

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

API 47-103-03192 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 205H
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 4,396,395.450 Easting 530,933.181
Landing Point of Curve Northing 4,396,789.752 Easting 531,282.224
Bottom Hole Northing 4,397,799.770 Easting 530,190.324

Elevation (ft) 1401.6' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

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

Date permit issued 07/21/2017 Date drilling commenced 11/18/2017 Date drilling ceased 02/09/2018
Date completion activities began 06/22/2018 Date completion activities ceased 08/31/2018
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 _____
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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Reviewed by

Reviewed by:
DMH
2-2-19

API 47- 103 - 03192 Farm name DANIEL DURIG (REMANDERMAN), ARTHUR & SHIRLEY ANN DURIG (LE) Well number DANIEL DURIG Wtz 205H

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	538'	NEW	J-55/54.50#		Y, 30 bbls
Coal	See Intermediate						
Intermediate 1	12.25	9.625	2,711'	NEW	J-55/36#		Y, 65 bbls
Intermediate 2							
Intermediate 3							
Production	8.75/8.50	5.5	12,720'	NEW	HCP-110/20#		Y
Tubing		2.375	7,789'	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	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	2,126	15.60	1.19	2,529.94	SURFACE	24
Tubing							

Drillers TD (ft) 12,720' Loggers TD (ft) 12,720'
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 9,712'

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 _____

**DANIEL DURIG WTZ 205H
ATTACHMENT 1
PERF REPORT**

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
1	4/9/2018	12,616	12,544	33
2	6/23/2018	12,511	12,439	33
3	6/24/2018	12,406	12,334	33
4	6/24/2018	12,301	12,229	33
5	6/25/2018	12,196	12,124	33
6	6/29/2018	12,091	12,019	33
7	6/30/2018	11,986	11,914	33
8	7/1/2018	11,881	11,809	33
9	7/1/2018	11,776	11,704	33
10	7/1/2018	11,671	11,599	33
11	7/2/2018	11,566	11,494	33
12	7/2/2018	11,461	11,389	33
13	7/3/2018	11,356	11,284	33
14	7/3/2018	11,251	11,179	33
15	7/4/2018	11,146	11,074	33
16	7/4/2018	11,041	10,969	33
17	7/5/2018	10,936	10,864	33
18	7/6/2018	10,831	10,759	33
19	7/6/2018	10,726	10,654	33
20	7/7/2018	10,621	10,549	33
21	7/7/2018	10,516	10,444	33
22	7/17/2018	10,411	10,339	33
23	7/20/2018	10,306	10,234	33
24	7/20/2018	10,201	10,129	33
25	7/21/2018	10,096	10,024	33
26	7/22/2018	9,991	9,919	33
27	7/22/2018	9,886	9,814	33
28	7/23/2018	9,781	9,709	33
29	7/23/2018	9,676	9,604	33
30	8/1/2018	9,571	9,499	33
31	8/1/2018	9,466	9,394	33
32	8/1/2018	9,361	9,289	33
33	8/2/2018	9,256	9,184	33
34	8/2/2018	9,151	9,079	33
35	8/2/2018	9,046	8,974	33
36	8/2/2018	8,941	8,869	33
37	8/3/2018	8,836	8,764	33
38	8/4/2018	8,731	8,659	33
39	8/4/2018	8,626	8,554	33
40	8/4/2018	8,521	8,449	33
41	8/4/2018	8,416	8,344	33
42	8/5/2018	8,311	8,239	33

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ATTACHMENT 1

PERF REPORT

STAGE NUM	Perf Date	Perf Top MD	Perf Bottom MD	# SHOTS PER STG
43	8/5/2018	8,206	8,134	33
44	8/5/2018	8,101	8,029	33
45	8/5/2018	7,996	7,924	33
46	8/5/2018	7,891	7,819	33

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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	6/23/2018	76	7,520	6,052	4,077	201,800	3,841	0
2	6/23/2018	78	7,731	5,599	4,529	204,480	3,459	0
3	6/24/2018	76	7,848	7,226	4,569	207,580	3,542	0
4	6/25/2018	75	7,753	5,856	4,641	212,240	3,635	0
5	6/29/2018	75	7,935	6,596	4,279	204,160	3,714	0
6	6/29/2018	74	7,817	6,790	4,108	205,220	3,374	0
7	7/1/2018	74	7,640	8,483	4,542	198,240	3,549	0
8	7/1/2018	78	7,116	8,076	4,907	207,640	3,375	0
9	7/1/2018	77	7,798	8,576	4,600	197,420	3,292	0
10	7/2/2018	77	7,639	7,599	4,876	197,280	3,481	0
11	7/2/2018	78	7,546	8,457	4,699	196,480	3,264	0
12	7/3/2018	78	7,939	8,781	4,746	203,880	3,396	0
13	7/3/2018	77	7,670	7,469	4,521	199,380	3,424	0
14	7/4/2018	79	7,297	7,930	4,809	198,680	3,379	0
15	7/4/2018	77	7,477	7,386	4,944	194,360	3,345	0
16	7/5/2018	78	7,481	8,031	4,946	200,540	3,340	0
17	7/5/2018	78	7,035	7,048	5,058	203,420	3,391	0
18	7/6/2018	76	7,210	7,785	5,053	200,240	3,328	0
19	7/7/2018	77	7,335	7,585	4,586	200,240	3,546	0
20	7/7/2018	79	7,130	7,224	4,637	205,120	3,282	0
21	7/16/2018	73	6,455	6,718	4,706	209,360	3,772	0
22	7/20/2018	73	7,134	6,924	5,322	200,800	2,833	0
23	7/21/2018	75	7,914	8,760	4,990	202,820	3,853	0
24	7/21/2018	79	7,481	7,531	5,012	219,060	3,576	0
25	7/22/2018	79	7,754	8,188	4,534	204,900	3,450	0
26	7/22/2018	79	7,531	7,952	5,848	204,440	3,336	0
27	7/23/2018	79	7,682	8,809	4,912	203,720	3,650	0
28	7/23/2018	78	7,431	8,354	5,120	202,620	3,363	0
29	8/1/2018	82.8	7,447	6,262	4,388	206,660	4,188	0
30	8/1/2018	83.9	7,476	5,505	4,853	203,960	3,208	0
31	8/1/2018	82.2	7,182	6,223	4,999	204,800	3,392	0
32	8/2/2018	81.2	7,962	6,442	5,051	201,930	3,286	0
33	8/2/2018	81.8	7,388	6,833	4,504	202,520	3,133	0
34	8/2/2018	80.3	7,274	6,644	4,375	208,220	3,307	0
35	8/2/2018	82.4	6,890	6,168	4,724	214,740	3,411	0
36	8/3/2018	82.9	7,224	6,490	4,542	206,420	3,284	0
37	8/3/2018	80.7	7,232	6,357	4,509	211,820	3,540	0
38	8/4/2018	82.2	7,281	6,531	4,622	203,620	3,454	0
39	8/4/2018	78	7,200	5,969	4,715	208,460	3,194	0
40	8/4/2018	78.5	7,393	6,396	5,161	209,800	3,204	0
41	8/4/2018	81.6	7,533	6,911	4,654	210,320	3,309	0
42	8/5/2018	81.8	7,504	6,360	4,741	214,280	3,440	0
43	8/5/2018	72.2	6,841	6,200	4,844	213,760	3,103	0
44	8/5/2018	78.4	7,228	6,039	4,198	208,260	3,121	0
45	8/5/2018	81	7,235	6,120	4,525	209,080	3,111	0
46	8/6/2018	83	7,429	6,032	4,509	205,520	3,667	0

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Well Name:

Daniel Durig Wtz 205H

47103031920000

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)	7156.00	6853.00	7283.00	6971.00	
Middlesex (shale)	7283.00	6971.00	7394.00	7064.00	
Burket (shale)	7394.00	7064.00	7431.00	7092.00	
Tully (ls)	7431.00	7092.00	7459.00	7113.00	
Mahantango (shale)	7459.00	7113.00	7667.00	7213.00	
Marcellus (shale)	7667.00	7213.00	NA	NA	GAS

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/23/2018
Job End Date:	8/6/2018
State:	West Virginia
County:	Wetzel
API Number:	47-103-03192-00-00
Operator Name:	Southwestern Energy
Well Name and Number:	Daniel Durig WTZ 205
Latitude:	39.71686833
Longitude:	-80.63909972
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,220
Total Base Water Volume (gal):	6,479,554
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
BIOC11219A	Nalco	Biocide					
				Listed Below			
SCAL16486A	Nalco	Scale Inhibitor					
				Listed Below			

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FLOJET DRP 1130 X	SWN Well Services	Friction Reducer					
				Listed Below			
FLOJET DR 9000 LPP	SWN Well Services	Friction Reducer					
				Listed Below			
IC-001	Economy Polymers & Chemicals	Additive					
				Listed Below			
FDP-S1176-15	Halliburton	Friction Reducer					
				Listed Below			
Econo-CI200	SWN Well Services	Corrosion Inhibitor					
				Listed Below			
Hydrochloric Acid	Halliburton	Solvent					
				Listed Below			
Ecopol-FEAC	SWN Well Services	Iron Control					
				Listed Below			
Sand	SWN Well Services	Proppant					
				Listed Below			
Sand-Common White	Halliburton	Proppant					

				Listed Below			
HCL	SWN Well Services	Solvent					
				Listed Below			
CI-200	Economy Polymers & Chemicals	Corrosion Inhibitor					
				Listed Below			
Base Water	Operator	Base Fluid					
				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	84.88749	
			Crystalline Silica, quartz	14808-60-7	100.00000	14.53216	
			Hydrochloric Acid	7647-01-0	15.00000	0.46632	
			Petroleum Distillates, Hydrotreated	64742-47-8	45.00000	0.04037	
			Water	7732-18-5	60.00000	0.03058	
			Polyacrylate	Proprietary	30.00000	0.00952	
			Methanol	67-56-1	80.00000	0.00949	
			Ethylene glycol	107-21-1	10.00000	0.00747	
			Methanol	67-56-1	60.00000	0.00709	
			Benzyl-(C12-C16 Alky)-Dimethyl-Ammonium	68424-85-1	30.00000	0.00703	
			Chloride Glutaraldehyde	111-30-8	10.00000	0.00234	
			Acetic Acid	64-19-7	37.50000	0.00231	
			Amine Triphosphate	Proprietary	30.00000	0.00168	
			Castor oil polyoxyethylene ether	61791-12-6	5.00000	0.00159	
			Ammonium chloride	12125-02-9	5.00000	0.00159	
			N,N-Diethanololeamide	93-83-4	5.00000	0.00159	

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			Sorbitan, mono-9-octadecenoate, (z)	1338-43-8	5.00000	0.00159	
			Sodium chloride	7647-14-5	5.00000	0.00159	
			Citric Acid	77-92-9	22.50000	0.00139	
			Alcohols, C12-C16, Ethoxylated propoxylated	68213-24-1	2.00000	0.00137	
			Fatty alcohols ethoxylated	Proprietary	2.00000	0.00137	
			Ethylene glycol	107-21-1	30.00000	0.00106	
			Fatty acids	61790-12-3	5.02700	0.00023	
			Oxyalkylated fatty acid	68951-67-7	9.67400	0.00017	
			Modified thiourea polymer	68527-49-1	4.74600	0.00008	
			Hydrochloric acid	7647-01-0	0.03600	0.00000	
			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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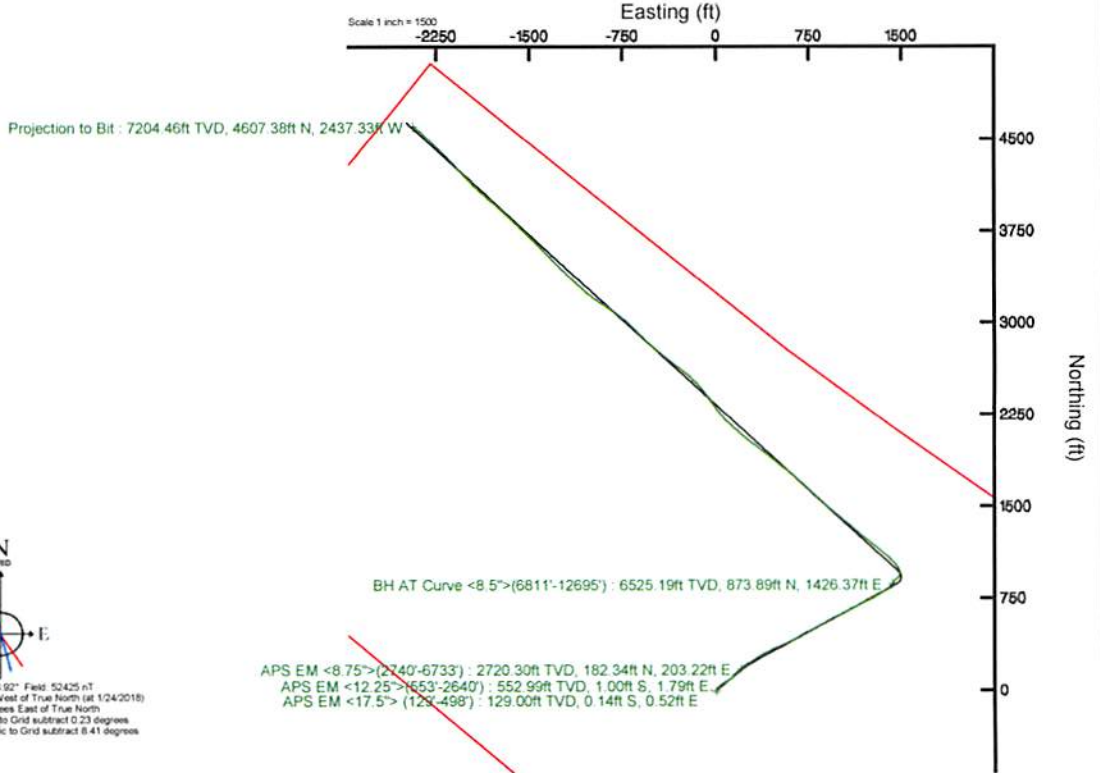
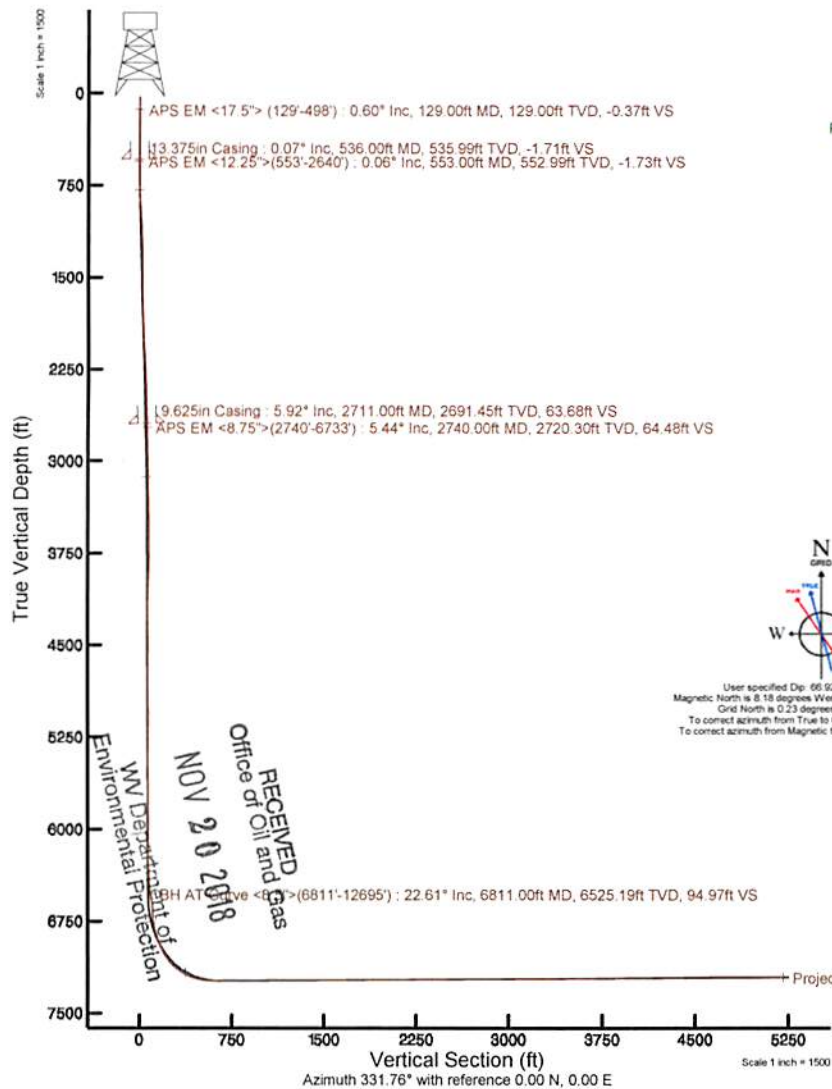
SOUTHWESTERN ENERGY

Location: Wetzel County, WV Slot: Slot 205H
 Field: Wetzel Well: Daniel Durig WZT 205H
 Facility: Daniel Durig Pad Wellbore: Daniel Durig WZT 205H PWB



API: 47-103-03192-0000
 Job#: 8841842
 Rig: SDC 46
 Duration: 01/24/2018 - 02/02/2018

Location Information					
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Daniel Durig Pad		1741901.656	14423820.627	39°43'00.529"N	80°38'20.783"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude
Slot 205H	19.94	1.80	1741903.450	14423840.560	39°43'00.728"N
SDC 46 (KB) to Ground level (At Slot: Slot 205H)				26ft	
Mean Sea Level to Ground level (At Slot: Slot 205H)				-1401ft	
SDC 46 (KB) to Mean Sea Level				1427ft	



Plot reference wellpath is Daniel Durig WZT 205H PWB Rev-A-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 geoidetic 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 205H): -1401 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: Balmuccini on 2018-02-12
	Drafting: WVA, Pennsylvania

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 205H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 205H
Field	Wetzel	Wellbore	Daniel Durig WTZ 205H 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	2/12/2018 at 10:21:56 AM
Convergence at slot	0.24° East	Database/Source file	WA_Pennsylvania/Daniel_Durig_WTZ_205H_AWP_Proj_12720_MD.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	19.94	1.80	1741903.45	14423840.56	39°43'00.726"N	80°38'20.759"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 205H)	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	331.76°



Actual Wellpath Report

Daniel Durig WTZ 205H AWP Proj: 12720 MD
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 205H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 205H
Field	Wetzel	Wellbore	Daniel Durig WTZ 205H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (142 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	105.430	0.00	0.00	0.00	0.00	1741903.45	14423840.56	39°43'00.726"N	80°38'20.759"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	105.430	26.00	0.00	0.00	0.00	1741903.45	14423840.56	39°43'00.726"N	80°38'20.759"W	0.00	0.000	0.00	0.00	0.00
129.00	0.600	105.430	129.00	-0.37	-0.14	0.52	1741903.97	14423840.42	39°43'00.725"N	80°38'20.752"W	0.54	105.430	0.58	0.58	102.36
221.00	0.350	116.480	220.99	-0.93	-0.40	1.24	1741904.69	14423840.16	39°43'00.722"N	80°38'20.743"W	1.30	107.808	0.29	-0.27	12.01
313.00	0.160	151.030	312.99	-1.29	-0.63	1.55	1741905.00	14423839.93	39°43'00.720"N	80°38'20.739"W	1.67	112.273	0.26	-0.21	37.55
405.00	0.100	155.310	404.99	-1.50	-0.82	1.65	1741905.09	14423839.74	39°43'00.718"N	80°38'20.738"W	1.84	116.491	0.07	-0.07	4.65
498.00	0.100	125.830	497.99	-1.65	-0.94	1.74	1741905.19	14423839.62	39°43'00.717"N	80°38'20.737"W	1.98	118.342	0.05	0.00	-31.70
553.00	0.060	166.370	552.99	-1.73	-1.00	1.79	1741905.24	14423839.56	39°43'00.716"N	80°38'20.736"W	2.05	119.116	0.12	-0.07	73.71
651.00	0.180	27.030	650.99	-1.69	-0.91	1.87	1741905.32	14423839.65	39°43'00.717"N	80°38'20.735"W	2.08	115.917	0.23	0.12	-142.18
693.00	1.500	24.780	692.99	-1.32	-0.35	2.13	1741905.58	14423840.21	39°43'00.722"N	80°38'20.732"W	2.16	99.374	3.14	3.14	-5.36
739.00	2.910	34.150	738.95	-0.42	1.16	3.04	1741906.49	14423841.72	39°43'00.737"N	80°38'20.720"W	3.25	69.105	3.15	3.07	20.37
786.00	3.060	26.500	785.89	0.86	3.27	4.27	1741907.72	14423843.83	39°43'00.758"N	80°38'20.704"W	5.38	52.550	0.90	0.32	-16.28
878.00	5.730	30.130	877.61	4.69	9.44	7.67	1741911.12	14423850.00	39°43'00.819"N	80°38'20.660"W	12.17	39.096	2.92	2.90	3.95
971.00	7.720	34.710	969.97	9.96	18.59	13.56	1741917.01	14423859.15	39°43'00.909"N	80°38'20.585"W	23.01	36.104	2.21	2.14	4.92
1064.00	10.060	38.520	1061.84	16.01	30.08	22.18	1741925.62	14423870.63	39°43'01.022"N	80°38'20.474"W	37.37	36.396	2.59	2.52	4.10
1157.00	10.080	45.980	1153.42	21.43	42.10	33.09	1741936.53	14423882.64	39°43'01.141"N	80°38'20.333"W	53.54	38.168	1.40	0.02	8.02
1250.00	10.990	52.870	1244.85	25.01	53.10	46.01	1741949.44	14423893.64	39°43'01.249"N	80°38'20.167"W	70.26	40.906	1.67	0.98	7.41
1342.00	9.580	60.330	1335.37	26.56	62.19	59.65	1741963.08	14423902.72	39°43'01.338"N	80°38'19.992"W	86.17	43.809	2.11	-1.53	8.11
1435.00	8.180	68.520	1427.26	25.97	68.44	72.54	1741975.96	14423908.97	39°43'01.399"N	80°38'19.827"W	99.73	46.664	2.02	-1.51	8.81
1528.00	7.950	61.170	1519.34	25.26	73.96	84.33	1741987.74	14423914.50	39°43'01.454"N	80°38'19.676"W	112.17	48.745	1.14	-0.25	-7.90
1620.00	6.900	52.230	1610.57	26.24	80.42	94.27	1741997.68	14423920.95	39°43'01.517"N	80°38'19.549"W	123.91	49.534	1.69	-1.14	-9.72
1714.00	6.730	51.600	1703.91	28.15	87.30	103.05	1742006.46	14423927.82	39°43'01.585"N	80°38'19.436"W	135.06	49.731	0.20	-0.18	-0.67
1806.00	6.330	50.820	1795.31	30.06	93.85	111.21	1742014.61	14423934.37	39°43'01.649"N	80°38'19.331"W	145.51	49.838	0.45	-0.43	-0.85
1899.00	5.910	49.250	1887.78	32.07	100.21	118.81	1742022.21	14423940.74	39°43'01.712"N	80°38'19.233"W	155.43	49.852	0.49	-0.45	-1.69
1992.00	6.600	44.190	1980.23	34.72	107.17	126.16	1742029.56	14423947.69	39°43'01.780"N	80°38'19.139"W	165.54	49.652	0.95	0.74	-5.44
2085.00	8.570	39.520	2072.41	38.96	116.35	134.30	1742037.69	14423956.87	39°43'01.871"N	80°38'19.034"W	177.69	49.095	2.22	2.12	-5.02
2177.00	8.780	43.850	2163.36	43.71	126.70	143.52	1742046.92	14423967.21	39°43'01.972"N	80°38'18.916"W	191.45	48.562	0.75	0.23	4.71
2270.00	9.440	47.560	2255.19	47.77	136.97	154.07	1742057.46	14423977.47	39°43'02.073"N	80°38'18.780"W	206.15	48.363	0.95	0.71	3.99
2362.00	8.140	46.220	2345.98	51.58	147.11	164.91	1742068.30	14423987.62	39°43'02.173"N	80°38'18.641"W	220.99	48.264	0.40	-0.33	-1.46
2455.00	8.910	47.670	2437.83	55.31	157.08	175.57	1742078.95	14423997.57	39°43'02.271"N	80°38'18.504"W	235.58	48.182	0.35	-0.25	1.56

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Actual Wellpath Report

Daniel Durig WTZ 205H AWP Proj: 12720*MD
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY
Area	Well County, WV
Field	Wellbore
Facility	Daniel Durig Pad
	Daniel Durig WTZ 205H AWP
	Daniel Durig WTZ 205H

WELLPATH DATA (142 stations)													
MD	Inclination	TDV	Vert Sect	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	BuILD Rate	Turn Rate
[ft]	[°]	[ft]	[ft]	[ft]	[US ft]	[US ft]	[ft]	[ft]	[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
2548.00	8.500	2529.76	58.66	166.49	186.03	1742089.40	39°43'02.364"N	80°38'18.370"W	249.65	48.171	0.45	-0.44	0.71
2640.00	7.090	2620.91	61.62	174.84	195.31	1742098.68	39°43'02.446"N	80°38'18.251"W	262.13	48.165	1.54	-1.53	-0.70
2740.00	5.440	2720.30	64.48	182.34	203.22	1742106.59	39°43'02.520"N	80°38'18.149"W	273.04	48.101	1.67	-1.65	-2.65
2833.00	6.680	2812.78	66.70	188.81	210.59	1742113.95	39°43'02.584"N	80°38'18.054"W	282.84	48.121	1.53	-1.33	7.13
2925.00	9.150	2903.90	68.47	196.30	220.79	1742124.16	39°43'02.657"N	80°38'17.923"W	295.44	48.360	2.74	2.68	3.86
3018.00	9.700	2995.65	70.58	205.30	233.08	1742136.43	39°43'02.746"N	80°38'17.766"W	310.60	48.625	0.77	0.59	-3.02
3111.00	11.360	3087.08	72.91	215.31	246.80	1742150.16	39°43'02.844"N	80°38'17.590"W	327.52	48.898	1.86	1.78	2.96
3204.00	13.400	3177.91	74.16	225.82	263.72	1742167.07	39°43'02.947"N	80°38'17.373"W	347.19	49.428	2.54	2.19	5.99
3299.00	15.370	3269.93	74.56	237.33	284.33	1742187.67	39°43'03.060"N	80°38'17.108"W	370.36	50.148	2.07	2.07	0.16
3392.00	17.310	3359.17	75.56	250.59	306.87	1742210.20	39°43'03.190"N	80°38'16.819"W	396.19	50.766	2.22	2.09	-2.72
3485.00	19.430	3447.43	77.88	266.45	331.51	1742234.83	39°43'03.346"N	80°38'16.503"W	425.32	51.209	2.39	2.28	-2.31
3577.00	22.130	3533.43	81.04	284.60	358.63	1742261.94	39°43'03.524"N	80°38'16.155"W	457.84	51.566	2.93	2.93	0.03
3670.00	24.490	3618.85	82.61	303.36	390.24	1742293.54	39°43'03.708"N	80°38'15.749"W	494.28	52.139	3.56	2.54	6.31
3763.00	24.100	3703.62	81.41	320.40	424.49	1742327.77	39°43'03.875"N	80°38'15.310"W	531.83	52.955	1.37	-0.42	3.16
3855.00	23.550	3787.78	80.17	336.87	457.79	1742361.06	39°43'04.037"N	80°38'14.883"W	568.38	53.652	1.35	-0.60	-3.00
3948.00	23.190	3873.16	78.24	352.59	491.13	1742394.39	39°43'04.191"N	80°38'14.456"W	604.59	54.324	2.16	-0.39	5.35
4041.00	23.430	3958.57	74.73	366.83	525.06	1742428.31	39°43'04.330"N	80°38'14.021"W	640.51	55.060	0.26	0.26	-0.05
4134.00	22.600	4044.16	71.71	381.32	558.41	1742461.64	39°43'04.472"N	80°38'13.593"W	676.18	55.672	1.07	-0.89	-1.49
4227.00	21.590	4130.33	69.64	396.01	590.15	1742493.37	39°43'04.616"N	80°38'13.186"W	710.71	56.137	1.22	-1.09	-1.46
4319.00	20.430	4216.22	68.59	410.68	619.69	1742522.90	39°43'04.760"N	80°38'12.808"W	743.42	56.467	1.44	-1.26	-1.95
4412.00	22.030	4302.91	69.43	427.34	648.93	1742552.12	39°43'04.923"N	80°38'12.433"W	777.00	56.634	2.46	1.72	-4.87
4505.00	22.600	4388.94	71.61	445.94	678.95	1742582.13	39°43'05.106"N	80°38'12.048"W	812.30	56.703	0.62	0.61	0.17
4598.00	21.610	4475.11	72.84	463.57	709.17	1742612.34	39°43'05.279"N	80°38'11.660"W	847.24	56.828	1.60	-1.06	3.17
4691.00	21.440	4561.63	72.08	479.03	739.57	1742642.73	39°43'05.431"N	80°38'11.270"W	881.15	57.068	1.43	-0.18	3.87
4783.00	22.530	4646.94	70.67	494.07	770.55	1742673.70	39°43'05.578"N	80°38'10.873"W	915.34	57.332	1.32	1.18	-1.58
4876.00	21.880	4733.04	70.60	510.63	801.53	1742704.67	39°43'05.740"N	80°38'10.475"W	950.37	57.500	1.44	-0.70	-3.32
4968.00	22.420	4818.25	70.95	527.35	831.92	1742735.05	39°43'05.904"N	80°38'10.086"W	984.98	57.630	0.92	0.59	1.88
5061.00	24.010	4903.72	70.59	544.38	864.39	1742767.50	39°43'06.071"N	80°38'09.669"W	1021.52	57.798	1.72	1.71	0.58
5154.00	22.750	4989.09	71.59	562.70	896.39	1742799.49	39°43'06.251"N	80°38'09.259"W	1058.37	57.882	2.48	-1.35	-5.24
5247.00	22.620	5074.90	73.19	581.06	927.18	1742830.27	39°43'06.431"N	80°38'08.864"W	1094.21	57.925	1.25	-0.14	3.22



Actual Wellpath Report

Daniel Durig WTZ 205H AWP Proj: 12720*MD
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 205H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 205H
Field	Wetzel	Wellbore	Daniel Durig WTZ 205H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (142 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]
5339.00	22.460	65.550	5159.88	72.36	596.99	958.61	1742861.69	14424437.32	39°43'06.588"N	80°38'08.461"W	1129.31	58.087	2.03	-0.17	5.27
5432.00	21.730	62.580	5246.05	70.94	612.27	990.07	1742893.13	14424452.59	39°43'06.737"N	80°38'08.057"W	1164.09	58.267	1.43	-0.78	-3.19
5525.00	22.270	63.670	5332.28	70.10	628.02	1021.15	1742924.20	14424468.33	39°43'06.892"N	80°38'07.659"W	1198.81	58.408	0.73	0.58	1.17
5621.00	21.830	62.550	5421.26	69.25	644.31	1053.29	1742956.33	14424484.62	39°43'07.051"N	80°38'07.247"W	1234.73	58.545	0.63	-0.46	-1.17
5713.00	23.950	59.130	5506.01	69.87	661.78	1084.50	1742987.53	14424502.08	39°43'07.223"N	80°38'06.846"W	1270.47	58.608	2.72	2.30	-3.72
5806.00	25.300	62.660	5590.56	70.43	680.60	1118.36	1743021.37	14424520.89	39°43'07.407"N	80°38'06.412"W	1309.17	58.677	2.15	1.45	3.80
5899.00	25.690	60.680	5674.50	70.49	699.59	1153.59	1743056.59	14424539.88	39°43'07.594"N	80°38'05.960"W	1349.15	58.765	1.01	0.42	-2.13
5991.00	23.650	65.150	5758.11	69.78	717.12	1187.72	1743090.71	14424557.40	39°43'07.766"N	80°38'05.523"W	1387.42	58.878	3.00	-2.22	4.86
6084.00	23.190	65.620	5843.45	67.44	732.51	1221.33	1743124.30	14424572.79	39°43'07.916"N	80°38'05.092"W	1424.16	59.046	0.53	-0.49	0.51
6177.00	22.550	62.810	5929.14	65.88	748.22	1253.87	1743156.83	14424588.49	39°43'08.070"N	80°38'04.674"W	1460.15	59.174	1.36	-0.69	-3.02
6269.00	22.000	58.710	6014.28	66.48	765.23	1284.29	1743187.24	14424605.49	39°43'08.237"N	80°38'04.284"W	1494.99	59.212	1.79	-0.60	-4.46
6362.00	20.090	59.920	6101.07	67.92	782.29	1313.00	1743215.94	14424622.54	39°43'08.405"N	80°38'03.916"W	1528.38	59.213	2.11	-2.05	1.30
6455.00	20.070	56.610	6188.42	69.86	799.08	1340.15	1743243.07	14424639.32	39°43'08.569"N	80°38'03.568"W	1560.29	59.194	1.22	-0.02	-3.56
6548.00	18.020	55.130	6276.32	72.96	816.08	1365.27	1743268.19	14424656.32	39°43'08.736"N	80°38'03.245"W	1590.59	59.131	2.26	-2.20	-1.59
6641.00	17.430	53.490	6364.91	76.62	832.59	1388.27	1743291.18	14424672.83	39°43'08.899"N	80°38'02.950"W	1618.80	59.047	0.83	-0.63	-1.76
6733.00	19.110	42.400	6452.30	83.60	851.92	1409.51	1743312.41	14424692.15	39°43'09.089"N	80°38'02.677"W	1646.96	58.851	4.19	1.83	-12.05
6811.00	22.610	33.350	6525.19	94.97	873.89	1426.37	1743329.26	14424714.11	39°43'09.305"N	80°38'02.460"W	1672.79	58.506	6.09	4.49	-11.60
6903.00	19.830	48.080	6611.01	107.09	899.11	1447.72	1743350.61	14424739.32	39°43'09.554"N	80°38'02.186"W	1704.20	58.158	6.51	-3.02	16.01
6996.00	15.670	55.770	6699.57	112.13	916.72	1469.86	1743372.73	14424756.92	39°43'09.727"N	80°38'01.902"W	1732.30	58.049	5.13	-4.47	8.27
7089.00	15.350	19.990	6789.39	121.66	935.40	1484.48	1743387.35	14424775.59	39°43'09.911"N	80°38'01.713"W	1754.61	57.784	10.14	-0.34	-38.47
7181.00	21.140	348.770	6876.93	145.72	963.20	1485.42	1743388.29	14424803.38	39°43'10.186"N	80°38'01.700"W	1770.37	57.039	12.14	6.29	-33.93
7271.00	23.250	330.680	6960.35	179.04	994.65	1473.54	1743376.42	14424834.82	39°43'10.497"N	80°38'01.850"W	1777.82	55.981	7.91	2.34	-20.10
7364.00	34.970	318.290	7041.54	223.50	1030.70	1446.70	1743349.59	14424870.86	39°43'10.854"N	80°38'02.192"W	1776.32	54.532	14.11	12.60	-13.32
7457.00	46.650	314.140	7111.82	281.86	1074.31	1404.55	1743307.45	14424914.45	39°43'11.287"N	80°38'02.729"W	1768.30	52.589	12.89	12.56	-4.46
7550.00	58.390	311.390	7168.31	351.47	1124.22	1350.38	1743253.30	14424964.34	39°43'11.782"N	80°38'03.420"W	1757.10	50.222	12.84	12.62	-2.96
7642.00	71.660	309.160	7207.08	428.86	1177.94	1286.84	1743189.79	14425018.04	39°43'12.316"N	80°38'04.230"W	1744.57	47.530	14.59	14.42	-2.42
7735.00	81.690	308.470	7228.48	512.08	1234.58	1216.41	1743119.39	14425074.66	39°43'12.878"N	80°38'05.128"W	1733.16	44.575	10.81	10.78	-0.74
7828.00	90.280	310.740	7234.99	597.92	1293.67	1145.01	1743048.02	14425133.73	39°43'13.465"N	80°38'06.039"W	1727.61	41.512	9.55	9.24	2.44
7921.00	90.710	310.980	7234.19	684.80	1354.51	1074.68	1742977.71	14425194.54	39°43'14.069"N	80°38'06.936"W	1729.06	38.429	0.53	0.46	0.26
8013.00	90.310	309.580	7233.37	770.38	1413.94	1004.46	1742907.52	14425253.95	39°43'14.659"N	80°38'07.832"W	1734.40	35.390	1.67	-0.43	-1.61

Office of Oil and Gas

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Environmental Protection

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 205H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 205H
Field	Wetzel	Wellbore	Daniel Durig WTZ 205H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (142 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]
8106.00	90.280	310.570	7232.89	856.77	1473.76	933.25	1742836.34	14425313.74	39°43'15.253"N	80°38'08.740"W	1744.40	32.344	1.15	-0.03	1.15
8198.00	90.370	313.390	7232.37	943.33	1535.29	864.87	1742767.98	14425375.25	39°43'15.864"N	80°38'09.612"W	1762.13	29.394	3.07	0.10	3.07
8291.00	90.280	313.110	7231.84	1031.52	1599.01	797.13	1742700.27	14425438.95	39°43'16.497"N	80°38'10.475"W	1786.69	26.497	0.32	-0.10	-0.30
8384.00	90.120	311.840	7231.51	1119.30	1661.81	728.54	1742631.71	14425501.72	39°43'17.120"N	80°38'11.350"W	1814.49	23.673	1.38	-0.17	-1.37
8476.00	90.220	311.790	7231.24	1205.78	1723.15	659.97	1742563.17	14425563.03	39°43'17.729"N	80°38'12.224"W	1845.21	20.957	0.12	0.11	-0.05
8569.00	90.280	309.810	7230.83	1292.62	1783.91	589.58	1742492.80	14425623.77	39°43'18.332"N	80°38'13.122"W	1878.81	18.289	2.13	0.06	-2.13
8662.00	90.250	309.050	7230.40	1378.64	1842.98	517.75	1742420.99	14425682.82	39°43'18.919"N	80°38'14.038"W	1914.32	15.692	0.82	-0.03	-0.82
8755.00	90.180	309.640	7230.06	1464.62	1901.94	445.83	1742349.10	14425741.76	39°43'19.505"N	80°38'14.955"W	1953.49	13.192	0.64	-0.08	0.63
8844.00	90.150	307.650	7229.80	1546.47	1957.51	376.32	1742279.62	14425797.31	39°43'20.057"N	80°38'15.842"W	1993.36	10.882	2.24	-0.03	-2.24
8937.00	90.120	307.390	7229.58	1631.27	2014.15	302.56	1742205.89	14425853.93	39°43'20.619"N	80°38'16.783"W	2036.75	8.543	0.28	-0.03	-0.28
9030.00	90.180	310.040	7229.34	1716.84	2072.32	230.00	1742133.36	14425912.07	39°43'21.197"N	80°38'17.709"W	2085.04	6.333	2.85	0.06	2.85
9123.00	90.220	312.310	7229.01	1803.89	2133.54	160.00	1742063.39	14425973.27	39°43'21.805"N	80°38'18.601"W	2139.53	4.289	2.44	0.04	2.44
9215.00	90.250	314.340	7228.63	1891.17	2196.66	93.08	1741996.49	14426036.36	39°43'22.431"N	80°38'19.455"W	2198.63	2.426	2.21	0.03	2.21
9308.00	90.310	321.200	7228.18	1981.35	2265.48	30.61	1741934.05	14426105.16	39°43'23.114"N	80°38'20.251"W	2265.69	0.774	7.38	0.06	7.38
9401.00	90.400	325.550	7227.60	2073.33	2340.10	-24.86	1741878.60	14426179.75	39°43'23.854"N	80°38'20.957"W	2340.23	359.391	4.68	0.10	4.68
9493.00	90.340	322.100	7227.01	2164.44	2414.35	-79.15	1741824.33	14426253.97	39°43'24.589"N	80°38'21.648"W	2415.65	358.122	3.75	-0.07	-3.75
9586.00	90.310	319.010	7226.48	2255.65	2486.16	-138.23	1741765.27	14426325.75	39°43'25.301"N	80°38'22.400"W	2490.00	356.818	3.32	-0.03	-3.32
9679.00	90.310	313.860	7225.98	2345.31	2553.52	-202.30	1741701.23	14426393.08	39°43'25.970"N	80°38'23.217"W	2561.52	355.470	5.54	0.00	-5.54
9772.00	90.800	307.720	7225.08	2432.11	2614.25	-272.67	1741630.88	14426453.78	39°43'26.573"N	80°38'24.114"W	2628.43	354.045	6.62	0.53	-6.60
9864.00	90.310	306.760	7224.18	2515.81	2669.92	-345.91	1741557.67	14426509.43	39°43'27.126"N	80°38'25.048"W	2692.23	352.618	1.17	-0.53	-1.04
9957.00	90.280	308.660	7223.71	2600.73	2726.80	-419.48	1741484.13	14426566.29	39°43'27.691"N	80°38'25.987"W	2758.87	351.254	2.04	-0.03	2.04
10049.00	90.370	311.880	7223.18	2686.32	2786.26	-489.67	1741413.97	14426625.73	39°43'28.281"N	80°38'26.882"W	2828.96	350.032	3.50	0.10	3.50
10142.00	90.220	314.130	7222.71	2774.37	2849.68	-557.67	1741346.00	14426689.13	39°43'28.911"N	80°38'27.749"W	2903.74	348.927	2.42	-0.16	2.42
10234.00	90.280	316.240	7222.30	2862.54	2914.94	-622.51	1741281.18	14426754.37	39°43'29.558"N	80°38'28.576"W	2980.67	347.945	2.29	0.07	2.29
10327.00	90.250	314.360	7221.87	2951.73	2981.04	-687.92	1741215.80	14426820.44	39°43'30.214"N	80°38'29.410"W	3059.39	347.006	2.02	-0.03	-2.02
10420.00	90.340	309.540	7221.39	3039.20	3043.19	-757.07	1741146.68	14426882.57	39°43'30.831"N	80°38'30.291"W	3135.95	346.030	5.18	0.10	-5.18
10512.00	90.220	305.250	7220.94	3122.98	3099.05	-830.14	1741073.63	14426938.40	39°43'31.386"N	80°38'31.224"W	3208.31	345.004	4.66	-0.13	-4.66
10605.00	90.280	302.780	7220.54	3205.28	3151.07	-907.22	1740996.58	14426990.40	39°43'31.903"N	80°38'32.208"W	3279.07	343.938	2.66	0.06	-2.66
10698.00	90.310	306.710	7220.06	3288.12	3204.06	-983.62	1740920.21	14427043.37	39°43'32.430"N	80°38'33.183"W	3351.65	342.934	4.23	0.03	4.23
10791.00	90.340	312.670	7219.53	3374.26	3263.43	-1055.16	1740848.71	14427102.72	39°43'33.019"N	80°38'34.095"W	3429.77	342.083	6.41	0.03	6.41



Actual Wellpath Report

Daniel Durig WZ 205H AWP Proj: 12720'MD
Page 6 of 8



REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 205H
Area	Wetzel County, WV	Well	Daniel Durig WZ 205H
Field	Wetzel	Wellbore	Daniel Durig WZ 205H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (142 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]
10883.00	90.220	313.430	7219.08	3461.40	3326.23	-1122.38	1740781.50	14427165.49	39°43'33.643"N	80°38'34.952"W	3510.49	341.354	0.84	-0.13	0.83
10976.00	90.520	313.120	7218.48	3549.60	3389.98	-1190.09	1740713.82	14427229.22	39°43'34.275"N	80°38'35.816"W	3592.81	340.656	0.46	0.32	-0.33
11069.00	90.520	315.160	7217.64	3638.23	3454.74	-1256.83	1740647.11	14427293.95	39°43'34.918"N	80°38'36.667"W	3676.25	340.009	2.19	0.00	2.19
11162.00	90.620	315.750	7216.71	3727.48	3521.02	-1322.06	1740581.91	14427360.20	39°43'35.575"N	80°38'37.498"W	3761.04	339.420	0.64	0.11	0.63
11254.00	90.650	315.980	7215.69	3815.96	3587.04	-1386.12	1740517.87	14427426.20	39°43'36.231"N	80°38'38.315"W	3845.54	338.872	0.25	0.03	0.25
11347.00	90.550	315.180	7214.72	3905.27	3653.46	-1451.21	1740452.81	14427492.60	39°43'36.889"N	80°38'39.144"W	3931.13	338.336	0.87	-0.11	-0.86
11440.00	90.550	314.330	7213.83	3994.20	3718.94	-1517.25	1740386.80	14427558.05	39°43'37.539"N	80°38'39.986"W	4016.53	337.806	0.91	0.00	-0.91
11533.00	90.650	314.550	7212.85	4082.97	3784.05	-1583.64	1740320.43	14427623.13	39°43'38.185"N	80°38'40.833"W	4102.07	337.290	0.26	0.11	0.24
11625.00	90.580	313.770	7211.86	4170.66	3848.14	-1649.64	1740254.45	14427687.20	39°43'38.821"N	80°38'41.674"W	4186.82	336.796	0.85	-0.08	-0.85
11718.00	90.520	312.610	7210.97	4258.81	3911.78	-1717.44	1740186.68	14427750.82	39°43'39.453"N	80°38'42.539"W	4272.20	336.296	1.25	-0.06	-1.25
11811.00	90.550	311.070	7210.10	4346.24	3973.82	-1786.72	1740117.43	14427812.83	39°43'40.069"N	80°38'43.422"W	4357.02	335.790	1.66	0.03	-1.66
11903.00	90.520	310.040	7209.24	4432.01	4033.63	-1856.62	1740047.56	14427872.61	39°43'40.662"N	80°38'44.314"W	4440.40	335.284	1.12	-0.03	-1.12
11996.00	90.830	314.260	7208.15	4519.59	4096.02	-1925.55	1739978.66	14427934.98	39°43'41.282"N	80°38'45.193"W	4526.05	334.822	4.55	0.33	4.54
12089.00	90.550	316.690	7207.03	4608.84	4162.31	-1990.75	1739913.48	14428001.25	39°43'41.939"N	80°38'46.024"W	4613.89	334.439	2.63	-0.30	2.61
12182.00	90.620	317.530	7206.08	4698.82	4230.45	-2054.04	1739850.21	14428069.36	39°43'42.615"N	80°38'46.831"W	4702.74	334.102	0.91	0.08	0.90
12275.00	90.370	317.290	7205.28	4788.91	4298.91	-2116.98	1739787.30	14428137.80	39°43'43.294"N	80°38'47.633"W	4791.89	333.782	0.37	-0.27	-0.26
12367.00	90.000	315.770	7204.98	4877.68	4365.68	-2180.27	1739724.03	14428204.53	39°43'43.957"N	80°38'48.439"W	4879.83	333.462	1.70	-0.40	-1.65
12460.00	90.060	314.460	7204.93	4966.78	4431.57	-2245.89	1739658.43	14428270.40	39°43'44.610"N	80°38'49.276"W	4968.18	333.124	1.41	0.06	-1.41
12553.00	90.120	313.330	7204.78	5055.29	4496.05	-2312.91	1739591.44	14428334.85	39°43'45.250"N	80°38'50.131"W	5056.09	332.777	1.22	0.06	-1.22
12645.00	90.180	312.460	7204.54	5142.35	4558.67	-2380.31	1739524.07	14428397.45	39°43'45.872"N	80°38'50.990"W	5142.70	332.429	0.95	0.07	-0.95
12695.00	90.000	309.530	7204.46	5189.09	4591.46	-2418.04	1739486.35	14428430.23	39°43'46.197"N	80°38'51.471"W	5189.27	332.227	5.87	-0.36	-5.86
12720.00	90.000	309.530	7204.46	5212.24	4607.38	-2437.33	1739467.08	14428446.14	39°43'46.355"N	80°38'51.717"W	5212.34	332.121	0.00	0.00	0.00

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NOV 20 2018

WV Department of
Environmental Protection

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 205H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 205H
Field	Wetzel	Wellbore	Daniel Durig WTZ 205H AWB
Facility	Daniel Durig Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Daniel Durig WTZ 205H AWB Ref Wellpath: Daniel Durig WTZ 205H AWP Proj: 12720'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	550.00	424.00	126.00	549.99	-0.14	0.49	-0.99	1.79
13.375in Casing	26.00	536.00	510.00	26.00	535.99	0.00	0.00	-0.98	1.78
12.25in Open Hole	550.00	2731.00	2181.00	549.99	2711.35	-0.99	1.79	181.73	202.61
9.625in Casing	26.00	2711.00	2685.00	26.00	2691.45	0.00	0.00	180.33	201.18
8.75in Open Hole	2731.00	6804.00	4073.00	2711.35	6518.72	181.73	202.61	871.66	1424.89
8.5in Open Hole	6804.00	12720.00	5916.00	6518.72	7204.46	871.66	1424.89	4607.38	-2437.33

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Daniel Durig WTZ 205H BHL Rev-2	7208.00	4632.45	-2488.02	1739416.40	14428471.20	39°43'46.605"N	80°38'52.365"W	point
Daniel Durig WTZ 205H LP Rev-2	7237.00	1323.18	1090.67	1742993.69	14425163.22	39°43'13.759"N	80°38'06.733"W	point

WELLPATH COMPOSITION - Ref Wellbore: Daniel Durig WTZ 205H AWB Ref Wellpath: Daniel Durig WTZ 205H AWP Proj: 12720'MD				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	498.00	BHI NaviTrak (Axial)	01_APS EM <17.5">(129'-498')	Daniel Durig WTZ 205H AWB
498.00	2640.00	BHI NaviTrak (Axial)	02_APS EM <12.25">(498')(553'-2640')	Daniel Durig WTZ 205H AWB
2640.00	6733.00	BHI NaviTrak (Axial)	03_APS EM <8.75">(2640')(2740'-6733')	Daniel Durig WTZ 205H AWB
6733.00	12695.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8.5">(6733')(6811'-12695')	Daniel Durig WTZ 205H AWB
12695.00	12720.00	Blind Drilling (std)	Projection to bit	Daniel Durig WTZ 205H AWB

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NOV 20 2018

WV Department of
Environmental Protection

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 205H
Area	Wetzel County, WV	Well	Daniel Durig WTZ 205H
Field	Wetzel	Wellbore	Daniel Durig WTZ 205H AWB
Facility	Daniel Durig Pad		

COMMENTS
<p>Wellpath general comments API: 47-103-03192-0000 Job#: 8841842 Rig: SDC 46 Duration: 01/24/2018 - 02/02/2018</p>

Latitude: 39°45'00"

SURFACE HOLE 3965'

BOTTOM HOLE 6384'

JACKSON SURVEYING INC.

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

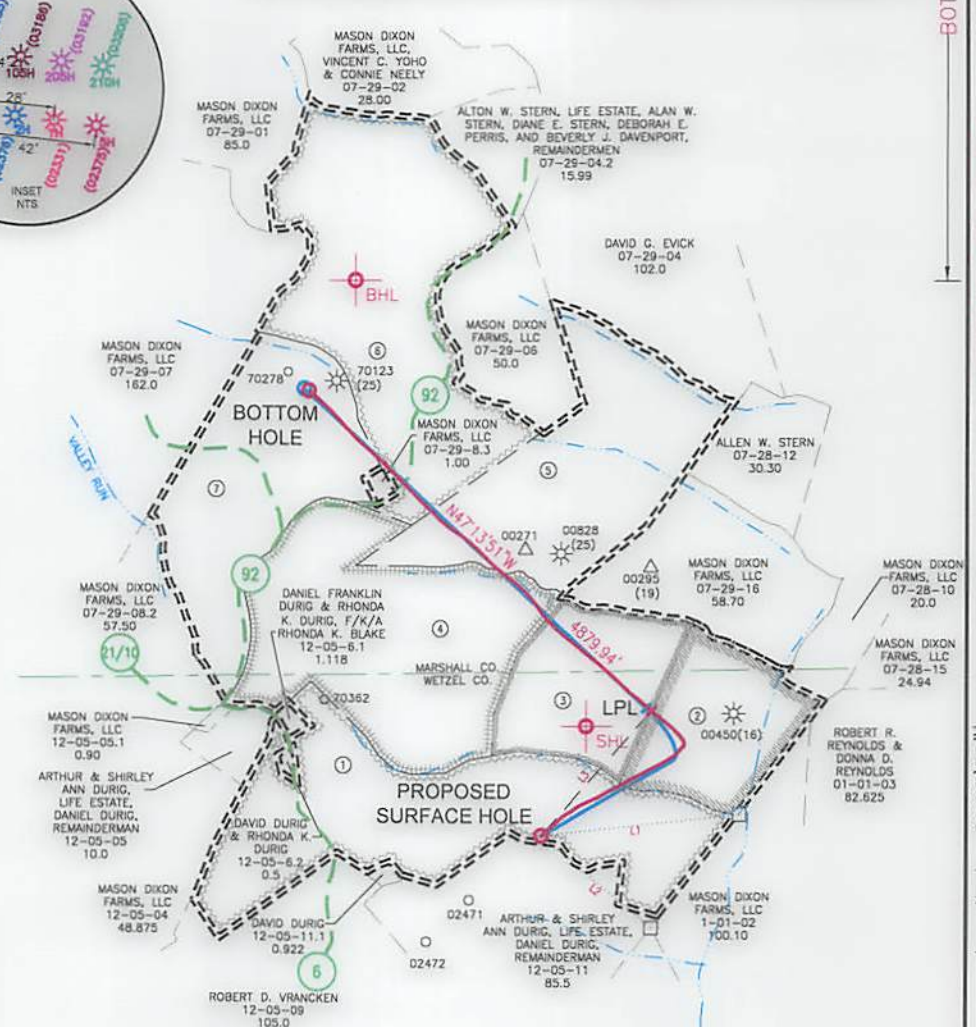
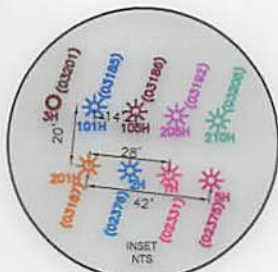
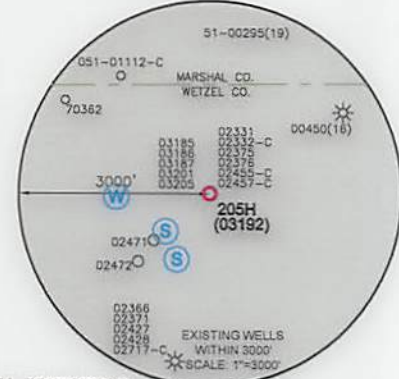
SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,396,395.395
EASTING: 530,933.233
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,396,798.555
EASTING: 531,265.551
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,397,806.830
EASTING: 530,175.179

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 (S) / O.C. YOHO AND MARY YOHO (R) 12-05-06 151.58

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,396,395.450
EASTING: 530,933.181
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,396,798.752
EASTING: 531,282.224
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,397,799.770
EASTING: 530,190.324

LINE BEARING DISTANCE DESCRIPTION MONUMENT
L1 N 85°12'12" E 2013.41' SHL TO LANDMARK FENCE CORNER
L2 S 47°13'53" E 1481.95' SHL TO LANDMARK FD. MARKED STONE



WELL RESTRICTIONS

- 1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
3. WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.

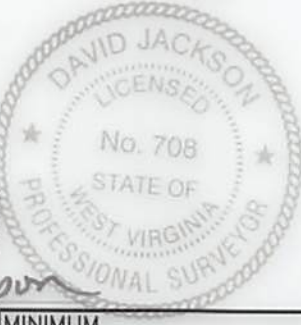
NOTES ON SURVEY

- 1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.

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 L. Jackson



(+) 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 ELEVATION: GRADE GPS (NAVD 88, US FT)

COMPANY: SWN Production Company, LLC
DANIEL DURIG WTZ
OPERATOR'S WELL #: 205H
API WELL #: 47 103 03192
STATE COUNTY PERMIT

WELL TYPE: OIL [] WASTE DISPOSAL [] PRODUCTION [X] DEEP [] GAS [X] LIQUID INJECTION [] STORAGE [] SHALLOW [X]
WATERSHED: LAUREL RUN
DISTRICT: PROCTOR COUNTY: WETZEL
SURFACE OWNER: DANIEL DURIG
OIL & GAS ROYALTY OWNER: O.C. YOHO AND MARY YOHO
DRILL [] DRILL DEEPER [] REDRILL [] FRACTURE OR STIMULATE [] PLUG OFF OLD FORMATION [] PERFORATE NEW FORMATION []
CONVERT [] PLUG & ABANDON [] CLEAN OUT & REPLUG [] OTHER CHANGE [X] (SPECIFY) ASDRILLED
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,235 TVD 12,720 TMD

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

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

P.O. Box 1460
677 W. Main St.
Clarksburg, WV 26032
304-623-5881

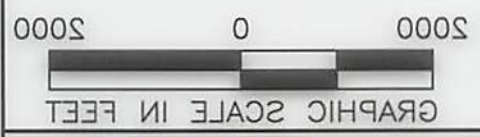
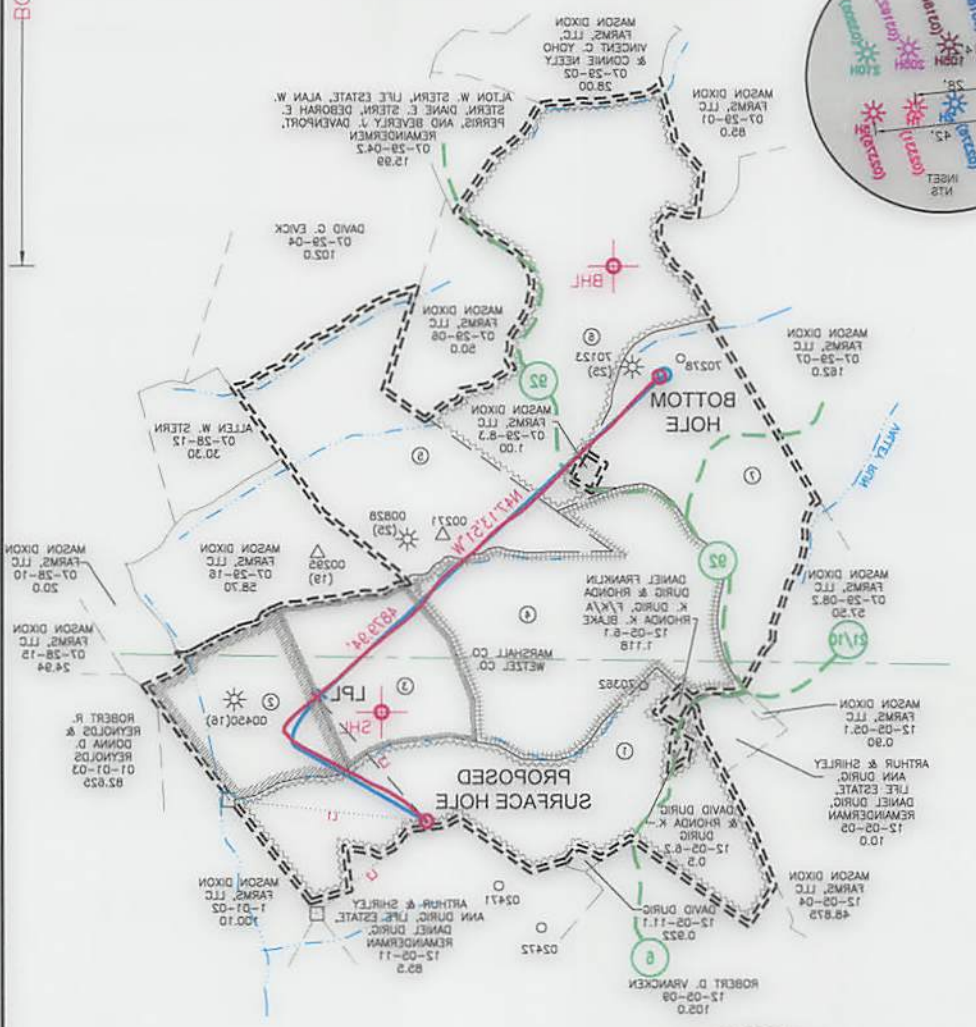
SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,388,282.232 EASTING: 230,933.233
LANDING POINT (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,388,288.252 EASTING: 231,282.251
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,397,808.830 EASTING: 230,125.128



TRACT	SURFACE OWNER (S)	ROYALTY OWNER (R)	TAX PARCEL ACRES
1	DANIEL DURIG (2)	O.C. YOHIO AND MARY YOHIO (R)	12.02-08 121.28
2	FRED S. WILKERSON (2)		01-01-01 20.00
3	MASON DIXON FARMS, LLC (2)		03-29-12 23.70
4	MASON DIXON FARMS, LLC (2)		03-29-14 129.40
5	MASON DIXON FARMS, LLC (2)		03-29-02 118.00
6	MASON DIXON FARMS, LLC (2)		03-29-08 98.878
7	ALTON W. STERN, LIFE ESTATE, ALAN W. STERN, STERN, DAVE E. STERN, DEBORAH E. PERRIS, AND BEVERLY J. DAVENPORT, REMAINDERMEN (2)		03-28-8.1 110.00

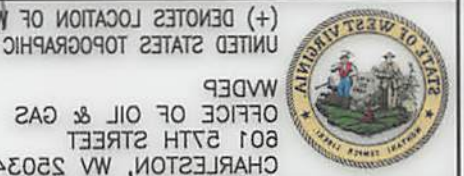
SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,388,282.232 EASTING: 230,933.181
LANDING POINT (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,388,288.252 EASTING: 231,282.254
BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,397,789.770 EASTING: 230,190.234

LINE	BEARING	DISTANCE	DESCRIPTION
L1	N 82°12'12" E	2012.41'	SHL TO LANDMARK
L2	S 47°13'23" E	1481.92'	SHL TO LANDMARK
L3	N 41°30'27" E	1327.88'	DISTANCE
L4		2,280.12'	SHL TO L.P.



NOTE ON SURVEY:
1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS. THIS PLAN DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
2. ALL INTERIOR GRID NORTH UNLESS OTHERWISE DELETED.
3. 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 AND PRESERVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

WELL RESTRICTIONS:
1. NO OCCUPIED DWELLINGS > 2500 FT. WITHIN 825 FEET OF CENTER OF PAD.
2. NO AGRICULTURE BUILDINGS > 2500 FT. WITHIN 825 FEET OF CENTER OF PAD.
3. DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
4. PERMANENT STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
5. NO NATURAL GAS PRODUCING TREATMENT WITHIN 200 FEET OF LIMITS OF DISTURBANCE.
6. NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD. LIMITS OF DISTURBANCE: E & S CONTROLS OR PUBLIC WATER SUPPLY.



CHARLESTON, WV 25034
OFFICE OF OIL & GAS
601 57TH STREET
WVDEP
UNITED STATES TOPOGRAPHIC MAPS
(+) DENOTES LOCATION OF WELL ON ACCURACY: 1/200
MINIMUM DEGREE OF PROVEN SURVEY SOURCE OF GRADE GPS
ELEVATION: (NAVD 88, US FT.)

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

TARGET FORMATION: MARCELLUS
CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY) ADSORBED
DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION

WATERSHED: LAUREL RUN
DISTRICT: PROCTOR
SURFACE OWNER: DANIEL DURIG
OIL & GAS ROYALTY OWNER: O.C. YOHIO AND MARY YOHIO
ACREAGE: ±121.28
ACREAGE: ±121.28
ELEVATION: 1401.6'
WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW

LEGEND:
○ PROPOSED SURFACE HOLE \\/ BOTTOM HOLE
* EXISTING \\/ PRODUCING WELLS
* LANDING POINT LOCATION
* EXISTING WATER WELL
* EXISTING SPRING
- SURVEYED BOUNDARY
- DRILLING UNIT
- LEASE BOUNDARY
- ADSORBED PATH
- PROPOSED PATH

REVISIONS:
DATE: 10-11-2018
DRAWN BY: N. MANO
SCALE: 1" = 2000'
DRAWING NO.:
WELL LOCATION PLAN
PROPERTY NUMBER 2501162386
PAD ID 2001162373