

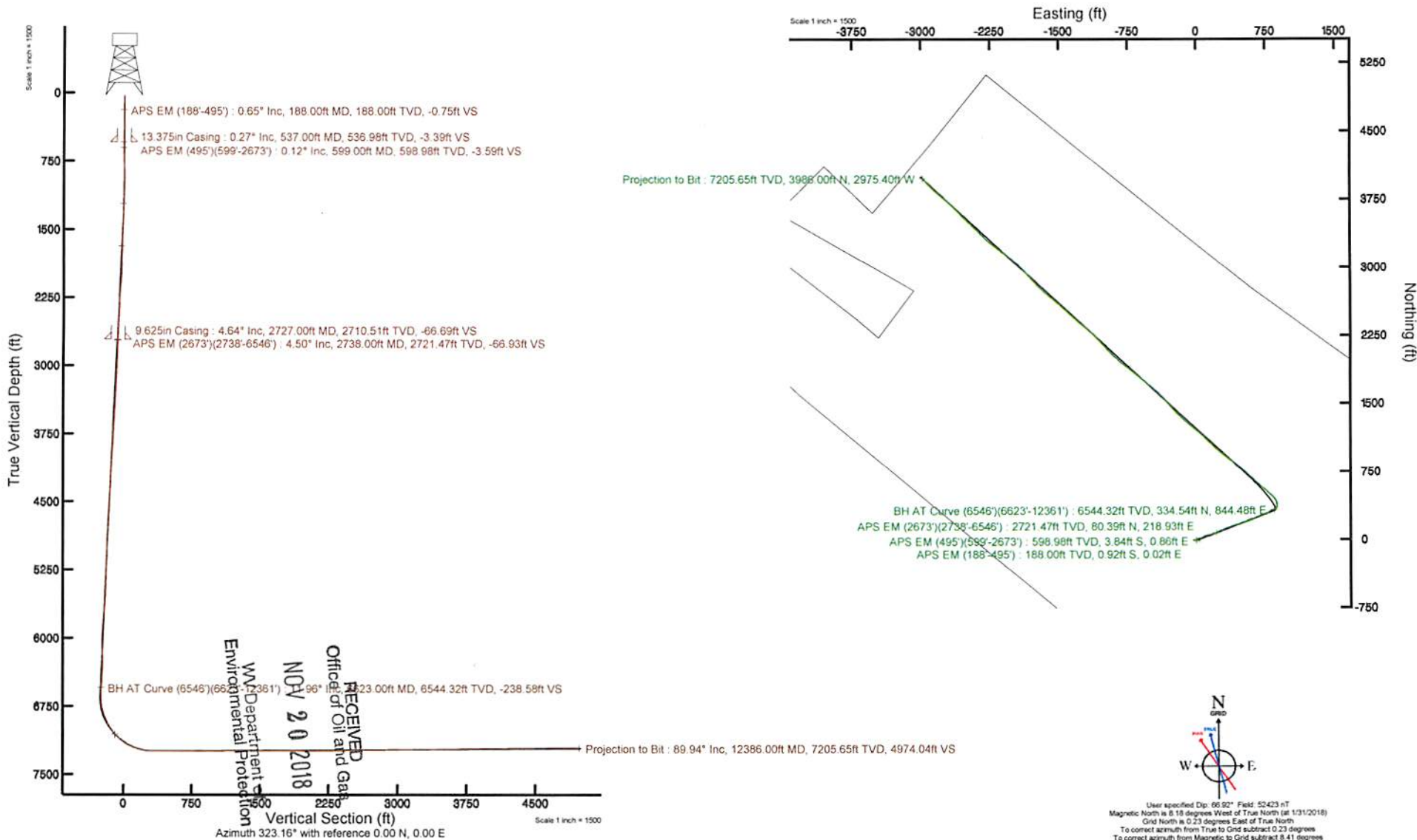
SOUTHWESTERN ENERGY

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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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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Daniel Durig WTZ 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 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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Daniel Durig WTZ 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 WTZ 105H
Field	Wetzel	Wellbore	Daniel Durig WTZ 105H AWB
Facility	Daniel Durig Pad		

WELLPATH DATA (151 stations)																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]	
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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Actual Wellpath Report

Daniel Durig WTZ 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 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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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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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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