339.210	5734.25	7849.81	7554.32	-2133.65	1735663.52	14592287.43	40°10'46.268"N	80°39'32.401"W	7849.85	344.228	3.03	0.07	-3.03
13550.00	90.920	339.720	5732.82	7937.52	7636.71	-2164.51	1735632.67	14592369.80	40°10'47.083"N	80°39'32.794"W	7937.54	344.175	0.58	-0.03	0.58
13637.00	90.620	335.830	5731.65	8023.97	7717.23	-2197.41	1735599.78	14592450.28	40°10'47.880"N	80°39'33.214"W	8023.98	344.106	4.48	-0.34	-4.47
13723.00	90.740	337.560	5730.63	8109.26	7796.20	-2231.43	1735565.78	14592529.22	40°10'48.662"N	80°39'33.649"W	8109.26	344.028	2.02	0.14	2.01
13810.00	90.710	341.560	5729.52	8195.96	7877.70	-2261.80	1735535.41	14592610.69	40°10'49.468"N	80°39'34.036"W	8195.97	343.980	4.60	-0.03	4.60
13897.00	90.770	339.600	5728.40	8282.79	7959.74	-2290.73	1735506.50	14592692.70	40°10'50.280"N	80°39'34.405"W	8282.81	343.945	2.25	0.07	-2.25
13983.00	90.590	343.580	5727.38	8368.69	8041.32	-2317.88	1735479.36	14592774.24	40°10'51.087"N	80°39'34.750"W	8368.71	343.921	4.63	-0.21	4.63
14070.00	90.680	347.530	5726.42	8455.64	8125.54	-2339.58	1735457.67	14592858.44	40°10'51.921"N	80°39'35.026"W	8455.65	343.937	4.54	0.10	4.54
14157.00	90.620	342.560	5725.43	8542.59	8209.57	-2362.02	1735435.24	14592942.42	40°10'52.752"N	80°39'35.311"W	8542.61	343.949	5.71	-0.07	-5.71
14244.00	91.140	344.630	5724.09	8629.57	8293.01	-2386.59	1735410.68	14593025.84	40°10'53.577"N	80°39'35.623"W	8629.59	343.945	2.45	0.60	2.38
14330.00	90.800	349.950	5722.63	8715.39	8376.86	-2405.50	1735391.78	14593109.65	40°10'54.407"N	80°39'35.863"W	8715.40	343.978	6.20	-0.40	6.19
14417.00	90.740	350.400	5721.47	8801.89	8462.58	-2420.34	1735376.94	14593195.34	40°10'55.254"N	80°39'36.050"W	8801.89	344.039	0.52	-0.07	0.52
14504.00	90.800	344.570	5720.30	8888.69	8547.46	-2439.19	1735358.10	14593280.19	40°10'56.094"N	80°39'36.288"W	8888.69	344.073	6.70	0.07	-6.70
14591.00	90.680	343.140	5719.17	8975.68	8631.02	-2463.37	1735333.92	14593363.72	40°10'56.920"N	80°39'36.596"W	8975.68	344.071	1.65	-0.14	-1.64
14678.00	90.740	348.950	5718.09	9062.58	8715.41	-2484.34	1735312.96	14593448.07	40°10'57.755"N	80°39'36.862"W	9062.58	344.090	6.68	0.07	6.68
14764.00	90.860	349.600	5716.89	9148.21	8799.90	-2500.35	1735296.97	14593532.53	40°10'58.591"N	80°39'37.064"W	9148.22	344.138	0.77	0.14	0.76
14851.00	90.920	340.480	5715.54	9235.10	8883.85	-2522.78	1735274.54	14593616.45	40°10'59.421"N	80°39'37.349"W	9235.11	344.147	10.48	0.07	-10.48
14937.00	90.650	341.120	5714.36	9320.95	8965.06	-2551.06	1735246.27	14593697.63	40°11'00.225"N	80°39'37.709"W	9320.96	344.116	0.81	-0.31	0.74
15024.00	90.680	343.380	5713.35	9407.90	9047.91	-2577.58	1735219.76	14593780.44	40°11'01.044"N	80°39'38.047"W	9407.90	344.099	2.60	0.03	2.60
15111.00	90.710	342.280	5712.29	9494.87	9131.03	-2603.26	1735194.09	14593863.52	40°11'01.867"N	80°39'38.373"W	9494.87	344.087	1.26	0.03	-1.26
15198.00	90.770	340.750	5711.17	9581.77	9213.53	-2630.84	1735166.52	14593945.99	40°11'02.683"N	80°39'38.725"W	9581.77	344.064	1.76	0.07	-1.76
15261.00	90.580	335.740	5710.43	9644.43	9272.02	-2654.18	1735143.19	14594004.46	40°11'03.262"N	80°39'39.023"W	9644.43	344.026	7.96	-0.30	-7.95
15285.00	90.580	335.740	5710.18	9668.17	9293.90	-2664.04	1735133.33	14594026.33	40°11'03.478"N	80°39'39.148"W	9668.18	344.005	0.00	0.00	0.00

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Environmental Protection



Actual Wellpath Report

Edward Dremak OHI 3H AWP Proj: 15285'
Page 8 of 9



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #3H
Area	Ohio County, WV	Well	Edward Dremak OHI 3H
Field	Ohio	Wellbore	Edward Dremak OHI 3H AWB
Facility	Edward Dremak OHI Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Edward Dremak OHI 3H AWB Ref Wellpath: Edward Dremak OHI 3H AWP Proj: 15285'									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
17.5in Open Hole	26.00	359.00	333.00	26.00	358.97	0.00	0.00	3.32	1.37
13.375in Casing Surface	26.00	341.00	315.00	26.00	340.98	0.00	0.00	2.98	1.23
12.25in Open Hole	359.00	1767.00	1408.00	358.97	1766.10	3.32	1.37	24.29	-4.90
9.625in Casing Intermediate	26.00	1754.00	1728.00	26.00	1753.12	0.00	0.00	24.42	-4.25
8.75in Open Hole	1767.00	5135.00	3368.00	1766.10	5102.60	24.29	-4.90	-31.00	-44.49
8.5in Open Hole	5135.00	15285.00	10150.00	5102.60	5710.18	-31.00	-44.49	9293.90	-2664.04

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Edward Dremak OHI 3H BHL Rev-2	5704.00	9337.55	-2669.30	1735128.08	14594069.97	40°11'03.910"N	80°39'39.214"W	point
Edward Dremak OHI 3H LP Rev-2	5789.00	619.73	-113.51	1737682.87	14585355.56	40°09'37.663"N	80°39'06.725"W	point

WELLPATH COMPOSITION - Ref Wellbore: Edward Dremak OHI 3H AWB Ref Wellpath: Edward Dremak OHI 3H AWP Proj: 15285'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	
26.00	348.00	OWSG EMS rev2 - Standard	01_MSS <17.5"> (26'-348')	Edward Dremak OHI 3H AWB	
348.00	1690.00	BHI NaviTrak (Axial)	02_APS EM <12.25"> (348')(416'-1690')	Edward Dremak OHI 3H AWB	
1690.00	5065.00	BHI NaviTrak (Axial)	03_APS EM <8.75"> (1690')(1772-5065')	Edward Dremak OHI 3H AWB	
5065.00	15261.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8.5"> (5065')(5189'-15261')	Edward Dremak OHI 3H AWB	
15261.00	15285.00	Blind Drilling (std)	Projection to bit	Edward Dremak OHI 3H AWB	

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Environmental Protection

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #3H
Area	Ohio County, WV	Well	Edward Dremak OHI 3H
Field	Ohio	Wellbore	Edward Dremak OHI 3H AWB
Facility	Edward Dremak OHI Pad		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
348.00	1.200	22.400	347.98	MSS <17.5"> (26'-348')	
416.00	0.660	44.430	415.97	APS EM <12.25"> (348')(416'-1690')	
1772.00	2.940	255.820	1771.10	APS EM <8.75"> (1690')(1772-5065')	
5189.00	7.240	104.080	5156.16	BH AT Curve <8.5"> (5065')(5189'-15261')	
15285.00	90.580	335.740	5710.18	Projection to Bit	

COMMENTS
<p>Wellpath general comments API: 47-069-00213-0000 Job#: 8752304 Rig: SDC-46 Duration: 09/18/17 - 09/25/17</p>

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 WV Department of
 Environmental Protection

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/25/2018
Job End Date:	3/16/2018
State:	West Virginia
County:	Ohio
API Number:	47-069-00226-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Edward Dremak 1H
Latitude:	40.15877640
Longitude:	-80.65158273
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	5,760
Total Base Water Volume (gal):	15,039,412
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	80.87182	Density = 8.330
Ingredients	Listed Above	Listed Above					
	Office of Oil and Gas		Water	7732-18-5	100.00000	1.11066	

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BIOC11219A	NALCO	Biocide					
				Listed Below			
HAI-150E	Halliburton	Corrosion Inhibitor					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
SAND-COMMON WHITE - 100 MESH, 3307 LB BAG	Halliburton	Proppant					
				Listed Below			
FDP-S1176-15	Halliburton	Friction Reducer					
				Listed Below			
FloJet DR 9000	SNF Inc	Friction Reducer					
				Listed Below			
SCAL16486A	NALCO	Scale Inhibitor					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
	RECEIVED Office of Oil and Gas			Listed Below			

APR 27 2018

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	17.95860	
			Hydrochloric acid	7647-01-0	15.00000	0.15970	
			Polyacrylate	Proprietary	30.00000	0.02300	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02300	
			Methanol	67-56-1	60.00000	0.01124	
			Benzyl-Dimethyl-Ammonium Chloride	68424-85-1	30.00000	0.00562	
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00383	
			9-Octadecenamide, n,n-bis-2(hydroxy-ethyl)-,(Z)	93-83-4	5.00000	0.00383	
			Ammonium chloride	12125-02-9	5.00000	0.00383	
			Castor oil, ethoxylated	61791-12-6	5.00000	0.00383	
			Sodium chloride	7647-14-5	5.00000	0.00383	
			Ethylene Glycol	107-21-1	30.00000	0.00241	
			Amine Triphosphate	Proprietary	30.00000	0.00224	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Glutaraldehyde	111-30-8	10.00000	0.00187	
			Distillates hydrotreated light	64742-47-8	45.00000	0.00078	
			Non-hazardous food substance	Proprietary	100.00000	0.00033	
			Alcohols, ethoxylated propoxylated	68213-24-1	2.00000	0.00003	
			Fatty alcohols ethoxylated	Proprietary	2.00000	0.00003	

* 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)

APR 27 2018

Department of
Environmental Protection

SHL Latitude: 40°10'00" 7,427'

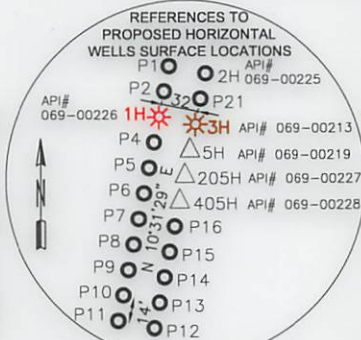
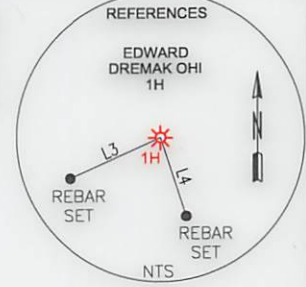
BHL Latitude: 40°12'30" 10,427'



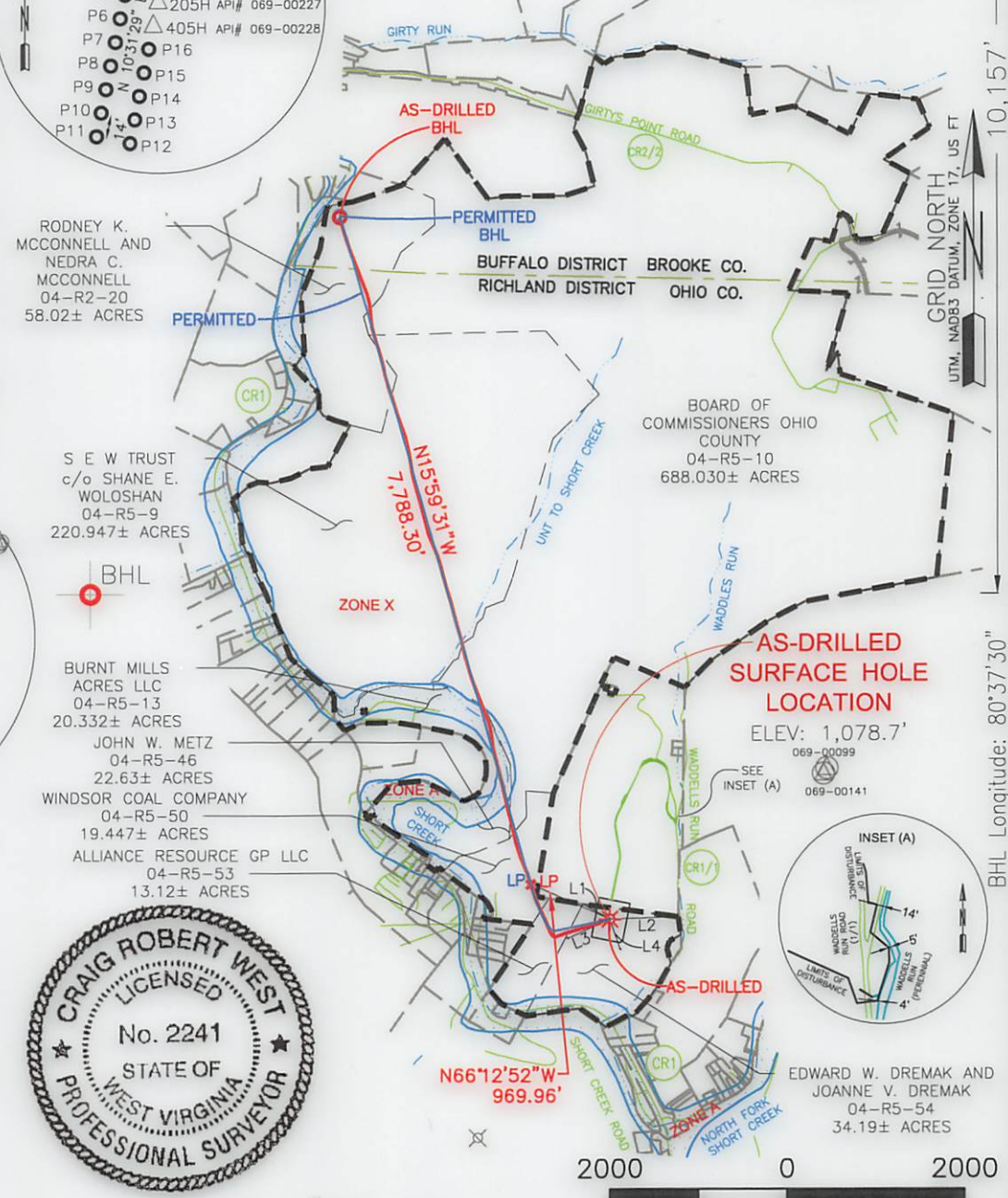
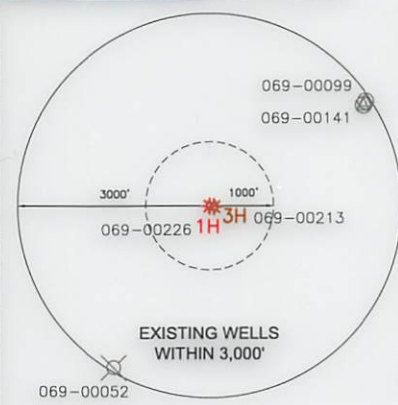
RETTEW Associates, Inc.
27 Travato Street, Suite 101
Bridgeport, WV 26330
Phone (800) 738-8395
Email: rettew@rettew.com
Website: www.rettew.com

Table with 2 columns: Location Type (SHL, LPL, BHL) and UTM Coordinates (NORTHING, EASTING).

Table with 5 columns: LINE, BEARING, DISTANCE, DESCRIPTION, MONUMENT.



AS-DRILLED



- NOTES ON SURVEY
1. COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. 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.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
6. NO LAKES, PONDS OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
7. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

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. 2241

COMPANY: SWN Production Company, LLC
EDWARD DREMAK OHI 1H
OPERATOR'S WELL #: 1H
API WELL #: 47 STATE COUNTY PERMIT

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

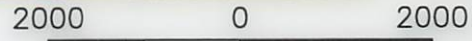
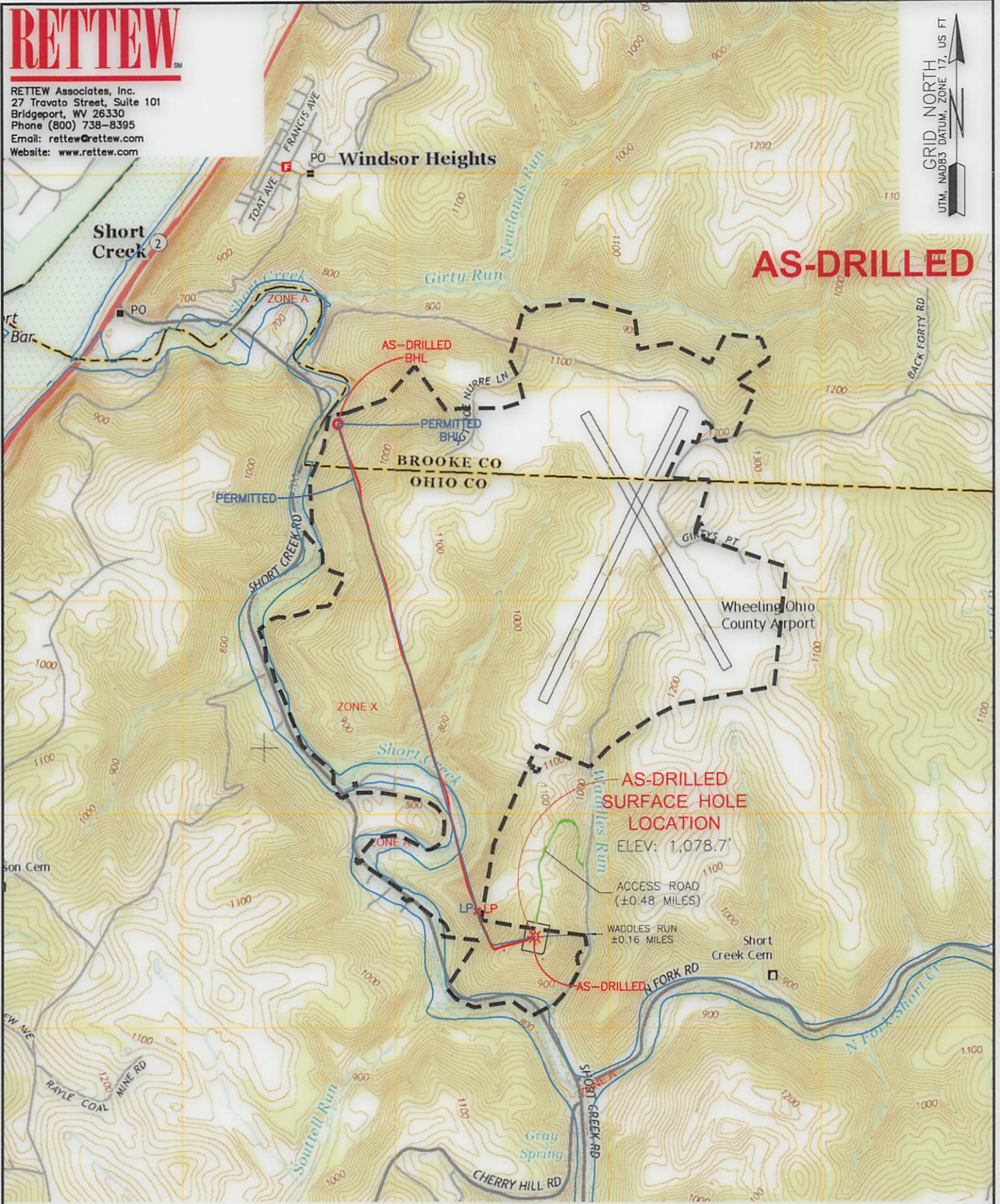
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SURVEY SOURCE OF GRADE GPS (NAVD 88, US FT)
ELEVATION:

EDWARD DREMAK OHI 1H
OPERATOR'S WELL #: 1H
API WELL #: 47 STATE COUNTY PERMIT

WELL TYPE: OIL [] WASTE DISPOSAL [] PRODUCTION [X] DEEP [] GAS [X] LIQUID INJECTION [] STORAGE [] SHALLOW [X]
WATERSHED: UPPER OHIO WHEELING
DISTRICT: RICHLAND COUNTY: OHIO
SURFACE OWNER: DREMAK, EDWARD W. & JOANNE V.
OIL & GAS ROYALTY OWNER: DREMAK, EDWARD W. & JOANNE V.
DRILL [] DRILL DEEPER [] REDRILL [] FRACTURE OR STIMULATE [] PLUG OFF OLD FORMATION [] PERFORATE NEW FORMATION []
CONVERT [] PLUG & ABANDON [] CLEAN OUT & REPLUG [] OTHER CHANGE [X] (SPECIFY) As-Drilled
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,790' TVD 14,018' TMD

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

LEGEND: PROPOSED SURFACE HOLE / BOTTOM HOLE, EXISTING / PRODUCING WELLHEAD, ABANDONED WELL, PLUGGED & ABANDONED WELL, PERMITTED NOT DRILLED, CUT CONDUCTOR, TIE LINE, LEASE BOUNDARY, ASDRILLED WELLPATH, PERMITTED WELLPATH, STREAM, REVISIONS, DATE: 11-08-2017, DRAWN BY: G.FLORES, SCALE: 1" = 2000', DRAWING NO: 087569045, WELL LOCATION PLAT



WELL: EDWARD DREMAK OHI 1H
QUAD: TILTONSVILLE, OH-WV

COMPANY:

NAME AND DISTANCE TO THE NEAREST STREAM: WADDLES RUN IS LOCATED ±0.16 MILES EAST OF THE CENTER OF THE DRILL PAD.	STREAM CROSSING COORDINATES (NAD 83): NO STREAM CROSSINGS
---	--

WELL RESTRICTIONS: WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET CENTER OF PAD TO AGRICULTURAL BUILDINGS LAGER THAN 2500 SQ FT: >625 FEET	OPERATOR'S EDWARD DREMAK OHI
FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF OHIO/BROOKE COUNTY, WEST VIRGINIA; MAP NUMBER 54069C00160/54069C0020D; EFFECTIVE DATE: JULY 17, 2006	WELL #: 1H

LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE * EXISTING / PRODUCING WELLHEAD	--- LEASE BOUNDARY --- ASDRILLED WELLPATH --- PERMITTED WELLPATH --- ACCESS ROAD --- HIGHWAY/INTERSTATE --- COUNTY ROAD
---	--

SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.158776° LONGITUDE: -80.651583°	LOCATION: RICHLAND/BUFFALO DISTRICTS, OHIO/BROOKE COUNTIES, WEST VIRGINIA
BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.180442° LONGITUDE: -80.662332°	DATE: 11-08-2017

REVISIONS:	DRAWN BY: G.FLORES
	SCALE: 1" = 2000'
	DRAWING NO:087569045
	TOPOGRAPHIC MAP

SHL Latitude: 40°10'00" 7,427'

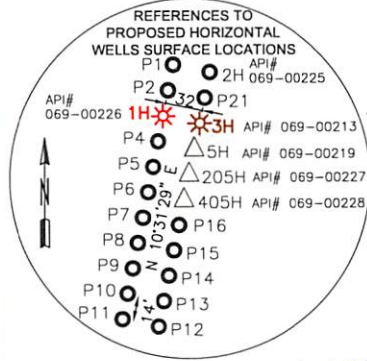
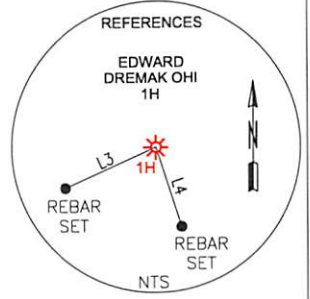
BHL Latitude: 40°12'30" 10,427'



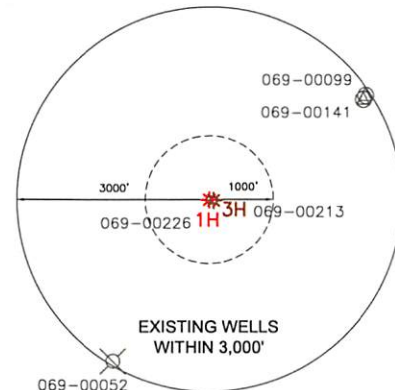
RETTEW Associates, Inc.
27 Travato Street, Suite 101
Bridgeport, WV 26330
Phone (800) 738-8395
Email: rettew@rettew.com
Website: www.rettew.com

Table with 2 columns: Location Type and UTM Coordinates. Rows include Surface Hole Location (SHL), Landing Point Location (LPL), and Bottom Hole Location (BHL) with their respective UTM (NAD83, Zone 17, Meters) coordinates.

Table with 5 columns: LINE, BEARING, DISTANCE, DESCRIPTION, MONUMENT. Contains data for lines L1 through L4.



AS-DRILLED



RODNEY K. MCCONNELL AND NEDRA C. MCCONNELL
04-R2-20
58.02± ACRES

S E W TRUST c/o SHANE E. WOLOSCHAN
04-R5-9
220.947± ACRES

BURNT MILLS ACRES LLC
04-R5-13
20.332± ACRES
JOHN W. METZ
04-R5-46
22.63± ACRES
WINDSOR COAL COMPANY
04-R5-50
19.447± ACRES
ALLIANCE RESOURCE GP LLC
04-R5-53
13.12± ACRES

BOARD OF COMMISSIONERS OHIO COUNTY
04-R5-10
688.030± ACRES

EDWARD W. DREMAK AND JOANNE V. DREMAK
04-R5-54
34.19± ACRES



- NOTES ON SURVEY
1. COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. 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.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
6. NO LAKES, PONDS OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
7. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

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. 2241

COMPANY: SWN Production Company, LLC

STATE OF WEST VIRGINIA logo and WVDEP OFFICE OF OIL & GAS address: 601 57TH STREET CHARLESTON, WV 25034

Table with 2 columns: PROPERTY and SURVEY. Minimum Degree of Accuracy: 1/200. Proven Source of Elevation: SURVEY GRADE GPS (NAVD 88, US FT).

Table with 3 columns: OPERATOR'S WELL # (EDWARD DREMAK OHI 1H), API WELL # (47, 69, 00226), and STATE/COUNTY/PERMIT.

WELL TYPE: OIL [] WASTE DISPOSAL [] PRODUCTION [X] DEEP [] GAS [X] LIQUID INJECTION [] STORAGE [] SHALLOW [X]
WATERSHED: UPPER OHIO WHEELING ELEVATION: 1,078.7' (AS-BUILT)
DISTRICT: RICHLAND COUNTY: OHIO QUADRANGLE: TILTONVILLE, OH-WV
SURFACE OWNER: DREMAK, EDWARD W. & JOANNE V. ACREAGE: 34.19±
OIL & GAS ROYALTY OWNER: DREMAK, EDWARD W. & JOANNE V. ACREAGE: 34.19±
DRILL [] DRILL DEEPER [] REDRILL [] FRACTURE OR STIMULATE [] PLUG OFF OLD FORMATION [] PERFORATE NEW FORMATION []
CONVERT [] PLUG & ABANDON [] CLEAN OUT & REPLUG [] OTHER CHANGE [X] (SPECIFY) As-Drilled
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,790' TVD 14,018' TMD

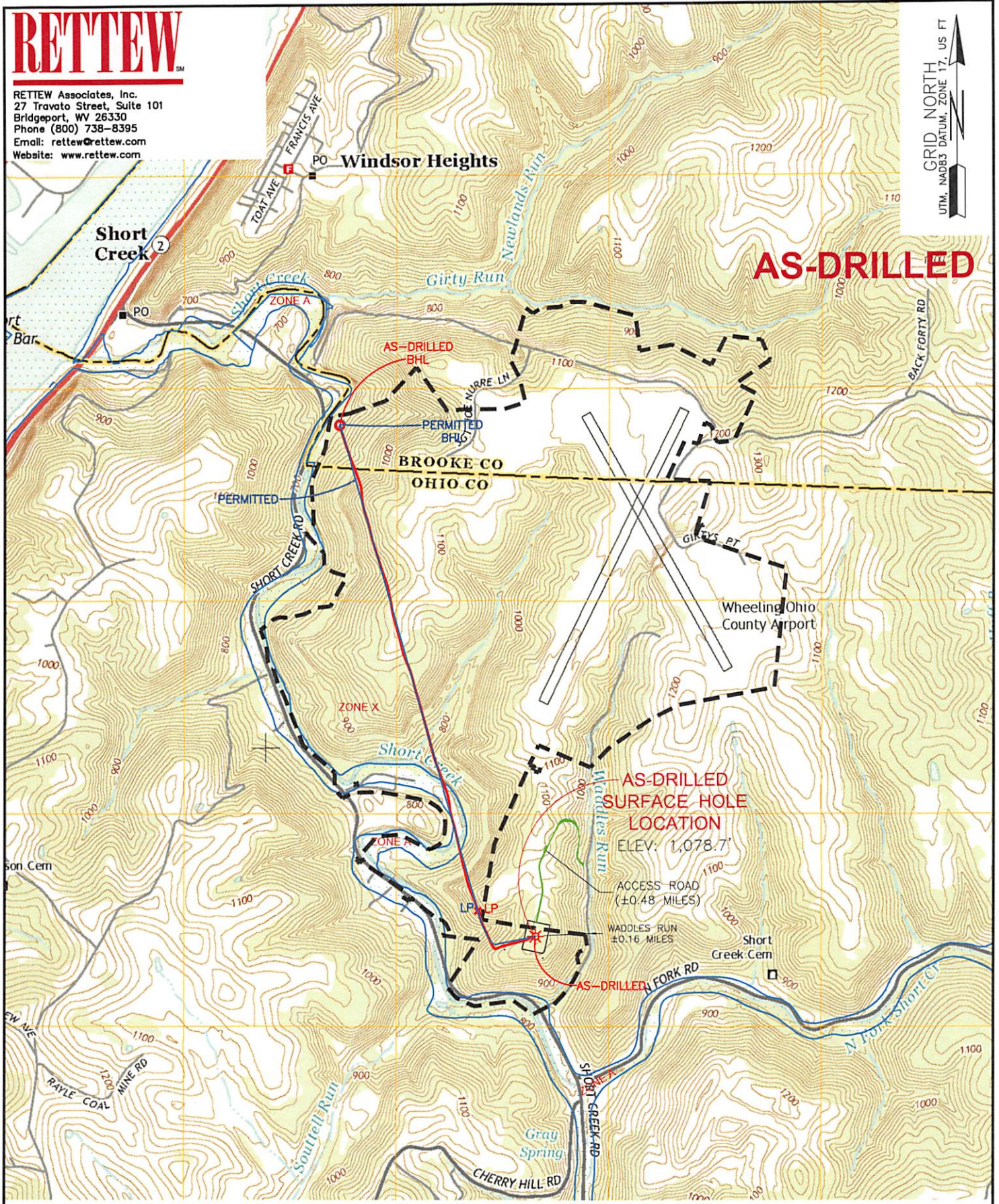
WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: DEE SOUTHALL
ADDRESS: P.O. BOX 1300 ADDRESS: P.O. BOX 1300
CITY: JANE LEW STATE: WV ZIP CODE: 26378 CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND: PROPOSED SURFACE HOLE / BOTTOM HOLE, EXISTING / PRODUCING WELLHEAD, ABANDONED WELL, PLUGGED & ABANDONED WELL, PERMITTED NOT DRILLED, CUT CONDUCTOR, TIE LINE, LEASE BOUNDARY, ASDRILLED WELLPATH, PERMITTED WELLPATH, STREAM. REVISIONS: DATE: 11-08-2017. DRAWN BY: G.FLORES. SCALE: 1" = 2000'. DRAWING NO: 087569045. WELL LOCATION PLAT.

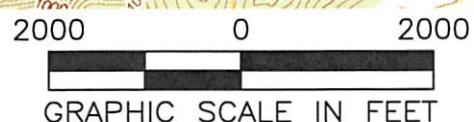
RETTEW

RETTEW Associates, Inc.
27 Travato Street, Suite 101
Bridgeport, WV 26330
Phone (800) 738-8395
Email: rettew@rettew.com
Website: www.rettew.com

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



WELL: EDWARD DREMAK OHI 1H
QUAD: TILTONSVILLE, OH-WV



NAME AND DISTANCE TO THE NEAREST STREAM: WADDLES RUN IS LOCATED ±0.16 MILES EAST OF THE CENTER OF THE DRILL PAD.		STREAM CROSSING COORDINATES (NAD 83): NO STREAM CROSSINGS		COMPANY: 	
WELL RESTRICTIONS: WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET CENTER OF PAD TO AGRICULTURAL BUILDINGS LAGER THAN 2500 SQ FT: >625 FEET		OPERATOR'S EDWARD DREMAK OHI		WELL #: 1H	
FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF OHIO/BROOKE COUNTY, WEST VIRGINIA; MAP NUMBER 54069C0016D/54069C0020D; EFFECTIVE DATE: JULY 17, 2006		LOCATION: RICHLAND/BUFFALO DISTRICTS, OHIO/BROOKE COUNTIES, WEST VIRGINIA		SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.158776° LONGITUDE: -80.651583°	
LEGEND: 		BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.180442° LONGITUDE: -80.662332°		REVISIONS:	
				DATE: 11-08-2017	
				DRAWN BY: G.FLORES	
				SCALE: 1" = 2000'	
				DRAWING NO: 087569045	
				TOPOGRAPHIC MAP	