

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

API 47-103-03186 County WETZEL District PROCTOR
Quad WILEYVILLE Pad Name DANIEL DURIG WTZ PAD Field/Pool Name VICTORY
Farm name DANIEL DURIG (REMAINDERMAN), ARTHUR & SHIRLEY ANN DURIG (LE) Well Number DANIEL DURIG WTZ 105H
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 4,396,395.834 Easting 530,928.908
Landing Point of Curve Northing 4,396,649.894 Easting 531,061.914
Bottom Hole Northing 4,397,610.723 Easting 530,022.007

Elevation (ft) 1401.4' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
SOBM

Date permit issued 07/21/2017 Date drilling commenced 11/16/2017 Date drilling ceased 01/24/2018
Date completion activities began 06/04/2018 Date completion activities ceased 09/02/2018
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 427' Open mine(s) (Y/N) depths _____
Salt water depth(s) ft 1,664' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1,167' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewea

Reviewed by:
DmH
2-21-18

API 47- 103 - 03186

Farm name DANIEL DURIG (REMAINDERMAN), ARTHUR & SHIRLEY ANN DURIG (L/E)

Well number DANIEL DURIG WTZ 105H

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	539'	NEW	J-55/54.50#		Y, 26 bbls
Coal	See Intermediate						
Intermediate 1	12.25	9.625	2,727'	NEW	J-55/36#		Y, 72 bbls
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	12,386'	NEW	P110-HC/20#		Y
Tubing		2.375	7,623	NEW	L-80/4.7#		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	486	15.60	1.20	583.20	SURFACE	8
Coal	See Intermediate						
Intermediate 1	CLASS A	1,053	15.60	1.18	1,242.54	SURFACE	8
Intermediate 2							
Intermediate 3							
Production	CLASS A	2,206	15.60	1.18	2,603.08	SURFACE	24
Tubing							

Drillers TD (ft) 12,386' Loggers TD (ft) 12,386'
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6,780'

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 TO

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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- 103 - 03186

Farm name DANIEL DURIG (REMAINDERMAN), ARTHUR & SHIRLEY ANN DURIG (LE)

Well number DANIEL DURIG WTZ 105H

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	2				

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Please insert additional pages as applicable.

API 47- 103 - 03186 Farm name DANIEL DURIG (REMAINDERMAN), ARTHUR & SHIRLEY ANN DURIG (LE) Well number DANIEL DURIG WTZ 105H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>MARCELLUS</u>	<u>7,221'</u> TVD	<u>7,522'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 4,902 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 9,788 mcfpd Oil 77 bpd NGL _____ bpd Water 79 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 9110 GROGANS MILL RD City THE WOODLANDS State TX Zip 77380

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Cementing Company SCHLUMBERGER WELL SERVICES
Address 10101 WOODLOCH FOREST DR City THE WOODLANDS State TX Zip 77380

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Stimulating Company SWN WELL SERVICES
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

Please insert additional pages as applicable.

Completed by ELIZABETH GEE Telephone 832-796-7632
Signature [Signature] Title STAFF REGULATORY ANALYST Date 11/19/2018

**DANIEL DURIG Wtz 105H
ATTACHMENT 2
STIM REPORT**

STAGE NUM	Stim Date	Ave Pump Rate (BPM)	Ave Treatment	Max Breakdown	ISIP (PSI)	Amount of Proppant (lbs)	Amount of water bbls	Amount of nitrogen/othe
1	6/4/2018	68	7,560	8,417	4,237	197,360	4,174	0
2	6/5/2018	59	7,936	8,207	4,317	198,440	4,429	0
3	6/5/2018	72	7,759	8,144	4,737	203,520	3,808	0
4	6/6/2018	75	7,910	7,712	4,608	205,060	3,912	0
5	6/6/2018	28	7,151	7,552	8,454	7,515	3,772	0
6	6/13/2018	74	7,145	6,321	4,276	197,680	8,374	0
7	6/14/2018	66	7,304	6,929	4,328	199,520	4,212	0
8	6/15/2018	75	7,602	6,974	4,985	199,600	3,489	0
9	6/16/2018	71	7,555	6,145	4,738	218,010	3,898	0
10	6/16/2018	78	7,587	6,792	4,561	218,330	3,649	0
11	6/17/2018	76	7,843	6,349	4,897	215,520	4,598	0
12	6/18/2018	79	7,786	6,279	4,963	207,160	3,510	0
13	6/18/2018	65	7,410	7,516	5,216	205,180	3,749	0
14	6/19/2018	81	7,674	6,222	5,299	205,640	3,518	0
15	6/21/2018	81	7,715	6,334	4,574	205,220	3,501	0
16	6/21/2018	73	7,525	6,425	4,639	208,160	3,367	0
17	6/22/2018	76	7,743	6,919	4,642	203,420	3,474	0
18	6/23/2018	80	7,697	6,634	4,642	218,860	3,370	0
19	6/24/2018	78	7,730	6,842	5,211	222,700	3,395	0
20	6/25/2018	78	7,721	6,736	5,435	204,004	3,425	0
21	6/25/2018	72	7,549	6,304	4,763	214,060	3,783	0
22	6/26/2018	80	7,447	6,128	5,146	208,026	3,365	0
23	6/27/2018	65	7,543	6,905	5,077	205,500	6,086	0
24	6/28/2018	80	7,399	6,656	4,830	201,900	3,411	0
25	6/28/2018	75	7,844	6,328	4,954	203,260	3,363	0
26	6/28/2018	78	7,626	6,672	4,655	198,900	3,385	0
27	6/28/2018	79	7,283	6,551	4,938	208,560	3,654	0
28	6/29/2018	81	7,103	6,551	5,365	197,580	4,000	0
29	6/29/2018	81	7,547	6,556	4,939	202,780	3,213	0
30	6/30/2018	74	7,845	6,711	5,212	145,060	4,420	0
31	7/1/2018	78	7,013	7,352	4,566	198,360	3,202	0
32	7/1/2018	79	7,027	8,462	4,802	196,640	3,201	0
33	7/1/2018	66	7,810	8,511	5,436	194,920	3,733	0
34	7/2/2018	79	7,257	7,801	4,699	200,820	3,145	0
35	7/2/2018	76	7,287	8,796	4,500	198,260	3,288	0
36	7/3/2018	78	7,249	8,354	4,358	198,520	3,094	0
37	7/3/2018	79	7,301	6,464	5,020	201,580	3,111	0
38	7/4/2018	80	7,143	7,931	4,922	195,240	3,131	0
39	7/4/2018	76	7,672	8,389	4,436	200,040	3,096	0
40	7/5/2018	75	7,587	8,118	5,267	201,030	4,043	0
41	7/6/2018	77	7,676	8,311	6,342	200,520	3,167	0
42	7/6/2018	71	7,106	7,989	5,163	199,440	3,066	0
43	7/7/2018	80	7,405	7,909	4,977	203,060	3,032	0
44	7/7/2018	80	7,115	7,254	4,258	202,560	3,101	0
45	7/17/2018	73	6,586	6,711	4,902	210,840	3,697	0

DANIEL DURIG WTZ 105H

ATTACHMENT 1

PERF REPORT

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	4/8/2018	12,281	12,209	33
2	6/4/2018	12,176	12,104	33
3	6/5/2018	12,071	11,999	33
4	6/6/2018	11,966	11,894	33
5	6/6/2018	11,861	11,789	33
6	6/12/2018	11,756	11,684	33
7	6/13/2018	11,651	11,579	33
8	6/14/2018	11,546	11,474	33
9	6/15/2018	11,441	11,369	33
10	6/16/2018	11,336	11,264	33
11	6/17/2018	11,231	11,159	33
12	6/17/2018	11,126	11,054	33
13	6/18/2018	11,021	10,949	33
14	6/19/2018	10,916	10,844	33
15	6/19/2018	10,811	10,739	33
16	6/21/2018	10,706	10,634	33
17	6/22/2018	10,601	10,529	33
18	6/22/2018	10,496	10,424	33
19	6/23/2018	10,391	10,319	33
20	6/24/2018	10,286	10,214	33
21	6/25/2018	10,181	10,109	33
22	6/25/2018	10,076	10,004	33
23	6/26/2018	9,971	9,899	33
24	6/27/2018	9,866	9,794	33
25	6/28/2018	9,761	9,689	33
26	6/28/2018	9,656	9,584	33
27	6/28/2018	9,551	9,479	33
28	6/29/2018	9,446	9,374	33
29	6/29/2018	9,341	9,269	33
30	6/29/2018	9,236	9,164	33
31	6/30/2018	9,131	9,059	33
32	7/1/2018	9,026	8,954	33
33	7/1/2018	8,921	8,849	33
34	7/2/2018	8,816	8,744	33
35	7/2/2018	8,711	8,639	33
36	7/2/2018	8,606	8,534	33
37	7/3/2018	8,501	8,429	33
38	7/3/2018	8,396	8,324	33
39	7/4/2018	8,291	8,219	33
40	7/4/2018	8,186	8,114	33
41	7/5/2018	8,081	8,009	33
42	7/6/2018	7,976	7,904	33

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DANIEL DURIG WTZ 105H

ATTACHMENT 1

PERF REPORT

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
43	7/6/2018	7,871	7,799	33
44	7/7/2018	7,766	7,694	33
45	7/16/2018	7,661	7,589	33



Well Name:

Daniel Durig Wtz 105H

47103031860000

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	427.00	427.00	
Top of Salt Water	1664.00	1664.00	NA	NA	
Pittsburgh Coal	1167.00	1167.00	1239.00	1239.00	
Pottsville (ss)	1239.00	1239.00	1259.00	1259.00	
Mauch Chunk (shale)	NA	NA	NA	NA	
Raven Cliff (ss)	1682.00	1682.00	1951.00	1951.00	
Maxton (ss)	1951.00	1951.00	NA	NA	
Greenbriar (ls)	NA	NA	NA	NA	
Big Injun (ss)	2325.00	2325.00	2911.00	2911.00	
Berea (siltstone)	2911.00	2911.00	6584.00	6584.00	
Rhinestreet (shale)	6584.00	6584.00	6984.00	6939.00	
Cashaqua (shale)	6957.00	6868.00	7085.00	6981.00	
Middlesex (shale)	7085.00	6981.00	7199.00	7071.00	
Burket (shale)	7199.00	7071.00	7241.00	7100.00	
Tully (ls)	7241.00	7100.00	7270.00	7120.00	
Mahantango (shale)	7270.00	7120.00	7522.00	7221.00	
Marcellus (shale)	7522.00	7221.00	NA	NA	GAS

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/4/2018
Job End Date:	7/17/2018
State:	West Virginia
County:	Wetzel
API Number:	47-103-03186-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Daniel Durig WTZ 105
Latitude:	39.71687250
Longitude:	-80.63914945
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,225
Total Base Water Volume (gal):	6,749,778
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
HCL	SWN Well Services	Solvent					
				Listed Below			
SCAL16486A	Nalco	Scale Inhibitor					
				Listed Below			

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FLOJET DRP 1130 X	SWN Well Services	Friction Reducer					
				Listed Below			
BIOC11219A	Nalco	Biocide					
				Listed Below			
Ecopol-FEAC	SWN Well Services	Iron Control					
				Listed Below			
Econo-CI200	SWN Well Services	Corrosion Inhibitor					
				Listed Below			
FLOJET DR 9000 LPP	SWN Well Services	Friction Reducer					
				Listed Below			
Base Water	Operator	Base Fluid					
				Listed Below			
Sand	SWN Well Services	Proppant					
				Listed Below			

Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.

			Water	7732-18-5	100.00000	84.54836	Density = 8.345
			Crystalline Silica, quartz	14808-60-7	100.00000	13.40182	
			Water	7732-18-5	85.00000	1.65986	
			Hydrochloric Acid	7647-01-0	15.00000	0.28347	
			Petroleum Distillates, Hydrotreated	64742-47-8	45.00000	0.05163	

			Methanol	67-56-1	60.00000	0.01567	
			Ethylene glycol	107-21-1	10.00000	0.01320	
			Benzyl-(C12-C16 Alky)- Dimethyl-Ammonium	68424-85-1	30.00000	0.00784	
			Acetic Acid	64-19-7	37.50000	0.00390	
			Chloride Glutaraldehyde	111-30-8	10.00000	0.00261	
			Methanol	67-56-1	80.00000	0.00239	
			Citric Acid	77-92-9	22.50000	0.00234	
			Alcohols, C12- C16,Ethoxylated propoxylated	68213-24-1	2.00000	0.00229	
			Fatty alcohols ethoxylated	Proprietary	2.00000	0.00229	
			Amine Triphosphate	Proprietary	30.00000	0.00173	
			Oxyalkylated fatty acid	68951-67-7	9.67400	0.00029	
			Fatty acids	61790-12-3	5.02700	0.00015	
			Modified thiourea polymer	68527-49-1	4.74600	0.00014	
			Potassium acetate	127-08-2	0.02200	0.00000	
			Formaldehyde	50-00-0	0.00400	0.00000	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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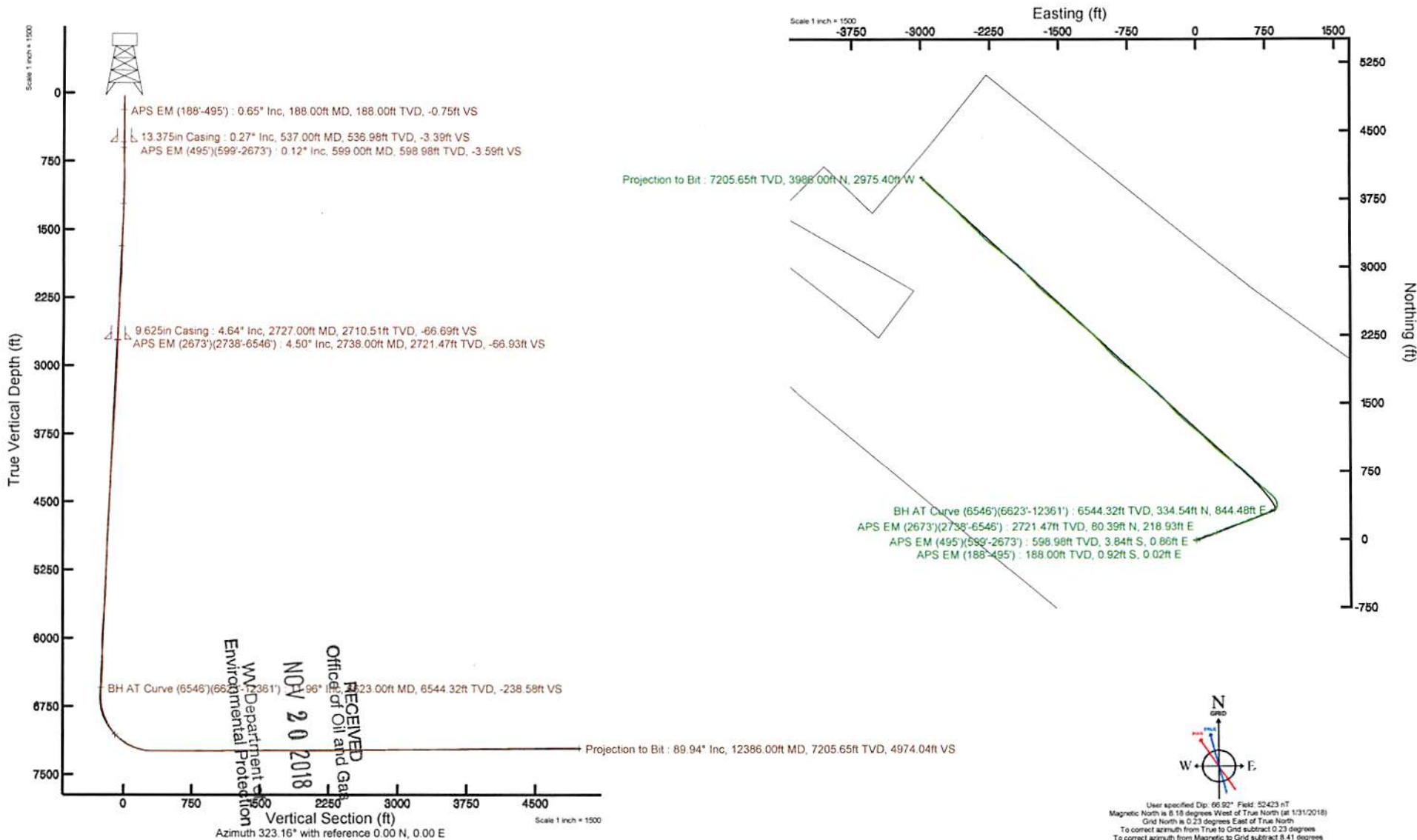
SOUTHWESTERN ENERGY

Location: Wetzel County, WV Slot: Slot 105H
 Field: Wetzel Well: Daniel Durig WTZ 105H
 Facility: Daniel Durig Pad Wellbore: Daniel Durig WTZ 105H PWB



Plot reference wellpath is Daniel Durig WTZ 105H PWB Rev 8.0	Grid System: NAD83 - UTM Zone 17 North, US feet
True vertical depths are referenced to SDC 46 (KB)	* - Wellpath was transformed from a different geoid datum
Measured depths are referenced to SDC 46 (KB)	North Reference: Grid North
SDC 46 (KB) to Mean Sea Level: 1427 feet	Scale: True distance
Mean Sea Level to Ground level (At Slot: Slot 105H): -1401 feet	Depth: as in feet
Coordinates are in feet referenced to Slot	Created by: thomasc on 2018-01-23
	Database: WA - Pennsylvania

API: 47-103-03186-0000
 Job #: 8841881
 Rig: SDC 46
 Duration: 01/09/18 - 01/21/18



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 105H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 105H
Field	Wetzel	Wellbore	Daniel Durig WTZ 105H AWB
Facility	Daniel Durig Pad		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Thomsuzc
Scale	0.999612	Report Generated	1/29/2018 at 10:36:45 AM
Convergence at slot	0.24° East	Database/Source file	WA_Pennsylvania/Daniel_Durig_WTZ_105H_AWP_Proj_12386_MD.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	21.40	-12.20	1741889.46	14423842.02	39°43'00.741"N	80°38'20.938"W
Facility Reference Pt			1741901.66	14423820.63	39°43'00.529"N	80°38'20.783"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 (KB) to Facility Vertical Datum	1427.00ft
Horizontal Reference Pt	Slot	SDC 46 (KB) to Mean Sea Level	1427.00ft
Vertical Reference Pt	SDC 46 (KB)	SDC 46 (KB) to Ground Level at Slot (Slot 105H)	26.00ft
MD Reference Pt	SDC 46 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	323.16°

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Actual Wellpath Report

Daniel Durig WZ 105H AWP Proj: 12386 MD
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 105H
Area	Wetzel County, WV	Well	Daniel Durig WZ 105H
Field	Wetzel	Wellbore	Daniel Durig WZ 105H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (151 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	178.630	0.00	0.00	0.00	0.00	1741889.46	14423842.02	39°43'00.741"N	80°38'20.938"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	178.630	26.00	0.00	0.00	0.00	1741889.46	14423842.02	39°43'00.741"N	80°38'20.938"W	0.00	0.000	0.00	0.00	0.00
188.00	0.650	178.630	188.00	-0.75	-0.92	0.02	1741889.48	14423841.10	39°43'00.732"N	80°38'20.938"W	0.92	178.630	0.40	0.40	110.27
218.00	0.640	160.410	217.99	-1.05	-1.25	0.08	1741889.54	14423840.77	39°43'00.729"N	80°38'20.937"W	1.25	176.227	0.68	-0.03	-60.73
310.00	0.700	168.300	309.99	-2.05	-2.28	0.37	1741889.83	14423839.74	39°43'00.718"N	80°38'20.933"W	2.31	170.824	0.12	0.07	8.58
402.00	0.210	152.390	401.99	-2.72	-2.98	0.56	1741890.02	14423839.04	39°43'00.712"N	80°38'20.931"W	3.03	169.349	0.54	-0.53	-17.29
495.00	0.370	164.740	494.98	-3.17	-3.42	0.72	1741890.18	14423838.60	39°43'00.707"N	80°38'20.929"W	3.50	168.139	0.18	0.17	13.28
599.00	0.120	148.040	598.98	-3.59	-3.84	0.86	1741890.33	14423838.18	39°43'00.703"N	80°38'20.927"W	3.93	167.304	0.25	-0.24	-16.06
692.00	1.400	326.920	691.97	-2.55	-2.97	0.30	1741889.76	14423839.05	39°43'00.712"N	80°38'20.934"W	2.98	174.305	1.63	1.38	192.34
785.00	2.260	327.640	784.93	0.41	-0.47	-1.31	1741888.16	14423841.55	39°43'00.736"N	80°38'20.955"W	1.39	250.299	0.93	0.92	0.77
877.00	4.430	43.460	876.80	2.82	3.65	0.17	1741889.63	14423845.67	39°43'00.777"N	80°38'20.936"W	3.65	2.643	4.84	2.36	82.41
970.00	4.220	49.210	969.53	3.66	8.49	5.23	1741894.69	14423850.51	39°43'00.825"N	80°38'20.871"W	9.97	31.636	0.52	-0.23	6.18
1063.00	5.770	73.690	1062.19	2.25	12.04	12.31	1741901.77	14423854.05	39°43'00.859"N	80°38'20.780"W	17.22	45.637	2.80	1.67	26.32
1156.00	5.500	71.150	1154.74	-0.76	14.79	21.01	1741910.47	14423856.81	39°43'00.886"N	80°38'20.668"W	25.70	54.860	0.40	-0.29	-2.73
1201.00	5.300	70.700	1199.54	-2.05	16.17	25.02	1741914.47	14423858.19	39°43'00.900"N	80°38'20.617"W	29.79	57.115	0.45	-0.44	-1.00
1294.00	5.640	77.920	1292.12	-5.26	18.55	33.54	1741922.99	14423860.56	39°43'00.923"N	80°38'20.508"W	38.33	61.053	0.82	0.37	7.76
1340.00	6.000	84.610	1337.88	-7.46	19.25	38.14	1741927.59	14423861.26	39°43'00.930"N	80°38'20.449"W	42.72	63.222	1.67	0.78	14.54
1433.00	5.970	89.490	1430.37	-12.86	19.75	47.82	1741937.26	14423861.76	39°43'00.934"N	80°38'20.325"W	51.73	67.559	0.55	-0.03	5.25
1526.00	5.420	72.980	1522.92	-17.22	21.08	56.85	1741946.29	14423863.09	39°43'00.947"N	80°38'20.209"W	60.63	69.659	1.85	-0.59	-17.75
1619.00	5.640	62.230	1615.49	-19.43	24.49	65.10	1741954.53	14423866.50	39°43'00.980"N	80°38'20.104"W	69.55	69.382	1.14	0.24	-11.56
1676.00	5.750	55.740	1672.21	-20.00	27.40	69.94	1741959.37	14423869.41	39°43'01.009"N	80°38'20.042"W	75.11	68.602	1.15	0.19	-11.39
1711.00	6.130	53.800	1707.02	-20.10	29.50	72.89	1741962.33	14423871.50	39°43'01.030"N	80°38'20.004"W	78.63	67.970	1.23	1.09	-5.54
1804.00	8.450	57.500	1799.26	-20.67	36.10	82.66	1741972.09	14423878.11	39°43'01.094"N	80°38'19.878"W	90.20	66.409	2.54	2.49	3.98
1897.00	9.310	60.330	1891.15	-22.13	43.50	94.96	1741984.39	14423885.50	39°43'01.167"N	80°38'19.721"W	104.45	65.391	1.04	0.92	3.04
1989.00	10.170	67.510	1981.83	-25.07	50.29	108.93	1741998.35	14423892.29	39°43'01.234"N	80°38'19.541"W	119.98	65.221	1.62	0.93	7.80
2082.00	12.270	82.460	2073.06	-31.94	54.73	126.32	1742015.74	14423896.72	39°43'01.277"N	80°38'19.319"W	137.67	66.577	3.84	2.26	16.08
2175.00	11.800	82.100	2164.02	-41.38	57.33	145.54	1742034.94	14423899.33	39°43'01.302"N	80°38'19.073"W	156.42	68.500	0.51	-0.51	-0.39
2268.00	8.920	68.700	2255.51	-47.91	61.26	161.68	1742051.08	14423903.25	39°43'01.340"N	80°38'18.866"W	172.90	69.250	4.02	-3.10	-14.41
2360.00	8.690	70.090	2346.42	-51.85	66.21	174.86	1742064.25	14423908.21	39°43'01.388"N	80°38'18.697"W	186.98	69.260	0.34	-0.25	1.51
2453.00	8.370	72.450	2438.39	-56.13	70.65	187.92	1742077.31	14423912.64	39°43'01.432"N	80°38'18.530"W	200.76	69.397	0.51	-0.34	2.54

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 105H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 105H
Field	Wetzel	Wellbore	Daniel Durig WTZ 105H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (151 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]	
2546.00	7.440	74.210	2530.51	-60.53	74.33	200.17	1742089.55	14423916.32	39°43'01.468"N	80°38'18.373"W	213.52	69.629	1.03	-1.00	1.89	
2639.00	5.930	71.930	2622.87	-64.24	77.46	210.53	1742099.91	14423919.45	39°43'01.498"N	80°38'18.240"W	224.33	69.801	1.65	-1.62	-2.45	
2673.00	5.320	71.480	2656.71	-65.30	78.50	213.69	1742103.07	14423920.49	39°43'01.508"N	80°38'18.199"W	227.66	69.829	1.80	-1.79	-1.32	
2738.00	4.500	68.690	2721.47	-66.93	80.39	218.93	1742108.30	14423922.37	39°43'01.527"N	80°38'18.132"W	233.22	69.838	1.31	-1.26	-4.29	
2831.00	6.710	66.800	2814.02	-69.19	83.85	227.32	1742116.69	14423925.84	39°43'01.561"N	80°38'18.025"W	242.29	69.752	2.38	2.38	-2.03	
2924.00	8.370	63.020	2906.21	-71.63	89.06	238.35	1742127.72	14423931.05	39°43'01.612"N	80°38'17.883"W	254.44	69.511	1.86	1.78	-4.06	
3016.00	10.900	60.640	2996.91	-73.91	96.37	251.90	1742141.26	14423938.35	39°43'01.683"N	80°38'17.710"W	269.70	69.065	2.78	2.75	-2.59	
3112.00	11.450	66.560	3091.09	-77.30	104.61	268.55	1742157.91	14423946.59	39°43'01.764"N	80°38'17.496"W	288.21	68.718	1.32	0.57	6.17	
3205.00	11.430	67.910	3182.24	-81.78	111.75	285.56	1742174.91	14423953.72	39°43'01.834"N	80°38'17.278"W	306.65	68.629	0.29	-0.02	1.45	
3297.00	10.980	68.010	3272.49	-86.35	118.45	302.13	1742191.47	14423960.43	39°43'01.900"N	80°38'17.066"W	324.52	68.592	0.49	-0.49	0.11	
3390.00	10.220	65.820	3363.90	-90.42	125.15	317.87	1742207.21	14423967.12	39°43'01.965"N	80°38'16.864"W	341.62	68.510	0.92	-0.82	-2.35	
3483.00	11.250	71.660	3455.28	-95.11	131.38	334.01	1742223.34	14423973.35	39°43'02.026"N	80°38'16.657"W	358.92	68.527	1.61	1.11	6.28	
3576.00	11.210	70.590	3546.50	-100.70	137.24	351.15	1742240.47	14423979.21	39°43'02.083"N	80°38'16.437"W	377.01	68.652	0.23	-0.04	-1.15	
3668.00	10.470	69.940	3636.85	-105.79	143.08	367.43	1742256.75	14423985.05	39°43'02.140"N	80°38'16.229"W	394.31	68.723	0.82	-0.80	-0.71	
3761.00	9.810	67.010	3728.40	-110.13	149.08	382.66	1742271.98	14423991.04	39°43'02.199"N	80°38'16.033"W	410.68	68.715	0.90	-0.71	-3.15	
3854.00	11.140	74.150	3819.85	-115.24	154.62	398.60	1742287.91	14423996.58	39°43'02.253"N	80°38'15.829"W	427.54	68.798	2.00	1.43	7.68	
3947.00	11.500	74.490	3911.04	-121.83	159.56	416.18	1742305.48	14424001.52	39°43'02.301"N	80°38'15.604"W	445.71	69.024	0.39	0.39	0.37	
4039.00	11.410	72.430	4001.21	-128.17	164.76	433.69	1742322.98	14424006.71	39°43'02.352"N	80°38'15.380"W	463.93	69.198	0.46	-0.10	-2.24	
4132.00	10.600	69.960	4092.50	-133.68	170.46	450.49	1742339.78	14424012.42	39°43'02.408"N	80°38'15.164"W	481.67	69.274	1.01	-0.87	-2.66	
4225.00	10.360	67.100	4183.95	-138.16	176.65	466.23	1742355.51	14424018.60	39°43'02.468"N	80°38'14.963"W	498.58	69.249	0.62	-0.26	-3.08	
4318.00	9.800	64.390	4275.52	-141.72	183.32	481.07	1742370.35	14424025.27	39°43'02.534"N	80°38'14.772"W	514.82	69.139	0.79	-0.60	-2.91	
4410.00	10.320	72.860	4366.11	-146.02	189.14	496.01	1742385.28	14424031.08	39°43'02.590"N	80°38'14.581"W	530.85	69.127	1.70	0.57	9.21	
4503.00	9.950	74.610	4457.65	-151.77	193.73	511.72	1742400.98	14424035.67	39°43'02.635"N	80°38'14.380"W	547.16	69.264	0.52	-0.40	1.88	
4596.00	8.880	75.250	4549.40	-157.41	197.69	526.41	1742415.66	14424039.63	39°43'02.674"N	80°38'14.191"W	562.30	69.417	1.16	-1.15	0.69	
4689.00	8.000	73.870	4641.39	-162.39	201.31	539.56	1742428.82	14424043.25	39°43'02.709"N	80°38'14.023"W	575.90	69.540	0.97	-0.95	-1.48	
4782.00	8.090	71.920	4733.48	-166.79	205.14	552.00	1742441.25	14424047.08	39°43'02.746"N	80°38'13.863"W	588.89	69.614	0.31	0.10	-2.10	
4874.00	8.730	71.550	4824.49	-171.07	209.36	564.78	1742454.02	14424051.30	39°43'02.788"N	80°38'13.700"W	602.33	69.661	0.70	0.70	-0.40	
4967.00	8.720	70.770	4916.41	-175.43	213.91	578.13	1742467.37	14424055.85	39°43'02.832"N	80°38'13.529"W	616.44	69.695	0.13	-0.01	-0.84	
5063.00	9.260	67.800	5011.23	-179.58	219.23	592.15	1742481.38	14424061.16	39°43'02.884"N	80°38'13.349"W	631.43	69.684	0.74	0.56	-3.09	
5155.00	9.480	66.180	5102.00	-183.62	225.09	605.94	1742495.16	14424067.02	39°43'02.941"N	80°38'13.172"W	646.39	69.622	0.37	0.24	-1.76	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 105H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 105H
Field	Wetzel	Wellbore	Daniel Durig WTZ 105H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (151 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]	
5248.00	9.460	64.330	5193.74	-186.37	231.49	619.83	1742509.05	14424073.42	39°43'03.004"N	80°38'12.994"W	661.65	69.521	0.33	-0.02	-1.99	
5341.00	9.120	58.380	5285.52	-188.52	238.66	633.00	1742522.21	14424080.59	39°43'03.074"N	80°38'12.825"W	676.50	69.342	1.10	-0.37	-6.40	
5433.00	10.430	61.090	5376.18	-190.33	246.51	646.50	1742535.71	14424088.44	39°43'03.151"N	80°38'12.652"W	691.90	69.128	1.51	1.42	2.95	
5526.00	11.180	63.390	5467.53	-193.09	254.62	661.93	1742551.13	14424096.54	39°43'03.231"N	80°38'12.454"W	709.21	68.960	0.93	0.81	2.47	
5619.00	12.730	70.210	5558.52	-197.70	262.13	679.63	1742568.83	14424104.05	39°43'03.304"N	80°38'12.227"W	728.43	68.909	2.25	1.67	7.33	
5711.00	13.760	72.630	5648.07	-204.32	268.83	699.61	1742588.80	14424110.74	39°43'03.370"N	80°38'11.971"W	749.48	68.981	1.27	1.12	2.63	
5804.00	12.870	74.280	5738.57	-211.74	274.94	720.14	1742609.32	14424116.85	39°43'03.429"N	80°38'11.708"W	770.84	69.104	1.04	-0.96	1.77	
5897.00	10.430	78.170	5829.65	-219.03	279.47	738.35	1742627.52	14424121.38	39°43'03.473"N	80°38'11.475"W	789.47	69.268	2.75	-2.62	4.18	
5989.00	6.220	88.890	5920.66	-225.46	281.27	751.49	1742640.66	14424123.19	39°43'03.491"N	80°38'11.307"W	802.40	69.480	4.86	-4.58	11.65	
6082.00	6.310	71.280	6013.12	-229.99	283.01	761.37	1742650.53	14424124.92	39°43'03.508"N	80°38'11.180"W	812.27	69.609	2.06	0.10	-18.94	
6175.00	7.420	38.030	6105.48	-230.02	289.39	769.91	1742659.07	14424131.29	39°43'03.570"N	80°38'11.071"W	822.50	69.400	4.37	1.19	-35.75	
6268.00	9.530	42.750	6197.46	-227.06	299.77	778.84	1742668.00	14424141.67	39°43'03.672"N	80°38'10.956"W	834.54	68.949	2.39	2.27	5.08	
6360.00	11.740	55.410	6287.89	-226.05	310.68	791.72	1742680.87	14424152.58	39°43'03.780"N	80°38'10.790"W	850.49	68.574	3.48	2.40	13.76	
6453.00	13.450	61.480	6378.65	-227.98	321.22	809.01	1742698.16	14424163.11	39°43'03.883"N	80°38'10.569"W	870.45	68.345	2.32	1.84	6.53	
6546.00	13.230	67.960	6469.15	-232.27	330.37	828.38	1742717.52	14424172.27	39°43'03.973"N	80°38'10.320"W	891.83	68.257	1.62	-0.24	6.97	
6623.00	11.960	83.790	6544.32	-238.58	334.54	844.48	1742733.62	14424176.43	39°43'04.013"N	80°38'10.114"W	908.34	68.389	4.76	-1.65	20.56	
6670.00	9.840	66.190	6590.48	-241.97	336.69	853.00	1742742.13	14424178.58	39°43'04.034"N	80°38'10.005"W	917.05	68.460	8.35	-4.51	-37.45	
6716.00	9.670	42.860	6635.83	-242.17	341.11	859.23	1742748.36	14424183.00	39°43'04.078"N	80°38'09.925"W	924.46	68.347	8.54	-0.37	-50.72	
6762.00	10.570	27.710	6681.12	-239.66	347.68	863.82	1742752.95	14424189.57	39°43'04.143"N	80°38'09.866"W	931.17	68.076	6.09	1.96	-32.93	
6809.00	12.260	22.970	6727.19	-235.30	356.09	867.77	1742756.90	14424197.98	39°43'04.226"N	80°38'09.815"W	937.99	67.689	4.11	3.60	-10.09	
6855.00	15.760	10.500	6771.83	-228.61	366.74	870.82	1742759.94	14424208.62	39°43'04.331"N	80°38'09.775"W	944.89	67.162	10.01	7.61	-27.11	
6901.00	19.390	357.720	6815.69	-218.08	380.52	871.65	1742760.78	14424222.39	39°43'04.467"N	80°38'09.764"W	951.09	66.416	11.47	7.89	-27.78	
6948.00	23.030	351.610	6859.51	-203.56	397.42	870.00	1742759.12	14424239.29	39°43'04.634"N	80°38'09.784"W	956.48	65.449	9.05	7.74	-13.00	
6994.00	24.670	344.760	6901.58	-186.72	415.59	866.16	1742755.29	14424257.45	39°43'04.814"N	80°38'09.832"W	960.70	64.368	6.99	3.57	-14.89	
7040.00	29.100	334.400	6942.62	-166.80	434.96	858.80	1742747.93	14424276.81	39°43'05.005"N	80°38'09.925"W	962.67	63.139	13.99	9.63	-22.52	
7087.00	31.590	322.300	6983.22	-143.26	455.03	846.32	1742735.45	14424296.87	39°43'05.204"N	80°38'10.084"W	960.89	61.735	14.02	5.30	-25.74	
7133.00	36.570	313.890	7021.33	-117.66	474.08	829.06	1742718.19	14424315.92	39°43'05.393"N	80°38'10.304"W	955.03	60.238	14.88	10.83	-18.28	
7179.00	42.430	313.030	7056.81	-88.83	494.19	807.82	1742696.96	14424336.02	39°43'05.593"N	80°38'10.575"W	946.99	58.543	12.79	12.74	-1.87	
7226.00	46.040	314.310	7090.48	-56.50	516.83	784.11	1742673.27	14424358.65	39°43'05.817"N	80°38'10.877"W	939.12	56.610	7.91	7.68	2.72	
7269.00	50.680	312.400	7119.04	-24.85	538.87	760.74	1742649.91	14424380.68	39°43'06.036"N	80°38'11.175"W	932.26	54.688	11.29	10.79	-4.44	

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Operator	SOUTHWESTERN ENERGY	Slot	Slot 105H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 105H
Field	Wetzel	Wellbore	Daniel Durig WTZ 105H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (151 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]
7316.00	57.280	309.720	7146.67	12.29	563.80	732.08	1742621.25	14424405.60	39°43'06.284"N	80°38'11.540"W	924.01	52.399	14.78	14.04	-5.70
7362.00	62.780	310.480	7169.64	51.09	589.46	701.61	1742590.80	14424431.25	39°43'06.538"N	80°38'11.929"W	916.36	49.965	12.04	11.96	1.65
7409.00	67.760	312.530	7189.30	92.89	617.75	669.66	1742558.86	14424459.53	39°43'06.819"N	80°38'12.336"W	911.08	47.309	11.31	10.60	4.36
7455.00	72.270	313.140	7205.02	135.41	647.14	637.97	1742527.19	14424488.91	39°43'07.111"N	80°38'12.740"W	908.73	44.591	9.88	9.80	1.33
7501.00	77.100	313.330	7217.16	179.10	677.52	605.66	1742494.89	14424519.28	39°43'07.413"N	80°38'13.152"W	908.77	41.795	10.51	10.50	0.41
7548.00	80.270	313.460	7226.38	224.51	709.18	572.18	1742461.42	14424550.92	39°43'07.727"N	80°38'13.579"W	911.22	38.897	6.75	6.74	0.28
7594.00	83.770	314.460	7232.77	269.47	740.80	539.39	1742428.64	14424582.53	39°43'08.041"N	80°38'13.997"W	916.36	36.059	7.91	7.61	2.17
7640.00	86.920	314.070	7236.50	314.76	772.79	506.56	1742395.83	14424614.51	39°43'08.358"N	80°38'14.416"W	924.02	33.245	6.90	6.85	-0.85
7687.00	89.820	310.980	7237.84	360.93	804.54	471.95	1742361.22	14424646.25	39°43'08.673"N	80°38'14.857"W	932.75	30.396	9.01	6.17	-6.57
7733.00	90.370	307.650	7237.76	405.58	833.68	436.36	1742325.65	14424675.38	39°43'08.963"N	80°38'15.311"W	940.98	27.628	7.34	1.20	-7.24
7826.00	90.340	306.370	7237.19	494.91	889.66	362.10	1742251.42	14424731.33	39°43'09.519"N	80°38'16.258"W	960.53	22.147	1.38	-0.03	-1.38
7919.00	90.620	309.580	7236.41	584.65	946.88	288.80	1742178.15	14424788.53	39°43'10.087"N	80°38'17.193"W	989.94	16.962	3.46	0.30	3.45
8011.00	90.710	312.030	7235.34	674.50	1006.99	219.18	1742108.55	14424848.62	39°43'10.684"N	80°38'18.081"W	1030.56	12.279	2.66	0.10	2.66
8104.00	90.800	314.820	7234.11	766.15	1070.90	151.65	1742041.05	14424912.51	39°43'11.318"N	80°38'18.942"W	1081.59	8.060	3.00	0.10	3.00
8196.00	89.820	315.370	7233.62	857.23	1136.06	86.70	1741976.13	14424977.64	39°43'11.965"N	80°38'19.770"W	1139.37	4.364	1.22	-1.07	0.60
8289.00	89.080	308.870	7234.51	948.46	1198.40	17.76	1741907.22	14425039.95	39°43'12.584"N	80°38'20.649"W	1198.53	0.849	7.03	-0.80	-6.99
8382.00	91.110	310.150	7234.36	1038.82	1257.56	-53.99	1741835.50	14425099.09	39°43'13.171"N	80°38'21.564"W	1258.72	357.542	2.58	2.18	1.38
8475.00	89.940	311.670	7233.50	1129.70	1318.46	-124.26	1741765.25	14425159.97	39°43'13.776"N	80°38'22.460"W	1324.31	354.616	2.06	-1.26	1.63
8567.00	89.780	314.520	7233.73	1220.27	1381.31	-191.44	1741698.10	14425222.79	39°43'14.400"N	80°38'23.317"W	1394.51	352.110	3.10	-0.17	3.10
8660.00	89.850	318.510	7234.03	1312.63	1448.77	-255.42	1741634.14	14425290.23	39°43'15.069"N	80°38'24.132"W	1471.12	350.001	4.29	0.08	4.29
8753.00	89.940	319.030	7234.20	1405.36	1518.72	-316.72	1741572.87	14425360.14	39°43'15.763"N	80°38'24.913"W	1551.39	348.220	0.57	0.10	0.56
8842.00	90.030	316.440	7234.22	1493.95	1584.57	-376.57	1741513.04	14425425.98	39°43'16.416"N	80°38'25.676"W	1628.70	346.632	2.91	0.10	-2.91
8935.00	90.370	311.200	7233.90	1585.68	1648.94	-443.65	1741445.99	14425490.32	39°43'17.055"N	80°38'26.531"W	1707.58	344.941	5.65	0.37	-5.63
9028.00	89.940	309.080	7233.65	1676.29	1708.89	-514.74	1741374.93	14425550.25	39°43'17.650"N	80°38'27.437"W	1784.73	343.237	2.33	-0.46	-2.28
9121.00	90.000	310.990	7233.69	1766.85	1768.71	-585.94	1741303.75	14425610.04	39°43'18.244"N	80°38'28.346"W	1863.24	341.671	2.05	0.06	2.05
9213.00	90.060	309.480	7233.65	1856.52	1828.14	-656.17	1741233.55	14425669.44	39°43'18.834"N	80°38'29.241"W	1942.33	340.255	1.64	0.07	-1.64
9306.00	89.910	308.260	7233.67	1946.64	1886.50	-728.58	1741161.17	14425727.78	39°43'19.414"N	80°38'30.165"W	2022.30	338.883	1.32	-0.16	-1.31
9399.00	89.910	309.660	7233.82	2036.79	1944.97	-800.89	1741088.88	14425786.23	39°43'19.994"N	80°38'31.087"W	2103.41	337.619	1.51	0.00	1.51
9492.00	90.280	312.820	7233.66	2127.78	2006.27	-870.81	1741018.99	14425847.51	39°43'20.603"N	80°38'31.979"W	2187.11	336.537	3.42	0.40	3.40
9584.00	90.180	315.530	7233.29	2218.64	2070.38	-936.79	1740953.04	14425911.59	39°43'21.239"N	80°38'32.820"W	2272.45	335.655	2.95	-0.11	2.95

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Actual Wellpath Report

Daniel Durig WZ 105H AWP Proj: 12386'MD
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 105H
Area	Wetzel County, WV	Well	Daniel Durig WZ 105H
Field	Wetzel	Wellbore	Daniel Durig WZ 105H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (151 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]	
9677.00	90.520	316.900	7232.72	2310.95	2137.51	-1001.14	1740888.71	14425978.70	39°43'21.905"N	80°38'33.640"W	2360.35	334.903	1.52	0.37	1.47	
9770.00	90.920	317.760	7231.56	2403.46	2205.89	-1064.17	1740825.71	14426047.05	39°43'22.583"N	80°38'34.444"W	2449.16	334.246	1.02	0.43	0.92	
9862.00	90.650	313.480	7230.30	2494.64	2271.62	-1128.49	1740761.41	14426112.75	39°43'23.235"N	80°38'35.263"W	2536.48	333.583	4.66	-0.29	-4.65	
9955.00	90.710	310.110	7229.19	2585.79	2333.59	-1197.81	1740692.12	14426174.70	39°43'23.851"N	80°38'36.147"W	2623.05	332.829	3.62	0.06	-3.62	
10047.00	90.550	310.530	7228.18	2675.49	2393.11	-1267.95	1740622.01	14426234.20	39°43'24.442"N	80°38'37.042"W	2708.26	332.084	0.49	-0.17	0.46	
10140.00	90.550	311.770	7227.29	2766.45	2454.31	-1337.98	1740552.01	14426295.37	39°43'25.049"N	80°38'37.935"W	2795.32	331.403	1.33	0.00	1.33	
10232.00	90.620	313.260	7226.35	2856.85	2516.47	-1405.78	1740484.23	14426357.51	39°43'25.666"N	80°38'38.800"W	2882.51	330.811	1.62	0.08	1.62	
10325.00	91.110	312.220	7224.94	2948.31	2579.58	-1474.08	1740415.96	14426420.60	39°43'26.292"N	80°38'39.671"W	2971.05	330.255	1.24	0.53	-1.12	
10418.00	91.020	309.540	7223.21	3039.16	2640.43	-1544.37	1740345.69	14426481.42	39°43'26.897"N	80°38'40.567"W	3058.92	329.677	2.88	-0.10	-2.88	
10510.00	90.740	309.310	7221.80	3128.51	2698.85	-1615.43	1740274.66	14426539.82	39°43'27.477"N	80°38'41.474"W	3145.38	329.097	0.39	-0.30	-0.25	
10603.00	90.550	314.010	7220.75	3219.62	2760.65	-1684.89	1740205.23	14426601.59	39°43'28.090"N	80°38'42.359"W	3234.20	328.603	5.06	-0.20	5.05	
10696.00	90.740	317.240	7219.71	3311.79	2827.11	-1749.92	1740140.23	14426668.03	39°43'28.750"N	80°38'43.188"W	3324.87	328.243	3.48	0.20	3.47	
10789.00	90.250	318.110	7218.90	3404.36	2895.86	-1812.53	1740077.64	14426736.75	39°43'29.431"N	80°38'43.986"W	3416.33	327.957	1.07	-0.53	0.94	
10882.00	90.620	319.190	7218.20	3497.07	2965.67	-1873.97	1740016.22	14426806.54	39°43'30.124"N	80°38'44.769"W	3508.13	327.712	1.23	0.40	1.16	
10974.00	90.710	313.550	7217.13	3588.38	3032.23	-1937.42	1739952.80	14426873.07	39°43'30.784"N	80°38'45.578"W	3598.34	327.424	6.13	0.10	-6.13	
11067.00	90.680	308.760	7216.00	3679.32	3093.41	-2007.42	1739882.83	14426934.23	39°43'31.391"N	80°38'46.470"W	3687.67	327.019	5.15	-0.03	-5.15	
11160.00	90.430	307.180	7215.10	3769.06	3150.63	-2080.73	1739809.55	14426991.42	39°43'31.960"N	80°38'47.406"W	3775.70	326.559	1.72	-0.27	-1.70	
11252.00	90.680	307.260	7214.21	3857.52	3206.27	-2153.98	1739736.32	14427047.04	39°43'32.512"N	80°38'48.341"W	3862.62	326.107	0.29	0.27	0.09	
11345.00	90.120	308.780	7213.56	3947.28	3263.55	-2227.25	1739663.09	14427104.30	39°43'33.081"N	80°38'49.275"W	3951.13	325.688	1.74	-0.60	1.63	
11438.00	90.340	313.630	7213.18	4038.24	3324.80	-2297.19	1739593.17	14427165.52	39°43'33.689"N	80°38'50.167"W	4041.21	325.358	5.22	0.24	5.22	
11531.00	90.980	315.500	7212.11	4130.18	3390.05	-2363.44	1739526.94	14427230.75	39°43'34.337"N	80°38'51.012"W	4132.59	325.117	2.13	0.69	2.01	
11624.00	90.710	313.650	7210.74	4222.13	3455.31	-2429.68	1739460.73	14427295.98	39°43'34.984"N	80°38'51.857"W	4224.04	324.886	2.01	-0.29	-1.99	
11716.00	90.400	314.410	7209.85	4312.96	3519.25	-2495.82	1739394.61	14427359.90	39°43'35.619"N	80°38'52.700"W	4314.42	324.656	0.89	-0.34	0.83	
11809.00	90.150	316.590	7209.40	4405.12	3585.58	-2561.00	1739329.46	14427426.20	39°43'36.277"N	80°38'53.531"W	4406.26	324.464	2.36	-0.27	2.34	
11902.00	90.950	315.180	7208.51	4497.36	3652.34	-2625.73	1739264.75	14427492.94	39°43'36.939"N	80°38'54.356"W	4498.23	324.287	1.74	0.86	-1.52	
11994.00	91.320	311.690	7206.69	4588.01	3715.57	-2692.52	1739198.00	14427556.14	39°43'37.567"N	80°38'55.207"W	4588.59	324.071	3.81	0.40	-3.79	
12087.00	90.280	309.630	7205.39	4678.79	3776.16	-2763.05	1739127.49	14427616.71	39°43'38.168"N	80°38'56.107"W	4679.09	323.807	2.48	-1.12	-2.22	
12180.00	90.220	312.360	7204.98	4769.69	3837.16	-2833.24	1739057.33	14427677.68	39°43'38.774"N	80°38'57.002"W	4769.81	323.559	2.94	-0.06	2.94	
12273.00	89.510	315.700	7205.20	4861.50	3901.79	-2900.10	1738990.50	14427742.29	39°43'39.415"N	80°38'57.855"W	4861.53	323.378	3.67	-0.76	3.59	
12361.00	89.940	319.790	7205.63	4949.09	3966.91	-2959.26	1738931.36	14427807.38	39°43'40.061"N	80°38'58.609"W	4949.10	323.278	4.67	0.49	4.65	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 105H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 105H
Field	Wetzel	Wellbore	Daniel Durig WTZ 105H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (151 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]
12386.00	89.940	319.790	7205.65	4974.04	3986.00	-2975.40	1738915.23	14427826.47	39°43'40.250"N	80°38'58.814"W	4974.05	323.260	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Daniel Durig WTZ 105H AWB Ref Wellpath: Daniel Durig WTZ 105H AWP Proj: 12386 MD									
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	126.00	537.00	411.00	126.00	536.98	-0.35	0.01	-3.65	0.78
13.375in Casing	26.00	537.00	511.00	26.00	536.98	0.00	0.00	-3.65	0.78
12.25in Open Hole	537.00	2727.00	2190.00	536.98	2710.51	-3.65	0.78	80.07	218.11
9.625in Casing	26.00	2727.00	2701.00	26.00	2710.51	0.00	0.00	80.07	218.11
8.75in Open Hole	2727.00	6612.00	3885.00	2710.51	6533.56	80.07	218.11	334.25	842.21
8.5in Open Hole	6612.00	12386.00	5774.00	6533.56	7205.65	334.25	842.21	3986.00	-2975.40

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Daniel Durig WTZ 105H BHL Rev-2	7212.00	3995.43	-2993.22	1738897.41	14427835.89	39°43'40.344"N	80°38'59.042"W	point
Daniel Durig WTZ 105H LP Rev-2	7238.00	778.97	486.42	1742375.70	14424620.69	39°43'08.420"N	80°38'14.673"W	point

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 105H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 105H
Field	Wetzel	Wellbore	Daniel Durig WTZ 105H AWB
Facility	Daniel Durig Pad		

WELLPATH COMPOSITION - Ref Wellbore: Daniel Durig WTZ 105H AWB Ref Wellpath: Daniel Durig WTZ 105H AWP Proj: 12386'MD				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	495.00	BHI NaviTrak (Axial)	01_APS EM <17.5">(188'-495')	Daniel Durig WTZ 105H AWB
495.00	2673.00	BHI NaviTrak (Axial)	02_APS EM <12.25">(495')(599'-2673')	Daniel Durig WTZ 105H AWB
2673.00	6546.00	BHI NaviTrak (Axial)	03_APS EM <8.75">(2673')(2738'-6546')	Daniel Durig WTZ 105H AWB
6546.00	12361.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8.5">(6546')(6623'-12361')	Daniel Durig WTZ 105H AWB
12361.00	12386.00	Blind Drilling (std)	Projection to bit	Daniel Durig WTZ 105H AWB

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 105H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 105H
Field	Wetzel	Wellbore	Daniel Durig WTZ 105H AWB
Facility	Daniel Durig Pad		

COMMENTS
<p>Wellpath general comments API: 47-103-03186-0000 Job #: 8841881 Rig: SDC 46 Duration: 01/09/18 - 01/21/18</p>

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Latitude: 39°45'00"

SURFACE HOLE 3979'

BOTTOM HOLE 6938'

JACKSON SURVEYING INC.

P.O. Box 1460
677 W. Main St.
Clarksburg, WV 26302
304-623-5851

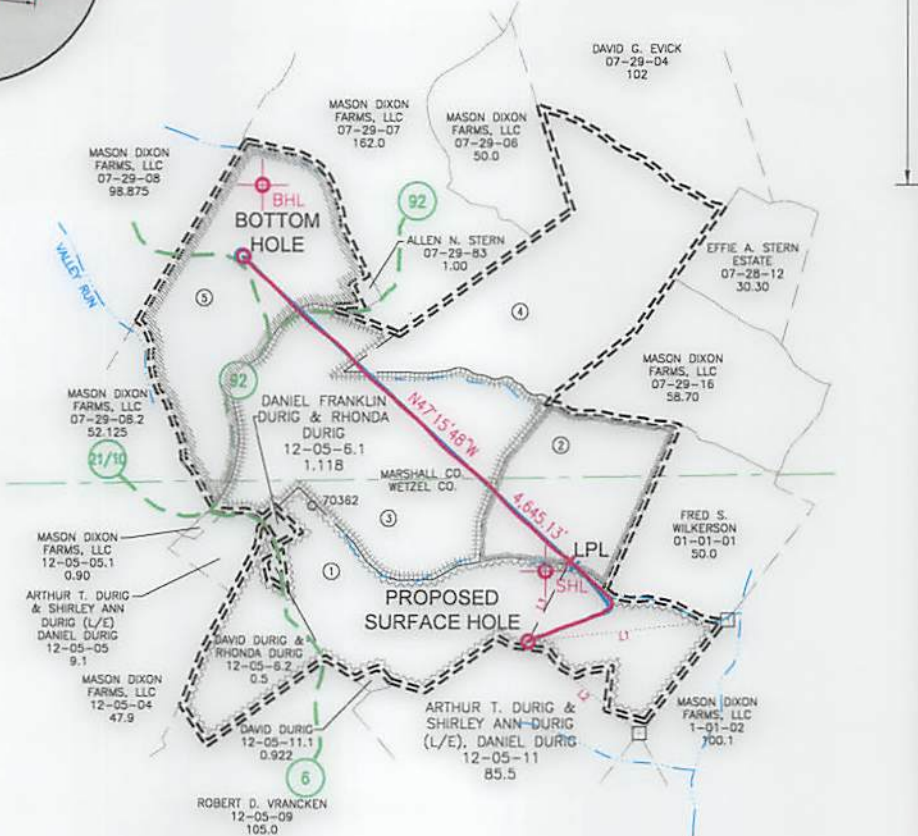
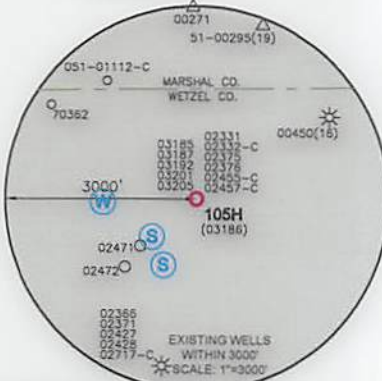
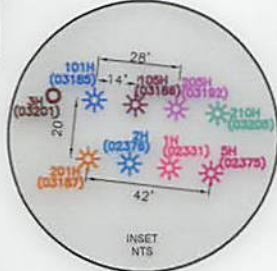
GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS			
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	DANIEL DURIG (REMAINDERMAN), ARTHUR AND SHIRLEY ANN DURIG (L/E) (S) / O.C. YOHO AND MARY YOHO (ARTHUR T. DURIG AND SHIRLEY ANN DURIG (LIFE ESTATE), DANIEL DURIG (REMAINDERMAN) (R)	12-05-06	151.58
TRACT	SURFACE OWNER	TAX PARCEL	ACRES
2	MASON DIXON FARMS, LLC (S)	07-29-15	57.70
3	MASON DIXON FARMS, LLC (S)	07-29-14	129.40
4	MASON DIXON FARMS, LLC (S)	07-29-05	118.00
5	ALTON W. STERN (LIFE ESTATE); ALAN W. STERN, DIANE E. STERN, DEBORAH E. PERRIS, BEVERLY J. DAVENPORT (REMAINDERMEN) (S)	07-29-08.1	109.00

SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,395.834 EASTING: 530,928.908
LANDING POINT (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,649.894 EASTING: 531,061.914
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,397,610.723 EASTING: 530,022.007

SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,395.840 EASTING: 530,928.969
LANDING POINT (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,396,633.183 EASTING: 531,077.163
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,397,613.178 EASTING: 530,016.997

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 85°16'19" E	2027.28'	SHL TO LANDMARK	FENCE CORNER
L2	S 47°33'40" E	1,493.13'	SHL TO LANDMARK	FD. MARKED STONE
LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
L3	N 27°37'59" E	940.85'	1,624.74'	SHL TO LP



WELL RESTRICTIONS

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

NOTES ON SURVEY

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

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 708

David Z. Jackson



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

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

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

DANIEL DURIG WTZ
OPERATOR'S WELL #: 105H
API WELL #: 47 103 03186
STATE COUNTY PERMIT

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

WATERSHED: LAUREL RUN ELEVATION: 1401.4'

DISTRICT: PROCTOR COUNTY: WETZEL QUADRANGLE: WILEYVILLE, WV

SURFACE OWNER: DANIEL DURIG (REMAINDERMAN), ARTHUR & SHIRLEY ANN DURIG (LE) ACREAGE: ±151.58

OIL & GAS ROYALTY OWNER: O.C. YOHO AND MARY YOHO (ARTHUR T. DURIG AND SHIRLEY ANN DURIG (LIFE ESTATE), DANIEL DURIG (REMAINDERMAN) ACREAGE: ±151.58

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

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,238' TVD 12,386' TMD


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

LEGEND:	— SURVEYED BOUNDARY	REVISIONS:	DATE: 10-11-2018
○ PROPOSED SURFACE HOLE / BOTTOM HOLE	— DRILLING UNIT		
★ EXISTING / PRODUCING WELLHEAD	— LEASE BOUNDARY		
LPL★ LANDING POINT LOCATION	— ASDRILLED PATH		DRAWN BY: N. MANO
⊕ EXISTING WATER WELL	— PROPOSED PATH		SCALE: 1" = 2000'
⊙ EXISTING SPRING			DRAWING NO:
			WELL LOCATION PLAT

<ul style="list-style-type: none"> ⊖ EXISTING SURFACE ⊖ EXISTING WATER MEET ☆ GUIDING POINT LOCATION ☆ EXISTING \ PROPOSED METHEAD ⊖ PROPOSED SURFACE HOGE \ BOTTOM HOGE 	<ul style="list-style-type: none"> — PROPOSED PATH — Y2-DWITTED PATH — FEWER VOLUNDARY — DWITTED PATH — SURVEYED VOLUNDARY 	<table border="1"> <tr><td colspan="2">MEET LOCATION BY:</td></tr> <tr><td colspan="2">DRAWING NO.:</td></tr> <tr><td colspan="2">SCALE: 1" = 3000'</td></tr> <tr><td colspan="2">DRAWN BY: M. MAHO</td></tr> <tr><td colspan="2">DATE: 10-11-2018</td></tr> </table>	MEET LOCATION BY:		DRAWING NO.:		SCALE: 1" = 3000'		DRAWN BY: M. MAHO		DATE: 10-11-2018	
MEET LOCATION BY:												
DRAWING NO.:												
SCALE: 1" = 3000'												
DRAWN BY: M. MAHO												
DATE: 10-11-2018												

CITY: VANE GEM STATE: WA ZIP CODE: 98318 CITY: VANE GEM STATE: WA ZIP CODE: 98318
 ADDRESS: P.O. BOX 1300 ADDRESS: P.O. BOX 1300
 MEET OPERATOR: ZMI PRODUCTION COMPANY, LLC DESIGNATED AGENT: BRITAIN MOODY

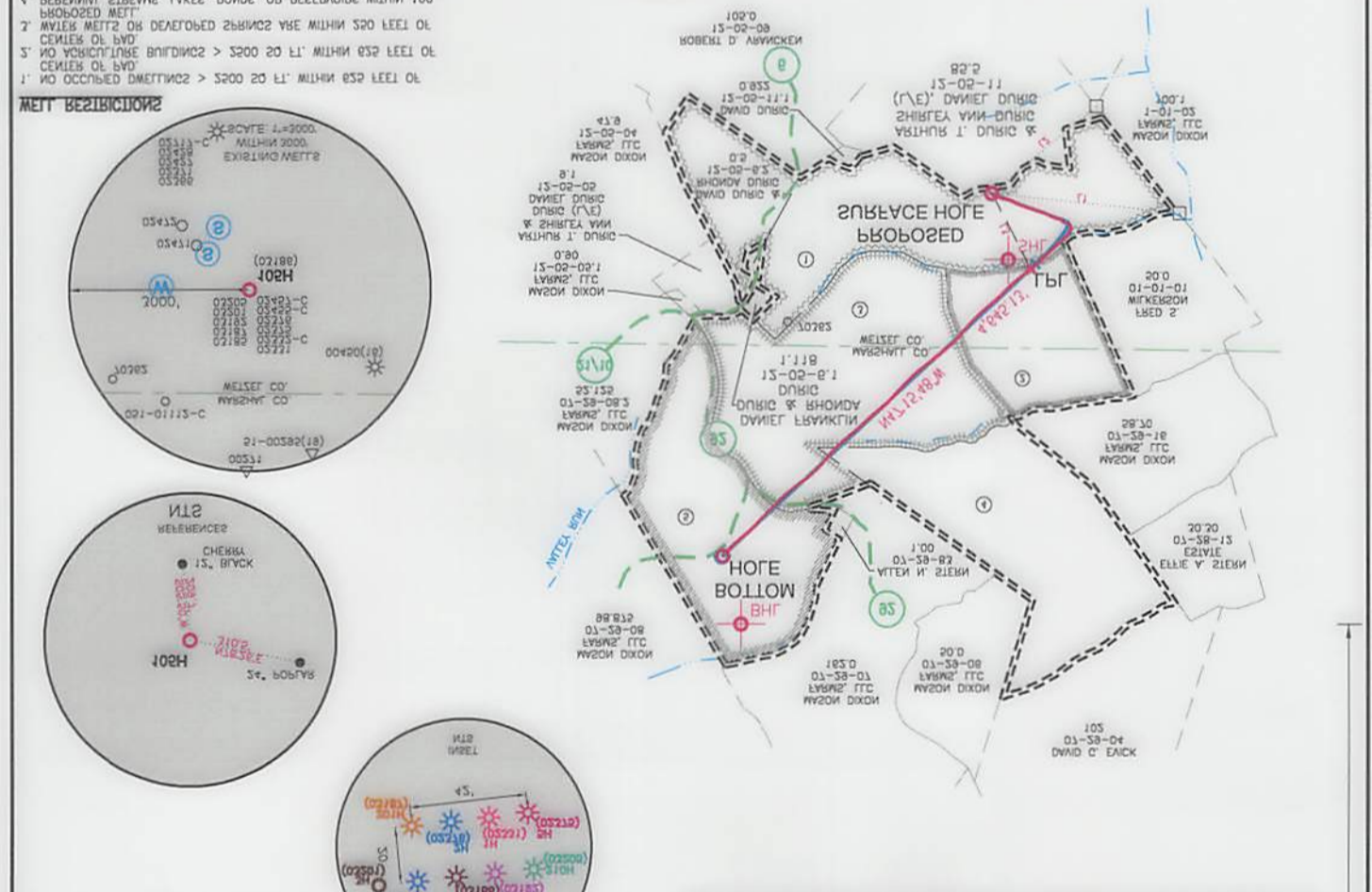
TARGET FORMATION: MARELTON ESTIMATED DEPTH: 1'228, 1AD 1'228, 1AD
 COMPLET BGC & AVANDON STEEL OUT & BEBIC OTHER CHARGE (SUBCIR) Y2-DWITTED
 DWIT DWIT DEEBER BEBIC FACILITE OR SHIMMATE BGC OFF OFD FORMATION BEBICATE IEM FORMATION
 OIG & CAS VOLUNTARY OMIER: O'C LOHO AND MVA LOHO (VAIHLI 1' DWIC AND ZHIBEL VMI DWIC (PUE EZIATE) DWIC (BEVAVDERMAN) VACBACE: 7/21/28
 SURFACE OMIER: DWIC DWIC (BEVAVDERMAN) VAIHLI & ZHIBEL VMI DWIC (PUE EZIATE) DWIC (BEVAVDERMAN) VACBACE: 7/21/28
 DISTRICT: PROSLOV COMPANY: MELSET SUBURBANAGE: MIGELITE' MA ELEVATION: 1401.4'
 MATERSHED: TUBEL VMI
 MEET LABE: OIG MATE DIZBOZAT PRODUCTION DEEB CAS PROUD INJECTION STORAGE SHATTOW

 CHARGESION' MA 2024 801 21TH STREET OFFICE OF OIG & CAS MADEP UNITED STATES TERRITORIAL MAPS (+) DEMOTES LOCATION OF MEET ON	ELEVATION: (HARD 88' 02" FT) SOURCE OF PROVEN ACCURACY: DEGREE OF MINIMUM	STATE COUNTY PERMIT 47 103 03188 OPERATOR, MEET #: 102H DANIEL DUBIC ML3
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AND DESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION...
 1. THE UNDERSIGNED HEREBY CERTIFY THAT THIS PLAN IS
 A. TRUE AND CORRECT COPY OF THE ORIGINAL
 B. THAT THE ORIGINAL HAS NOT BEEN ALTERED
 C. THAT THE ORIGINAL IS IN MY POSSESSION, CONTROL OR
 1. SURFACE AND VOLUNTARY OMIER INFORMATION AND THEIR
 NOTES ON SURFACE

STATE OF MARYLAND
 PROFESSIONAL SURVEYOR
 LICENSE NO. 208

GRAPHIC SCALE IN FEET
 5000 0 5000



EASTING: 270'018'883	POINTING: 4'28'282'840
P.M (MAD2) ZONE 13' METERS2)	
BOTTOM HOGE LOCATION (BH1):	
EASTING: 271'013'182	POINTING: 4'288'822'182
P.M (MAD2) ZONE 13' METERS2)	
GUIDING POINT (GP):	
EASTING: 270'828'888	POINTING: 4'288'282'840
P.M (MAD2) ZONE 13' METERS2)	
SURFACE HOGE LOCATION (SH1):	
304-853-2821	
Clarkburg, WA 98305	
633 W. Main St	
P.O. Box 1400	
INC.	
JACKSON SURVEYING	

NO.	DESCRIPTION	DATE	DEPTH
1	DWITTING (BEVAVDERMAN) (B) DWIC (PUE EZIATE) DWIC	01-38-08	108'00"
2	MASON DIXON EBMED' TTC (2)	01-38-08	118'00"
3	MASON DIXON EBMED' TTC (2)	01-38-14	138'00"
4	MASON DIXON EBMED' TTC (2)	01-38-14	138'00"
5	MASON DIXON EBMED' TTC (2)	01-38-12	23'00"
6	DAVLEBOKI (BEVAVDERMAN) (2) DWIC (PUE EZIATE) DWIC	01-38-08	108'00"
7	MASON DIXON EBMED' TTC (2)	01-38-14	138'00"
8	MASON DIXON EBMED' TTC (2)	01-38-14	138'00"
9	MASON DIXON EBMED' TTC (2)	01-38-12	23'00"

EASTING: 270'018'883	POINTING: 4'28'282'840
P.M (MAD2) ZONE 13' METERS2)	
BOTTOM HOGE LOCATION (BH1):	
EASTING: 271'013'182	POINTING: 4'288'822'182
P.M (MAD2) ZONE 13' METERS2)	
GUIDING POINT (GP):	
EASTING: 270'828'888	POINTING: 4'288'282'840
P.M (MAD2) ZONE 13' METERS2)	
SURFACE HOGE LOCATION (SH1):	

Grounding: 80.21, 30"
 SURFACE HOGE 1502L
 BOTTOM HOGE 808B