

Actual Wellpath Report

SWN A WTZ 5H AWP Proj: 20865'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 05
Area	Wetzel County, WV	Well	SWN A WTZ 5H
Field	Wetzel	Wellbore	SWN A WTZ 5H AWB
Facility	SWN A WTZ Pad		

WELLPATH DATA (248 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	355.690	0.00	0.00	0.00	0.00	1741810.73	14411367.12	39°40'57.410"N	80°38'22.588"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	355.690	26.00	0.00	0.00	0.00	1741810.73	14411367.12	39°40'57.410"N	80°38'22.588"W	0.00	0.000	0.00	0.00	0.00
50.00	0.320	355.690	50.00	0.05	0.07	-0.01	1741810.72	14411367.19	39°40'57.410"N	80°38'22.588"W	0.07	355.690	1.33	1.33	-17.96
100.00	0.490	335.580	100.00	0.35	0.40	-0.10	1741810.63	14411367.52	39°40'57.414"N	80°38'22.589"W	0.41	345.462	0.44	0.34	-40.22
150.00	0.800	346.190	150.00	0.84	0.93	-0.28	1741810.45	14411368.05	39°40'57.419"N	80°38'22.591"W	0.97	343.565	0.66	0.62	21.22
200.00	0.660	334.930	199.99	1.40	1.53	-0.48	1741810.25	14411368.65	39°40'57.425"N	80°38'22.594"W	1.61	342.594	0.40	-0.28	-22.52
250.00	0.910	323.420	249.99	2.06	2.11	-0.84	1741809.89	14411369.23	39°40'57.431"N	80°38'22.598"W	2.27	338.337	0.59	0.50	-23.02
300.00	0.350	306.780	299.98	2.60	2.52	-1.20	1741809.53	14411369.64	39°40'57.435"N	80°38'22.603"W	2.79	334.600	1.17	-1.12	-33.28
350.00	0.410	281.240	349.98	2.90	2.65	-1.50	1741809.23	14411369.77	39°40'57.438"N	80°38'22.607"W	3.04	330.553	0.36	0.12	-51.08
396.00	0.430	267.470	395.98	3.16	2.67	-1.83	1741808.90	14411369.79	39°40'57.436"N	80°38'22.611"W	3.24	325.620	0.22	0.04	-29.93
450.00	0.450	230.740	449.98	3.33	2.53	-2.20	1741808.53	14411369.65	39°40'57.435"N	80°38'22.616"W	3.35	319.052	0.51	0.04	-68.02
500.00	0.350	225.440	499.98	3.37	2.30	-2.46	1741808.27	14411369.42	39°40'57.432"N	80°38'22.619"W	3.37	313.106	0.21	-0.20	-10.60
550.00	0.500	231.460	549.98	3.40	2.06	-2.74	1741807.99	14411369.18	39°40'57.430"N	80°38'22.622"W	3.42	306.929	0.31	0.30	12.04
600.00	0.820	198.060	599.97	3.28	1.58	-3.02	1741807.71	14411368.70	39°40'57.425"N	80°38'22.626"W	3.41	297.646	0.98	0.64	-66.80
650.00	1.000	164.670	649.97	2.76	0.82	-3.01	1741807.72	14411367.94	39°40'57.418"N	80°38'22.626"W	3.12	285.223	1.10	0.36	-66.78
700.00	1.360	170.190	699.96	1.92	-0.19	-2.80	1741807.93	14411366.93	39°40'57.408"N	80°38'22.623"W	2.80	266.212	0.75	0.72	11.04
750.00	1.790	163.470	749.94	0.77	-1.52	-2.47	1741808.26	14411365.60	39°40'57.395"N	80°38'22.619"W	2.90	238.464	0.93	0.86	-13.44
800.00	1.720	119.120	799.92	-0.63	-2.63	-1.60	1741809.13	14411364.49	39°40'57.384"N	80°38'22.608"W	3.08	211.240	2.65	-0.14	-88.70
848.00	1.580	87.050	847.90	-1.79	-2.95	-0.31	1741810.42	14411364.17	39°40'57.380"N	80°38'22.592"W	2.96	185.935	1.92	-0.29	-66.81
979.00	2.480	72.290	978.82	-4.43	-1.99	4.20	1741814.93	14411365.13	39°40'57.390"N	80°38'22.534"W	4.65	115.409	0.79	0.69	-11.27
1070.00	2.890	63.910	1069.72	-6.20	-0.39	8.13	1741818.86	14411366.73	39°40'57.405"N	80°38'22.484"W	8.14	92.717	0.62	0.45	-9.21
1160.00	3.190	61.680	1159.59	-7.80	1.80	12.38	1741823.10	14411368.92	39°40'57.427"N	80°38'22.429"W	12.51	81.725	0.36	0.33	-2.48
1250.00	3.440	51.950	1249.44	-9.01	4.65	16.71	1741827.43	14411371.77	39°40'57.455"N	80°38'22.374"W	17.34	74.439	0.68	0.28	-10.81
1341.00	3.930	51.830	1340.25	-9.91	8.26	21.31	1741832.03	14411375.38	39°40'57.490"N	80°38'22.315"W	22.85	68.806	0.54	0.54	-0.13
1431.00	3.160	54.480	1430.08	-10.86	11.61	25.75	1741836.47	14411378.72	39°40'57.523"N	80°38'22.258"W	28.25	65.733	0.87	-0.86	2.94
1521.00	1.880	47.740	1519.99	-11.47	14.04	28.86	1741839.58	14411381.16	39°40'57.547"N	80°38'22.218"W	32.10	64.055	1.46	-1.42	-7.49
1612.00	1.780	36.510	1610.94	-11.43	16.18	30.81	1741841.53	14411383.30	39°40'57.568"N	80°38'22.193"W	34.80	62.288	0.41	-0.11	-12.34
1702.00	0.770	31.260	1700.92	-11.14	17.82	31.95	1741842.67	14411384.94	39°40'57.584"N	80°38'22.178"W	36.59	60.848	1.13	-1.12	-5.83
1792.00	0.780	18.350	1790.91	-10.76	18.92	32.46	1741843.18	14411386.03	39°40'57.595"N	80°38'22.171"W	37.57	59.761	0.19	0.01	-14.34
1883.00	0.390	302.510	1881.91	-10.20	19.68	32.39	1741843.11	14411386.79	39°40'57.603"N	80°38'22.172"W	37.90	58.726	0.86	-0.43	-83.34
1973.00	0.450	298.980	1971.91	-9.55	20.01	31.83	1741842.54	14411387.12	39°40'57.606"N	80°38'22.179"W	37.60	57.839	0.07	0.07	-3.92
2064.00	0.400	283.850	2062.90	-8.93	20.26	31.21	1741841.92	14411387.37	39°40'57.609"N	80°38'22.187"W	37.21	57.005	0.13	-0.05	-16.63

WELLPATH DATA (248 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]
2154.00	0.810	251.760	2152.90	-8.35	20.14	30.30	1741841.01	14411387.25	39°40'57.607"N	80°38'22.199"W	36.38	56.389	0.57	0.46	-35.66
2244.00	1.380	232.660	2242.88	-7.87	19.28	28.83	1741839.55	14411386.39	39°40'57.599"N	80°38'22.218"W	34.68	56.227	0.74	0.63	-21.22
2334.00	1.790	214.760	2332.85	-7.89	17.47	27.17	1741837.89	14411384.58	39°40'57.561"N	80°38'22.239"W	32.30	57.260	0.71	0.46	-19.90
2425.00	1.870	208.160	2423.80	-8.48	14.99	25.66	1741836.38	14411382.11	39°40'57.557"N	80°38'22.259"W	29.72	59.702	0.25	0.09	-7.24
2515.00	1.620	204.480	2513.76	-9.27	12.54	24.44	1741835.16	14411379.65	39°40'57.533"N	80°38'22.274"W	27.47	62.836	0.30	-0.28	-4.09
2605.00	1.350	211.650	2603.73	-9.88	10.48	23.35	1741834.07	14411377.60	39°40'57.512"N	80°38'22.288"W	25.60	65.833	0.36	-0.30	7.97
2695.00	1.040	239.980	2693.71	-9.86	9.17	22.09	1741832.81	14411376.28	39°40'57.499"N	80°38'22.305"W	23.92	67.460	0.73	-0.34	31.48
2761.00	0.720	245.120	2759.70	-9.53	8.69	21.20	1741831.92	14411375.81	39°40'57.485"N	80°38'22.316"W	22.91	67.698	0.50	-0.48	7.79
2840.00	0.860	278.480	2838.69	-8.85	8.57	20.16	1741830.88	14411375.69	39°40'57.494"N	80°38'22.329"W	21.91	66.962	0.60	0.18	42.23
2886.00	0.950	286.620	2884.69	-8.23	8.73	19.45	1741830.17	14411375.85	39°40'57.495"N	80°38'22.338"W	21.32	65.823	0.34	0.20	17.70
2976.00	1.010	298.220	2974.68	-6.80	9.32	18.04	1741828.76	14411376.44	39°40'57.501"N	80°38'22.356"W	20.30	62.673	0.23	0.07	12.89
3066.00	1.080	302.300	3064.66	-5.20	10.15	16.62	1741827.35	14411377.27	39°40'57.509"N	80°38'22.374"W	19.48	58.592	0.11	0.08	4.53
3156.00	1.130	304.830	3154.64	-3.48	11.11	15.18	1741825.90	14411378.22	39°40'57.519"N	80°38'22.393"W	18.81	53.796	0.08	0.06	2.81

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 05
Area	Wetzel County, WV	Well	SWN A WTZ 5H
Field	Wetzel	Wellbore	SWN A WTZ 5H AWB
Facility	SWN A WTZ Pad		

WELLPATH DATA (248 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]
3247.00	1.030	61.830	3245.64	-2.86	12.01	15.16	1741825.89	14411379.12	39°40'57.528"N	80°38'22.393"W	19.34	51.620	2.02	-0.11	128.57
3337.00	3.570	89.250	3335.56	-5.14	12.43	18.68	1741829.40	14411379.54	39°40'57.532"N	80°38'22.348"W	22.43	56.362	3.00	2.82	30.47
3428.00	5.350	95.330	3426.28	-10.53	12.07	25.73	1741836.45	14411379.18	39°40'57.528"N	80°38'22.258"W	28.42	64.873	2.02	1.96	6.68
3518.00	7.000	104.810	3515.76	-18.68	10.28	35.21	1741845.93	14411377.39	39°40'57.510"N	80°38'22.137"W	36.68	73.729	2.15	1.83	10.53
3606.00	7.720	110.340	3603.03	-28.85	6.85	45.94	1741856.65	14411373.97	39°40'57.476"N	80°38'22.000"W	46.45	81.516	1.15	0.82	6.28
3697.00	7.570	109.650	3693.22	-39.98	2.71	57.32	1741868.02	14411369.83	39°40'57.434"N	80°38'21.854"W	57.38	87.291	0.19	-0.16	-0.76
3787.00	7.470	106.620	3782.45	-50.66	-0.95	68.51	1741879.21	14411366.17	39°40'57.397"N	80°38'21.711"W	68.51	90.798	0.45	-0.11	-3.37
3877.00	7.250	104.170	3871.71	-60.86	-4.02	79.62	1741890.32	14411363.10	39°40'57.367"N	80°38'21.569"W	79.72	92.889	0.43	-0.24	-2.72
3968.00	6.950	101.000	3962.01	-70.55	-6.47	90.59	1741901.28	14411360.65	39°40'57.342"N	80°38'21.429"W	90.82	94.088	0.54	-0.33	-3.48
4059.00	6.810	97.160	4052.36	-79.58	-8.20	101.35	1741912.04	14411358.93	39°40'57.325"N	80°38'21.292"W	101.68	94.624	0.53	-0.15	-4.22
4149.00	6.610	92.290	4141.74	-87.82	-9.07	111.82	1741922.50	14411358.05	39°40'57.316"N	80°38'21.158"W	112.19	94.637	0.67	-0.22	-5.41
4241.00	7.510	99.960	4233.04	-96.86	-10.32	123.03	1741933.71	14411356.80	39°40'57.303"N	80°38'21.014"W	123.46	94.795	1.41	0.98	8.34
4330.00	7.430	96.970	4321.29	-106.37	-12.02	134.47	1741945.15	14411355.10	39°40'57.285"N	80°38'20.868"W	135.01	95.110	0.45	-0.09	-3.36
4420.00	7.220	92.290	4410.55	-115.35	-12.96	145.90	1741956.57	14411354.17	39°40'57.276"N	80°38'20.722"W	146.47	95.075	0.70	-0.23	-5.20
4510.00	6.730	86.100	4499.89	-123.23	-12.82	156.81	1741967.48	14411354.30	39°40'57.277"N	80°38'20.583"W	157.34	94.675	1.00	-0.54	-6.88
4600.00	7.120	94.010	4589.23	-131.15	-12.86	167.64	1741978.30	14411354.27	39°40'57.276"N	80°38'20.444"W	168.13	94.385	1.14	0.43	8.79
4691.00	6.850	99.220	4679.56	-140.03	-14.12	178.62	1741989.28	14411353.01	39°40'57.263"N	80°38'20.304"W	179.18	94.520	0.76	-0.30	5.73
4781.00	6.120	97.320	4768.98	-148.38	-15.59	188.68	1741999.33	14411351.54	39°40'57.248"N	80°38'20.175"W	189.32	94.724	0.85	-0.81	-2.11
4872.00	5.240	91.410	4859.54	-155.41	-16.31	197.64	1742008.29	14411350.82	39°40'57.241"N	80°38'20.060"W	198.31	94.718	1.16	-0.97	-6.49
4962.00	5.510	95.210	4949.14	-161.89	-16.80	206.05	1742016.70	14411350.32	39°40'57.235"N	80°38'19.963"W	206.74	94.682	0.50	0.30	4.22
5053.00	5.070	91.080	5039.75	-168.32	-17.28	214.42	1742025.07	14411349.85	39°40'57.230"N	80°38'19.846"W	215.12	94.607	0.64	-0.48	-4.54
5143.00	5.630	91.050	5129.36	-174.55	-17.43	222.81	1742033.46	14411349.69	39°40'57.228"N	80°38'19.739"W	223.50	94.474	0.62	0.62	-0.03
5234.00	5.350	86.460	5219.94	-180.78	-17.25	231.51	1742042.15	14411349.87	39°40'57.230"N	80°38'19.627"W	232.15	94.262	0.57	-0.31	-5.04
5324.00	6.370	88.120	5309.47	-187.19	-16.83	240.69	1742051.33	14411350.30	39°40'57.234"N	80°38'19.510"W	241.28	94.000	1.15	1.13	1.84
5414.00	7.020	92.980	5398.86	-194.92	-16.95	251.17	1742061.80	14411350.17	39°40'57.232"N	80°38'19.376"W	251.74	93.861	0.96	0.72	5.40
5505.00	6.520	90.030	5489.22	-202.95	-17.24	261.89	1742072.52	14411349.88	39°40'57.229"N	80°38'19.239"W	262.46	93.767	0.67	-0.55	-3.24
5595.00	7.070	88.700	5578.59	-210.64	-17.12	272.54	1742083.16	14411349.01	39°40'57.230"N	80°38'19.103"W	273.08	93.595	0.64	0.61	-1.48
5686.00	7.950	93.340	5668.81	-219.47	-17.36	284.42	1742095.04	14411349.77	39°40'57.227"N	80°38'18.951"W	284.95	93.493	1.17	0.97	5.10
5776.00	7.750	91.880	5757.97	-228.82	-17.92	296.70	1742107.31	14411349.20	39°40'57.221"N	80°38'18.794"W	297.24	93.457	0.31	-0.22	-1.62
5867.00	7.070	87.190	5848.21	-237.33	-17.85	308.43	1742119.04	14411349.28	39°40'57.221"N	80°38'18.644"W	308.94	93.312	1.00	-0.75	-5.15
5957.00	7.710	94.000	5937.46	-245.86	-18.00	319.98	1742130.59	14411349.13	39°40'57.219"N	80°38'18.496"W	320.49	93.219	1.20	0.71	7.57
6047.00	7.550	93.340	6026.67	-255.09	-18.76	331.91	1742142.51	14411348.36	39°40'57.211"N	80°38'18.343"W	332.44	93.236	0.20	-0.18	-0.73

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6138.00	6.900	90.290	6116.94	-263.69	-19.14	343.34	1742153.94	14411347.99	39°40'57.207"N	80°38'18.197"W	343.87	93.191	0.83	-0.71	-3.35
6228.00	7.670	96.030	6206.22	-272.45	-19.80	354.72	1742166.31	14411347.33	39°40'57.200"N	80°38'18.052"W	355.27	93.195	1.18	0.86	6.38
6319.00	7.370	96.940	6296.43	-282.01	-21.14	366.55	1742177.14	14411345.99	39°40'57.186"N	80°38'17.900"W	367.16	93.301	0.35	-0.33	1.00
6409.00	6.370	92.920	6385.79	-290.48	-22.09	377.27	1742187.85	14411345.04	39°40'57.176"N	80°38'17.763"W	377.92	93.352	1.23	-1.11	-4.47
6500.00	6.120	93.630	6476.25	-298.08	-22.66	387.15	1742197.73	14411344.47	39°40'57.170"N	80°38'17.637"W	387.81	93.349	0.29	-0.27	0.78
6533.00	6.340	94.770	6509.05	-300.86	-22.92	390.72	1742201.30	14411344.21	39°40'57.168"N	80°38'17.591"W	391.39	93.357	0.76	0.67	3.45
6574.00	6.010	95.330	6549.81	-304.34	-23.31	395.12	1742205.69	14411343.82	39°40'57.164"N	80°38'17.535"W	395.80	93.376	0.82	-0.80	1.37
6638.00	6.300	75.450	6613.45	-306.86	-22.74	401.85	1742212.42	14411344.39	39°40'57.169"N	80°38'17.449"W	402.49	93.238	3.34	0.45	-31.06
6729.00	7.250	7.820	6703.95	-308.21	-15.78	407.47	1742218.04	14411351.34	39°40'57.237"N	80°38'17.377"W	407.78	92.218	8.32	1.04	-74.32
6820.00	12.110	341.520	6793.66	-296.49	-1.03	405.23	1742215.80	14411366.09	39°40'57.383"N	80°38'17.405"W	405.23	90.145	7.09	5.34	-28.90
6910.00	16.160	327.880	6880.95	-276.06	18.55	395.57	1742206.14	14411385.66	39°40'57.577"N	80°38'17.527"W	396.00	87.315	5.80	4.50	-15.16
7000.00	19.800	315.920	6966.57	-248.70	40.12	378.29	1742188.88	14411407.22	39°40'57.791"N	80°38'17.747"W	380.42	83.946	5.74	4.04	-13.29
7091.00	23.970	308.820	7051.00	-214.85	62.79	363.15	1742163.75	14411429.89	39°40'58.016"N	80°38'18.067"W	358.69	79.918	5.42	4.58	-7.80

Actual Wellpath Report

SWN A WTZ 5H AWP Proj: 20865'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 05
Area	Wetzel County, WV	Well	SWN A WTZ 5H
Field	Wetzel	Wellbore	SWN A WTZ 5H AWB
Facility	SWN A WTZ Pad		

WELLPATH DATA (248 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)
7182.00	33.430	309.760	7130.73	-171.30	90.48	319.41	1742130.01	14411457.56	39°40'58.291"N	80°38'18.498"W	331.97	74.184	10.41	10.40	1.03
7272.00	44.120	311.820	7200.80	-115.07	127.33	276.88	1742087.50	14411494.40	39°40'58.657"N	80°38'19.040"W	304.75	65.303	11.96	11.88	2.29
7362.00	54.770	310.890	7259.23	-46.82	172.41	225.59	1742036.24	14411539.46	39°40'59.105"N	80°38'19.693"W	283.93	52.611	11.86	11.83	-1.03
7407.00	60.630	309.890	7283.27	-8.84	197.04	196.63	1742007.28	14411564.08	39°40'59.349"N	80°38'20.062"W	278.37	44.940	13.16	13.02	-2.22
7452.00	65.470	309.960	7303.66	31.20	222.78	165.88	1741976.54	14411589.81	39°40'59.605"N	80°38'20.454"W	277.75	36.671	10.76	10.76	0.16
7497.00	71.040	310.330	7320.32	72.92	249.72	133.94	1741944.62	14411616.74	39°40'59.872"N	80°38'20.862"W	283.37	28.208	12.40	12.38	0.82
7543.00	74.870	311.120	7333.80	116.85	278.41	100.62	1741911.31	14411645.42	39°41'00.157"N	80°38'21.286"W	296.03	19.870	8.49	8.33	1.72
7587.00	76.490	310.710	7344.69	159.45	306.33	68.40	1741879.11	14411673.33	39°41'00.434"N	80°38'21.697"W	313.87	12.588	3.79	3.68	-0.93
7632.00	80.200	310.760	7353.77	203.48	335.08	35.01	1741845.73	14411702.07	39°41'00.720"N	80°38'22.123"W	336.91	5.965	8.25	8.24	0.11
7678.00	84.420	310.380	7359.93	249.01	364.72	0.39	1741811.12	14411731.70	39°41'01.014"N	80°38'22.564"W	364.72	0.062	9.21	9.17	-0.83
7723.00	88.030	310.950	7362.89	293.86	393.98	-33.66	1741777.08	14411760.94	39°41'01.305"N	80°38'22.998"W	395.41	355.117	8.12	8.02	1.27
7813.00	90.890	311.730	7363.74	383.81	453.42	-101.22	1741709.55	14411820.36	39°41'01.895"N	80°38'23.859"W	464.58	347.415	3.29	3.18	0.87
7903.00	90.890	310.770	7362.34	473.75	512.75	-168.88	1741641.92	14411879.67	39°41'02.484"N	80°38'24.721"W	539.84	341.770	1.07	0.00	-1.07
7994.00	91.320	310.000	7360.59	564.63	571.70	-238.18	1741572.64	14411936.59	39°41'03.069"N	80°38'25.605"W	619.33	337.382	0.97	0.47	-0.85
8084.00	89.630	309.390	7359.84	654.46	629.18	-307.43	1741503.42	14411996.05	39°41'03.640"N	80°38'26.487"W	700.27	333.959	2.00	-1.88	-0.68
8175.00	90.890	311.970	7359.43	745.37	688.49	-376.43	1741434.45	14412055.34	39°41'04.229"N	80°38'27.367"W	784.67	331.332	3.16	1.38	2.84
8265.00	91.970	313.530	7357.18	835.33	749.56	-442.50	1741368.41	14412116.38	39°41'04.835"N	80°38'28.209"W	870.42	329.445	2.11	1.20	1.73
8355.00	92.060	311.700	7354.02	925.27	810.45	-508.68	1741302.24	14412177.26	39°41'05.439"N	80°38'29.052"W	956.87	327.885	2.03	0.10	-2.03
8444.00	91.910	311.010	7350.93	1014.17	869.22	-575.45	1741235.50	14412236.00	39°41'06.023"N	80°38'29.903"W	1042.44	326.494	0.79	-0.17	-0.78
8535.00	91.690	309.580	7348.07	1105.01	928.04	-644.82	1741166.16	14412294.80	39°41'06.607"N	80°38'30.788"W	1130.07	325.208	1.59	-0.24	-1.57
8625.00	92.030	308.960	7345.15	1194.76	984.98	-714.46	1741096.55	14412351.72	39°41'07.172"N	80°38'31.676"W	1216.81	324.045	0.79	0.38	-0.69
8715.00	91.850	308.210	7342.11	1284.43	1041.08	-784.77	1741026.27	14412407.79	39°41'07.729"N	80°38'32.572"W	1303.73	322.991	0.86	-0.20	-0.83
8806.00	92.160	308.400	7338.92	1375.05	1097.45	-856.14	1740954.93	14412464.14	39°41'08.289"N	80°38'33.482"W	1391.89	322.042	0.40	0.34	0.21
8896.00	91.970	307.380	7335.68	1464.62	1152.69	-927.12	1740883.98	14412519.36	39°41'08.838"N	80°38'34.387"W	1479.27	321.190	1.15	-0.21	-1.13
8987.00	92.000	309.360	7332.53	1555.25	1209.14	-998.42	1740812.70	14412575.78	39°41'09.399"N	80°38'35.296"W	1568.07	320.453	2.17	0.03	2.18
9077.00	92.250	310.600	7329.19	1645.05	1266.92	-1067.32	1740743.82	14412633.55	39°41'09.972"N	80°38'36.175"W	1666.59	319.887	1.40	0.28	1.38
9167.00	92.090	311.030	7325.78	1734.91	1325.71	-1135.40	1740675.78	14412692.31	39°41'10.556"N	80°38'37.043"W	1745.46	319.422	0.51	-0.18	0.48
9257.00	92.280	313.640	7322.35	1824.83	1386.27	-1201.87	1740609.33	14412752.85	39°41'11.157"N	80°38'37.890"W	1834.73	319.075	2.91	0.21	2.90
9348.00	92.370	315.270	7318.66	1915.73	1449.94	-1266.77	1740544.45	14412816.50	39°41'11.789"N	80°38'38.717"W	1925.37	318.857	1.79	0.10	1.79
9438.00	92.490	315.940	7314.84	2005.56	1514.19	-1329.68	1740481.57	14412880.72	39°41'12.427"N	80°38'39.518"W	2015.15	318.712	0.76	0.13	0.74
9528.00	92.430	315.230	7310.98	2095.39	1578.42	-1392.61	1740418.67	14412944.92	39°41'13.064"N	80°38'40.320"W	2104.94	318.579	0.79	-0.07	-0.79
9619.00	92.490	314.110	7307.07	2186.27	1642.34	-1457.26	1740354.04	14413008.82	39°41'13.698"N	80°38'41.144"W	2195.65	318.417	1.23	0.07	-1.23

WELLPATH DATA (248 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]
9709.00	92.680	313.270	7303.01	2276.18	1704.44	-1522.27	1740289.05	14413070.90	39°41'14.314"N	80°38'41.972"W	2285.26	318.231	0.96	0.21	-0.93
9799.00	92.520	311.170	7298.93	2366.07	1764.85	-1588.85	1740222.50	14413131.28	39°41'14.914"N	80°38'42.821"W	2374.69	318.004	2.34	-0.18	-2.33
9880.00	92.490	310.150	7294.95	2456.90	1824.09	-1657.82	1740153.56	14413190.50	39°41'15.502"N	80°38'43.700"W	2464.88	317.734	1.12	-0.03	-1.12
9980.00	92.430	310.560	7291.09	2546.71	1882.31	-1726.34	1740085.06	14413248.70	39°41'16.080"N	80°38'44.573"W	2554.08	317.475	0.46	-0.07	0.46
10070.00	92.560	310.070	7287.17	2636.52	1940.48	-1794.90	1740016.53	14413306.85	39°41'16.658"N	80°38'45.447"W	2643.32	317.232	0.56	0.14	-0.54
10161.00	92.400	310.360	7283.24	2727.31	1999.18	-1864.32	1739947.13	14413365.52	39°41'17.240"N	80°38'46.332"W	2733.58	316.999	0.36	-0.18	0.32
10251.00	92.370	312.640	7279.49	2817.19	2058.76	-1931.67	1739879.82	14413425.08	39°41'17.892"N	80°38'47.191"W	2823.09	316.824	2.53	-0.03	2.53
10341.00	92.430	314.650	7275.72	2907.11	2120.82	-1996.73	1739814.78	14413487.12	39°41'18.448"N	80°38'48.020"W	2912.87	316.726	2.23	0.07	2.23
10432.00	91.450	312.850	7272.64	2998.04	2183.71	-2062.43	1739749.11	14413549.98	39°41'19.072"N	80°38'48.857"W	3003.70	316.636	2.25	-1.08	-1.98
10522.00	91.260	313.620	7270.51	3088.02	2245.34	-2127.98	1739683.58	14413611.59	39°41'19.683"N	80°38'49.693"W	3093.52	316.537	0.88	-0.21	0.86
10613.00	91.480	314.080	7268.34	3178.98	2308.37	-2193.58	1739618.00	14413674.59	39°41'20.309"N	80°38'50.529"W	3184.39	316.461	0.56	0.24	0.51
10704.00	91.660	314.220	7265.84	3269.94	2371.73	-2258.85	1739552.76	14413737.92	39°41'20.938"N	80°38'51.360"W	3275.29	316.396	0.25	0.20	0.15
10794.00	91.660	314.860	7263.23	3359.87	2434.83	-2322.97	1739488.66	14413801.00	39°41'21.564"N	80°38'52.177"W	3365.20	316.347	0.71	0.00	0.71



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 05
Area	Wetzel County, WV	Well	SWN A WTZ 5H
Field	Wetzel	Wellbore	SWN A WTZ 5H AWB
Facility	SWN A WTZ Pad		

WELLPATH DATA (248 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]
10884.00	91.690	313.620	7260.60	3449.81	2497.59	-2387.42	1739424.24	14413863.74	39°41'22.186"N	80°38'52.999"W	3455.11	316.292	1.38	0.03	-1.38
10975.00	91.540	314.630	7258.04	3540.76	2560.92	-2452.72	1739358.97	14413927.04	39°41'22.815"N	80°38'53.831"W	3546.00	316.236	1.12	-0.16	1.11
11066.00	91.690	314.450	7255.47	3631.70	2624.72	-2517.55	1739294.16	14413990.82	39°41'23.448"N	80°38'54.657"W	3636.93	316.194	0.26	0.16	-0.20
11157.00	92.340	316.840	7252.27	3722.54	2689.75	-2581.13	1739230.61	14414055.82	39°41'24.093"N	80°38'55.467"W	3727.86	316.181	2.72	0.71	2.63
11247.00	91.320	315.310	7249.40	3812.38	2754.53	-2643.53	1739168.23	14414120.58	39°41'24.736"N	80°38'56.262"W	3817.81	316.178	2.04	-1.13	-1.70
11338.00	91.690	314.800	7247.01	3903.29	2818.92	-2707.79	1739104.00	14414184.94	39°41'25.374"N	80°38'57.081"W	3908.76	316.152	0.69	0.41	-0.56
11428.00	90.950	313.660	7244.94	3993.25	2881.68	-2772.26	1739039.55	14414247.67	39°41'25.997"N	80°38'57.902"W	3998.69	316.109	1.51	-0.82	-1.27
11519.00	91.170	311.950	7243.25	4084.23	2943.50	-2839.01	1738972.83	14414309.47	39°41'26.611"N	80°38'58.763"W	4089.52	316.035	1.89	0.24	-1.88
11609.00	91.970	311.180	7240.79	4174.16	3003.19	-2906.32	1738905.54	14414369.14	39°41'27.203"N	80°38'59.611"W	4179.22	315.939	1.23	0.89	-0.86
11699.00	90.680	308.600	7238.71	4263.98	3060.89	-2975.35	1738836.54	14414426.81	39°41'27.776"N	80°39'00.491"W	4268.69	315.812	3.20	-1.43	-2.87
11789.00	90.460	308.550	7237.81	4353.70	3117.00	-3045.71	1738766.21	14414482.90	39°41'28.333"N	80°39'01.388"W	4357.99	315.663	0.25	-0.24	-0.06
11879.00	90.550	309.240	7237.02	4443.45	3173.51	-3115.75	1738696.19	14414539.39	39°41'28.895"N	80°39'02.282"W	4447.37	315.526	0.77	0.10	0.77
11969.00	90.370	312.240	7236.29	4533.36	3232.24	-3183.94	1738628.04	14414598.10	39°41'29.478"N	80°39'03.151"W	4537.05	315.431	3.34	-0.20	3.33
12059.00	90.310	313.600	7235.76	4623.35	3293.52	-3249.84	1738562.16	14414659.36	39°41'30.086"N	80°39'03.991"W	4626.96	315.382	1.51	-0.07	1.51
12150.00	89.720	312.960	7235.74	4714.35	3355.91	-3316.09	1738495.93	14414721.72	39°41'30.705"N	80°39'04.833"W	4717.90	315.342	0.96	-0.65	-0.70
12240.00	90.340	312.570	7235.69	4804.35	3417.02	-3382.16	1738429.89	14414782.80	39°41'31.311"N	80°39'05.677"W	4807.81	315.294	0.81	0.69	-0.43
12330.00	90.280	311.300	7235.20	4894.33	3477.16	-3449.11	1738362.97	14414842.92	39°41'31.908"N	80°39'06.531"W	4897.65	315.232	1.41	-0.07	-1.41
12421.00	90.680	311.270	7234.44	4985.28	3537.20	-3517.49	1738294.61	14414902.94	39°41'32.504"N	80°39'07.403"W	4988.44	315.160	0.44	0.44	-0.03
12512.00	91.690	309.790	7232.56	5076.16	3596.32	-3586.64	1738225.49	14414962.04	39°41'33.091"N	80°39'08.284"W	5079.12	315.077	1.97	1.11	-1.63
12601.00	91.050	309.060	7230.43	5164.95	3652.83	-3655.37	1738156.79	14415018.52	39°41'33.652"N	80°39'09.161"W	5167.67	314.980	1.09	-0.72	-0.82
12692.00	91.390	308.630	7228.49	5255.67	3709.89	-3726.22	1738085.96	14415075.56	39°41'34.219"N	80°39'10.064"W	5258.14	314.874	0.60	0.37	-0.47
12782.00	90.370	308.280	7227.11	5345.36	3765.85	-3796.69	1738015.52	14415131.50	39°41'34.775"N	80°39'10.963"W	5347.57	314.766	1.20	-1.13	-0.39
12872.00	90.280	309.480	7226.60	5435.12	3822.34	-3866.75	1737945.49	14415187.97	39°41'35.336"N	80°39'11.856"W	5437.10	314.669	1.34	-0.10	1.33
12963.00	90.430	309.810	7226.04	5525.95	3880.40	-3936.82	1737875.44	14415246.01	39°41'35.912"N	80°39'12.750"W	5527.76	314.586	0.40	0.16	0.36
13053.00	90.250	308.620	7225.50	5615.73	3937.30	-4006.55	1737805.74	14415302.88	39°41'36.477"N	80°39'13.639"W	5617.36	314.501	1.34	-0.20	-1.32
13143.00	90.220	309.920	7225.13	5705.53	3994.27	-4076.22	1737736.10	14415359.83	39°41'37.043"N	80°39'14.528"W	5706.99	314.418	1.44	-0.03	1.44
13234.00	90.370	312.090	7224.66	5796.46	4053.97	-4144.89	1737667.46	14415419.51	39°41'37.635"N	80°39'15.403"W	5797.83	314.365	2.39	0.16	2.38
13324.00	90.620	311.550	7223.89	5886.43	4113.98	-4211.96	1737600.41	14415479.49	39°41'38.231"N	80°39'16.258"W	5887.74	314.326	0.66	0.28	-0.60
13414.00	90.460	310.900	7223.04	5976.38	4173.29	-4279.65	1737532.75	14415538.78	39°41'38.820"N	80°39'17.121"W	5977.60	314.279	0.74	-0.18	-0.72
13505.00	90.990	310.000	7221.89	6067.27	4232.32	-4348.89	1737463.54	14415597.79	39°41'39.406"N	80°39'18.004"W	6068.39	314.222	1.15	0.58	-0.99
13595.00	90.550	309.680	7220.68	6157.12	4289.97	-4417.99	1737394.46	14415655.42	39°41'39.978"N	80°39'18.885"W	6158.13	314.158	0.60	-0.49	-0.36
13685.00	90.460	312.470	7219.88	6247.05	4349.10	-4485.83	1737326.65	14415714.52	39°41'40.565"N	80°39'19.750"W	6247.98	314.113	3.10	-0.10	3.10

WELLPATH DATA (248 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]
13776.00	90.550	313.860	7219.08	6338.04	4411.35	-4552.20	1737260.31	14415776.75	39°41'41.183"N	80°39'20.596"W	6338.97	314.100	1.53	0.10	1.53
13866.00	90.620	314.630	7218.16	6428.02	4474.14	-4616.67	1737195.87	14415839.52	39°41'41.806"N	80°39'21.418"W	6428.96	314.102	0.86	0.08	0.86
13956.00	90.620	315.060	7217.19	6617.97	4637.60	-4680.48	1737132.08	14415902.95	39°41'42.435"N	80°39'22.231"W	6518.95	314.112	0.47	0.00	0.47
14047.00	90.580	316.120	7216.24	6608.88	4602.60	-4744.16	1737068.42	14415967.92	39°41'43.080"N	80°39'23.042"W	6609.91	314.132	1.18	-0.04	1.18
14137.00	90.490	317.270	7215.40	6698.70	4668.09	-4805.89	1737006.72	14416033.38	39°41'43.730"N	80°39'23.829"W	6699.82	314.167	1.28	-0.10	1.28
14227.00	90.890	316.860	7214.31	6788.48	4733.97	-4867.19	1736945.44	14416099.24	39°41'44.383"N	80°39'24.610"W	6789.70	314.205	0.64	0.44	-0.46
14318.00	91.570	315.190	7212.36	6879.34	4799.44	-4930.35	1736882.30	14416164.69	39°41'45.032"N	80°39'25.415"W	6880.63	314.229	1.98	0.75	-1.84
14408.00	91.020	312.090	7210.32	6869.30	4881.53	-4995.46	1736817.22	14416228.75	39°41'45.648"N	80°39'26.245"W	6970.59	314.222	3.50	-0.61	-3.44
14499.00	90.650	311.790	7209.00	7060.27	4922.34	-5063.14	1736749.56	14416287.54	39°41'46.252"N	80°39'27.108"W	7061.51	314.192	0.52	-0.41	-0.33
14589.00	90.520	313.250	7208.08	7150.26	4983.16	-5129.47	1736683.26	14416348.34	39°41'46.856"N	80°39'27.953"W	7151.46	314.171	1.63	-0.14	1.62
14679.00	90.550	312.830	7207.24	7240.25	5044.59	-5195.25	1736617.51	14416409.74	39°41'47.465"N	80°39'28.792"W	7241.44	314.157	0.47	0.03	-0.47
14770.00	90.430	312.120	7206.46	7331.25	5106.03	-5262.37	1736550.42	14416471.16	39°41'48.075"N	80°39'29.647"W	7332.40	314.136	0.79	-0.13	-0.78
14860.00	90.550	311.700	7205.69	7421.22	5166.15	-5329.34	1736483.47	14416531.25	39°41'48.672"N	80°39'30.501"W	7422.33	314.108	0.49	0.13	-0.47



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 05
Area	Wetzel County, WV	Well	SWN A WTZ 5H
Field	Wetzel	Wellbore	SWN A WTZ 5H AWB
Facility	SWN A WTZ Pad		

WELLPATH DATA (248 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]
14951.00	90.620	311.310	7204.76	7512.18	5226.45	-5397.49	1736415.35	14416591.53	39°41'49.270"N	80°39'31.370"W	7513.23	314.078	0.44	0.08	-0.43
15042.00	90.890	309.590	7203.56	7603.07	5285.48	-5466.73	17363346.14	14416650.54	39°41'49.856"N	80°39'32.253"W	7604.04	314.034	1.91	0.30	-1.89
15132.00	90.710	310.390	7202.31	7692.93	5343.31	-5535.67	17362277.22	14416708.35	39°41'50.430"N	80°39'33.132"W	7693.81	313.987	0.91	-0.20	0.89
15222.00	90.650	310.490	7201.24	7782.82	5401.69	-5604.17	1736208.75	14416766.70	39°41'51.010"N	80°39'34.006"W	7783.63	313.946	0.13	-0.07	0.11
15312.00	90.650	311.630	7200.22	7872.76	5460.80	-5672.02	1736140.92	14416825.79	39°41'51.596"N	80°39'34.871"W	7873.51	313.913	1.27	0.00	1.27
15403.00	91.020	312.000	7198.89	7963.72	5521.47	-5739.84	1736073.13	14416886.43	39°41'52.198"N	80°39'35.735"W	7964.44	313.889	0.57	0.41	0.41
15493.00	91.050	312.040	7197.27	8053.69	5581.70	-5806.69	1736006.31	14416946.64	39°41'52.796"N	80°39'36.588"W	8054.38	313.868	0.06	0.03	0.04
15584.00	91.110	310.020	7195.55	8144.61	5641.42	-5875.32	1735937.70	14417006.34	39°41'53.389"N	80°39'37.463"W	8145.25	313.837	2.22	0.07	-2.22
15674.00	90.680	311.350	7194.14	8234.52	5700.09	-5943.56	1735869.49	14417064.98	39°41'53.971"N	80°39'38.333"W	8235.10	313.802	1.55	-0.48	1.48
15764.00	90.800	312.650	7192.98	8324.49	5760.30	-6010.43	1735802.64	14417125.17	39°41'54.569"N	80°39'39.186"W	8325.05	313.783	1.45	0.13	1.44
15855.00	90.800	310.440	7191.71	8415.44	5820.64	-6078.53	1735734.57	14417185.49	39°41'55.168"N	80°39'40.054"W	8415.96	313.758	2.43	0.00	-2.43
15945.00	90.580	310.090	7190.63	8505.32	5878.81	-6147.20	1735665.93	14417243.64	39°41'55.745"N	80°39'40.930"W	8505.79	313.722	0.46	-0.24	-0.39
16036.00	90.710	310.150	7189.60	8596.19	5937.44	-6216.78	1735596.37	14417302.25	39°41'56.327"N	80°39'41.817"W	8596.61	313.683	0.16	0.14	0.07
16126.00	90.550	309.800	7188.61	8686.05	5995.26	-6285.75	1735527.43	14417360.04	39°41'56.901"N	80°39'42.697"W	8686.41	313.645	0.43	-0.18	-0.39
16216.00	90.650	309.580	7187.67	8775.88	6052.74	-6355.00	1735458.21	14417417.49	39°41'57.472"N	80°39'43.580"W	8776.20	313.604	0.27	0.11	-0.24
16307.00	90.520	309.200	7186.74	8866.69	6110.48	-6425.33	1735387.91	14417475.22	39°41'58.045"N	80°39'44.477"W	8866.95	313.561	0.44	-0.14	-0.42
16398.00	90.650	310.790	7185.81	8957.54	6168.96	-6495.03	1735318.23	14417533.68	39°41'58.626"N	80°39'45.366"W	8957.77	313.525	1.75	0.14	1.75
16488.00	90.580	313.800	7184.85	9047.52	6229.52	-6561.60	1735251.70	14417594.21	39°41'59.227"N	80°39'46.214"W	9047.73	313.513	3.35	-0.08	3.34
16578.00	90.830	315.390	7183.74	9137.48	6292.70	-6625.68	1735187.64	14417657.36	39°41'59.853"N	80°39'47.031"W	9137.71	313.524	1.79	0.28	1.77
16669.00	91.020	313.890	7182.27	9228.43	6356.63	-6690.42	1735122.93	14417721.27	39°42'00.488"N	80°39'47.856"W	9228.67	313.535	1.66	0.21	-1.65
16759.00	91.910	314.560	7179.97	9318.38	6419.38	-6754.89	1735058.48	14417784.00	39°42'01.110"N	80°39'48.678"W	9318.64	313.541	1.24	0.99	0.74
16850.00	91.810	314.770	7177.01	9409.30	6483.32	-6819.58	1734993.82	14417847.91	39°42'01.745"N	80°39'49.503"W	9409.57	313.552	0.26	-0.11	0.23
16940.00	91.660	315.090	7174.29	9499.22	6546.85	-6883.26	1734930.15	14417911.42	39°42'02.375"N	80°39'50.315"W	9499.50	313.565	0.39	-0.17	0.36
17031.00	91.880	314.850	7171.48	9590.13	6611.13	-6947.61	1734865.83	14417975.67	39°42'03.012"N	80°39'51.135"W	9590.43	313.578	0.36	0.24	-0.26
17121.00	92.590	316.850	7167.97	9679.95	6675.66	-7010.25	1734803.21	14418040.17	39°42'03.652"N	80°39'51.933"W	9680.29	313.600	2.36	0.79	2.22
17211.00	92.550	315.700	7163.93	9769.72	6740.63	-7072.40	1734741.09	14418105.12	39°42'04.297"N	80°39'52.725"W	9770.10	313.624	1.28	-0.04	-1.28
17302.00	91.910	314.060	7160.39	9860.61	6804.79	-7136.83	1734676.69	14418169.25	39°42'04.933"N	80°39'53.546"W	9861.01	313.636	1.93	-0.70	-1.80
17392.00	89.780	311.850	7159.06	9950.59	6866.10	-7202.68	1734610.86	14418230.54	39°42'05.542"N	80°39'54.386"W	9950.98	313.630	3.41	-2.37	-2.46
17482.00	88.550	310.280	7160.38	10040.51	6925.22	-7270.53	1734543.04	14418289.63	39°42'06.128"N	80°39'55.251"W	10040.88	313.607	2.22	-1.37	-1.74
17573.00	87.380	310.150	7163.61	10131.34	6983.93	-7339.97	1734473.62	14418348.33	39°42'06.711"N	80°39'56.137"W	10131.66	313.576	1.29	-1.29	-0.14
17663.00	89.080	311.610	7166.39	10221.22	7042.81	-7407.98	1734405.64	14418407.18	39°42'07.296"N	80°39'57.004"W	10221.51	313.552	2.49	1.89	1.62
17753.00	88.860	310.640	7168.01	10311.15	7101.99	-7475.77	1734337.88	14418466.34	39°42'07.883"N	80°39'57.869"W	10311.42	313.531	1.10	-0.24	-1.08

WELLPATH DATA (248 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]
17843.00	89.020	311.670	7169.67	10401.08	7161.21	-7543.52	1734270.16	14418525.53	39°42'08.471"N	80°39'58.733"W	10401.32	313.511	1.16	0.18	1.14
17934.00	89.880	312.620	7170.54	10492.06	7222.26	-7610.98	1734202.72	14418586.57	39°42'09.077"N	80°39'59.593"W	10492.29	313.499	1.41	0.95	1.04
18024.00	90.620	312.370	7170.15	10562.05	7283.06	-7677.34	1734136.36	14418647.34	39°42'09.680"N	80°40'00.439"W	10562.26	313.490	0.87	0.82	-0.28
18114.00	90.580	311.560	7169.21	10672.03	7343.24	-7744.26	1734069.49	14418707.49	39°42'10.277"N	80°40'01.292"W	10672.24	313.477	0.90	-0.04	-0.90
18205.00	90.620	310.740	7168.26	10762.97	7403.11	-7812.78	1734001.00	14418767.35	39°42'10.871"N	80°40'02.166"W	10763.16	313.458	0.90	0.04	-0.90
18295.00	90.520	309.320	7167.36	10852.83	7461.00	-7881.68	1733932.12	14418825.21	39°42'11.446"N	80°40'03.045"W	10852.99	313.429	1.58	-0.11	-1.58
18386.00	90.430	308.600	7166.61	10943.59	7518.21	-7952.44	1733861.39	14418882.40	39°42'12.014"N	80°40'03.947"W	10943.71	313.392	0.80	-0.10	-0.79
18476.00	90.520	309.160	7165.86	11033.34	7574.70	-8022.50	1733791.36	14418938.87	39°42'12.575"N	80°40'04.841"W	11033.43	313.355	0.83	0.10	0.62
18567.00	90.460	310.480	7165.08	11124.18	7632.97	-8092.39	1733721.50	14418997.12	39°42'13.153"N	80°40'05.733"W	11124.26	313.327	1.45	-0.07	1.45
18657.00	90.520	311.450	7164.31	11214.12	7691.98	-8160.35	1733653.57	14419056.09	39°42'13.739"N	80°40'06.599"W	11214.18	313.308	1.08	0.07	1.08
18743.00	90.770	311.660	7163.34	11300.08	7749.02	-8224.70	1733589.24	14419113.12	39°42'14.305"N	80°40'07.420"W	11300.13	313.294	0.38	0.29	0.24
18828.00	90.680	309.180	7162.27	11384.97	7804.12	-8289.40	1733524.57	14419168.20	39°42'14.852"N	80°40'08.245"W	11385.01	313.273	2.92	-0.11	-2.92
18918.00	90.740	310.250	7161.14	11475.80	7862.26	-8359.39	1733454.60	14419226.32	39°42'15.429"N	80°40'09.136"W	11475.83	313.245	1.18	0.07	1.18

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 05
Area	Wetzel County, WV	Well	SWN A WTZ 5H
Field	Wetzel	Wellbore	SWN A WTZ 5H AWB
Facility	SWN A WTZ Pad		

WELLPATH DATA (248 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)
19009.00	90.740	311.590	7159.98	11565.73	7921.21	-8427.39	1733386.63	14419285.24	39°42'16.014"N	80°40'10.005"W	11565.75	313.227	1.49	0.00	1.49
19091.00	91.140	312.750	7158.63	11647.70	7976.25	-8488.16	1733325.88	14419340.26	39°42'16.560"N	80°40'10.780"W	11647.72	313.219	1.50	0.49	1.41
19174.00	91.050	312.720	7157.05	11730.69	8032.56	-8549.11	1733264.96	14419396.55	39°42'17.119"N	80°40'11.557"W	11730.70	313.216	0.11	-0.11	-0.04
19262.00	91.140	314.300	7155.36	11818.66	8093.14	-8612.92	1733201.17	14419457.10	39°42'17.720"N	80°40'12.371"W	11818.68	313.218	1.80	0.10	1.80
19352.00	91.230	315.760	7153.50	11908.59	8156.79	-8676.51	1733137.61	14419520.73	39°42'18.351"N	80°40'13.181"W	11908.62	313.232	1.62	0.10	1.62
19443.00	91.050	315.870	7151.69	11999.47	8222.04	-8739.92	1733074.22	14419585.95	39°42'18.998"N	80°40'13.990"W	11999.51	313.251	0.23	-0.20	0.12
19533.00	90.980	317.060	7150.10	12089.30	8287.27	-8801.90	1733012.26	14419651.16	39°42'19.645"N	80°40'14.780"W	12089.35	313.275	1.32	-0.08	1.32
19624.00	91.140	314.900	7148.42	12180.17	8352.69	-8865.13	1732949.06	14419716.55	39°42'20.294"N	80°40'15.586"W	12180.23	313.295	2.38	0.18	-2.37
19714.00	91.140	313.460	7146.62	12270.13	8415.40	-8929.65	1732884.56	14419779.24	39°42'20.916"N	80°40'16.408"W	12270.20	313.302	1.60	0.00	-1.60
19804.00	90.710	312.360	7145.17	12360.12	8476.67	-8995.56	1732818.68	14419840.48	39°42'21.524"N	80°40'17.249"W	12360.18	313.299	1.31	-0.48	-1.22
19895.00	90.890	311.490	7143.90	12451.09	8537.47	-9063.26	1732751.01	14419901.25	39°42'22.127"N	80°40'18.112"W	12451.15	313.289	0.98	0.20	-0.96
19986.00	90.680	310.760	7142.65	12542.03	8597.31	-9131.80	1732682.49	14419961.08	39°42'22.721"N	80°40'18.986"W	12542.07	313.273	0.83	-0.23	-0.80
20075.00	90.740	310.480	7141.55	12630.94	8655.25	-9199.35	1732614.97	14420018.99	39°42'23.296"N	80°40'19.848"W	12630.97	313.254	0.32	0.07	-0.31
20165.00	90.800	310.180	7140.34	12720.82	8713.49	-9267.96	1732546.39	14420077.21	39°42'23.874"N	80°40'20.723"W	12720.85	313.234	0.34	0.07	-0.33
20256.00	90.770	310.020	7139.10	12811.69	8772.10	-9337.56	1732476.82	14420135.80	39°42'24.456"N	80°40'21.611"W	12811.70	313.212	0.18	-0.03	-0.18
20348.00	90.710	309.800	7137.91	12903.53	8831.12	-9408.12	1732406.28	14420194.79	39°42'25.042"N	80°40'22.511"W	12903.54	313.188	0.25	-0.07	-0.24
20438.00	90.680	310.520	7136.82	12993.41	8889.16	-9476.90	1732337.53	14420252.81	39°42'25.618"N	80°40'23.388"W	12993.41	313.167	0.80	-0.03	0.80
20529.00	90.550	311.340	7135.84	13084.33	8948.77	-9545.64	1732268.81	14420312.40	39°42'26.210"N	80°40'24.265"W	13084.34	313.152	0.91	-0.14	0.90
20620.00	90.520	311.600	7134.99	13175.29	9009.03	-9613.83	1732200.65	14420372.64	39°42'26.808"N	80°40'25.134"W	13175.29	313.140	0.29	-0.03	0.29
20711.00	90.680	312.860	7134.04	13266.27	9070.19	-9681.20	1732133.30	14420433.77	39°42'27.414"N	80°40'25.994"W	13266.27	313.134	1.40	0.18	1.38
20802.00	90.650	313.600	7132.98	13357.27	9132.51	-9747.50	1732067.03	14420496.07	39°42'28.033"N	80°40'26.839"W	13357.27	313.134	0.81	-0.03	0.81
20840.00	90.680	313.970	7132.54	13395.26	9158.81	-9774.93	1732039.61	14420522.35	39°42'28.294"N	80°40'27.189"W	13395.26	313.136	0.98	0.08	0.97
20865.00	90.680	313.970	7132.24	13420.26	9176.16	-9792.93	1732021.63	14420539.70	39°42'28.466"N	80°40'27.418"W	13420.26	313.138	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: SWN A WTZ 5H AWB Ref Wellpath: SWN A WTZ 5H AWP Proj: 20865'

String/Diameter	Start MD [ft]		Interval [ft]		Start TVD [ft]		End TVD [ft]		Start N/S [ft]		End N/S [ft]		Start E/W [ft]		End E/W [ft]	
	Start MD	End MD	Start MD	End MD	Start TVD	End TVD	Start TVD	End TVD	Start N/S	End N/S	Start E/W	End E/W	Start E/W	End E/W		
20in Conductor	26.00	100.00	74.00	100.00	26.00	100.00	0.00	100.00	0.00	0.00	0.00	0.00	0.40	0.40	-0.10	-0.10
17.5in Open Hole	100.00	400.00	300.00	400.00	100.00	399.98	0.40	399.98	0.40	0.40	-0.10	-0.10	2.67	2.67	-1.86	-1.86
13.375in Casing Surface	26.00	400.00	374.00	400.00	26.00	399.98	0.00	399.98	0.00	0.00	0.00	0.00	2.67	2.67	-1.86	-1.86
12.25in Open Hole	400.00	2809.00	2409.00	2809.00	399.98	2807.70	2.67	2807.70	2.67	2.67	-1.86	-1.86	8.55	8.55	20.60	20.60

HOLE & CASING SECTIONS - Ref Wellbore: SWN A WTZ 5H AWB Ref Wellpath: SWN A WTZ 5H AWP Proj: 20865'										
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]	
9.625in Casing Intermediate	26.00	2809.00	2783.00	26.00	2807.70	0.00	0.00	8.55	20.60	
8.75in Open Hole	2809.00	6600.00	3791.00	2807.70	6575.67	8.55	20.60	-23.36	397.84	
8.5in Open Hole	6600.00	20865.00	14265.00	6575.67	7132.24	-23.36	397.84	9176.16	-9792.93	
5.5in Casing Production	26.00	20865.00	20839.00	26.00	7132.24	0.00	0.00	9176.16	-9792.93	

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY		Slot	Slot 05
Area	Wetzel County, WV		Well	SWN A WTZ 5H
Field	Wetzel		Wellbore	SWN A WTZ 5H AWB
Facility	SWN A WTZ Pad			

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SWN A WTZ 5H BHL Rev-3	7135.00	9175.23	-9796.62	1732017.93	14420538.77	39°42'28.457"N	80°40'27.466"W	point
SWN A WTZ 5H LP Rev-3	7365.00	389.88	-46.43	1741764.32	14411756.85	39°41'01.265"N	80°38'23.161"W	point

WELLPATH COMPOSITION - Ref Wellbore: SWN A WTZ 5H AWB Ref Wellpath: SWN A WTZ 5H AWP Proj: 20865'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	396.00	VESSI GyroFlex v4	01_VESSI GyroFlex <17 1/2"> (50'-396")	SWN A WTZ 5H AWB
396.00	848.00	VESSI GyroFlex v4	02_VESSI GyroFlex <12 1/4"> (450'-848')	SWN A WTZ 5H AWB
848.00	2244.00	OWSG MWD rev2 + HRGM	03_Premier MWD <12 1/4"> (979'-2244')	SWN A WTZ 5H AWB
2244.00	2761.00	OWSG MWD rev2 + HRGM	04_Premier MWD <8 3/4"> (2334'-2761')	SWN A WTZ 5H AWB
2761.00	6533.00	OWSG MWD rev2 + HRGM	05_Premier MWD <8 3/4"> (2840'-6533')	SWN A WTZ 5H AWB
6533.00	20840.00	BHI AutoTrak Curve (Short)	06_BH AT Curve <8 1/2"> (6574'-20840')	SWN A WTZ 5H AWB
20840.00	20865.00	Blind Drilling (std)	Projection to bit	SWN A WTZ 5H AWB



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 05
Area	Wetzel County, WV	Well	SWN A WTZ 5H
Field	Wetzel	Wellbore	SWN A WTZ 5H AWB
Facility	SWN A WTZ Pad		

COMMENTS

Wellpath general comments
 API: 47-103-03233-0000
 BH Job #: 109785621
 Rig: SDC 46
 Duration: 05/08/2019 - 05/13/2019