



Actual Wellpath Report

Kathy Mayhew BRK 206H AWP Proj: 13705'

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JAN 28 2020

WV Department of
Environmental Protection



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 206H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 206H
Field	Brooke	Wellbore	Kathy Mayhew BRK 206H AWB
Facility	Kathy Mayhew BRK Pad		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Atenjen
Scale	0.999613	Report Generated	8/19/2019 at 8:45:14 AM
Convergence at slot	0.24° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Kathy_Mayhew_BRK_206H_AWP_Proj_13705_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-55.79	-20.06	1745786.40	14566967.78	40°11'32.132"N	80°37'21.677"W
Facility Reference Pt			1745806.46	14597023.54	40°11'32.682"N	80°37'21.416"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM

Calculation method	Minimum curvature	SDC 41 (RKB) to Facility Vertical Datum	1307.20ft
Horizontal Reference Pt	Slot	SDC 41 (RKB) to Mean Sea Level	1307.20ft
Vertical Reference Pt	SDC 41 (RKB)	SDC 41 (RKB) to Ground Level at Slot (Slot 206H)	26.00ft
MD Reference Pt	SDC 41 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	169.19°



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Area	Brooke County, WV		Well	Kathy Mayhew BRK 206H
Field	Brooke		Wellbore	Kathy Mayhew BRK 206H AWB
Facility	Kathy Mayhew BRK Pad			

WELLPATH DATA (158 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 (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)
0.00†	0.000	283.740	0.00	0.00	0.00	0.00	1745786.40	14596967.78	40°11'32.132"N	80°37'21.677"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	283.740	26.00	0.00	0.00	0.00	1745786.40	14596967.78	40°11'32.132"N	80°37'21.677"W	0.00	0.000	0.00	0.00	0.00
100.00	0.110	283.740	100.00	-0.03	0.02	-0.07	1745786.33	14596967.79	40°11'32.132"N	80°37'21.678"W	0.07	283.740	0.15	0.15	-103.05
150.00	0.060	258.250	150.00	-0.05	0.02	-0.14	1745786.26	14596967.80	40°11'32.132"N	80°37'21.679"W	0.14	279.225	0.12	-0.10	-50.98
200.00	0.070	305.550	200.00	-0.07	0.04	-0.19	1745786.21	14596967.81	40°11'32.132"N	80°37'21.680"W	0.19	280.451	0.11	0.02	94.60
250.00	0.090	261.560	250.00	-0.09	0.05	-0.26	1745786.15	14596967.82	40°11'32.132"N	80°37'21.680"W	0.26	280.504	0.13	0.04	-87.98
300.00	0.190	303.240	300.00	-0.15	0.09	-0.36	1745786.04	14596967.86	40°11'32.133"N	80°37'21.682"W	0.37	283.462	0.27	0.20	83.36
350.00	0.140	281.260	350.00	-0.23	0.14	-0.49	1745785.91	14596967.92	40°11'32.133"N	80°37'21.684"W	0.51	286.331	0.16	-0.10	-43.96
400.00	0.060	240.960	400.00	-0.25	0.14	-0.58	1745785.83	14596967.92	40°11'32.133"N	80°37'21.685"W	0.59	284.010	0.20	-0.16	-80.60
445.00	0.050	94.340	445.00	-0.24	0.13	-0.58	1745785.83	14596967.91	40°11'32.133"N	80°37'21.685"W	0.59	282.771	0.23	-0.02	-325.82
477.00	0.260	123.680	477.00	-0.18	0.09	-0.50	1745785.90	14596967.87	40°11'32.133"N	80°37'21.684"W	0.51	280.090	0.68	0.66	91.69
569.00	1.110	128.560	568.99	0.64	-0.58	0.37	1745786.77	14596967.19	40°11'32.126"N	80°37'21.672"W	0.69	147.675	0.93	0.92	5.30
659.00	2.010	127.130	658.96	2.47	-2.08	2.31	1745788.71	14596965.70	40°11'32.111"N	80°37'21.648"W	3.11	131.995	1.00	1.00	-1.59
750.00	2.590	128.330	749.88	5.21	-4.32	5.19	1745791.59	14596963.46	40°11'32.089"N	80°37'21.611"W	6.75	129.731	0.64	0.64	1.32
849.00	2.120	123.000	848.80	8.17	-6.70	8.48	1745794.88	14596961.08	40°11'32.065"N	80°37'21.568"W	10.81	128.304	0.52	-0.47	-5.38
867.00	1.760	123.720	866.79	8.60	-7.04	8.99	1745795.39	14596960.74	40°11'32.062"N	80°37'21.562"W	11.42	128.038	2.00	-2.00	4.00
959.00	0.670	39.090	958.77	9.24	-7.40	10.51	1745796.91	14596960.38	40°11'32.058"N	80°37'21.542"W	12.85	125.165	1.98	-1.18	-91.99
1052.00	2.380	327.020	1051.74	7.10	-5.36	9.80	1745796.20	14596962.42	40°11'32.079"N	80°37'21.551"W	11.17	118.681	2.44	1.84	-77.49
1144.00	4.060	315.450	1143.59	2.63	-1.44	6.47	1745792.88	14596966.34	40°11'32.118"N	80°37'21.594"W	6.63	102.513	1.95	1.83	-12.58
1237.00	5.320	306.420	1236.28	-3.28	3.47	0.69	1745787.10	14596971.24	40°11'32.166"N	80°37'21.668"W	3.54	11.327	1.57	1.35	-9.71
1329.00	5.910	301.610	1327.84	-9.60	8.48	-6.77	1745779.64	14596976.26	40°11'32.216"N	80°37'21.764"W	10.85	321.408	0.82	0.64	-5.23
1422.00	6.590	296.490	1420.29	-16.07	13.37	-15.62	1745770.78	14596981.15	40°11'32.265"N	80°37'21.878"W	20.57	310.562	0.94	0.73	-5.51
1515.00	5.960	292.920	1512.73	-21.98	17.63	-24.85	1745761.56	14596985.40	40°11'32.307"N	80°37'21.996"W	30.47	305.363	0.80	-0.68	-3.84
1607.00	4.050	291.730	1604.38	-26.38	23.22	-32.27	1745754.15	14596988.47	40°11'32.338"N	80°37'22.092"W	38.33	302.679	2.08	-2.08	-1.29
1699.00	3.340	299.510	1696.18	-29.86	20.22	-37.62	1745748.50	14596990.99	40°11'32.363"N	80°37'22.191"W	44.21	301.687	0.94	-0.77	8.46
1743.00	3.330	298.340	1740.11	-31.50	24.46	-39.86	1745746.56	14596992.23	40°11'32.375"N	80°37'22.189"W	46.76	301.536	0.16	-0.02	-2.66
1840.00	3.450	298.490	1836.94	-35.13	27.19	-44.90	1745741.52	14596994.95	40°11'32.403"N	80°37'22.254"W	52.49	301.195	0.12	0.12	0.15
1886.00	3.270	298.160	1882.86	-36.83	28.47	-47.27	1745739.15	14596996.23	40°11'32.415"N	80°37'22.285"W	55.18	301.055	0.39	-0.39	-0.72
1979.00	6.490	288.200	1975.51	-41.05	31.36	-54.61	1745731.82	14596999.13	40°11'32.444"N	80°37'22.379"W	62.97	299.869	3.57	3.46	-10.71
2072.00	7.560	285.400	2067.81	-46.30	34.63	-65.50	1745720.93	14597002.39	40°11'32.477"N	80°37'22.519"W	74.09	297.864	1.21	1.15	-3.01



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Field	Brooke	Wellbore	Kathy Mayhew BRK 206H AWB
Facility	Kathy Mayhew BRK Pad		

WELLPATH DATA (158 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]
2164.00	9.140	282.780	2158.84	-51.90	37.85	-78.46	1745707.97	14597005.61	40°11'32.509"N	80°37'22.686"W	87.11	295.754	1.77	1.72	-2.85
2257.00	10.660	274.680	2250.45	-57.15	40.19	-94.24	1745692.20	14597007.95	40°11'32.533"N	80°37'22.889"W	102.45	293.096	2.21	1.63	-8.71
2350.00	12.410	268.690	2341.57	-61.10	40.66	-112.80	1745673.64	14597008.42	40°11'32.539"N	80°37'23.129"W	119.91	289.822	2.28	1.88	-6.44
2443.00	14.620	267.280	2431.99	-64.40	39.88	-134.52	1745661.93	14597007.64	40°11'32.532"N	80°37'23.408"W	140.31	286.511	2.40	2.38	-1.52
2535.00	16.760	265.280	2520.56	-67.44	38.23	-159.34	1745659.16	14597005.99	40°11'32.517"N	80°37'23.728"W	163.86	283.493	2.40	2.33	-2.17
2627.00	18.790	264.840	2608.17	-70.31	35.81	-187.32	1745599.16	14597003.57	40°11'32.494"N	80°37'24.089"W	190.71	280.822	2.21	2.21	-0.48
2718.00	19.790	266.680	2694.06	-73.76	33.60	-217.30	1745569.19	14597001.36	40°11'32.473"N	80°37'24.475"W	219.88	278.789	1.29	1.10	2.02
2811.00	21.210	265.080	2781.16	-77.54	31.24	-249.78	1745536.72	14596999.01	40°11'32.451"N	80°37'24.894"W	251.72	277.130	1.64	1.53	-1.72
2840.00	21.750	263.440	2808.15	-78.47	30.18	-260.34	1745526.16	14596997.94	40°11'32.441"N	80°37'25.030"W	262.09	276.612	2.78	1.86	-5.66
2933.00	20.670	262.920	2894.85	-80.82	26.19	-293.75	1745492.77	14596993.95	40°11'32.403"N	80°37'25.461"W	294.92	275.095	1.18	-1.16	-0.56
3026.00	20.840	264.270	2981.82	-83.35	22.51	-326.50	1745460.03	14596990.28	40°11'32.368"N	80°37'25.883"W	327.27	273.945	0.55	0.18	1.45
3118.00	21.800	262.190	3067.52	-85.69	18.56	-359.71	1745426.84	14596986.33	40°11'32.330"N	80°37'26.311"W	360.19	272.953	1.33	1.04	-2.26
3211.00	23.880	262.010	3153.22	-87.52	13.59	-395.46	1745391.10	14596981.37	40°11'32.283"N	80°37'26.772"W	395.70	271.969	2.24	2.24	-0.19
3303.00	22.860	262.800	3237.67	-89.56	8.77	-431.63	1745354.94	14596976.54	40°11'32.237"N	80°37'27.239"W	431.72	271.163	1.16	-1.11	0.86
3386.00	18.470	267.640	3324.68	-92.87	5.89	-464.29	1745322.23	14596973.67	40°11'32.210"N	80°37'27.660"W	464.33	270.727	5.06	-4.72	5.20
3489.00	19.320	266.270	3412.66	-96.93	4.29	-494.36	1745292.29	14596972.06	40°11'32.195"N	80°37'28.047"W	494.38	270.497	1.03	0.91	-1.47
3581.00	20.470	267.800	3499.17	-101.21	2.68	-525.63	1745260.98	14596970.45	40°11'32.180"N	80°37'28.450"W	525.63	270.292	1.37	1.25	1.66
3674.00	20.780	267.840	3586.21	-106.13	1.43	-558.36	1745228.26	14596969.21	40°11'32.170"N	80°37'28.872"W	558.36	270.147	0.33	0.33	0.04
3766.00	20.440	268.200	3672.32	-111.10	0.31	-590.73	1745195.91	14596968.09	40°11'32.160"N	80°37'29.289"W	590.73	270.030	0.39	-0.37	0.39
3859.00	20.330	265.910	3759.50	-115.53	-1.35	-623.07	1745163.57	14596966.43	40°11'32.145"N	80°37'29.706"W	623.07	269.876	0.87	-0.12	-2.46
3952.00	20.110	265.460	3846.77	-119.17	-3.77	-655.13	1745131.53	14596964.01	40°11'32.122"N	80°37'30.119"W	655.14	269.671	0.29	-0.24	-0.48
4044.00	20.040	267.160	3933.18	-123.08	-5.80	-686.64	1745100.04	14596961.98	40°11'32.103"N	80°37'30.525"W	686.66	269.516	0.64	-0.08	1.85
4137.00	19.860	264.700	4020.60	-126.81	-8.05	-718.28	1745068.44	14596959.73	40°11'32.083"N	80°37'30.933"W	718.33	269.358	0.92	-0.19	-2.65
4228.00	20.380	264.760	4106.05	-129.83	-10.92	-749.45	1745037.20	14596956.86	40°11'32.055"N	80°37'31.335"W	749.53	269.165	0.57	0.57	0.07
4321.00	21.900	265.080	4192.79	-133.18	-13.89	-782.86	1745003.85	14596953.09	40°11'32.027"N	80°37'31.766"W	782.88	268.983	1.64	1.63	0.34
4414.00	22.930	265.680	4278.76	-137.07	-16.74	-818.21	1744968.52	14596949.47	40°11'31.977"N	80°37'32.221"W	818.38	268.828	1.13	1.11	0.65
4506.00	22.580	266.050	4363.60	-141.15	-19.31	-853.70	1744933.04	14596945.34	40°11'31.947"N	80°37'32.679"W	853.92	268.704	0.41	-0.38	0.40
4599.00	22.890	263.960	4449.37	-144.78	-22.44	-889.50	1744897.25	14596941.57	40°11'31.912"N	80°37'33.140"W	889.78	268.555	0.93	0.33	-2.25
4689.00	22.750	263.610	4532.33	-147.58	-26.22	-924.20	1744862.57	14596941.57	40°11'31.876"N	80°37'33.588"W	924.57	268.375	0.22	-0.16	-0.39
4782.00	22.590	264.420	4618.14	-150.59	-29.96	-959.84	1744826.93	14596937.83	40°11'31.841"N	80°37'34.047"W	960.31	268.212	0.38	-0.17	0.87



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MD ft)	Inclination °1	Azimuth °1	TVD ft)	Vert Sect ft)	North ft)	East ft)	Grid East US ft)	Grid North US ft)	Latitude	Longitude	Closure Dist ft)	Closure Dir °1	DLS °/100ft)	Build Rate °/100ft)	Turn Rate °/100ft)
4874.00	23.910	267.470	4702.67	-154.89	-32.50	-996.06	1744790.73	14596935.29	40°11'31.852"N	80°37'34.514"W	996.59	268.131	1.94	1.43	3.32
4967.00	24.510	269.450	4787.50	-161.04	-33.52	-1034.18	1744752.63	14596934.27	40°11'31.844"N	80°37'35.005"W	1034.72	268.144	1.09	0.65	2.13
5068.00	23.440	268.360	4870.64	-167.29	-34.22	-1077.15	1744715.67	14596933.57	40°11'31.839"N	80°37'35.482"W	1071.69	268.170	1.27	-1.18	-1.20
5151.00	22.590	268.710	4966.24	-173.19	-35.15	-1107.49	1744679.34	14596932.64	40°11'31.831"N	80°37'35.950"W	1108.05	268.182	0.93	-0.91	0.38
5244.00	22.270	268.860	5042.20	-179.10	-35.90	-1142.97	1744643.88	14596931.89	40°11'31.825"N	80°37'36.407"W	1143.53	268.201	0.35	-0.34	0.16
5336.00	18.140	269.480	5128.52	-184.59	-36.38	-1174.74	1744612.13	14596931.41	40°11'31.822"N	80°37'36.816"W	1175.30	268.226	4.50	-4.49	0.67
5428.00	17.350	269.080	5216.15	-189.51	-36.73	-1202.77	1744584.10	14596931.06	40°11'31.819"N	80°37'37.178"W	1203.33	268.251	0.87	-0.86	-0.43
5508.00	16.360	269.770	5292.71	-193.62	-36.97	-1225.97	1744560.91	14596930.83	40°11'31.818"N	80°37'37.477"W	1226.52	268.273	1.26	-1.24	0.86
5600.00	20.680	273.920	5379.93	-200.14	-35.91	-1255.15	1744531.75	14596931.88	40°11'31.830"N	80°37'37.853"W	1255.66	268.361	4.91	4.70	4.51
5693.00	21.320	254.780	5466.85	-203.02	-39.23	-1287.88	1744499.02	14596928.57	40°11'31.798"N	80°37'38.275"W	1288.48	268.255	7.38	0.69	-20.58
5784.00	22.280	224.730	5551.61	-191.95	-55.88	-1316.07	1744470.84	14596911.92	40°11'31.635"N	80°37'38.639"W	1317.26	267.569	12.18	1.05	-33.02
5877.00	27.020	205.210	5636.25	-164.83	-87.58	-1337.52	1744449.40	14596880.23	40°11'31.322"N	80°37'38.917"W	1340.39	266.253	10.07	5.10	-20.99
5969.00	34.470	193.360	5715.33	-124.08	-131.93	-1352.48	1744434.45	14596835.90	40°11'30.885"N	80°37'39.112"W	1358.90	264.429	10.40	8.10	-12.88
6060.00	42.530	182.050	5786.58	-70.44	-187.88	-1359.55	1744427.39	14596779.97	40°11'30.332"N	80°37'39.206"W	1372.47	262.132	11.73	8.86	-12.43
6153.00	49.810	179.950	5850.95	-4.81	-254.91	-1360.64	1744426.29	14596712.97	40°11'29.670"N	80°37'39.224"W	1384.31	259.389	7.99	7.83	-2.26
6245.00	58.690	181.250	5904.65	68.30	-329.49	-1361.47	1744425.46	14596638.41	40°11'28.933"N	80°37'39.239"W	1400.77	256.395	9.72	9.65	1.41
6337.00	67.420	176.940	5946.31	149.00	-411.38	-1360.06	1744426.88	14596556.55	40°11'28.123"N	80°37'39.225"W	1420.91	253.171	10.36	9.49	-4.68
6429.00	72.990	167.650	5977.51	235.29	-497.00	-1348.35	1744438.58	14596470.97	40°11'27.277"N	80°37'39.079"W	1437.03	249.766	11.26	6.05	-10.10
6522.00	81.640	161.740	5997.93	325.61	-584.37	-1324.36	1744462.56	14596383.64	40°11'26.413"N	80°37'38.774"W	1447.55	246.191	11.17	9.30	-6.35
6615.00	87.910	157.570	6006.40	416.87	-671.13	-1292.17	1744494.74	14596296.90	40°11'25.554"N	80°37'38.364"W	1456.06	242.553	8.09	6.74	-4.48
6707.00	87.940	154.870	6009.73	506.46	-755.26	-1255.10	1744453.79	14596212.81	40°11'24.721"N	80°37'37.891"W	1464.82	238.962	2.93	0.03	-2.93
6800.00	89.170	156.480	6012.08	566.85	-839.97	-1216.80	1744470.07	14596128.13	40°11'23.882"N	80°37'37.402"W	1478.57	235.382	2.18	1.32	1.73
6893.00	88.980	154.700	6013.58	687.23	-924.65	-1178.38	17444608.48	14596043.49	40°11'23.044"N	80°37'36.912"W	1497.85	231.880	1.92	-0.20	-1.91
6986.00	87.290	154.480	6016.61	777.17	-1008.60	-1138.49	17444687.35	14595959.57	40°11'22.213"N	80°37'36.402"W	1521.00	228.462	1.83	-1.82	-0.24
7079.00	88.280	155.280	6020.20	867.22	-1092.74	-1099.05	17444687.79	14595875.46	40°11'21.380"N	80°37'36.888"W	1549.83	225.165	1.37	1.06	0.86
7171.00	88.830	152.830	6022.52	965.99	-1175.44	-1058.81	17444728.01	14595792.80	40°11'20.561"N	80°37'35.384"W	1582.00	222.012	2.73	0.60	-2.66
7264.00	87.780	152.000	6025.27	1045.00	-1257.83	-1015.77	17444771.03	14595710.44	40°11'19.745"N	80°37'34.834"W	1616.76	218.923	1.44	-1.13	-0.89
7357.00	88.400	156.780	6028.37	1134.83	-1341.62	-975.60	17444811.18	14595626.68	40°11'18.915"N	80°37'34.321"W	1658.84	216.024	5.18	0.67	5.14
7450.00	87.690	160.340	6031.55	1226.17	-1428.12	-941.63	17444845.14	14595540.22	40°11'18.059"N	80°37'33.888"W	1710.61	213.399	3.90	-0.76	3.83
7542.00	89.720	163.540	6033.63	1317.39	-1515.55	-913.12	17444873.63	14595452.82	40°11'17.194"N	80°37'33.526"W	1769.37	211.069	4.12	2.21	3.48



Actual Wellpath Report

Kathy Mayhew BRK 206H AWP Proj: 13705'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY		Slot	Slot 206H
Area	Brooke County, WV		Well	Kathy Mayhew BRK 206H
Field	Brooke		Wellbore	Kathy Mayhew BRK 206H AWB
Facility	Kathy Mayhew BRK Pad			

WELLPATH DATA (158 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]
7635.00	89.940	159.490	6033.90	1409.54	-1603.73	-883.65	1744903.10	14595364.67	40°11'16.32"N	80°37'33.151"W	1831.06	208.854	4.36	0.24	-4.35
7728.00	89.420	160.380	6034.42	1501.33	-1691.08	-851.74	1744935.00	14595277.35	40°11'15.457"N	80°37'32.744"W	1893.47	206.733	1.11	-0.56	0.96
7820.00	89.660	158.370	6035.16	1591.97	-1777.18	-819.33	1744967.39	14595191.29	40°11'14.604"N	80°37'32.331"W	1956.99	204.751	2.20	0.26	-2.18
7913.00	90.150	155.830	6035.32	1682.90	-1862.84	-783.15	1745003.56	14595105.66	40°11'13.756"N	80°37'31.870"W	2020.77	202.802	2.78	0.53	-2.73
8006.00	88.400	158.460	6036.49	1773.84	-1948.52	-747.04	1745039.66	14595020.01	40°11'12.908"N	80°37'31.409"W	2086.82	200.976	3.40	-1.88	2.83
8097.00	89.290	160.150	6038.33	1863.46	-2033.63	-714.88	1745071.80	14594934.94	40°11'12.066"N	80°37'31.000"W	2155.62	199.368	2.10	0.98	1.86
8190.00	90.830	157.260	6038.23	1954.90	-2120.27	-681.11	1745105.55	14594848.33	40°11'11.208"N	80°37'30.569"W	2226.98	197.809	3.52	1.66	-3.11
8282.00	89.480	155.310	6037.98	2044.57	-2204.49	-644.12	1745142.54	14594764.14	40°11'10.374"N	80°37'30.097"W	2296.67	196.287	2.58	-1.47	-2.12
8374.00	90.060	152.780	6038.35	2133.36	-2287.21	-603.85	1745182.78	14594681.46	40°11'09.555"N	80°37'29.583"W	2365.58	194.789	2.82	0.63	-2.75
8467.00	89.140	148.820	6039.00	2221.59	-2368.37	-568.49	1745228.13	14594600.33	40°11'08.751"N	80°37'29.003"W	2433.33	193.269	4.37	-0.99	-4.26
8559.00	88.030	150.260	6041.27	2308.21	-2447.64	-511.87	1745274.73	14594521.09	40°11'07.966"N	80°37'28.406"W	2500.59	191.812	1.98	-1.21	1.57
8652.00	88.340	157.310	6044.22	2397.76	-2530.98	-470.84	1745315.75	14594437.78	40°11'07.141"N	80°37'27.882"W	2574.41	190.538	7.58	0.33	7.58
8744.00	89.450	161.730	6046.00	2488.41	-2617.13	-438.66	1745347.91	14594351.67	40°11'06.288"N	80°37'27.472"W	2653.64	189.515	4.95	1.21	4.80
8837.00	90.740	162.090	6045.84	2580.66	-2705.53	-409.79	1745376.78	14594263.30	40°11'05.413"N	80°37'27.105"W	2736.39	188.613	1.44	1.39	0.39
8929.00	89.320	159.810	6045.79	2671.58	-2792.48	-379.76	1745406.79	14594176.38	40°11'04.553"N	80°37'26.723"W	2818.19	187.744	2.92	-1.54	-2.48
9020.00	89.480	160.610	6046.75	2761.70	-2878.10	-348.95	1745437.59	14594090.79	40°11'03.705"N	80°37'26.331"W	2899.18	186.913	0.90	0.18	0.88
9113.00	89.630	160.920	6047.47	2853.58	-2965.91	-318.32	1745468.21	14594003.02	40°11'02.836"N	80°37'25.941"W	2982.94	186.126	0.37	0.16	0.33
9206.00	89.320	161.170	6048.32	2945.63	-3053.86	-288.11	1745498.41	14593915.10	40°11'01.966"N	80°37'25.566"W	3067.42	185.389	0.43	-0.33	0.27
9298.00	89.260	159.350	6049.46	3036.51	-3140.45	-257.04	1745529.46	14593828.55	40°11'01.109"N	80°37'25.161"W	3150.95	184.679	1.98	-0.07	-1.98
9390.00	89.820	158.990	6050.20	3127.10	-3226.43	-224.32	1745562.17	14593742.60	40°11'00.258"N	80°37'24.744"W	3234.22	183.977	0.72	0.61	-0.39
9483.00	89.200	158.480	6051.00	3218.55	-3313.09	-190.60	1745595.88	14593655.97	40°10'59.400"N	80°37'24.314"W	3318.57	183.293	0.86	-0.67	-0.55
9576.00	89.660	157.540	6051.92	3309.78	-3399.32	-155.78	1745630.69	14593569.78	40°10'58.547"N	80°37'23.870"W	3402.89	182.624	1.13	0.49	-1.01
9666.00	89.540	160.320	6052.55	3398.33	-3483.29	-123.42	1745663.03	14593485.84	40°10'57.716"N	80°37'23.458"W	3485.48	182.029	3.09	0.13	3.09
9758.00	90.310	159.750	6052.67	3489.16	-3569.76	-92.01	1745694.43	14593399.40	40°10'56.860"N	80°37'23.058"W	3570.95	181.476	1.04	0.84	-0.62
9850.00	89.690	156.350	6052.67	3579.41	-3655.08	-57.63	1745728.80	14593314.12	40°10'56.015"N	80°37'22.620"W	3655.54	180.903	3.76	-0.67	-3.70
9942.00	89.140	157.340	6053.61	3669.28	-3739.67	-21.45	1745764.96	14593229.57	40°10'55.178"N	80°37'22.158"W	3739.73	180.329	1.23	-0.60	1.08
10035.00	89.170	159.150	6054.98	3760.57	-3826.03	-13.01	1745799.41	14593143.24	40°10'54.323"N	80°37'21.719"W	3826.05	179.805	1.95	0.03	1.95
10127.00	89.420	156.690	6056.11	3850.79	-3911.27	47.59	1745833.97	14593058.03	40°10'53.479"N	80°37'21.278"W	3911.56	179.303	2.69	0.27	-2.67
10220.00	89.350	157.990	6057.11	3941.80	-3997.08	83.41	1745869.79	14592972.25	40°10'52.630"N	80°37'20.821"W	3997.95	178.804	1.40	-0.08	1.40
10313.00	89.420	158.440	6058.11	4033.09	-4083.44	117.93	1745904.28	14592885.93	40°10'51.775"N	80°37'20.381"W	4085.14	178.346	0.49	0.08	0.48



Actual Wellpath Report
Kathy Mayhew BRK 206H AWP Proj: 13705
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WV Department of Environmental Protection



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 206H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 206H
Field	Brooke	Wellbore	Kathy Mayhew BRK 206H AWB
Facility	Kathy Mayhew BRK Pad		

WELLPATH DATA (158 stations)

MD (ft)	Inclination P°	Azimuth P°	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)
10405.00	89.050	157.760	6059.34	4123.36	-4168.79	152.24	1745938.58	14592800.61	40°10'50.930"N	80°37'19.944"W	4171.57	177.909	0.84	-0.40	-0.74
10498.00	89.200	158.740	6060.76	4214.66	-4255.16	186.70	1745973.03	14592714.28	40°10'50.075"N	80°37'19.505"W	4259.25	177.488	1.07	0.16	1.05
10590.00	89.260	159.230	6061.99	4305.20	-4341.03	219.69	1746006.00	14592628.44	40°10'49.225"N	80°37'19.085"W	4346.58	177.103	0.54	0.07	0.53
10683.00	89.230	154.600	6063.22	4396.04	-4426.55	256.14	1746042.44	14592542.95	40°10'48.378"N	80°37'18.620"W	4433.96	176.688	4.98	-0.03	-4.98
10775.00	88.950	156.990	6064.68	4485.52	-4510.45	293.85	1746080.14	14592429.09	40°10'47.548"N	80°37'18.138"W	4520.21	176.273	2.62	-0.30	-2.60
10868.00	90.220	157.560	6065.36	4576.51	-4596.22	329.78	1746116.05	14592373.34	40°10'46.699"N	80°37'17.680"W	4608.04	175.896	1.50	1.37	0.61
10961.00	89.910	158.280	6065.25	4667.72	-4682.40	364.73	1746151.00	14592287.20	40°10'45.846"N	80°37'17.235"W	4696.59	175.546	0.84	-0.33	0.77
11051.00	89.970	158.690	6065.34	4756.15	-4766.13	397.74	1746183.99	14592203.50	40°10'45.017"N	80°37'16.814"W	4782.70	175.230	0.46	0.07	0.46
11144.00	89.570	155.130	6065.72	4847.01	-4851.67	434.21	1746220.44	14592118.00	40°10'44.170"N	80°37'16.349"W	4871.06	174.886	3.85	-0.43	-3.83
11236.00	89.970	158.830	6066.09	4936.91	-4936.32	470.18	1746256.40	14592033.37	40°10'43.332"N	80°37'15.890"W	4958.66	174.559	4.05	0.43	4.02
11328.00	89.850	158.140	6066.23	5027.31	-5021.91	503.92	1746290.12	14591947.82	40°10'42.485"N	80°37'15.460"W	5047.13	174.270	0.76	-0.13	-0.75
11421.00	89.660	159.000	6066.63	5118.71	-5108.48	537.90	1746324.09	14591861.28	40°10'41.628"N	80°37'15.027"W	5136.72	173.989	0.95	-0.20	0.92
11514.00	89.940	159.400	6066.95	5210.30	-5195.42	570.92	1746357.10	14591774.38	40°10'40.767"N	80°37'14.606"W	5226.69	173.729	0.53	0.30	0.43
11607.00	90.580	159.720	6066.53	5301.99	-5282.56	603.40	1746389.57	14591680.10	40°10'39.905"N	80°37'14.193"W	5316.91	173.484	0.77	0.69	0.34
11700.00	88.950	159.630	6066.91	5393.71	-5366.77	635.70	1746421.86	14591600.10	40°10'39.042"N	80°37'13.781"W	5407.27	173.248	1.76	-1.75	-0.10
11791.00	91.230	161.000	6066.77	5483.61	-5455.44	666.35	1746452.49	14591514.46	40°10'38.194"N	80°37'13.391"W	5495.99	173.036	2.92	2.51	1.51
11884.00	90.460	156.280	6065.40	5575.00	-5542.02	700.21	1746486.34	14591427.91	40°10'37.337"N	80°37'12.960"W	5586.08	172.799	5.14	-0.83	-5.08
11977.00	89.690	157.340	6065.28	5665.84	-5627.50	736.83	1746522.95	14591342.46	40°10'36.490"N	80°37'12.493"W	5675.54	172.540	1.41	-0.83	1.14
12069.00	89.170	159.770	6066.19	5756.24	-5713.12	770.46	1746556.57	14591256.88	40°10'35.643"N	80°37'12.064"W	5764.84	172.320	2.70	-0.57	2.64
12162.00	91.510	158.710	6065.64	5847.84	-5800.08	803.42	1746589.51	14591169.96	40°10'34.782"N	80°37'11.644"W	5855.46	172.114	2.76	2.52	-1.14
12255.00	89.570	156.230	6064.76	5938.88	-5885.96	839.05	1746625.13	14591084.10	40°10'33.932"N	80°37'11.190"W	5945.47	171.887	3.39	-2.09	-2.67
12348.00	90.490	163.570	6064.71	6030.60	-5973.24	870.99	1746657.05	14590996.86	40°10'33.068"N	80°37'10.784"W	6036.41	171.704	7.95	0.99	7.89
12440.00	89.420	160.320	6064.79	6121.85	-6060.70	899.50	1746685.55	14590909.44	40°10'32.203"N	80°37'10.421"W	6127.08	171.558	3.72	-1.16	-3.53
12533.00	88.370	159.390	6066.58	6213.60	-6147.99	931.52	1746717.56	14590822.18	40°10'31.339"N	80°37'10.013"W	6218.16	171.384	1.51	-1.13	-1.00
12626.00	90.150	162.020	6067.78	6305.56	-6235.75	962.24	1746748.27	14590734.46	40°10'30.470"N	80°37'09.623"W	6309.55	171.228	3.41	1.91	2.83
12718.00	90.400	160.110	6067.34	6396.63	-6322.76	992.10	1746778.11	14590647.48	40°10'29.609"N	80°37'09.243"W	6401.12	171.083	2.09	0.27	-2.08
12811.00	89.720	160.700	6067.24	6488.54	-6419.38	1023.29	1746809.29	14590559.90	40°10'28.742"N	80°37'08.846"W	6491.53	170.930	0.97	-0.73	0.63
12904.00	90.090	159.550	6067.40	6580.88	-6497.83	1054.90	1746840.89	14590472.47	40°10'27.876"N	80°37'08.443"W	6582.91	170.779	1.30	0.40	-1.24
12997.00	89.320	159.570	6067.88	6672.06	-6584.98	1087.38	1746873.36	14590385.36	40°10'27.014"N	80°37'08.030"W	6674.15	170.623	0.83	-0.83	0.02
13090.00	91.140	158.050	6067.50	6763.54	-6671.68	1120.99	1746906.96	14590298.69	40°10'26.156"N	80°37'07.601"W	6765.20	170.462	2.55	1.96	-1.63



Actual Wellpath Report

Kathy Mayhew BRK 206H AWP Proj: 13705'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 206H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 206H
Field	Brooke	Wellbore	Kathy Mayhew BRK 206H AWB
Facility	Kathy Mayhew BRK Pad		

WELLPATH DATA (158 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]
13182.00	89.690	155.830	6066.84	6853.43	-6756.32	1157.02	1746942.98	14590214.09	40°10'25.318"N	80°37'07.142"W	6854.68	170.282	2.88	-1.58	-2.41
13275.00	88.580	155.140	6068.24	6943.77	-6840.93	1195.61	1746981.55	14590129.51	40°10'24.480"N	80°37'06.650"W	6944.62	170.086	1.41	-1.19	-0.74
13367.00	89.230	155.730	6070.00	7033.11	-6924.58	1233.85	1747019.77	14590045.89	40°10'23.652"N	80°37'06.162"W	7033.65	169.897	0.95	0.71	0.64
13460.00	89.350	153.830	6071.15	7123.18	-7008.71	1273.47	1747059.38	14589961.80	40°10'22.819"N	80°37'05.656"W	7123.46	169.702	2.05	0.13	-2.04
13552.00	89.010	155.110	6072.47	7212.15	-7091.71	1313.11	1747099.01	14589878.82	40°10'21.997"N	80°37'05.150"W	7212.26	169.510	1.44	-0.37	1.39
13645.00	89.320	154.980	6073.82	7302.32	-7176.02	1352.35	1747138.22	14589794.55	40°10'21.162"N	80°37'04.649"W	7302.34	169.328	0.36	0.33	-0.14
13680.00	89.260	154.980	6074.26	7336.24	-7207.74	1367.15	1747153.02	14589762.85	40°10'20.848"N	80°37'04.460"W	7336.25	169.260	0.17	-0.17	0.00
13705.00	89.260	154.980	6074.58	7360.48	-7230.39	1377.72	1747163.59	14589740.20	40°10'20.624"N	80°37'04.325"W	7360.48	169.212	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Kathy Mayhew BRK 206H AWB Ref Wellpath: Kathy Mayhew BRK 206H AWP Proj: 13705'

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	549.00	523.00	26.00	549.00	0.00	0.00	-0.36	0.09
13.375in Casing Surface	26.00	529.00	503.00	26.00	529.00	0.00	0.00	-0.18	-0.14
12.25in Open Hole	549.00	1824.00	1275.00	549.00	1820.97	-0.36	0.09	26.73	-44.06
9.625in Casing Intermediate	26.00	1804.00	1778.00	26.00	1801.00	0.00	0.00	26.16	-43.01
8.75in Open Hole	1824.00	5502.00	3678.00	1820.97	5286.95	26.73	-44.06	-36.96	-1224.27
8.5in Open Hole	5502.00	13705.00	8203.00	5286.95	6074.58	-36.96	-1224.27	-7230.39	1377.72
5.5in Casing Production	26.00	13705.00	13679.00	26.00	6074.58	0.00	0.00	-7230.39	1377.72

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Actual Wellpath Report

Kathy Mayhew BRK 206H AWP Proj: 13705'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 206H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 206H
Field	Brooke	Wellbore	Kathy Mayhew BRK 206H AWB
Facility	Kathy Mayhew BRK Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Kathy Mayhew BRK 206H LP Rev-3	6003.04	-649.38	-1269.20	1744517.70	14596318.65	40°1'125.768"N	80°37'38.067"W	point
Kathy Mayhew BRK 206H BHL Rev-3	6055.89	-7235.87	1381.81	1747167.68	14589734.72	40°10'20.569"N	80°37'04.273"W	point

WELLPATH COMPOSITION - Ref Wellbore: Kathy Mayhew BRK 206H AWB Ref Wellpath: Kathy Mayhew BRK 206H AWP Proj: 13705'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	477.00	Gyrodata standard - Continuous gyro	01_GyroData continuous gyro <17 1/2"> (100'-477')	Kathy Mayhew BRK 206H AWB
477.00	750.00	Gyrodata standard - Continuous gyro	02_GyroData continuous gyro <12 1/4"> (569'-750')	Kathy Mayhew BRK 206H AWB
750.00	1743.00	OWSG MWD rev2 + HRGM	03_GyroData MWD <12 1/4"> (849'-1743')	Kathy Mayhew BRK 206H AWB
1743.00	5428.00	OWSG MWD rev2 + HRGM	04_GyroData MWD <8 3/4"> (1840'-5428')	Kathy Mayhew BRK 206H AWB
5428.00	13680.00	BH AutoTrak Curve (Short)	05_BH AT Curve <8 1/2"> (5508'-13680')	Kathy Mayhew BRK 206H AWB
13680.00	13705.00	Blind Drilling (std)	Projection to bit	Kathy Mayhew BRK 206H AWB

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Kathy Mayhew BRK 206H AWP Proj: 13705'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 206H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 206H
Field	Brooke	Wellbore	Kathy Mayhew BRK 206H AWP
Facility	Kathy Mayhew BRK Pad		

COMMENTS

Wellpath general comments
 API: 47-009-00258-0000
 BH Job #: 109938697A
 Rig: SDC 41
 Duration: 08/15/2019 - 08/18/2019

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