

REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot #3H
Area	Brooke County, WV	Well	Barry Greathouse A BRK 3H
Field	Brooke	Wellbore	Barry Greathouse A BRK 3H AWB
Facility	Barry Greathouse A BRK Pad		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Hilphop
Scale	0.999612	Report Generated	22/Apr/2019 at 12:02
Convergence at slot	0.24° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Barry_Greathouse_A_BRK_3H_AWP_Proj_19967_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	59.14	-6.53	1742177.35	14596714.95	40°11'29.782"N	80°38'08.214"W
Facility Reference Pt			1742183.88	14596655.84	40°11'29.197"N	80°38'08.133"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM		
Calculation method	Minimum curvature	SDC 40 (RKB) to Facility Vertical Datum
Horizontal Reference Pt	Slot	SDC 40 (RKB) to Mean Sea Level
Vertical Reference Pt	SDC 40 (RKB)	SDC 40 (RKB) to Ground Level at Slot (Slot #3H)
MD Reference Pt	SDC 40 (RKB)	Section Origin
Field Vertical Reference	Mean Sea Level	Section Azimuth
		1163.30ft
		1163.30ft
		26.00ft
		N 0.00, E 0.00 ft
		332.19°

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SOUTHWESTERN ENERGY	Well	Barry Greathouse A BRK 3H
Area	Wellbore	Barry Greathouse A BRK 3H AWP
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Facility		

**WELLPATH DATA (229 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	324.750	0.00	0.00	0.00	0.00	1742177.35	14596714.95	40°11'29.782"N	80°38'08.214"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	324.750	26.00	0.00	0.00	0.00	1742177.35	14596714.95	40°11'29.782"N	80°38'08.214"W	0.00	0.000	0.00	0.00	0.00
100.00	0.580	324.750	100.00	0.37	0.31	-0.22	1742177.13	14596715.26	40°11'29.785"N	80°38'08.217"W	0.37	324.750	0.78	0.78	-47.64
200.00	0.660	295.600	199.99	1.34	0.97	-1.03	1742176.32	14596715.92	40°11'29.791"N	80°38'08.227"W	1.41	313.289	0.32	0.08	-29.15
300.00	1.090	287.960	299.98	2.48	1.51	-2.45	1742174.90	14596716.46	40°11'29.797"N	80°38'08.246"W	2.88	301.598	0.44	0.43	-7.74
337.00	1.230	290.700	336.97	3.03	1.76	-3.16	1742174.19	14596716.71	40°11'29.799"N	80°38'08.255"W	3.61	299.082	0.41	0.38	7.68
418.00	1.030	290.040	417.96	4.22	2.31	-4.66	1742172.70	14596717.26	40°11'29.805"N	80°38'08.274"W	5.20	296.424	0.25	-0.25	-0.81
507.00	1.210	281.680	506.94	5.41	2.78	-6.33	1742171.02	14596717.73	40°11'29.809"N	80°38'08.295"W	6.91	293.703	0.27	0.20	-9.39
597.00	1.360	279.710	596.92	6.66	3.15	-8.31	1742169.04	14596718.10	40°11'29.813"N	80°38'08.321"W	8.89	290.761	0.17	0.17	-2.19
690.00	1.930	274.340	689.88	8.17	3.46	-10.96	1742166.39	14596718.40	40°11'29.816"N	80°38'08.355"W	11.49	287.497	0.63	0.61	-5.77
783.00	2.510	273.270	782.81	10.05	3.69	-14.56	1742162.80	14596718.77	40°11'29.819"N	80°38'08.401"W	15.02	284.225	0.63	0.62	-1.15
879.00	3.270	270.240	878.69	12.43	3.82	-19.39	1742157.97	14596718.68	40°11'29.820"N	80°38'08.464"W	19.76	281.148	0.81	0.79	-3.16
971.00	3.960	268.160	970.50	15.05	3.73	-25.19	1742152.17	14596718.68	40°11'29.820"N	80°38'08.538"W	25.47	278.423	0.76	0.75	-2.26
1064.00	3.910	271.770	1063.28	18.02	3.73	-31.57	1742145.79	14596718.67	40°11'29.820"N	80°38'08.621"W	31.79	276.730	0.27	-0.05	3.88
1157.00	4.140	291.390	1156.06	22.13	5.05	-37.87	1742139.50	14596720.00	40°11'29.833"N	80°38'08.702"W	38.20	277.593	1.49	0.25	21.10
1249.00	4.250	292.970	1247.81	27.29	7.59	-44.10	1742133.27	14596722.54	40°11'29.858"N	80°38'08.782"W	44.74	279.765	0.17	0.12	1.72
1342.00	5.000	292.950	1340.51	33.09	10.51	-51.00	1742126.37	14596725.46	40°11'29.888"N	80°38'08.871"W	52.07	281.649	0.81	0.81	-0.02
1435.00	4.820	290.210	1433.17	39.14	13.44	-58.40	1742118.97	14596728.39	40°11'29.917"N	80°38'08.966"W	59.93	282.964	0.32	-0.19	-2.95
1527.00	4.730	288.650	1524.85	44.76	15.99	-65.62	1742111.75	14596730.94	40°11'29.942"N	80°38'09.059"W	67.54	283.697	0.17	-0.10	-1.70
1575.00	4.820	287.040	1572.68	47.62	17.22	-69.42	1742107.95	14596732.16	40°11'29.955"N	80°38'09.108"W	71.53	283.928	0.34	0.19	-3.35
1638.00	4.770	282.570	1635.46	51.18	18.56	-74.51	1742102.87	14596733.50	40°11'29.968"N	80°38'09.173"W	76.79	283.989	0.60	-0.08	-7.10
1730.00	5.590	261.130	1727.09	55.11	18.70	-82.67	1742094.71	14596733.65	40°11'29.970"N	80°38'09.278"W	84.76	282.748	2.27	0.89	-23.30
1823.00	6.390	235.230	1819.60	55.96	15.05	-91.40	1742085.98	14596730.60	40°11'29.934"N	80°38'09.391"W	92.63	279.352	3.00	0.86	-27.85
1913.00	7.880	216.650	1908.91	52.69	7.25	-99.20	1742078.19	14596722.19	40°11'29.857"N	80°38'09.492"W	99.46	274.178	3.03	1.66	-20.64
2006.00	7.980	199.500	2001.04	45.56	-3.96	-105.16	1742072.23	14596711.00	40°11'29.747"N	80°38'09.569"W	105.24	267.846	2.54	0.11	-18.44
2098.00	7.510	194.920	2092.20	36.82	-15.79	-108.84	1742068.55	14596699.17	40°11'29.630"N	80°38'09.617"W	109.98	261.748	0.84	-0.51	-4.98
2191.00	8.650	197.480	2184.27	27.43	-28.33	-112.51	1742064.89	14596686.63	40°11'29.506"N	80°38'09.665"W	116.02	255.867	1.29	1.23	2.75
2283.00	10.330	194.460	2275.01	16.46	-42.92	-116.64	1742060.75	14596672.05	40°11'29.362"N	80°38'09.719"W	124.29	249.800	1.90	1.83	-3.28
2376.00	11.720	195.240	2366.29	3.39	-60.10	-121.21	1742056.19	14596654.87	40°11'29.193"N	80°38'09.779"W	135.29	243.624	1.50	1.49	0.84
2469.00	13.070	194.330	2457.12	-11.31	-79.41	-126.30	1742051.10	14596635.57	40°11'29.002"N	80°38'09.846"W	149.18	237.841	1.47	1.45	-0.98

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# Actual Wellpath Report

Barry Greathouse A BRK 3H AWP Proj: 19967'

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SOUTHWESTERN ENERGY	Well	Barry Greathouse A BRK 3H
Area	Wellbore	Barry Greathouse A BRK 3H AWB
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Facility		

## WELLPATH DATA (229 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]
2561.00	12.240	191.850	2546.89	-26.54	-99.03	-130.87	1742046.53	14596615.96	40°11'28.808"N	80°38'09.906"W	164.12	232.885	1.08	-0.90	-2.70
2654.00	13.160	192.270	2637.61	-42.23	-119.02	-135.15	1742042.26	14596595.97	40°11'28.611"N	80°38'09.962"W	180.09	228.629	0.99	0.99	0.45
2747.00	12.050	189.370	2728.37	-58.06	-138.95	-138.98	1742038.43	14596576.06	40°11'28.414"N	80°38'10.012"W	196.52	225.006	1.37	-1.19	-3.12
2840.00	13.370	191.110	2819.09	-74.16	-159.08	-142.63	1742034.78	14596555.93	40°11'28.215"N	80°38'10.060"W	213.66	221.879	1.48	1.42	1.87
2932.00	12.730	190.190	2908.71	-90.43	-179.49	-146.47	1742030.93	14596535.53	40°11'28.014"N	80°38'10.111"W	231.67	219.216	0.73	-0.70	-1.00
3025.00	13.210	193.890	2999.34	-106.43	-199.89	-150.84	1742026.57	14596515.13	40°11'27.812"N	80°38'10.168"W	250.42	217.038	1.03	0.52	3.98
3118.00	13.530	196.720	3089.82	-122.12	-220.63	-156.52	1742020.89	14596494.41	40°11'27.608"N	80°38'10.243"W	270.51	215.353	0.78	0.34	3.04
3211.00	11.900	192.380	3180.54	-137.21	-240.41	-161.70	1742015.71	14596474.63	40°11'27.412"N	80°38'10.310"W	289.74	213.925	2.03	-1.75	-4.67
3303.00	12.370	196.050	3270.49	-151.56	-259.15	-166.46	1742010.95	14596455.90	40°11'27.227"N	80°38'10.373"W	308.01	212.714	0.98	0.51	3.99
3396.00	13.560	198.770	3361.12	-166.23	-279.05	-172.72	1742004.69	14596436.01	40°11'27.031"N	80°38'10.454"W	328.18	211.757	1.44	1.28	2.92
3489.00	11.790	196.080	3451.85	-180.58	-298.50	-178.86	1741998.56	14596416.57	40°11'26.839"N	80°38'10.535"W	347.99	210.930	2.01	-1.90	-2.89
3582.00	12.970	201.690	3542.69	-194.20	-317.33	-185.35	1741992.07	14596397.74	40°11'26.653"N	80°38'10.619"W	367.50	210.289	1.81	1.27	6.03
3674.00	15.320	198.930	3631.89	-209.24	-338.42	-193.11	1741984.31	14596376.66	40°11'26.445"N	80°38'10.720"W	389.64	209.710	2.66	2.55	-3.00
3767.00	14.710	193.360	3721.72	-226.55	-361.53	-199.83	1741977.60	14596353.56	40°11'26.217"N	80°38'10.808"W	413.08	208.930	1.68	-0.66	-5.99
3860.00	13.390	188.060	3811.94	-244.16	-383.68	-204.07	1741973.36	14596331.42	40°11'25.998"N	80°38'10.864"W	434.58	208.007	1.98	-1.42	-5.70
3949.00	12.640	191.060	3898.65	-260.10	-403.45	-207.38	1741970.05	14596311.66	40°11'25.803"N	80°38'10.908"W	453.62	207.204	1.13	-0.84	3.37
4042.00	13.740	194.540	3989.20	-276.18	-424.12	-212.10	1741965.33	14596290.99	40°11'25.599"N	80°38'10.970"W	474.20	206.570	1.46	1.18	3.74
4135.00	13.130	191.690	4079.66	-292.49	-445.16	-217.02	1741960.42	14596269.97	40°11'25.391"N	80°38'11.034"W	495.24	205.990	0.97	-0.66	-3.06
4228.00	14.370	194.010	4169.99	-309.25	-466.70	-221.95	1741955.48	14596248.43	40°11'25.179"N	80°38'11.099"W	516.79	205.435	1.46	1.33	2.49
4320.00	13.700	189.730	4259.25	-326.39	-488.52	-226.56	1741950.88	14596226.62	40°11'24.963"N	80°38'11.159"W	538.49	204.880	1.34	-0.73	-4.65
4413.00	13.370	193.550	4349.66	-343.20	-509.82	-230.94	1741946.50	14596205.32	40°11'24.753"N	80°38'11.217"W	559.69	204.369	1.02	-0.35	4.11
4506.00	13.690	195.630	4440.08	-359.26	-530.88	-236.42	1741941.02	14596184.28	40°11'24.545"N	80°38'11.288"W	581.14	204.005	0.63	0.34	2.24
4598.00	13.090	192.490	4529.58	-375.11	-551.53	-241.61	1741935.84	14596163.63	40°11'24.341"N	80°38'11.356"W	602.13	203.657	1.02	-0.65	-3.41
4691.00	13.540	199.240	4620.09	-390.56	-572.09	-247.47	1741929.97	14596143.08	40°11'24.138"N	80°38'11.433"W	623.33	203.392	1.74	0.48	7.26
4784.00	12.750	195.710	4710.65	-405.42	-592.25	-253.84	1741923.61	14596122.93	40°11'23.939"N	80°38'11.516"W	644.36	203.200	1.21	-0.85	-3.80
4877.00	13.920	199.570	4801.15	-420.44	-612.67	-260.37	1741917.09	14596102.52	40°11'23.738"N	80°38'11.601"W	665.70	203.024	1.58	1.26	4.15
4969.00	12.440	194.320	4890.72	-435.28	-632.70	-266.52	1741910.93	14596082.49	40°11'23.540"N	80°38'11.682"W	686.55	202.843	2.07	-1.61	-5.71
5062.00	13.160	191.850	4981.41	-450.86	-652.77	-271.18	1741906.28	14596062.43	40°11'23.342"N	80°38'11.743"W	706.86	202.559	0.97	0.77	-2.66
5155.00	13.440	191.250	5071.92	-467.40	-673.73	-275.46	1741902.00	14596041.48	40°11'23.135"N	80°38'11.799"W	727.87	202.237	0.34	0.30	-0.65
5248.00	10.940	195.090	5162.81	-482.26	-692.86	-279.87	1741897.59	14596022.36	40°11'22.946"N	80°38'11.857"W	747.24	201.995	2.82	-2.69	4.13

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5294.00	8.670	212.930	5208.15	-487.16	-699.98	-282.89	1741894.57	14596015.24	40°11'22.876"N	80°38'11.896"W	754.98	202.005	8.19	-4.93	38.78
5340.00	7.540	236.910	5253.70	-489.13	-704.54	-287.30	1741890.16	14596010.68	40°11'22.831"N	80°38'11.953"W	760.87	202.185	7.68	-2.46	52.13
5387.00	7.860	263.310	5300.29	-488.25	-706.60	-293.08	1741884.38	14596008.63	40°11'22.811"N	80°38'12.028"W	764.97	202.527	7.49	0.68	56.17
5433.00	9.250	285.700	5345.79	-484.57	-705.97	-299.76	1741877.70	14596009.26	40°11'22.817"N	80°38'12.114"W	766.97	203.007	7.78	3.02	48.67
5479.00	11.410	301.760	5391.05	-478.10	-702.57	-307.19	1741870.27	14596012.65	40°11'22.851"N	80°38'12.209"W	766.79	203.617	7.78	4.70	34.91
5526.00	13.620	313.620	5436.94	-468.85	-696.30	-315.16	1741862.32	14596018.92	40°11'22.914"N	80°38'12.312"W	764.30	204.352	7.19	4.70	25.23
5536.00	14.260	314.860	5446.65	-466.55	-694.62	-316.88	1741860.59	14596020.60	40°11'22.930"N	80°38'12.334"W	763.49	204.522	7.06	6.40	12.40
5604.00	19.340	319.720	5511.73	-447.55	-680.11	-330.11	1741847.37	14596035.10	40°11'23.074"N	80°38'12.504"W	755.99	205.891	7.74	7.47	7.15
5697.00	31.260	319.120	5595.66	-408.87	-650.01	-355.95	1741821.54	14596065.19	40°11'23.373"N	80°38'12.835"W	741.09	208.705	12.82	12.82	-0.65
5790.00	42.320	322.540	5670.03	-354.33	-606.78	-390.89	1741786.61	14596108.41	40°11'23.801"N	80°38'13.283"W	721.79	212.790	12.09	11.89	3.68
5836.00	47.110	327.750	5702.72	-322.23	-580.21	-409.32	1741768.19	14596134.96	40°11'24.065"N	80°38'13.519"W	710.06	215.202	13.11	10.41	11.33
5882.00	52.930	329.750	5732.26	-287.06	-550.08	-427.58	1741749.94	14596165.09	40°11'24.363"N	80°38'13.753"W	696.71	217.858	13.08	12.65	4.35
5929.00	60.090	330.000	5758.18	-247.92	-516.20	-447.23	1741730.29	14596198.95	40°11'24.699"N	80°38'14.004"W	682.99	220.906	15.24	15.23	0.53
5975.00	66.940	330.430	5778.68	-206.80	-480.48	-467.67	1741709.86	14596234.65	40°11'25.052"N	80°38'14.266"W	670.51	224.226	14.91	14.89	0.93
6021.00	72.660	331.890	5794.56	-163.66	-442.68	-488.47	1741689.07	14596272.44	40°11'25.427"N	80°38'14.532"W	659.22	227.816	12.79	12.43	3.17
6068.00	78.950	333.030	5806.08	-118.11	-402.29	-509.53	1741668.02	14596312.81	40°11'25.827"N	80°38'14.801"W	649.20	231.707	13.59	13.38	2.43
6111.00	84.110	335.160	5812.41	-75.62	-364.05	-528.09	1741649.46	14596351.04	40°11'26.205"N	80°38'15.038"W	641.42	235.419	12.96	12.00	4.95
6157.00	88.580	335.280	5815.34	-29.79	-322.38	-547.33	1741630.23	14596392.69	40°11'26.618"N	80°38'15.284"W	635.22	239.502	9.72	9.72	0.26
6250.00	90.740	333.060	5815.89	63.14	-238.68	-587.85	1741589.73	14596476.36	40°11'27.447"N	80°38'15.801"W	634.45	247.901	3.33	2.32	-2.39
6343.00	90.370	331.630	5814.99	156.13	-156.32	-631.01	1741546.59	14596558.70	40°11'28.262"N	80°38'16.353"W	650.08	256.007	1.59	-0.40	-1.54
6437.00	90.370	332.930	5814.39	250.13	-73.11	-674.73	1741502.88	14596641.87	40°11'29.086"N	80°38'16.912"W	678.68	263.816	1.38	0.00	1.38
6529.00	90.340	332.980	5813.82	342.12	8.83	-716.56	1741461.07	14596723.78	40°11'29.898"N	80°38'17.447"W	716.62	270.706	0.06	-0.03	0.05
6619.00	90.340	333.170	5813.28	432.10	89.07	-757.31	1741420.33	14596803.99	40°11'30.692"N	80°38'17.968"W	762.53	276.708	0.21	0.00	0.21
6709.00	90.920	333.620	5812.29	522.08	169.54	-797.62	1741380.04	14596884.42	40°11'31.489"N	80°38'18.483"W	815.44	282.000	0.82	0.64	0.50
6802.00	90.860	333.620	5810.85	615.04	252.84	-838.93	1741338.74	14596967.70	40°11'32.314"N	80°38'19.011"W	876.21	286.772	0.06	-0.06	0.00
6891.00	90.890	334.030	5809.49	703.99	332.71	-878.19	1741299.50	14597047.53	40°11'33.105"N	80°38'19.513"W	939.10	290.750	0.46	0.03	0.46
6984.00	90.830	333.860	5808.09	796.94	416.25	-919.03	1741258.68	14597131.03	40°11'33.932"N	80°38'20.035"W	1008.90	294.367	0.19	-0.06	-0.18
7077.00	90.860	333.470	5806.72	889.90	499.59	-960.28	1741217.44	14597214.34	40°11'34.757"N	80°38'20.562"W	1082.47	297.486	0.42	0.03	-0.42
7169.00	90.860	333.900	5805.34	981.85	582.04	-1001.06	1741176.68	14597296.77	40°11'35.574"N	80°38'21.083"W	1157.97	300.175	0.47	0.00	0.47
7262.00	90.740	333.890	5804.04	1074.80	665.55	-1041.98	1741135.77	14597380.24	40°11'36.401"N	80°38'21.606"W	1236.40	302.568	0.13	-0.13	-0.01

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**Actual Wellpath Report**  
Barry Greathouse A BRK 3H AWP Proj: 19967  
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #3H
Operator	SOUTHWESTERN ENERGY	Well	Barry Greathouse A BRK 3H
Area	Brooke County, WV	Wellbore	Barry Greathouse A BRK 3H AWB
Field	Brooke		
Facility	Barry Greathouse A BRK Pad		

WELLPATH DATA (229 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]
7355.00	90.650	334.590	5802.91	1167.74	749.30	-1082.40	1741095.38	14597463.96	40°11'37.230"N	80°38'22.122"W	1316.45	304.693	0.76	-0.10	0.75
7448.00	90.620	335.850	5801.88	1260.60	833.73	-1121.37	1741056.41	14597548.35	40°11'38.066"N	80°38'22.620"W	1397.35	306.630	1.36	-0.03	1.35
7541.00	90.620	337.230	5800.88	1353.32	919.03	-1158.39	1741019.41	14597633.63	40°11'38.910"N	80°38'23.093"W	1478.68	308.427	1.48	0.00	1.48
7633.00	90.580	337.720	5799.91	1444.93	1004.01	-1193.64	1740984.18	14597718.57	40°11'39.751"N	80°38'23.542"W	1559.74	310.068	0.53	-0.04	0.53
7726.00	90.580	337.880	5798.97	1537.48	1090.11	-1228.77	1740949.06	14597804.64	40°11'40.604"N	80°38'23.991"W	1642.63	311.578	0.17	0.00	0.17
7818.00	90.550	337.010	5798.06	1629.08	1175.07	-1264.06	1740913.78	14597889.56	40°11'41.445"N	80°38'24.441"W	1725.87	312.911	0.95	-0.03	-0.95
7911.00	90.580	336.830	5797.15	1721.76	1260.62	-1300.52	1740877.34	14597975.08	40°11'42.291"N	80°38'24.906"W	1811.22	314.108	0.20	0.03	-0.19
8004.00	90.800	337.180	5796.03	1814.43	1346.23	-1336.84	1740841.03	14598060.65	40°11'43.139"N	80°38'25.370"W	1897.23	315.200	0.44	0.24	0.38
8097.00	90.650	336.660	5794.85	1907.10	1431.77	-1373.30	1740804.59	14598146.17	40°11'43.986"N	80°38'25.835"W	1983.92	316.194	0.58	-0.16	-0.56
8189.00	90.740	337.170	5793.73	1998.78	1516.40	-1409.37	1740768.53	14598230.76	40°11'44.823"N	80°38'26.296"W	2070.22	317.095	0.56	0.10	0.55
8282.00	90.770	336.100	5792.51	2091.50	1601.77	-1446.25	1740731.67	14598316.09	40°11'45.668"N	80°38'26.766"W	2158.07	317.921	1.15	0.03	-1.15
8375.00	90.680	334.170	5791.33	2184.36	1686.13	-1485.35	1740692.58	14598400.43	40°11'46.504"N	80°38'27.266"W	2247.07	318.623	2.08	-0.10	-2.08
8468.00	90.890	333.470	5790.06	2277.31	1769.59	-1526.37	1740651.57	14598483.85	40°11'47.330"N	80°38'27.790"W	2336.93	319.220	0.79	0.23	-0.75
8560.00	90.740	332.990	5788.75	2369.29	1851.72	-1567.81	1740610.15	14598565.94	40°11'48.143"N	80°38'28.320"W	2426.29	319.746	0.55	-0.16	-0.52
8653.00	90.680	333.390	5787.60	2462.27	1934.71	-1609.75	1740568.23	14598648.91	40°11'48.965"N	80°38'28.856"W	2516.83	320.238	0.43	-0.06	0.43
8746.00	90.740	333.870	5786.45	2555.23	2018.03	-1651.05	1740526.94	14598732.19	40°11'49.790"N	80°38'29.384"W	2607.38	320.712	0.52	0.06	0.52
8838.00	90.770	334.150	5785.23	2647.18	2100.72	-1691.37	1740486.64	14598814.85	40°11'50.609"N	80°38'29.899"W	2696.99	321.161	0.31	0.03	0.30
8931.00	90.830	334.330	5783.93	2740.11	2184.47	-1731.78	1740446.25	14598898.57	40°11'51.438"N	80°38'30.416"W	2787.64	321.594	0.20	0.06	0.19
9024.00	90.860	336.980	5782.56	2832.92	2269.18	-1770.11	1740407.93	14598983.25	40°11'52.277"N	80°38'30.905"W	2877.93	322.043	2.85	0.03	2.85
9117.00	91.570	339.560	5780.59	2925.37	2355.55	-1804.53	1740373.52	14599069.58	40°11'53.131"N	80°38'31.344"W	2967.31	322.545	2.88	0.76	2.77
9209.00	90.990	337.150	5778.53	3016.80	2441.03	-1838.45	1740339.61	14599155.03	40°11'53.978"N	80°38'31.777"W	3055.90	323.015	2.69	-0.63	-2.62
9302.00	90.950	333.180	5776.96	3109.65	2525.40	-1877.50	1740300.58	14599239.37	40°11'54.813"N	80°38'32.276"W	3146.85	323.371	4.27	-0.04	-4.27
9395.00	90.860	331.970	5775.49	3202.63	2607.94	-1920.33	1740257.77	14599321.87	40°11'55.630"N	80°38'32.823"W	3238.67	323.634	1.30	-0.10	-1.30
9488.00	90.830	330.660	5774.12	3295.61	2689.51	-1964.96	1740213.15	14599403.41	40°11'56.438"N	80°38'33.394"W	3330.85	323.848	1.41	-0.03	-1.41
9580.00	90.950	332.240	5772.69	3387.59	2770.31	-2008.93	1740169.21	14599484.18	40°11'57.238"N	80°38'33.957"W	3422.05	324.052	1.72	0.13	1.72
9670.00	90.860	334.320	5771.27	3477.55	2850.69	-2049.39	1740128.76	14599564.53	40°11'58.034"N	80°38'34.474"W	3510.90	324.287	2.31	-0.10	2.31
9763.00	90.740	335.220	5769.97	3570.45	2934.81	-2089.02	1740089.14	14599648.61	40°11'58.867"N	80°38'34.980"W	3602.38	324.556	0.98	-0.13	0.97
9852.00	90.950	338.280	5768.66	3659.15	3016.56	-2124.15	1740054.03	14599730.33	40°11'59.676"N	80°38'35.429"W	3689.40	324.848	3.45	0.24	3.44
9945.00	90.800	339.490	5767.24	3751.50	3103.31	-2157.65	1740020.55	14599817.04	40°12'00.535"N	80°38'35.856"W	3779.67	325.190	1.31	-0.16	-1.30
10038.00	90.740	338.470	5765.99	3843.84	3190.11	-2191.00	1739987.20	14599903.81	40°12'01.394"N	80°38'36.281"W	3870.05	325.518	1.10	-0.06	-1.10

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**Actual Wellpath Report**  
Barry Greathouse A BRK 3H AWP Proj: 19967

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**REFERENCE WELLPATH IDENTIFICATION**

Operator	SOUTHWESTERN ENERGY	Slot	Slot #3H
Area	Brooke County, WV	Well	Barry Greathouse A BRK 3H
Field	Brooke	Wellbore	Barry Greathouse A BRK 3H AWB
Facility	Barry Greathouse A BRK Pad		

**WELLPATH DATA (229 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]
10130.00	90.920	337.070	5764.65	3935.39	3275.26	-2225.80	1739952.42	14599988.93	40°12'02.237"N	80°38'36.725"W	3959.99	325.801	1.53	0.20	-1.52
10223.00	90.860	334.240	5763.21	4028.20	3359.97	-2264.13	1739914.10	14600073.61	40°12'03.075"N	80°38'37.215"W	4051.63	326.026	3.04	-0.06	-3.04
10316.00	90.740	331.390	5761.91	4121.18	3442.68	-2306.61	1739871.64	14600156.29	40°12'03.894"N	80°38'37.758"W	4143.97	326.178	3.07	-0.13	-3.06
10408.00	90.770	328.900	5760.70	4213.10	3522.46	-2352.40	1739825.87	14600236.03	40°12'04.685"N	80°38'38.344"W	4235.74	326.264	2.71	0.03	-2.71
10498.00	90.740	328.850	5759.51	4302.95	3599.49	-2398.92	1739779.37	14600313.04	40°12'05.448"N	80°38'38.940"W	4325.64	326.318	0.06	-0.03	-0.06
10591.00	90.680	330.890	5758.36	4395.86	3679.92	-2445.60	1739732.71	14600393.43	40°12'06.244"N	80°38'39.537"W	4418.45	326.393	2.19	-0.06	2.19
10684.00	90.800	334.930	5757.16	4488.82	3762.69	-2487.93	1739690.39	14600476.17	40°12'07.064"N	80°38'40.078"W	4510.84	326.527	4.35	0.13	4.34
10777.00	90.830	338.700	5755.83	4581.49	3848.16	-2524.54	1739653.80	14600561.61	40°12'07.910"N	80°38'40.546"W	4602.35	326.734	4.05	0.03	4.05
10869.00	91.050	338.060	5754.33	4672.94	3933.67	-2558.43	1739619.92	14600647.09	40°12'08.756"N	80°38'40.978"W	4692.48	326.960	0.74	0.24	0.70
10962.00	91.020	335.060	5752.65	4765.65	4018.97	-2595.41	1739582.95	14600732.36	40°12'09.601"N	80°38'41.450"W	4784.17	327.146	3.23	-0.03	-3.23
11055.00	90.830	332.860	5751.14	4858.59	4102.52	-2636.23	1739542.14	14600815.87	40°12'10.428"N	80°38'41.972"W	4876.51	327.276	2.37	-0.20	-2.37
11145.00	90.650	331.880	5749.98	4948.58	4182.25	-2677.97	1739500.43	14600895.56	40°12'11.217"N	80°38'42.506"W	4966.16	327.368	1.11	-0.20	-1.09
11237.00	90.550	331.200	5749.02	5040.57	4263.12	-2721.81	1739456.60	14600976.41	40°12'12.018"N	80°38'43.067"W	5057.91	327.444	0.75	-0.11	-0.74
11327.00	90.650	332.150	5748.08	5130.56	4342.34	-2764.51	1739413.92	14601055.60	40°12'12.803"N	80°38'43.613"W	5147.66	327.518	1.06	0.11	1.06
11420.00	90.680	333.020	5747.00	5223.55	4424.89	-2807.32	1739371.12	14601138.12	40°12'13.620"N	80°38'44.161"W	5240.30	327.607	0.94	0.03	0.94
11513.00	90.650	334.570	5745.92	5316.50	4508.32	-2848.39	1739330.07	14601221.52	40°12'14.446"N	80°38'44.685"W	5332.76	327.715	1.67	-0.03	1.67
11605.00	90.770	335.440	5744.78	5408.38	4591.70	-2887.26	1739291.22	14601304.86	40°12'15.272"N	80°38'45.182"W	5424.02	327.838	0.95	0.13	0.95
11698.00	90.740	334.560	5743.55	5501.26	4675.98	-2926.56	1739251.93	14601389.11	40°12'16.106"N	80°38'45.684"W	5516.30	327.959	0.95	-0.03	-0.95
11790.00	91.050	336.590	5742.11	5593.08	4759.73	-2964.59	1739213.91	14601472.82	40°12'16.935"N	80°38'46.170"W	5607.48	328.083	2.23	0.34	2.21
11883.00	91.660	337.790	5739.91	5685.70	4845.43	-3000.64	1739177.88	14601558.49	40°12'17.784"N	80°38'46.630"W	5699.30	328.231	1.45	0.66	1.29
11976.00	91.480	335.060	5737.37	5778.40	4930.63	-3037.81	1739140.72	14601643.66	40°12'18.627"N	80°38'47.105"W	5791.32	328.362	2.94	-0.19	-2.94
12069.00	90.860	334.400	5735.47	5871.29	5014.71	-3075.11	1739101.05	14601727.71	40°12'19.460"N	80°38'47.612"W	5883.74	328.463	0.97	-0.67	-0.71
12161.00	90.860	333.970	5734.09	5963.23	5097.52	-3117.56	1739061.00	14601810.48	40°12'20.279"N	80°38'48.124"W	5975.28	328.551	0.47	0.00	-0.47
12254.00	90.830	332.980	5732.71	6056.19	5180.72	-3159.09	1739019.49	14601893.65	40°12'21.103"N	80°38'48.655"W	6067.93	328.626	1.06	-0.03	-1.06
12347.00	90.860	332.140	5731.34	6149.18	5263.25	-3201.94	1738976.66	14601976.15	40°12'21.920"N	80°38'49.203"W	6160.70	328.685	0.90	0.03	-0.90
12440.00	90.830	333.100	5729.97	6242.17	5345.82	-3244.71	1738933.91	14602058.69	40°12'22.738"N	80°38'49.750"W	6253.47	328.744	1.03	-0.03	1.03
12532.00	90.830	333.320	5728.64	6334.14	5427.94	-3286.17	1738892.46	14602140.77	40°12'23.551"N	80°38'50.280"W	6345.19	328.809	0.24	0.00	0.24
12625.00	90.740	334.200	5727.36	6427.10	5511.35	-3327.28	1738851.36	14602224.15	40°12'24.377"N	80°38'50.806"W	6437.84	328.880	0.95	-0.10	0.95
12718.00	90.220	335.960	5726.59	6519.97	5595.68	-3366.47	1738812.20	14602308.45	40°12'25.212"N	80°38'51.307"W	6530.29	328.968	1.97	-0.56	1.89
12811.00	90.680	337.480	5725.86	6612.67	5681.10	-3403.22	1738775.46	14602393.84	40°12'26.058"N	80°38'51.776"W	6622.45	329.077	1.71	0.49	1.63

# Actual Wellpath Report

Barry Greathouse A BRK 3H AWP Proj: 19967  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #3H
Area	Brooke County, WV	Well	Barry Greathouse A BRK 3H
Field	Brooke	Wellbore	Barry Greathouse A BRK 3H AWB
Facility	Barry Greathouse A BRK Pad		

## WELLPATH DATA (229 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]
12903.00	90.620	338.370	5724.81	6704.21	5766.35	-3437.79	1738740.90	14602479.05	40°12'26.901"N	80°38'52.217"W	6713.36	329.197	0.97	-0.07	0.97
12996.00	90.620	337.480	5723.81	6796.74	5852.53	-3472.74	1738705.96	14602565.20	40°12'27.754"N	80°38'52.663"W	6805.29	329.316	0.96	0.00	-0.96
13089.00	90.620	336.430	5722.80	6889.41	5938.10	-3509.14	1738669.58	14602650.73	40°12'28.601"N	80°38'53.128"W	6897.47	329.419	1.13	0.00	-1.13
13182.00	90.620	336.370	5721.79	6982.15	6023.32	-3546.37	1738632.36	14602735.92	40°12'29.445"N	80°38'53.604"W	6989.79	329.512	0.06	0.00	-0.06
13271.00	90.620	336.300	5720.83	7070.91	6104.83	-3582.10	1738596.65	14602817.40	40°12'30.252"N	80°38'54.060"W	7078.16	329.597	0.08	0.00	-0.08
13364.00	90.460	337.150	5719.95	7163.62	6190.26	-3618.84	1738559.92	14602902.79	40°12'31.097"N	80°38'54.529"W	7170.45	329.689	0.93	-0.17	0.91
13457.00	90.370	337.690	5719.28	7256.23	6276.12	-3654.55	1738524.23	14602988.63	40°12'31.947"N	80°38'54.985"W	7262.61	329.788	0.59	-0.10	0.58
13549.00	90.310	338.620	5718.73	7347.73	6361.52	-3688.78	1738490.01	14603073.98	40°12'32.792"N	80°38'55.422"W	7353.64	329.892	1.01	-0.07	1.01
13642.00	90.490	338.900	5718.08	7440.11	6448.20	-3722.47	1738456.33	14603160.63	40°12'33.650"N	80°38'55.852"W	7445.54	330.003	0.36	0.19	0.30
13734.00	90.550	337.180	5717.25	7531.63	6533.51	-3756.87	1738421.94	14603245.92	40°12'34.495"N	80°38'56.291"W	7536.64	330.100	1.87	0.07	-1.87
13824.00	90.800	334.830	5716.19	7621.41	6615.73	-3793.47	1738385.36	14603328.09	40°12'35.309"N	80°38'56.788"W	7626.15	330.170	2.63	0.28	-2.61
13917.00	90.710	332.920	5714.96	7714.36	6699.21	-3834.41	1738344.43	14603411.55	40°12'36.135"N	80°38'57.282"W	7718.95	330.215	2.06	-0.10	-2.05
14007.00	90.770	331.630	5713.80	7804.35	6778.87	-3876.28	1738302.58	14603491.18	40°12'36.924"N	80°38'57.817"W	7808.88	330.238	1.43	0.07	-1.43
14100.00	90.770	331.980	5712.55	7897.34	6860.83	-3920.22	1738258.66	14603573.10	40°12'37.736"N	80°38'58.379"W	7901.84	330.257	0.38	0.00	0.38
14193.00	90.740	331.050	5711.33	7990.33	6942.56	-3964.57	1738214.33	14603654.80	40°12'38.545"N	80°38'58.947"W	7994.81	330.271	1.00	-0.03	-1.00
14285.00	90.680	330.690	5710.19	8082.29	7022.92	-4009.35	1738169.57	14603735.13	40°12'39.341"N	80°38'59.520"W	8086.80	330.278	0.40	-0.07	-0.39
14378.00	90.680	331.330	5709.08	8175.27	7104.26	-4054.42	1738124.51	14603816.44	40°12'40.146"N	80°39'00.097"W	8179.78	330.287	0.69	0.00	0.69
14471.00	90.430	332.070	5708.18	8268.26	7186.14	-4098.51	1738080.44	14603898.29	40°12'40.957"N	80°39'00.661"W	8272.75	330.302	0.84	-0.27	0.80
14564.00	90.620	332.730	5707.33	8361.25	7268.55	-4141.59	1738037.38	14603980.67	40°12'41.773"N	80°39'01.212"W	8365.68	330.326	0.74	0.20	0.71
14653.00	90.550	333.160	5706.42	8450.24	7347.81	-4182.07	1737996.91	14604059.89	40°12'42.558"N	80°39'01.730"W	8454.59	330.353	0.49	-0.08	0.48
14742.00	90.370	333.480	5705.71	8539.22	7427.33	-4222.03	1737956.97	14604139.38	40°12'43.346"N	80°39'02.241"W	8543.46	330.384	0.41	-0.20	0.36
14832.00	90.460	335.240	5705.05	8629.15	7508.46	-4260.92	1737918.04	14604220.48	40°12'44.149"N	80°39'02.739"W	8633.24	330.426	1.96	0.10	1.96
14921.00	90.680	337.250	5704.17	8717.92	7589.92	-4296.82	1737882.21	14604301.90	40°12'44.955"N	80°39'03.197"W	8721.78	330.485	2.27	0.25	2.26
15009.00	90.490	336.490	5703.27	8805.62	7670.84	-4331.38	1737847.66	14604382.79	40°12'45.756"N	80°39'03.638"W	8809.24	330.548	0.89	-0.22	-0.86
15098.00	90.740	337.230	5702.31	8894.32	7752.67	-4366.36	1737812.70	14604464.60	40°12'46.566"N	80°39'04.085"W	8897.70	330.611	0.88	0.28	0.83
15188.00	90.650	337.610	5701.22	8983.94	7835.77	-4400.91	1737778.15	14604547.66	40°12'47.389"N	80°39'04.526"W	8987.06	330.680	0.43	-0.10	0.42
15276.00	90.370	339.020	5700.44	9071.43	7917.53	-4433.43	1737745.65	14604629.39	40°12'48.198"N	80°39'04.941"W	9074.28	330.753	1.63	-0.32	1.60
15366.00	90.490	339.580	5699.76	9160.73	8001.72	-4465.24	1737713.85	14604713.55	40°12'49.031"N	80°39'05.347"W	9163.29	330.837	0.64	0.13	0.62
15455.00	90.580	339.560	5698.93	9248.99	8085.12	-4496.30	1737682.80	14604796.91	40°12'49.856"N	80°39'05.743"W	9251.26	330.921	0.10	0.10	-0.02
15543.00	90.520	338.670	5698.09	9336.35	8167.33	-4527.67	1737651.44	14604879.10	40°12'50.670"N	80°39'06.143"W	9338.37	330.998	1.01	-0.07	-1.01

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# Actual Wellpath Report

Barry Greathouse A BRK 3H AWP Proj: 19967

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## REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #3H
Area	Brooke County, WV	Well	Barry Greathouse A BRK 3H
Field	Brooke	Wellbore	Barry Greathouse A BRK 3H AWB
Facility	Barry Greathouse A BRK Pad		

## WELLPATH DATA (229 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]
15632.00	90.400	337.230	5697.37	9424.89	8249.82	-4561.08	1737618.05	14604961.55	40°12'51.486"N	80°39'06.569"W	9426.72	331.063	1.62	-0.13	-1.62
15721.00	90.400	336.520	5696.75	9513.59	8331.66	-4596.04	1737583.11	14605043.36	40°12'52.297"N	80°39'07.016"W	9515.26	331.117	0.80	0.00	-0.80
15810.00	90.460	334.680	5696.08	9602.43	8412.71	-4632.80	1737546.36	14605124.38	40°12'53.099"N	80°39'07.486"W	9603.98	331.159	2.07	0.07	-2.07
15900.00	90.620	332.780	5695.24	9692.39	8493.41	-4672.63	1737506.54	14605205.04	40°12'53.898"N	80°39'07.995"W	9693.89	331.183	2.12	0.18	-2.11
15989.00	90.920	333.410	5694.04	9781.37	8572.76	-4712.90	1737466.29	14605284.37	40°12'54.684"N	80°39'08.510"W	9782.83	331.200	0.78	0.34	0.71
16077.00	91.350	334.270	5692.30	9869.31	8651.73	-4751.69	1737427.51	14605363.31	40°12'55.466"N	80°39'09.006"W	9870.72	331.224	1.09	0.49	0.98
16166.00	90.770	330.920	5690.65	9958.28	8730.72	-4792.64	1737386.58	14605442.26	40°12'56.248"N	80°39'09.530"W	9959.66	331.236	3.82	-0.65	-3.76
16256.00	90.520	331.630	5689.64	10048.26	8809.64	-4835.89	1737343.34	14605521.15	40°12'57.029"N	80°39'10.084"W	10049.66	331.236	0.84	-0.28	0.79
16345.00	90.740	330.860	5688.66	10137.25	8887.66	-4878.70	1737300.55	14605599.14	40°12'57.802"N	80°39'10.631"W	10138.65	331.236	0.90	0.25	-0.87
16434.00	90.770	330.930	5687.49	10226.22	8965.41	-4921.99	1737257.28	14605676.87	40°12'58.572"N	80°39'11.186"W	10227.64	331.233	0.09	0.03	0.08
16527.00	90.710	332.690	5686.28	10319.20	9047.67	-4965.36	1737213.93	14605759.09	40°12'59.386"N	80°39'11.740"W	10320.61	331.242	2.73	-0.06	2.73
16620.00	90.890	336.580	5684.99	10412.07	9131.95	-5004.62	1737174.69	14605843.34	40°13'00.221"N	80°39'12.242"W	10413.39	331.276	3.35	0.19	3.34
16713.00	90.800	336.610	5683.61	10504.78	9217.29	-5041.55	1737137.76	14605928.64	40°13'01.065"N	80°39'12.714"W	10505.99	331.323	0.10	-0.10	0.03
16805.00	91.420	335.200	5681.83	10596.57	9301.26	-5079.11	1737100.23	14606012.58	40°13'01.897"N	80°39'13.194"W	10597.67	331.363	1.67	0.67	-1.53
16898.00	90.680	332.720	5680.13	10689.50	9384.79	-5119.92	1737059.43	14606096.08	40°13'02.724"N	80°39'13.716"W	10690.56	331.385	2.78	-0.80	-2.67
16990.00	90.680	332.690	5679.03	10781.49	9466.55	-5162.11	1737017.26	14606177.80	40°13'03.533"N	80°39'14.255"W	10782.52	331.396	0.03	0.00	-0.03
17083.00	90.580	332.930	5678.01	10874.48	9549.26	-5204.60	1736974.78	14606260.49	40°13'04.352"N	80°39'14.799"W	10875.49	331.408	0.28	-0.11	0.26
17176.00	90.740	336.850	5676.94	10967.35	9633.45	-5244.06	1736935.34	14606344.64	40°13'05.186"N	80°39'15.303"W	10968.30	331.438	4.22	0.17	4.22
17269.00	91.020	337.780	5675.51	11059.97	9719.25	-5279.92	1736899.49	14606430.40	40°13'06.035"N	80°39'15.761"W	11060.80	331.487	1.04	0.30	1.00
17361.00	90.710	334.960	5674.12	11151.70	9803.51	-5316.79	1736862.64	14606514.64	40°13'06.869"N	80°39'16.232"W	11152.45	331.527	3.08	-0.34	-3.07
17454.00	90.710	335.180	5672.97	11244.58	9887.84	-5355.98	1736823.46	14606598.93	40°13'07.704"N	80°39'16.734"W	11245.27	331.557	0.24	0.00	0.24
17547.00	90.830	334.190	5671.72	11337.48	9971.90	-5395.75	1736783.71	14606682.96	40°13'08.536"N	80°39'17.242"W	11338.12	331.582	1.07	0.13	-1.06
17639.00	90.800	333.840	5670.41	11429.42	10054.59	-5436.05	1736743.42	14606765.62	40°13'09.355"N	80°39'17.757"W	11430.03	331.602	0.38	-0.03	-0.38
17732.00	90.800	334.100	5669.11	11522.37	10138.15	-5476.86	1736702.63	14606849.15	40°13'10.182"N	80°39'18.279"W	11522.94	331.621	0.28	0.00	0.28
17825.00	90.680	334.200	5667.91	11615.31	10221.84	-5517.40	1736662.10	14606932.80	40°13'11.011"N	80°39'18.798"W	11615.84	331.641	0.17	-0.13	0.11
17918.00	90.580	335.710	5666.89	11708.19	10306.09	-5556.77	1736622.75	14607017.02	40°13'11.845"N	80°39'19.301"W	11708.68	331.668	1.63	-0.11	1.62
18010.00	90.860	335.950	5665.73	11800.00	10390.02	-5594.44	1736585.10	14607100.91	40°13'12.675"N	80°39'19.782"W	11800.43	331.700	0.40	0.30	0.26
18103.00	90.680	334.900	5664.48	11892.84	10474.58	-5633.11	1736546.44	14607185.45	40°13'13.513"N	80°39'20.277"W	11893.23	331.729	1.15	-0.19	-1.13
18193.00	90.740	334.520	5663.37	11982.75	10555.95	-5671.55	1736508.01	14607266.78	40°13'14.318"N	80°39'20.768"W	11983.10	331.752	0.43	0.07	-0.42
18282.00	90.650	333.430	5662.29	12071.70	10635.92	-5710.60	1736468.98	14607346.72	40°13'15.110"N	80°39'21.267"W	12072.02	331.768	1.23	-0.10	-1.22



**Actual Wellpath Report**  
Barry Greathouse A BRK 3H AWP Proj: 19967



**REFERENCE WELLPATH IDENTIFICATION**

Operator	SOUTHWESTERN ENERGY	Slot	Slot #3H
Area	Brooke County, WV	Well	Barry Greathouse A BRK 3H
Field	Brooke	Wellbore	Barry Greathouse A BRK 3H AWB
Facility	Barry Greathouse A BRK Pad		

**WELLPATH DATA (229 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]
18375.00	90.620	332.870	5661.26	12164.68	10718.89	-5752.60	1736426.99	14607429.66	40°13'15.931"N	80°39'21.805"W	12164.99	331.778	0.60	-0.03	-0.60
18468.00	90.580	332.750	5660.28	12257.67	10801.61	-5795.10	1736384.51	14607512.34	40°13'16.750"N	80°39'22.348"W	12257.97	331.786	0.14	-0.04	-0.13
18560.00	90.620	333.380	5659.32	12349.65	10883.62	-5836.77	1736342.86	14607594.33	40°13'17.563"N	80°39'22.882"W	12349.94	331.796	0.69	0.04	0.68
18653.00	90.620	333.530	5658.32	12442.62	10966.81	-5878.33	1736301.32	14607677.48	40°13'18.386"N	80°39'23.413"W	12442.90	331.808	0.16	0.00	0.16
18746.00	90.490	333.930	5657.41	12535.58	11050.20	-5919.49	1736260.17	14607760.84	40°13'19.212"N	80°39'23.940"W	12535.84	331.822	0.45	-0.14	0.43
18839.00	90.620	334.280	5656.51	12628.53	11133.86	-5960.10	1736219.58	14607844.47	40°13'20.040"N	80°39'24.459"W	12628.76	331.839	0.40	0.14	0.38
18932.00	90.620	333.940	5655.51	12721.47	11217.52	-6000.71	1736178.99	14607928.10	40°13'20.868"N	80°39'24.978"W	12721.69	331.856	0.37	0.00	-0.37
19021.00	90.490	333.710	5654.64	12810.43	11297.39	-6039.96	1736139.74	14608007.93	40°13'21.659"N	80°39'25.480"W	12810.63	331.870	0.30	-0.15	-0.26
19114.00	90.650	333.880	5653.72	12903.39	11380.83	-6081.03	1736098.69	14608091.34	40°13'22.485"N	80°39'26.006"W	12903.57	331.883	0.25	0.17	0.18
19207.00	90.650	335.940	5652.66	12996.27	11465.04	-6120.46	1736059.28	14608175.52	40°13'23.319"N	80°39'26.510"W	12996.43	331.905	2.21	0.00	2.22
19299.00	90.860	338.980	5651.45	13087.86	11550.00	-6155.72	1736024.03	14608260.44	40°13'24.160"N	80°39'26.960"W	13087.98	331.944	3.31	0.23	3.30
19392.00	90.710	340.800	5650.18	13180.01	11637.32	-6187.69	1735992.07	14608347.73	40°13'25.024"N	80°39'27.368"W	13180.09	332.000	1.96	-0.16	1.96
19484.00	91.020	340.780	5648.79	13270.97	11724.18	-6217.96	1735961.82	14608434.56	40°13'25.883"N	80°39'27.754"W	13271.00	332.061	0.34	0.34	-0.02
19577.00	90.860	339.570	5647.26	13363.05	11811.66	-6249.49	1735930.30	14608522.00	40°13'26.749"N	80°39'28.156"W	13363.06	332.117	1.31	-0.17	-1.30
19670.00	92.160	336.610	5644.81	13455.52	11897.90	-6284.18	1735895.62	14608608.21	40°13'27.603"N	80°39'28.599"W	13455.52	332.158	3.48	1.40	-3.18
19763.00	91.020	334.440	5642.23	13548.32	11982.50	-6322.69	1735867.13	14608692.78	40°13'28.440"N	80°39'29.091"W	13548.32	332.181	2.63	-1.23	-2.33
19855.00	90.680	332.420	5640.87	13640.28	12064.78	-6363.83	1735836.00	14608775.02	40°13'29.255"N	80°39'29.617"W	13640.28	332.190	2.23	-0.37	-2.20
19942.00	90.740	331.140	5639.79	13727.27	12141.43	-6404.97	1735774.88	14608851.64	40°13'30.014"N	80°39'30.144"W	13727.27	332.187	1.47	0.07	-1.47
19967.00	90.740	331.140	5639.47	13752.26	12163.32	-6417.04	1735762.82	14608873.52	40°13'30.231"N	80°39'30.298"W	13752.26	332.185	0.00	0.00	0.00

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# Actual Wellpath Report

Barry Greathouse A BRK 3H AWP Proj: 19967

WV Department of Environmental Protection

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## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #3H
SOUTHWESTERN ENERGY	Well	Barry Greathouse A BRK 3H
Brooke County, WV	Wellbore	Barry Greathouse A BRK 3H AWB
Brooke		
Barry Greathouse A BRK Pad		

## HOLE & CASING SECTIONS - Ref Wellbore: Barry Greathouse A BRK 3H AWB Ref Wellpath: Barry Greathouse A BRK 3H AWP Proj: 19967

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	26.00	344.00	318.00	26.00	343.97	0.00	0.00	1.81	-3.30
13.375in Casing Surface	26.00	344.00	318.00	26.00	343.97	0.00	0.00	1.81	-3.30
12.25in Open Hole	344.00	1622.00	1278.00	343.97	1619.52	1.81	-3.30	18.26	-73.21
9.625in Casing Intermediate	26.00	1622.00	1596.00	26.00	1619.52	0.00	0.00	18.26	-73.21
8.75in Open Hole	1622.00	5586.00	3964.00	1619.52	5494.67	18.26	-73.21	-684.48	-326.35
8.5in Open Hole	5586.00	19967.00	14381.00	5494.67	5639.47	-684.48	-326.35	12163.32	-6417.04
5.5in Casing Production	26.00	19967.00	19941.00	26.00	5639.47	0.00	0.00	12163.32	-6417.04

## TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Barry Greathouse A BRK 3H BHL Rev-7	5659.90	12163.86	-6416.66	1735763.19	14608874.06	40°13'30.236"N	80°39'30.294"W	point
Barry Greathouse A BRK 3H LP Rev-7	5828.00	-278.29	-578.80	1741598.78	14596436.77	40°11'27.055"N	80°38'15.687"W	point

## WELLPATH COMPOSITION - Ref Wellbore: Barry Greathouse A BRK 3H AWB Ref Wellpath: Barry Greathouse A BRK 3H AWP Proj: 19967

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	337.00	Gyrodata standard - Continuous gyro	01_GyroData Cont <17 1/2"> (100'-337')	Barry Greathouse A BRK 3H AWB
337.00	1575.00	OWSG MWD rev2 + HRGM	02_Premier MWD <12 1/4"> (418'-1575')	Barry Greathouse A BRK 3H AWB
1575.00	5526.00	OWSG MWD rev2 + HRGM	03_Premier MWD <8 3/4"> (1638'-5526')	Barry Greathouse A BRK 3H AWB
5526.00	19942.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8 1/2"> (5536'-19942')	Barry Greathouse A BRK 3H AWB
19942.00	19967.00	Blind Drilling (std)	Projection to bit	Barry Greathouse A BRK 3H AWB

# Actual Wellpath Report

Barry Greathouse A BRK 3H AWP Proj: 19967'



## REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #3H
SOUTHWESTERN ENERGY	Well	Barry Greathouse A BRK 3H
Brooke County, WV	Wellbore	Barry Greathouse A BRK 3H AWB
Brooke		
Barry Greathouse A BRK Pad		

## COMMENTS

Wellpath general comments  
API: 47-009-00272-0000  
BH Job #: 109745380  
Rig: SDC 40  
Duration: 4/11/2019 - 4/16/19  
GyroData Cont <17 1/2"> (100'-337')  
Premier MWD <12 1/4"> (418'-1575')  
Premier MWD <8 3/4"> (1638'-5526')  
BH AT Curve <8 1/2"> (5536'-19942')  
Projected MD at TD: 19,967'