

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

API 47-069-00320 County OHIO District RICHLAND
Quad TILTONSVILLE, OH-WV Pad Name EDWARD DREMAK-OHI-PAD1 Field/Pool Name PANHANDLE FIELD WET
Farm name ANDREW JOHN EVICK Well Number EDWARD DREMAK OHI 210H
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 4,445,421.26 Easting 529,668.95
Landing Point of Curve Northing 4,445,515.80 Easting 530,252.62
Bottom Hole Northing 4,441,019.04 Easting 531,658.99

Elevation (ft) 1087.9' 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 10/10/2019 Date drilling commenced 1/12/2020 Date drilling ceased 1/25/2020 RECEIVED
Date completion activities began 3/23/2020 Date completion activities ceased 5/11/2020 Office of Oil and Gas
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A AUG 04 2020

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

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

Reviewed by: [Signature]
9.10.20

API 47-069 - 00320 Farm name **ANDREW JOHN EVICK** Well number **EDWARD DREMAK OHI 210H**

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/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	346'	NEW	J-55/54.50#	259.9' / 218.2'	Y; 33 BBLs
Coal							
Intermediate 1	12.25	9.625	1653'	NEW	J-55/96#		Y; 16 BBLs
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	21,694'	NEW	HCP-110/20#		Y; 55 BBL
Tubing		2.875	6595'	NEW	P-110/6.50#		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	422	15.60	1.20	506.4	SURFACE	8
Coal	SEE SURFACE						
Intermediate 1	CLASS A	553	15.60	1.19	658.07	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	2,640	15.60	1.19	3,141.6	SURFACE	24
Tubing							

Drillers TD (ft) 21,694'

Loggers TD (ft) 21,694'

Deepest formation penetrated MARCELLUS

Plug back procedure N/A

Kick off depth (ft) 5,590'

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

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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 - 00320 Farm name **ANDREW JOHN EVICK** Well number **EDWARD DREMAK OHI 210H**

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.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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

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Please insert additional pages as applicable.

API 47- 069 - 00320 Farm name ANDREW JOHN EVICK Well number EDWARD DREMAK OHI 210H

PRODUCING FORMATION(S)

DEPTH(S)

MARCELLUS 5.775' TVD 6,401' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2,620 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 3,200 mcfpd 576 bpd Oil 816 bpd Water 816 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT	BOTTOM DEPTH IN FT	TOP DEPTH IN FT	BOTTOM DEPTH IN FT	MD	MD	MD	MD	TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	0		0						
	SEE	ATTACHMENT	3						

Please insert additional pages as applicable.

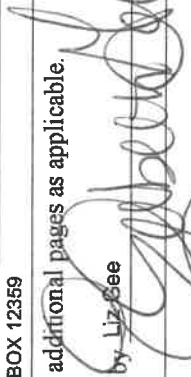
Drilling Contractor SWN DRILLING COMPANY
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Logging Company BAKER HUGHES
Address 9110 GROGANS MILL RD City THE WOODLANDS State TX Zip 77380

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

Stimulating Company SWN WELL SERVICES
Address PO BOX 12359 City SPRING State TX Zip 77391

Please insert additional pages as applicable.

Completed by Liz See
Signature  Title STAFF REGULATORY ANALYST Date 02/28/2020

Telephone 832-796-2873

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

**EDWARD DREMAK OHI 210H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
1	3/10/2020	21,609	21,520	36
2	N/A	N/A	N/A	
3	4/15/2020	21,275	21,098	36
4	4/15/2020	21,066	20,889	54
5	4/15/2020	20,856	20,680	36
6	4/15/2020	20,642	20,471	36
7	4/16/2020	20,438	20,262	36
8	4/16/2020	20,229	20,052	36
9	4/16/2020	20,019	19,843	36
10	4/16/2020	19,810	19,634	36
11	4/16/2020	19,597	19,425	36
12	4/17/2020	19,392	19,215	36
13	4/17/2020	19,183	19,006	36
14	4/17/2020	18,973	18,797	36
15	4/17/2020	18,766	18,588	36
16	4/17/2020	18,555	18,379	36
17	4/18/2020	18,346	18,169	36
18	4/18/2020	18,136	17,960	36
19	4/18/2020	17,927	17,751	36
20	4/18/2020	17,718	17,542	36
21	4/18/2020	17,509	17,332	36
22	4/19/2020	17,300	17,125	36
23	4/19/2020	17,090	16,910	36
24	4/19/2020	16,881	16,705	36
25	4/19/2020	16,672	16,496	36
26	4/19/2020	16,463	16,286	36
27	4/20/2020	16,254	16,073	36
28	4/20/2020	16,044	15,868	36
29	4/20/2020	15,835	15,659	36
30	4/20/2020	15,626	15,449	36
31	4/20/2020	15,417	15,240	36
32	4/21/2020	15,207	15,031	36
33	4/21/2020	14,998	14,822	36
34	4/21/2020	14,789	14,613	36
35	4/21/2020	14,580	14,403	36
36	4/21/2020	14,371	14,194	36
37	4/22/2020	14,161	13,985	36
38	4/22/2020	13,952	13,776	36
39	4/22/2020	13,743	13,567	36
40	4/22/2020	13,534	13,354	36
41	4/22/2020	13,319	13,148	36
42	4/22/2020	13,115	12,939	36
43	4/23/2020	12,906	12,730	36

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**EDWARD DREMAK OHI 210H
ATTACHMENT 1
PERF REPORT**

STAGENUM	Perf Date	Perf Bottom MD	Perf Top MD2	# SHOTS PER STG
44	4/23/2020	12,697	12,520	36
45	4/23/2020	12,488	12,311	36
46	4/23/2020	12,278	12,107	36
47	4/23/2020	12,069	11,893	36
48	4/23/2020	11,858	11,684	36
49	4/24/2020	11,651	11,474	36
50	4/24/2020	11,441	11,265	36
51	4/24/2020	11,232	11,056	36
52	4/24/2020	11,023	10,847	36
53	4/24/2020	10,814	10,639	36
54	4/25/2020	10,605	10,426	36
55	4/25/2020	10,398	10,219	36
56	4/25/2020	10,186	10,010	36
57	4/25/2020	9,977	9,801	36
58	4/25/2020	9,768	9,591	36
59	4/25/2020	9,558	9,383	36
60	4/26/2020	9,349	9,171	36
61	4/26/2020	9,143	8,964	36
62	4/26/2020	8,931	8,754	36
63	4/26/2020	8,722	8,542	36
64	4/26/2020	8,512	8,336	36
65	4/27/2020	8,303	8,132	36
66	4/27/2020	8,094	7,918	36
67	4/27/2020	7,882	7,708	36
68	4/27/2020	7,675	7,499	36
69	4/27/2020	7,466	7,290	36
70	4/28/2020	7,257	7,083	36
71	4/28/2020	7,048	6,871	36
72	4/28/2020	6,834	6,662	36
73	4/28/2020	6,629	6,453	36

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EDWARD DREMAK OHI 210H
ATTACHMENT 2
STIM REPORT

STAGE NUM	Stim Date	Ave Pump		Treatment	Breakdown	ISIP (psi)	Amount of		Amount of nitrogen/othe
		Rate (BPM)	Ave				Proppant (lbs)	water bbls	
1	4/15/2020	76	N/A	7,720	7,208	3,629	196,240	5,555	0
2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	4/15/2020	81	8,342	5,194	4,748	4,748	415,180	8,499	0
4	4/15/2020	80	8,087	5,245	4,839	4,839	413,400	7,560	0
5	4/15/2020	81	7,792	6,025	4,503	4,503	415,920	8,557	0
6	4/16/2020	85	7,960	4,777	4,422	4,422	424,780	8,187	0
7	4/16/2020	85	8,245	5,435	4,722	4,722	362,840	7,135	0
8	4/16/2020	80	7,825	5,617	4,809	4,809	425,340	7,335	0
9	4/16/2020	83	7,788	5,530	4,698	4,698	419,970	8,018	0
10	4/16/2020	88	7,871	5,254	4,521	4,521	421,560	8,201	0
11	4/17/2020	87	8,082	5,813	4,435	4,435	424,480	8,266	0
12	4/17/2020	86	7,985	5,601	4,842	4,842	425,920	7,517	0
13	4/17/2020	87	7,895	5,320	5,230	5,230	423,340	7,643	0
14	4/17/2020	88	7,952	5,384	4,756	4,756	417,680	7,506	0
15	4/17/2020	91	8,054	5,602	4,525	4,525	419,400	8,169	0
16	4/17/2020	87	8,138	5,738	4,379	4,379	423,260	8,195	0
17	4/18/2020	89	8,026	6,002	4,855	4,855	425,620	7,716	0
18	4/18/2020	90	7,994	5,482	5,136	5,136	428,500	7,404	0
19	4/18/2020	87	8,003	5,214	4,802	4,802	418,420	7,297	0
20	4/18/2020	95	8,020	5,381	4,802	4,802	420,180	7,543	0
21	4/18/2020	92	8,011	5,580	4,457	4,457	420,020	7,694	0
22	4/19/2020	92	7,986	5,822	4,755	4,755	421,300	7,502	0
23	4/19/2020	92	7,838	5,128	4,287	4,287	421,160	7,249	0
24	4/19/2020	92	8,022	5,556	4,336	4,336	424,500	7,218	0
25	4/19/2020	95	8,065	5,936	4,526	4,526	415,180	7,471	0
26	4/20/2020	95	7,616	5,598	4,421	4,421	417,820	7,500	0
27	4/20/2020	93	8,212	5,892	4,609	4,609	420,880	7,643	0
28	4/20/2020	94	7,863	5,984	4,590	4,590	420,740	7,208	0
29	4/20/2020	93	7,811	5,812	4,567	4,567	376,880	7,038	0
30	4/20/2020	95	8,156	6,050	4,369	4,369	421,400	7,477	0
31	4/20/2020	97	8,108	5,548	4,521	4,521	419,860	7,298	0
32	4/21/2020	100	8,134	5,749	4,325	4,325	422,970	7,342	0
33	4/21/2020	98	7,949	5,579	4,679	4,679	423,010	7,126	0
34	4/21/2020	99	8,020	5,434	4,678	4,678	421,480	7,265	0
35	4/21/2020	99	7,886	5,498	4,621	4,621	421,180	7,286	0
36	4/21/2020	99	7,980	5,678	4,810	4,810	419,720	7,210	0
37	4/22/2020	99	7,804	5,871	4,722	4,722	425,620	7,426	0
38	4/22/2020	99	7,780	5,849	4,525	4,525	426,660	7,210	0
39	4/22/2020	100	7,676	4,991	4,526	4,526	422,060	7,087	0
40	4/22/2020	99	7,751	5,700	4,671	4,671	420,400	7,126	0
41	4/22/2020	100	7,666	5,196	4,602	4,602	420,580	7,678	0
42	4/22/2020	99	7,774	5,446	4,619	4,619	416,020	7,422	0
43	4/23/2020	101	7,663	5,395	4,623	4,623	424,610	7,502	0
44	4/23/2020	99	7,676	5,296	4,617	4,617	423,040	7,101	0
45	4/23/2020	100	7,758	5,467	4,939	4,939	417,840	7,256	0
46	4/23/2020	100	7,489	5,188	4,587	4,587	424,240	7,361	0
47	4/23/2020	100	7,499	5,246	4,512	4,512	422,800	7,411	0
48	4/24/2020	99	7,569	5,206	4,512	4,512	426,620	7,542	0
49	4/24/2020	99	7,463	5,292	4,889	4,889	425,560	7,368	0
50	4/24/2020	100	7,463	5,286	4,556	4,556	425,370	7,190	0
51	4/24/2020	100	7,381	5,138	4,625	4,625	422,070	7,509	0
52	4/24/2020	100	7,277	5,900	4,642	4,642	411,340	7,255	0
53	4/24/2020	101	7,053	5,613	4,434	4,434	420,540	7,372	0

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EDWARD DREMAK OHI 210H
ATTACHMENT 2

STIM REPORT

STAGE NUM	Stim Date	Ave Pump		Treatment	Max		ISIP (PSI)	Amount of		Amount of nitrogen/othe
		Rate (BPM)	Ave		Breakdown	Proppant (lbs)		water bbls		
54	4/25/2020	101	7,200	7,200	5,285	4,585	427,160	7,347	0	
55	4/25/2020	100	7,146	7,146	5,518	5,010	424,200	7,555	0	
56	4/25/2020	100	7,063	7,063	5,368	4,688	422,470	7,329	0	
57	4/25/2020	100	7,077	7,077	5,388	4,846	418,430	7,351	0	
58	4/25/2020	101	7,126	7,126	5,581	4,317	419,840	7,251	0	
59	4/26/2020	101	6,949	6,949	5,885	4,346	421,000	7,318	0	
60	4/26/2020	100	7,490	7,490	4,931	4,832	422,020	7,389	0	
61	4/26/2020	100	7,613	7,613	5,626	4,724	422,990	7,447	0	
62	4/26/2020	100	6,831	6,831	5,268	4,889	424,550	7,348	0	
63	4/26/2020	101	6,941	6,941	5,747	4,409	416,050	7,264	0	
64	4/27/2020	101	7,021	7,021	5,682	4,267	420,560	7,268	0	
65	4/27/2020	100	6,868	6,868	5,526	4,411	429,610	7,383	0	
66	4/27/2020	100	7,018	7,018	5,422	4,389	420,190	7,315	0	
67	4/27/2020	100	6,841	6,841	5,210	4,321	417,750	7,336	0	
68	4/27/2020	101	6,840	6,840	5,612	4,144	418,780	7,425	0	
69	4/28/2020	101	6,888	6,888	4,962	4,308	417,550	7,161	0	
70	4/28/2020	101	6,766	6,766	5,136	4,793	419,988	7,121	0	
71	4/28/2020	93	6,530	6,530	5,231	4,568	433,830	7,290	0	
72	4/28/2020	101	6,682	6,682	5,642	4,639	421,880	7,142	0	
73	4/28/2020	100	6,923	6,923	5,960	4,237	418,310	7,447	0	

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Well Name:

Edward Dremak OHI 210H

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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	276.00	276.00	
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	1309.00	1305.00	
Big Injun (ss)	1309.00	1305.00	1865.00	1864.00	
Berea (siltstone)	1865.00	1864.00	5723.00	5265.00	
Rhinestreet (shale)	5723.00	5265.00	6004.00	5504.00	
Cashqua (shale)	6004.00	5504.00	6065.00	5554.00	
Middlesex (shale)	6065.00	5554.00	6150.00	5622.00	
Burket (shale)	6150.00	5622.00	6169.00	5637.00	
Tully (ls)	6169.00	5637.00	6242.00	5689.00	
Mahantango (shale)	6242.00	5689.00	6401.00	5775.00	
Marcellus (shale)	6401.00	5775.00	NA	NA	GAS

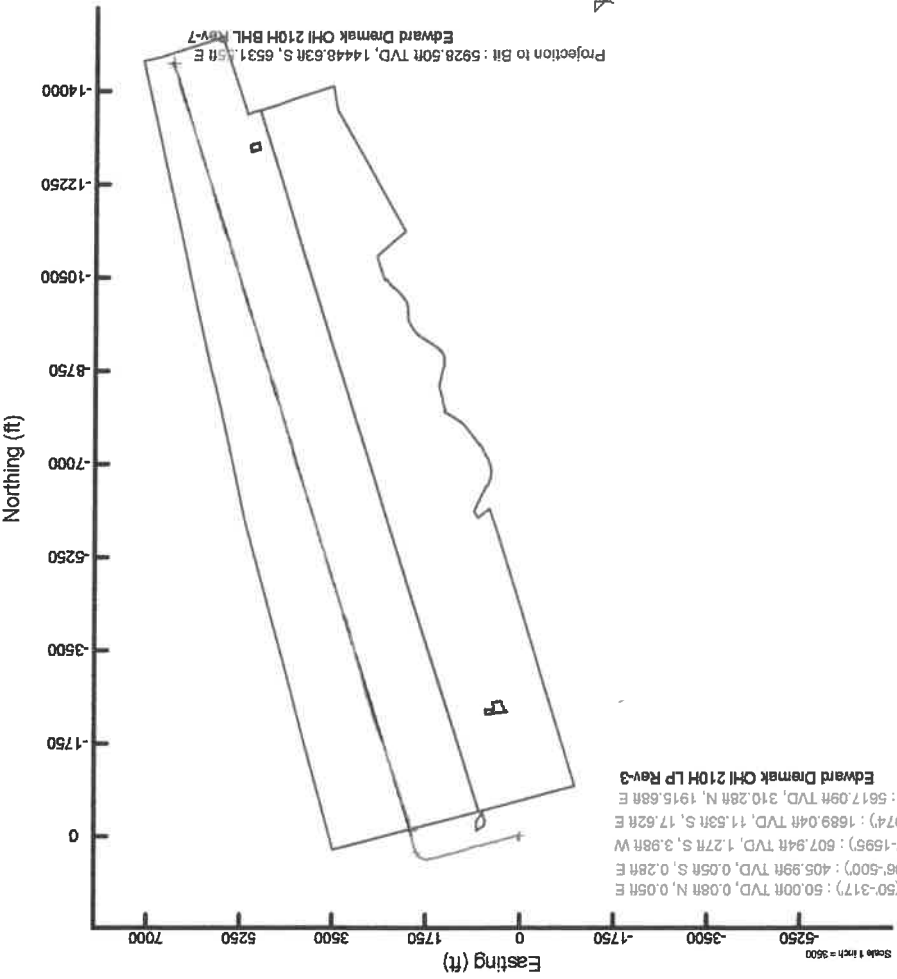
SOUTHWESTERN ENERGY
 Location: Ohio County, WV
 Field: Ohio
 Facility: Edward Dremak OHI 210H Pad
 Wellbore: Edward Dremak OHI 210H PWB
 Slot: Slot #210H
 Well: Edward Dremak OHI 210H

Field System: NAD83 / UTM Zone 17 North, US Feet	North Reference: Grid north
True vertical depths are referenced to SDC-42 (KB)	
Reference wellpath measured depths are referenced to SDC-42 (KB)	Scale: True depths
SDC-42 (KB) to Mean Sea Level: 114 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (at Slot #210H-1098 feet)	Depths are in feet
Other wellpath MIDs are referenced to each path's default MID datum	Created by: dmpm on 2020-01-27; Database: VVA_MID_EASTERNUS_Dept



Location Information	
Facility Name	Edward Dremak OHI Pad
Slot	Slot #210H
Local N (M)	Local E (M)
Ghd East (US ft)	Ghd East (US ft)
Latitude	Longitude
40°09'31.2230"N	80°39'6.0110"W
14584704.331	1737740.826
Ghd North (US ft)	Ghd East (US ft)
Latitude	Longitude
40°09'31.0438"N	80°39'5.8223"W
14584686.260	1737756.540
SDC-42 (KB) to Ground level (at Slot #210H)	Mean Sea Level to Ground level (at Slot #210H)
26ft	-1088ft
SDC-42 (KB) to Mean Sea Level	1114ft

Comments	
AP#	47-059-K137D-0000
BH Job #	110199756A
Rig	SDC-42
Duration:	01/18/2020 - 01/21/2020



Gyrodatta Gyro <17 1/2"> (60°-317') : 50.00ft TVD, 0.05ft N, 0.05ft E
 Gyrodatta Gyro <12 1/4"> (406°-500') : 405.99ft TVD, 0.05ft S, 0.28ft E
 Premier MWD <12 1/4"> (608°-1595') : 607.94ft TVD, 1.27ft S, 3.98ft W
 Premier MWD <8 3/4"> (1690°-6074') : 1689.04ft TVD, 11.53ft S, 17.62ft E
 BH AT Curve <8 1/2"> (6143°-21669') : 5617.09ft TVD, 310.28ft N, 1915.68ft E
 Edward Dremak OHI 210H LP Rev-3

Use specified Dip: 67.36° Fict: 60.65ft
 Magnetic North is 8.02 degrees East of True North (at 12/20/20)
 Grid North is 0.22 degrees East of True North
 To correct azimuth from True to Grid subtract 8.24 degrees



Gyrodatta Gyro <17 1/2"> (60°-317') : 0.44° Inc, 50.00ft MD, 50.00ft TVD, -0.06ft VS
 20in Conductor : 0.33° Inc, 126.00ft MD, 126.00ft TVD, -0.43ft VS
 13.375in Casing Surface : 0.40° Inc, 360.00ft MD, 360.00ft TVD, 0.02ft VS
 Gyrodatta Gyro <12 1/4"> (406°-500') : 0.71° Inc, 406.00ft MD, 405.99ft TVD, 0.13ft VS
 Premier MWD <12 1/4"> (608°-1595') : 1.72° Inc, 608.00ft MD, 607.94ft TVD, 0.03ft VS
 Premier MWD <8 3/4"> (1690°-6074') : 4.67° Inc, 1690.00ft MD, 1689.04ft TVD, 16.27ft VS
 9.65in Casing Intermediate : 4.60° Inc, 1650.00ft MD, 1649.17ft TVD, 15.00ft VS
 B Curve 1/2" : 38.44° Inc, 6143.00ft MD, 5617.09ft TVD, 277.45ft VS
 Projection to Bit : 5928.50ft TVD, 14448.63ft S, 6531.45ft E
 Edward Dremak OHI 210H BHL Rev-7

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Vertical Section (ft)
 Azimuth 162.58° with reference 0.00 N, 0.00 E
 Scale 1 inch = 2500

Projection to Bit : 89.63° Inc, 21694.00ft MD, 5928.50ft TVD, 15741.33ft VS
 5.5in Casing Production : 89.63° Inc, 21694.00ft MD, 5928.50ft TVD, 15741.33ft VS

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/14/2020
Job End Date:	4/28/2020
State:	West Virginia
County:	Ohio
API Number:	47-069-00320-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	EDWARD DREMAK OHI 210
Latitude:	40.15862327
Longitude:	-80.65161733
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	5,877
Total Base Water Volume (gal):	22,326,834
Total Base Non Water Volume:	0



Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Sand	SWN Well Services	Proppant					
Plexaid 655WG	SWN Well Services	Scale Inhibitor					
					Listed Below		
						Listed Below	

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HCL	SWN Well Services	Solvent		Listed Below			
Ecopol-FEAC	SWN Well Services	Iron Control		Listed Below			
SWN FRW-11LC	SWN Well Services	Friction Reducer		Listed Below			
Base Water	Operator	Base Fluid		Listed Below			
Toxicide PS 50A	SWN Well Services	Bicide		Listed Below			
Econo-C1200	SWN Well Services	Corrosion Inhibitor		Listed Below			
				Listed Below			
Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients.							
	Water	7732-18-5	100.00000	85.46746	Density = 8.345		
	Crystalline Silica, quartz	14808-60-7	100.00000	13.79080			
	Water	7732-18-5	85.00000	0.60008			
	Hydrochloric Acid	7647-01-0	15.00000	0.09124			
	Petroleum Distillates, Hydroreated	64742-47-8	25.00000	0.02414			
	Tetrakis	55566-30-8	55.00000	0.01477			
	Glycerin	56-81-5	50.00000	0.00296			
	Ammonium Chloride	12125-02-9	2.00000	0.00193			

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			68551-12-2	1.50000	0.00145
			93-83-4	1.50000	0.00145
			64-19-7	37.50000	0.00122
			67-56-1	80.00000	0.00075
			77-92-9	22.50000	0.00073
			15827-60-8	10.00000	0.00059
			397256-50-7	1.00000	0.00027
			68951-67-7	9.67400	0.00009
			61790-12-3	5.02700	0.00005
			68527-49-1	4.74600	0.00004
			127-08-2	0.02200	0.00000
			50-00-0	0.00400	0.00000

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%
 *** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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

LATITUDE: 40°10'00" SURFACE HOLE (2000' SCALE)

LATITUDE: 40°07'30" BOTTOM HOLE (2000' SCALE)

7436'

LONGITUDE: 80°37'30" SURFACE HOLE (2000' SCALE)

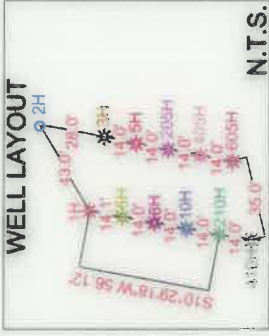
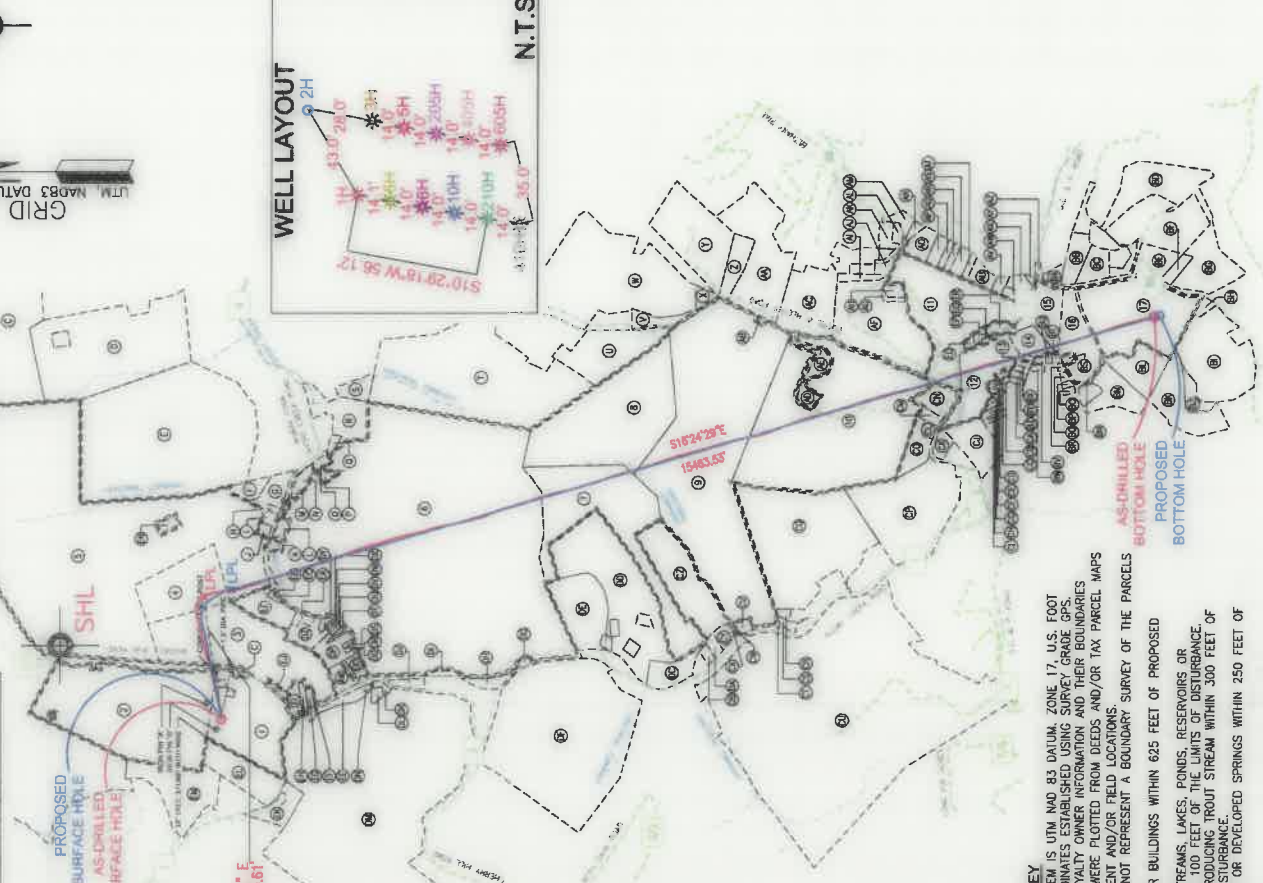
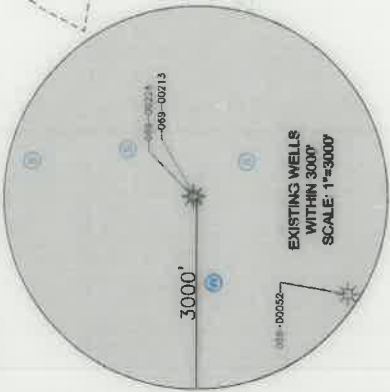
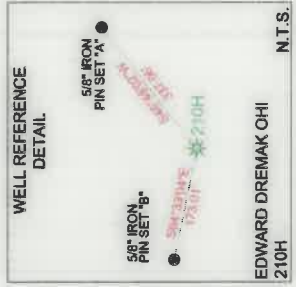
2226'

2956'

JHA Companies
ENGINEERS SURVEYORS ENVIRONMENTAL GIS MAPPING
www.jhacompanies.com

68011 Vineyard Road
St. Clairsville, Ohio 43950
740-695-8100

LINE	BEARING	DISTANCE
L1	S85°13'02"W	778.42'
L2	N78°51'21"W	793.04'



SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4445421.26 EASTING: 529668.95
LANDING POINT LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4445515.80 EASTING: 530252.62
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4441019.04 EASTING: 531658.59
SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4445421.26 EASTING: 529668.95
LANDING POINT LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4445425.59 EASTING: 530247.58
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4440994.58 EASTING: 531665.64

NOTES ON SURVEY

1. COORDINATE 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.
2. SHOWN - HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
3. THIS PLAN DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS OR BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
5. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR OTHER WATER BODIES WITHIN 300 FEET OF PROPOSED CENTER OF PAD.
6. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF THE LIMITS OF DISTURBANCE.
7. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.



I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN 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.

COMPANY: **SWN** **SWN** **Production Company, LLC** Production Company™

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WYDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

OPERATOR'S WELL #: EDWARD DREMAK OHI 210H

API WELL #: 47 069 00320
STATE COUNTY PERMIT

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW

WATERSHED: UPPER OHIO SOUTH

DISTRICT: RICHLAND

SURFACE OWNER: ANDREW JOHN EVICK

OIL & GAS ROYALTY OWNER: EDWARD W. & JOANNE V. DREMAK

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

CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) AS-DRILLED

TARGET FORMATION: MARCELLUS

ELEVATION: 1,087.9'

QUADRANGLE: TILTONSVILLE, OH-WV & WHEELING, WV

ACREAGE: ±34.19

ACREAGE: ±34.19

ESTIMATED DEPTH: 5,929' TVD 21,694' TMD

DESIGNATED AGENT: BRITTANY WOODY

ADDRESS: 1300 FORT PIERPONT DRIVE, SUITE 201

CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

DATE: 04-08-2020

API NO: 47-069-00320

DRAWN BY: R. GRIMES

SCALE: 1" = 3000'

DRAWING NO.: 2018-284

WELL LOCATION PLAN

COMPLETION ID 2501168633
PAD ID 3001165800

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS			
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	TAX PARCEL
1	ANDREW JOHN EVICK (S) EDWARD W. & JOANNE V. DREMAK (R)	04-R5-54.0	
2	EDWARD W. & JOANNE DREMAK	04-R5-49.0	
3	WINDSOR POWER HOUSE COAL COMPANY	04-R8-08.1	
4	OHIO COUNTY BOARD OF COMMISSIONERS	04-R5-10.0	
5	OHIO COUNTY BOARD OF COMMISSIONERS	04-R5-55.0	
6	AMERICAN DISPOSAL SERVICES OF WEST VIRGINIA, INC	04-R8-15.0	
7	TUNNEL RIDGE, LLC	04-R8-22.0	
8	AMERICAN DISPOSAL SERVICES OF WEST VIRGINIA, INC	04-R8-61.0	
9	TUNNEL RIDGE, LLC	04-R8-61.4	
10	JOSEPH ELIAS	04-R12-01.0	
11	MICHAEL THOMAS & MICHELLE LYNN RATCLIFFE	04-R12-23.15	
12	SEAN P. & KATIE M. SMITH	04-R12E-23.29	
13	GREGORY J. & SHERRI L. POND	04-R12E-23.0	
14	LYNN M. KAMINSKI	04-R12J-45.0	
15	LORI JEAN HENRY	04-R12-07.0	
16	MICHAEL S. & SHEILA M. LITTLE	04-R12-13.0	
17	MULL W. QUAY, II TRUST	04-R12-12.0	

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	OHIO COUNTY BOARD OF COMMISSIONERS	04-R5-10.0
B	MARC SEMON	04-R6-02.0
C	SHORT CREEK COAL COMPANY	04-R6-17.3
D	SHORT CREEK COAL COMPANY	04-R6-17.0
E	MARC SEMON	04-R6-37.0
F	SHORT CREEK CEMETERY ASSOCIATION, TRUSTEES	04-R5-57.0
G	SHORT CREEK METHODIST CHURCH	04-R5-60.0
H	ROBERT L. & GWENDOLYN NOVAK	04-R5-59.0
I	ERIC W. & LISA N. GADD	04-R5-55.1
J	ERIC W. & LISA N. GADD	04-R5-55.3
K	LUTHER R., II & D.F. SMITH	04-R8-16.1
L	DELBERT E. & CAROL L. HUFFMAN	04-R8-16.2
M	DELBERT E. HUFFMAN, JR.	04-R8-18.4
N	LUTHER R., JR. & ELEANOR L. SMITH	04-R8-18.3
O	LUTHER R., JR. & E.L. SMITH	04-R8-18.1
P	JOHN E. HARWAT	04-R8-18.2
Q	LUTHER R., JR. & E.L. SMITH	04-R9-14.4
R	HELEN M. PERRY (L/E) & ET AL	04-R9-14.2
S	HELEN M. PERRY (L/E) & ET AL	04-R9-14.1
T	JORDAN & GAYLE WEBER	04-R9-09.0
U	L.R. HOPKINS, JR. & R.F. DELATORE	04-R9-05.0
V	WILLIAM ISAC KNIIGHT & MEREDITH SERTICH	04-R9-03.7
W	DONNA MARTIN EVANS	04-R9-03.5
X	BETH ANNE KENNEDY	04-R9-03.4
Y	RCK 2 GROUP	04-R9-01.0
Z	WILLIAM H. & C.L. REUTHER	04-R9-02.0
AA	BRADFORD & NANNETTA HARTLEY	04-R9-01.3
AB	GREGORY TAGART	04-R9-50.0
AC	DOMINIC J. & SHERRIE D. COTTRELL	04-R12-19.30
AD	ROBERT C. & PATRICIA L. KOTA	04-R12-01.2
AE	MARK & LAURA DAWSON	04-R12-01.1
AF	ROBERT E. JONES LIVING TRUST	04-R12-18.0
AG	DANIEL & M. HARRIMAN	04-R12-18.2
AH	DANIEL & M. HARRIMAN	04-R12-18.1
AI	COLUMBIA GAS TRANSMISSION CORPORATION	04-R12-19.1
AJ	STEPHEN E. & DEBORAH E. KEDING	04-R12-19.21
AK	CARLEY & CHRISTOPHER ELSWICK	04-R12-21.0
AL	EDWARD A. & K.L. WOODS	04-R12-21.1
AM	LAWRENCE WITZBERGER, IV	04-R12-19.5
AN	WILLIAM & J.M. WITZBERGER	04-R12-23.2
AO	LAWRENCE W., III & J.C. WITZBERGER	04-R12-22.0
AP	MICHAEL L. & KATHY D. BARON	04-R12-23.8
AQ	GLORIA J. CHAROCCHI	04-R12-23.4
AR	LARRY E. PAUGH	04-R12-23.9
AS	E. JEBBIA, R. RUTTENBER & J. O'DELL	04-R12-23.5
AT	MATTHEW J. & TISHA L. PARCE	04-R12-23.6
AU	HARRY A., JR. & EDITH J. RUMIS, REVOCABLE TRUST	04-R12-23.0
AV	BRIAN K. & STACEY L. PAGE	04-R12-23.7
AW	LORI JEAN HENRY	04-R12-23.14
AX	LORI JEAN HENRY	04-R12-23.1
AY	LORI JEAN HENRY	04-R12-8999-9999
AZ	HENRY'S SERVICE STATION (LORI JEAN HENRY)	04-R12-28.1
BA	LORI HENRY (C/O: HENRY'S SERVICE STATION)	04-R12-29.0
BB	KAREN NOEL & SCOTT R. YOCLUM	04-R12-45.17
BC	RYAN RIES & DANIELLE WASSAM	04-R12-45.20
BD	JOHN A. TARR, IV	04-R12-45.0
BE	JONATHAN D. LECHNER	04-R12-45.12
BF	JONATHAN D. LECHNER, MD	04-R12-46.1
BG	ROBERT L. & PATRICIA J. WEISS, IRREVOCABLE TRUST	04-R12-46.0
BH	ROBERT GAUDIO & CLARE MCDONALD	04-R12-11.0
BI	MULL W. QUAY, II TRUST	04-R12-10.14
BJ	MULL W. QUAY, II TRUST	04-R12-10.17
BK	WEST RENTALS, INC	04-R12-10.16

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
BL	CHARLINE M. DOFKA (C/O: WESBRANCO TRUST)	04-R12J-46.0
BM	FRANK A. & K.E. JACKSON	04-R12J-40.0
BN	MICHAEL S. & SHEILA M. LITTLE	04-R12J-42.0
BO	ANN E. REAM	04-R12J-43.3
BP	MATTHEW & TINA L. MALETICH	04-R12J-43.14
BQ	TODD & COURTNEY MORRISON	04-R12J-43.5
BR	JAMES M. & C.L. MYER	04-R12J-51.0
BS	MICHAEL S. & SHEILA M. LITTLE	04-R12J-44.0
BT	STEPHANIE HELLER	04-R12J-50.0
BU	LYNN M. KAMINSKI	04-R12J-50.2
BV	RONALD A. & LYNN M. KAMINSKI	04-R12J-50.1
BW	STEPHANIE HELLER	04-R12J-47.0
BX	GREGORY J. & SHERRI L. POND	04-R12E-23.22
BY	BARRY L. SUTPHIN, JR.	04-R12E-23.20
BZ	ARLIE B. & M.L. MASSEY	04-R12E-23.21
CA	DANIEL S. TENNANT & MICHAELA R. JELLEN-TENNANT	04-R12E-23.24
CB	TIMOTHY J. & C.L. GILLIGAN	04-R12E-23.31
CC	ROBERT JEFFREY MUCHECK	04-R12E-23.30
CD	DEBRA LYNN SHELKE	04-R12E-23.19
CE	DAVID M. & K.S. WEYRAUCH	04-R12E-23.18
CF	RENEE A. & JOHN J., JR. BILLIE	04-R12E-23.23
CG	DEBORAH J. GRIFFITHS	04-R12E-23.15
CH	STEVEN M. & LORI J. MCGLUMPHY	04-R12E-23.13
CI	DAVID S. & DIAHANN M. FISHER	04-R12E-23.16
CJ	LARRY C. BOWMAN & ET AL	04-R12-06.0
CK	STEPHANIE CIPRIANI	04-R12-06.2
CL	DAVID J., JR. & Y.A. MILLER	04-R12-03.0
CM	MARY ANN BURKHART	04-R12-04.0
CN	RELYKS, LLC	04-R12-05.0
CO	MARY ANN ARMSTRONG	04-R12-02.0
CP	HOWARD L. & B.M. SHACKELFORD	04-R11-35.2
CQ	TUNNEL RIDGE, LLC	04-R12-01.3
CR	TUNNEL RIDGE, LLC	04-R11-34.3
CS	TUNNEL RIDGE, LLC	04-R11-34.12
CT	TUNNEL RIDGE, LLC	04-R8-61.2
CU	SANDCREST FOUNDATION, INC	04-R11-15.0
CV	TUNNEL RIDGE, LLC	04-R8-61.1
CW	TUNNEL RIDGE, LLC	04-R8-74.0
CX	TUNNEL RIDGE, LLC	04-R8-60.1
CY	TUNNEL RIDGE, LLC	04-R8-59.0
CZ	TUNNEL RIDGE, LLC	04-R8-22.1
DA	TUNNEL RIDGE, LLC	04-R8-60.0
DB	TUNNEL RIDGE, LLC	04-R8-58.0
DC	K.L. & R.J. HUFFMAN	04-R8-55.0
DD	TUNNEL RIDGE, LLC	04-R8-20.0
DE	TUNNEL RIDGE, LLC	04-R8-21.2
DF	TUNNEL RIDGE, LLC	04-R8-27.7
DG	TUNNEL RIDGE, LLC	04-R8-27.6
DH	TUNNEL RIDGE, LLC	04-R8-15.4
DI	CHARLES M. & M.M. MILLER	04-R8-15.3
DJ	STATE OF WEST VIRGINIA, DEPARTMENT OF TRANSPORTATION	04-R8-0
DK	DEBRA S. SHEPHERD	04-R8-15.2
DL	LOUIS R. HERCULES & ET AL	04-R8-07.0
DM	ALLIANCE RESOURCE GROUP, LLC	04-R8-06.0
DN	JUDITH K. TYLER	04-R8-08.8
DO	SAM L., JR. & AMY M. PELLEN	04-R8-08.0
DP	ARTHUR ENNIS, PEGGY CLARK & ALMA SINCAVICH	04-R8-09.0
DQ	MICHAEL W. DAVIS	04-R8-09.1
DR	EUNICE MAE DAVIS	04-R8-09.3
DS	HAROLD & EUNICE MAE DAVIS	04-R8-09.2
DT	JOYCE ANN FARLEY	04-R8-10.1
DU	JOYCE ANN FARLEY	04-R8-10.2
DV	BETTY L. SNYDER (C/O: PAULA MCGEE)	04-R8-10.0
DW	MARK D. MATTHIAS	04-R8-11.1
DX	MARK D. MATTHIAS	04-R8-11.0
DY	RHONDA J. ROBBINS	04-R8-13.2
DZ	RODNEY & A.J. SNYDER	04-R8-13.0
EA	RICKIE SNYDER	04-R8-14.0
EB	ALLIED WASTE, INC	04-R5-56.0
EC	ALLIED WASTE, INC	04-R5-56.2
ED	ALLIED WASTE, INC	04-R5-56.1
EE	OHIO COUNTY COMMISSION	04-R8-08.16
EF	TUNNEL RIDGE, LLC	04-R8-08.17
EG	TUNNEL RIDGE, LLC	04-R8-08.14
EH	TUNNEL RIDGE, LLC	04-R8-08.2
EI	SUSAN L. CHAIN	04-R8-08.3
EJ	TUNNEL RIDGE, LLC	04-R8-08.18
EK	ALLIANCE RESOURCE GROUP, LLC	04-R5-52.0
EL	ALLIANCE RESOURCE GROUP, LLC	04-R5-53.0
EM	WINDSOR COAL COMPANY	04-R5-50.0
EN	BRYAN K. & LAURA L. PETTIT	04-R5-55.4
EO	PATRICK DAVID & KRISTY ANN DEFRANCO	04-R12-17.0
EP	DAVID P. & KRISTY A. DEFRANCO	04-R12-23.3
EQ	DAVID P. & KRISTY A. DEFRANCO	04-R12-15.0
EO	KARIL LEE DONALDSON	04-R12-16.0

REVISIONS:

COMPANY:



OPERATOR'S

EDWARD DREMAK OHI

WELL #:

210H

DISTRICT:
RICHLAND

COUNTY:
OHIO

STATE:
WV

DATE: 04-08-2020

API NO: 47-069-00320

DRAWN BY: R. GRIMES

SCALE: N/A

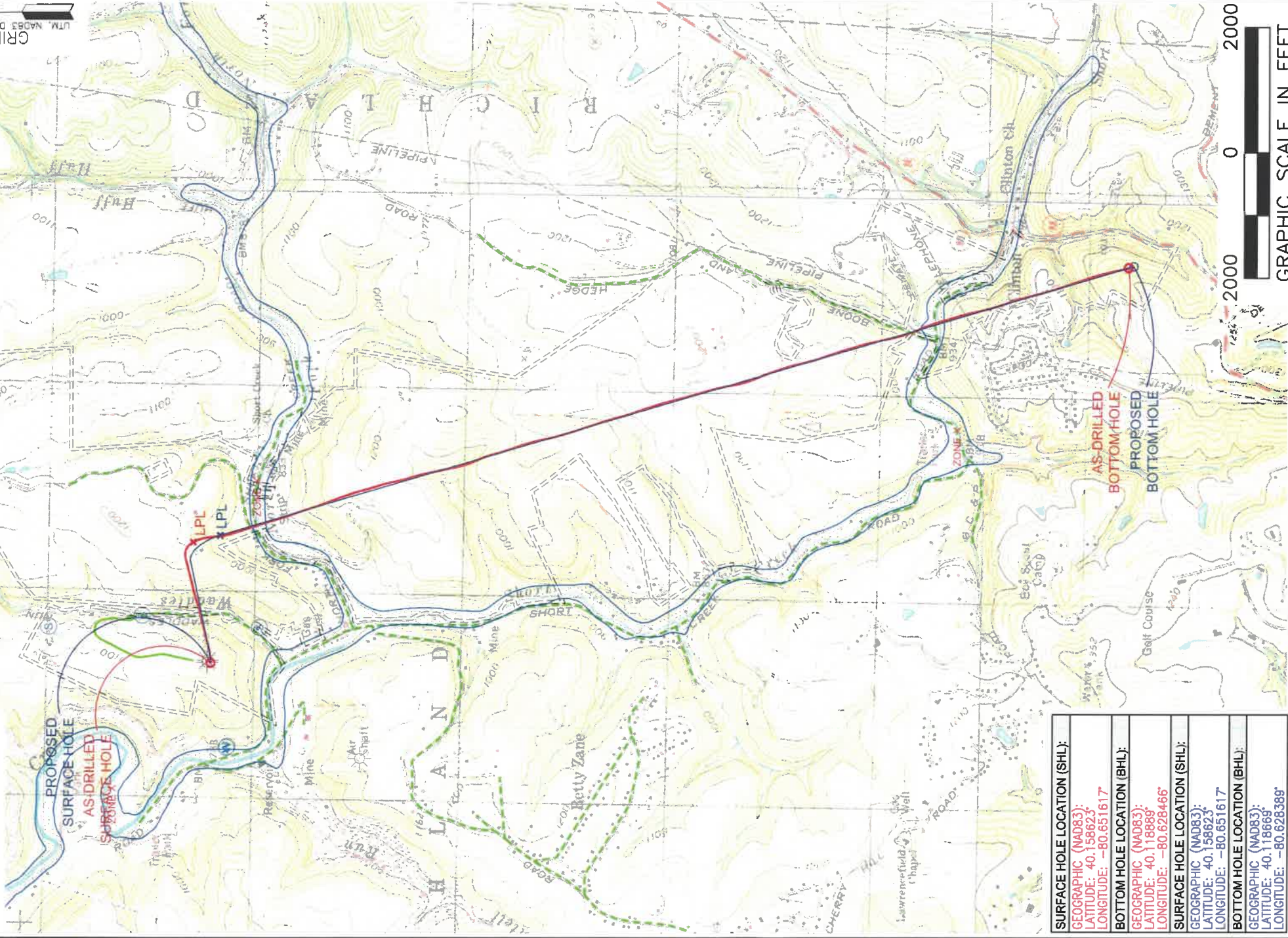
DRAWING NO: 2018-284

WELL LOCATION PLAT



www.jhacompanies.com
 68011 Vineyard Road
 St. Clairsville, Ohio 43950
 740-695-6100

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



SURFACE HOLE LOCATION (SHL):
GEOGRAPHIC (NAD83):
LATITUDE: 40.158623°
LONGITUDE: -80.651617°
BOTTOM HOLE LOCATION (BHL):
GEOGRAPHIC (NAD83):
LATITUDE: 40.118889°
LONGITUDE: -80.628466°
SURFACE HOLE LOCATION (SHL):
GEOGRAPHIC (NAD83):
LATITUDE: 40.158623°
LONGITUDE: -80.651617°
BOTTOM HOLE LOCATION (BHL):
GEOGRAPHIC (NAD83):
LATITUDE: 40.118669°
LONGITUDE: -80.628389°

NOTES ON SURVEY

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

LEGEND:

- EXISTING BOTTOM HOLE
- ★ EXISTING / PRODUCING WELLHEAD
- ★ EXISTING LANDING POINT LOCATION
- LPL★ PROPOSED SURFACE HOLE / BOTTOM HOLE
- LPL★ PROPOSED LANDING POINT LOCATION
- ACCESS ROAD
- PUBLIC ROAD
- FLOOD PLAN
- LEASE BOUNDARY
- AS-DRILLED PATH
- PROPOSED PATH

WELL OPERATOR:	WELL (FARM) NAME:	WELL #	SERIAL #
SWN PRODUCTION COMPANY, LLC	EDWARD DREMAK OHI	210H	XXXX
ADDRESS:	COUNTY:	CODE:	DISTRICT:
1300 FORT PIERPONT DRIVE, SUITE 201, MORGANTOWN, WV 26508	OHIO	069	RICHLAND
SURFACE OWNER:	USGS 7 1/2 QUADRANGLE MAP NAME:	API #	47-069-00320
ANDREW JOHN EVICK	TILTONSVILLE, OH-WV & WHEELING, WV		