

JAN 28 2020

WV Department of
Environmental Protection



Actual Wellpath Report

Kathy Mayhew BRK 1H AWP Proj: 24188

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 1H
Field	Brooke	Wellbore	Kathy Mayhew BRK 1H 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	9/16/2019 at 3:03:23 PM
Convergence at slot	0.24° East	Database/Source file	WA_MPL_EASTERONUS_Defn/Kathy_Mayhew_BRK_1H_AWP_Proj_24188_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North [ft]	East [ft]	Easting [US ft]	Northing [US ft]	Latitude	Longitude
Slot Location	-27.78	-20.10	1745786.37	14596995.77	40°11'32.409"N	80°37'21.676"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 1H)	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	333.78°

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Facility	Kathy Mayhew BRK Pad		

WELLPATH DATA (269 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	230.630	0.00	0.00	0.00	0.00	1745786.37	14596995.77	40°11'32.409"N	80°37'21.676"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	230.630	26.00	0.00	0.00	0.00	1745786.37	14596995.77	40°11'32.409"N	80°37'21.676"W	0.00	0.000	0.00	0.00	0.00
100.00	0.620	230.630	100.00	-0.09	-0.25	-0.31	1745786.06	14596995.52	40°11'32.406"N	80°37'21.680"W	0.40	230.630	0.84	0.84	-174.82
200.00	0.350	265.220	200.00	-0.10	-0.62	-1.03	1745785.34	14596995.15	40°11'32.403"N	80°37'21.689"W	1.21	238.901	0.39	-0.27	34.59
300.00	0.400	269.120	299.99	0.16	-0.65	-1.69	1745784.69	14596995.12	40°11'32.402"N	80°37'21.698"W	1.81	248.810	0.06	0.05	3.90
400.00	0.420	264.240	399.99	0.44	-0.70	-2.40	1745783.97	14596995.07	40°11'32.402"N	80°37'21.707"W	2.50	253.832	0.04	0.02	-4.88
481.00	0.290	306.250	480.99	0.72	-0.60	-2.86	1745783.51	14596995.32	40°11'32.403"N	80°37'21.713"W	2.92	258.072	0.35	-0.16	51.86
573.00	0.420	86.840	572.99	0.80	-0.45	-2.71	1745783.66	14596994.95	40°11'32.404"N	80°37'21.711"W	2.75	260.619	0.73	0.14	152.82
664.00	2.500	101.220	663.95	-0.54	-0.82	-0.43	1745785.94	14596994.95	40°11'32.401"N	80°37'21.682"W	0.92	207.849	2.30	2.29	15.80
755.00	4.160	107.390	754.80	-4.02	-2.19	4.67	1745791.03	14596993.58	40°11'32.387"N	80°37'21.616"W	5.15	115.128	1.86	1.82	6.78
847.00	5.170	103.580	846.49	-8.98	-4.16	11.88	1745798.25	14596991.61	40°11'32.367"N	80°37'21.523"W	12.59	109.295	1.15	1.10	-4.14
914.00	6.030	99.100	913.17	-12.95	-5.42	18.29	1745804.65	14596990.35	40°11'32.354"N	80°37'21.441"W	19.08	106.520	1.44	1.28	-6.69
960.00	6.170	87.590	958.91	-15.34	-5.70	23.14	1745809.51	14596990.07	40°11'32.351"N	80°37'21.378"W	23.84	103.842	2.67	0.30	-25.02
1052.00	5.780	78.580	1050.41	-18.52	-4.58	32.63	1745818.98	14596991.19	40°11'32.362"N	80°37'21.256"W	32.95	97.987	1.10	-0.42	-9.79
1145.00	3.740	75.420	1143.09	-20.33	-2.89	40.15	1745826.51	14596992.88	40°11'32.379"N	80°37'21.159"W	40.26	94.112	2.21	-2.19	-3.40
1237.00	1.770	76.900	1234.98	-21.26	-1.81	44.44	1745830.79	14596993.96	40°11'32.389"N	80°37'21.104"W	44.48	92.331	2.14	-2.14	1.61
1330.00	0.840	81.910	1327.95	-21.80	-1.39	46.51	1745832.87	14596994.38	40°11'32.393"N	80°37'21.077"W	46.53	91.709	1.01	-1.00	5.39
1423.00	0.200	74.040	1420.95	-22.04	-1.25	47.35	1745833.70	14596994.52	40°11'32.394"N	80°37'21.066"W	47.36	91.509	0.69	-0.69	-8.46
1515.00	0.220	315.310	1512.95	-21.90	-1.08	47.38	1745833.73	14596994.69	40°11'32.396"N	80°37'21.066"W	47.39	91.303	0.39	0.02	-129.05
1608.00	0.380	271.820	1605.95	-21.58	-0.94	46.94	1745833.29	14596994.83	40°11'32.397"N	80°37'21.071"W	46.95	91.148	0.29	0.17	-46.76
1700.00	0.440	289.510	1697.95	-21.19	-0.81	46.30	1745832.66	14596994.96	40°11'32.399"N	80°37'21.079"W	46.31	91.006	0.15	0.07	19.23
1746.00	0.390	272.690	1743.94	-20.99	-0.75	45.98	1745832.33	14596995.02	40°11'32.399"N	80°37'21.084"W	45.99	90.930	0.28	-0.11	-36.57
1840.00	0.530	277.680	1837.94	-20.59	-0.67	45.23	1745831.58	14596995.10	40°11'32.400"N	80°37'21.093"W	45.24	90.853	0.15	0.15	5.31
1886.00	0.400	279.970	1883.94	-20.37	-0.62	44.86	1745831.21	14596995.15	40°11'32.401"N	80°37'21.098"W	44.87	90.788	0.29	-0.28	4.98
1979.00	2.540	261.100	1976.90	-19.57	-0.88	42.51	1745828.86	14596994.89	40°11'32.398"N	80°37'21.128"W	42.51	91.186	2.33	2.30	-20.29
2072.00	3.190	259.040	2069.79	-18.27	-1.69	37.93	1745824.28	14596994.08	40°11'32.390"N	80°37'21.187"W	37.97	92.552	0.71	0.70	-2.22
2164.00	4.850	252.260	2161.56	-17.03	-3.36	31.71	1745818.07	14596992.41	40°11'32.374"N	80°37'21.268"W	31.89	96.053	1.87	1.80	-7.37
2257.00	6.600	243.040	2254.09	-16.52	-6.98	23.20	1745809.56	14596988.79	40°11'32.339"N	80°37'21.378"W	24.23	106.752	2.12	1.88	-9.91
2350.00	8.370	236.800	2346.30	-17.41	-13.11	12.77	1745799.14	14596982.66	40°11'32.279"N	80°37'21.512"W	18.31	135.753	2.09	1.90	-6.71
2443.00	10.290	233.620	2438.06	-19.70	-21.75	0.42	1745786.79	14596974.03	40°11'32.194"N	80°37'21.672"W	21.75	178.891	2.14	2.06	-3.42



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Operator	SOUTHWESTERN ENERGY	
Area	Brooke County, WV	Kathy Mayhew BRK 1H
Field	Brooke	Kathy Mayhew BRK 1H AWB
Facility	Kathy Mayhew BRK Pad	

WELLPATH DATA (269 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]
2535.00	11.550	229.340	2528.40	-23.44	-32.62	-13.18	1745773.19	14596963.16	40°11'32.087"N	80°37'21.848"W	35.19	202.002	1.63	1.37	-4.65
2627.00	11.840	231.600	2618.49	-27.73	-44.49	-27.57	1745758.82	14596951.30	40°11'31.970"N	80°37'22.034"W	52.34	211.784	0.59	0.32	2.46
2719.00	11.270	229.300	2708.62	-31.97	-56.21	-41.78	1745744.61	14596939.58	40°11'31.855"N	80°37'22.218"W	70.04	216.621	0.80	-0.62	-2.50
2811.00	11.400	230.460	2798.83	-36.31	-67.86	-55.61	1745730.79	14596927.93	40°11'31.740"N	80°37'22.396"W	87.73	219.331	0.29	0.14	1.26
2903.00	12.470	231.960	2888.84	-40.44	-79.77	-70.44	1745715.96	14596916.03	40°11'31.623"N	80°37'22.588"W	106.42	221.445	1.21	1.16	1.63
2996.00	13.650	232.930	2979.43	-44.56	-92.57	-87.10	1745699.30	14596903.23	40°11'31.498"N	80°37'23.041"W	127.11	223.256	1.29	1.27	1.04
3089.00	14.850	233.890	3069.57	-48.68	-106.21	-105.49	1745680.92	14596889.60	40°11'31.364"N	80°37'23.288"W	149.70	224.804	1.32	1.29	1.03
3181.00	15.830	229.800	3158.29	-53.73	-121.26	-124.60	1745661.82	14596874.56	40°11'31.216"N	80°37'23.542"W	173.87	225.778	1.59	1.07	-4.45
3274.00	16.060	228.740	3247.72	-59.74	-137.62	-144.22	1745642.21	14596858.20	40°11'31.055"N	80°37'23.793"W	199.35	226.340	0.33	0.25	0.80
3366.00	16.060	228.740	3336.13	-65.96	-154.10	-163.61	1745622.82	14596841.73	40°11'30.893"N	80°37'23.793"W	224.76	226.714	0.54	0.00	-1.96
3459.00	15.320	231.000	3425.66	-72.02	-170.32	-182.83	1745603.61	14596825.52	40°11'30.733"N	80°37'24.041"W	249.87	227.029	1.03	-0.80	2.43
3552.00	15.150	234.150	3515.39	-76.77	-185.17	-202.23	1745584.22	14596810.67	40°11'30.587"N	80°37'24.292"W	274.20	227.521	0.91	-0.18	3.39
3644.00	15.330	234.870	3604.16	-80.66	-199.21	-221.92	1745564.54	14596796.64	40°11'30.449"N	80°37'24.547"W	298.21	228.087	0.28	0.20	0.78
3737.00	15.260	235.370	3693.86	-84.36	-213.24	-242.04	1745544.42	14596782.62	40°11'30.312"N	80°37'24.807"W	322.58	228.620	0.16	-0.08	0.54
3829.00	15.920	236.240	3782.48	-87.78	-227.13	-262.50	1745523.98	14596768.73	40°11'30.175"N	80°37'25.071"W	347.12	229.131	0.76	0.72	0.95
3922.00	16.460	232.630	3871.79	-92.00	-242.21	-283.57	1745502.91	14596753.65	40°11'30.027"N	80°37'25.343"W	372.93	229.497	1.23	0.58	-3.88
4015.00	15.740	229.340	3961.15	-97.70	-258.43	-303.61	1745482.88	14596737.44	40°11'29.868"N	80°37'25.602"W	398.71	229.596	1.25	-0.77	-3.54
4107.00	14.910	225.830	4049.88	-104.46	-274.81	-321.57	1745464.93	14596721.07	40°11'29.707"N	80°37'25.835"W	423.00	229.483	1.35	-0.90	-3.82
4200.00	14.660	227.750	4139.80	-111.40	-291.06	-338.86	1745447.64	14596704.82	40°11'29.547"N	80°37'26.058"W	446.70	229.340	0.59	-0.27	2.06
4291.00	15.070	229.040	4227.75	-117.58	-306.56	-356.32	1745430.92	14596689.33	40°11'29.394"N	80°37'26.284"W	470.04	229.293	0.58	0.45	1.42
4384.00	15.760	233.110	4317.41	-123.00	-322.06	-375.55	1745410.19	14596673.83	40°11'29.242"N	80°37'26.533"W	494.74	229.384	1.38	0.74	4.38
4477.00	15.400	232.250	4407.07	-127.75	-337.03	-395.19	1745391.33	14596658.87	40°11'29.095"N	80°37'26.787"W	519.39	229.541	0.81	-0.77	-0.92
4569.00	14.200	235.000	4496.09	-131.86	-350.81	-413.87	1745372.66	14596645.09	40°11'28.959"N	80°37'27.028"W	542.55	229.714	1.18	-0.91	2.99
4661.00	14.580	234.290	4585.20	-135.49	-364.04	-432.52	1745354.02	14596631.87	40°11'28.829"N	80°37'27.269"W	565.33	229.913	0.46	0.41	-0.77
4752.00	15.410	237.220	4673.11	-138.76	-377.28	-451.99	1745334.56	14596618.64	40°11'28.699"N	80°37'27.521"W	588.75	230.148	1.24	0.91	3.22
4845.00	15.920	238.760	4762.65	-141.29	-390.58	-473.28	1745313.27	14596605.34	40°11'28.569"N	80°37'27.796"W	613.64	230.468	0.71	0.55	1.66
4938.00	16.670	237.260	4851.92	-143.92	-404.41	-495.41	1745291.16	14596591.52	40°11'28.433"N	80°37'28.082"W	639.51	230.775	0.92	0.81	-1.61
5029.00	17.470	238.540	4938.91	-146.65	-418.60	-518.04	1745268.53	14596577.33	40°11'28.294"N	80°37'28.374"W	666.02	231.060	0.97	0.88	1.41
5122.00	17.300	235.350	5027.66	-149.95	-433.75	-541.32	1745245.26	14596562.19	40°11'28.145"N	80°37'28.675"W	693.66	231.296	1.04	-0.18	-3.43
5214.00	16.090	234.170	5115.78	-154.08	-448.99	-562.91	1745223.68	14596546.96	40°11'27.995"N	80°37'28.954"W	720.04	231.424	1.37	-1.32	-1.28

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5307.00	15.670	235.400	5205.23	-158.07	-463.66	-583.70	1745202.90	14596532.29	40°11'27.851"N	80°37'29.223"W	745.44	231.538	0.58	-0.45	1.32
5354.00	15.490	236.540	5250.50	-159.78	-470.73	-594.16	1745192.44	14596525.23	40°11'27.782"N	80°37'29.358"W	758.03	231.612	0.76	-0.38	2.43
5417.00	14.110	234.500	5311.41	-162.08	-479.83	-607.43	1745179.18	14596516.13	40°11'27.693"N	80°37'29.529"W	774.08	231.694	2.34	-2.19	-3.24
5510.00	14.980	249.040	5401.46	-162.81	-490.71	-627.89	1745158.72	14596505.25	40°11'27.586"N	80°37'29.794"W	796.90	231.991	4.03	0.94	15.63
5602.00	16.130	296.550	5490.44	-151.50	-489.25	-650.51	1745136.11	14596506.71	40°11'27.601"N	80°37'30.085"W	813.96	233.053	13.53	1.25	51.64
5695.00	23.110	322.480	5578.15	-123.23	-468.94	-673.26	1745113.38	14596527.02	40°11'27.803"N	80°37'30.377"W	820.47	235.142	11.83	7.51	27.88
5788.00	30.780	327.650	5661.00	-81.60	-434.30	-697.14	1745089.50	14596561.64	40°11'28.146"N	80°37'30.683"W	821.36	238.078	8.62	8.25	5.56
5879.00	38.290	328.760	5735.91	-30.29	-390.46	-724.26	1745062.39	14596605.46	40°11'28.581"N	80°37'31.030"W	822.81	241.670	8.28	8.25	1.22
5971.00	46.530	333.940	5803.80	31.61	-335.99	-753.77	1745032.89	14596659.91	40°11'29.120"N	80°37'31.407"W	825.26	245.975	9.72	8.96	5.63
6063.00	53.560	335.860	5882.85	102.07	-272.15	-783.61	1745003.06	14596723.73	40°11'29.752"N	80°37'31.788"W	829.52	250.848	7.81	7.64	2.09
6155.00	60.270	337.520	5913.04	179.00	-201.38	-814.06	1744972.63	14596794.47	40°11'30.453"N	80°37'32.177"W	838.59	256.105	7.45	7.29	1.80
6247.00	68.020	341.090	5953.14	261.32	-123.98	-843.21	1744943.49	14596871.84	40°11'31.219"N	80°37'32.548"W	852.27	261.635	9.12	8.42	3.88
6340.00	75.320	347.720	5982.40	347.95	-39.03	-866.80	1744919.91	14596956.75	40°11'32.059"N	80°37'32.848"W	867.68	267.422	10.36	7.85	7.13
6431.00	82.900	348.210	5999.58	434.52	48.30	-885.42	1744901.30	14597044.05	40°11'32.923"N	80°37'33.083"W	886.73	273.122	8.35	8.33	0.54
6524.00	90.830	342.640	6004.67	525.37	138.06	-908.77	1744877.95	14597133.78	40°11'33.811"N	80°37'33.379"W	919.20	278.638	10.41	8.53	-5.99
6572.00	89.940	339.090	6004.34	572.99	183.40	-924.50	1744862.23	14597179.10	40°11'34.260"N	80°37'33.579"W	942.52	281.220	7.62	-1.85	-7.40
6617.00	89.970	337.460	6004.38	617.85	225.20	-941.16	1744845.58	14597220.88	40°11'34.674"N	80°37'33.791"W	967.73	283.457	3.62	0.07	-3.62
6663.00	89.940	336.040	6004.41	663.79	267.47	-959.32	1744827.42	14597263.13	40°11'35.092"N	80°37'34.023"W	995.91	285.579	3.09	-0.07	-3.09
6709.00	90.250	336.570	6004.34	709.74	309.59	-977.80	1744808.95	14597305.24	40°11'35.509"N	80°37'34.259"W	1025.64	287.569	1.33	0.67	1.15
6802.00	89.850	335.450	6004.26	802.67	394.55	-1015.62	1744771.15	14597390.17	40°11'36.350"N	80°37'34.742"W	1089.56	291.230	1.28	-0.43	-1.20
6895.00	90.520	334.520	6003.96	895.65	478.83	-1054.94	1744731.84	14597474.41	40°11'37.185"N	80°37'35.244"W	1158.52	294.413	1.23	0.72	-1.00
6988.00	90.650	333.710	6003.01	988.64	562.49	-1095.54	1744691.26	14597558.04	40°11'38.013"N	80°37'35.762"W	1231.50	297.178	0.88	0.14	-0.87
7081.00	90.580	333.920	6002.01	1081.64	645.94	-1136.57	1744650.24	14597641.46	40°11'38.839"N	80°37'36.287"W	1307.30	299.611	0.24	-0.08	0.23
7173.00	91.020	334.370	6000.72	1173.63	728.72	-1176.69	1744610.14	14597724.21	40°11'39.659"N	80°37'36.799"W	1384.07	301.770	0.68	0.48	0.49
7266.00	90.920	334.440	5999.15	1266.61	812.59	-1216.86	1744569.98	14597808.04	40°11'40.489"N	80°37'37.312"W	1463.23	303.734	0.13	-0.11	0.08
7359.00	90.710	334.000	5997.83	1359.59	896.32	-1257.30	1744529.55	14597891.74	40°11'41.319"N	80°37'37.829"W	1544.09	305.485	0.52	-0.23	-0.47
7452.00	90.710	334.560	5996.68	1452.58	980.10	-1297.66	1744489.21	14597975.49	40°11'42.148"N	80°37'38.344"W	1626.20	307.063	0.60	0.00	0.60
7544.00	90.680	334.510	5995.56	1544.57	1063.16	-1337.21	1744449.68	14598058.51	40°11'42.971"N	80°37'38.850"W	1708.35	308.487	0.06	-0.03	-0.05
7637.00	90.650	334.840	5994.48	1637.55	1147.21	-1376.99	1744409.91	14598142.54	40°11'43.803"N	80°37'39.358"W	1792.26	309.799	0.36	-0.03	0.35
7730.00	90.680	334.960	5993.40	1730.53	1231.43	-1416.44	1744370.48	14598226.72	40°11'44.637"N	80°37'39.861"W	1876.89	311.003	0.13	0.03	0.13

Actual Wellpath Report
Kathy Mayhew BRK 1H AWP Proj: 24188'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 1H
Field	Brooke	Wellbore	Kathy Mayhew BRK 1H AWB
Facility	Kathy Mayhew BRK Pad		

WELLPATH DATA (269 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]
7822.00	90.680	334.930	5992.31	1822.50	1314.76	-1455.40	1744331.54	14598310.02	40°11'45.462"N	80°37'40.359"W	1961.32	312.094	0.03	0.00	-0.03
7915.00	90.740	334.580	5991.16	1915.48	1398.87	-1495.06	1744291.89	14598394.10	40°11'46.295"N	80°37'40.866"W	2047.45	313.096	0.38	0.06	-0.38
8008.00	90.680	335.180	5990.00	2008.46	1483.07	-1534.54	1744252.43	14598478.26	40°11'47.128"N	80°37'41.370"W	2134.08	314.023	0.65	-0.06	0.65
8100.00	90.770	336.530	5988.84	2100.39	1567.01	-1572.16	1744214.82	14598562.17	40°11'47.959"N	80°37'41.850"W	2219.74	314.906	1.47	0.10	1.47
8192.00	90.860	337.780	5987.53	2192.22	1651.79	-1607.88	1744179.12	14598646.91	40°11'48.799"N	80°37'42.306"W	2305.14	315.772	1.36	0.10	1.36
8285.00	90.830	337.490	5986.16	2284.99	1737.78	-1643.26	1744143.75	14598732.87	40°11'49.650"N	80°37'42.757"W	2391.69	316.601	0.31	-0.03	-0.31
8376.00	90.890	338.210	5984.79	2375.75	1822.06	-1677.57	1744109.46	14598817.12	40°11'50.484"N	80°37'43.195"W	2476.71	317.364	0.79	0.07	0.79
8469.00	90.860	338.090	5983.37	2468.47	1908.36	-1742.18	1744074.86	14598903.39	40°11'51.338"N	80°37'43.636"W	2563.86	318.102	0.13	-0.03	-0.13
8561.00	90.740	336.760	5982.09	2560.28	1993.30	-1747.49	1744039.56	14598988.30	40°11'52.179"N	80°37'44.086"W	2650.85	318.760	1.45	-0.13	-1.45
8654.00	90.680	338.040	5980.94	2653.08	2079.16	-1783.23	1744003.84	14599074.12	40°11'53.029"N	80°37'44.542"W	2739.12	319.381	1.38	-0.06	1.38
8746.00	90.860	337.020	5979.70	2744.88	2164.16	-1818.38	1743968.69	14599159.09	40°11'53.870"N	80°37'44.991"W	2826.68	319.962	1.13	0.20	-1.11
8839.00	90.860	335.930	5978.30	2837.76	2249.42	-1855.50	1743931.59	14599244.32	40°11'54.715"N	80°37'45.465"W	2915.95	320.481	1.17	0.00	-1.17
8931.00	90.770	334.960	5977.00	2929.71	2333.09	-1893.73	1743893.38	14599327.95	40°11'55.543"N	80°37'45.953"W	3004.92	320.934	1.06	-0.10	-1.05
9024.00	90.920	334.130	5975.62	3022.69	2417.05	-1933.69	1743853.43	14599411.88	40°11'56.374"N	80°37'46.463"W	3095.37	321.339	0.91	0.16	-0.89
9115.00	90.860	334.650	5974.21	3113.68	2499.10	-1973.02	1743814.11	14599493.90	40°11'57.187"N	80°37'46.966"W	3184.08	321.709	0.58	-0.07	0.57
9208.00	90.710	333.690	5972.94	3206.66	2582.80	-2013.54	1743773.61	14599577.57	40°11'58.016"N	80°37'47.483"W	3274.94	322.060	1.04	-0.16	-1.03
9300.00	90.740	333.390	5971.77	3298.66	2665.16	-2054.53	1743732.64	14599659.89	40°11'58.831"N	80°37'48.007"W	3365.14	322.372	0.33	0.03	-0.33
9392.00	90.620	333.610	5970.68	3390.65	2747.49	-2095.58	1743691.61	14599742.19	40°11'59.646"N	80°37'48.532"W	3455.45	322.666	0.27	-0.13	0.24
9485.00	90.680	335.540	5969.63	3483.63	2831.47	-2135.50	1743651.70	14599826.14	40°12'00.478"N	80°37'49.042"W	3546.49	322.976	2.08	0.06	2.08
9578.00	90.710	336.580	5968.50	3576.55	2916.46	-2173.23	1743613.98	14599911.10	40°12'01.319"N	80°37'49.523"W	3637.13	323.308	1.12	0.03	1.12
9669.00	90.680	336.460	5967.39	3667.44	2999.92	-2209.49	1743577.74	14599994.52	40°12'02.145"N	80°37'49.986"W	3725.77	323.628	0.14	-0.03	-0.13
9760.00	90.710	336.470	5966.29	3758.33	3083.35	-2245.82	1743541.42	14600077.91	40°12'02.971"N	80°37'50.450"W	3814.54	323.931	0.03	0.03	0.01
9852.00	90.680	337.150	5965.17	3850.19	3167.91	-2282.05	1743505.21	14600162.44	40°12'03.808"N	80°37'50.912"W	3904.28	324.232	0.74	-0.03	0.74
9945.00	90.650	336.320	5964.09	3943.06	3253.34	-2318.78	1743468.49	14600247.84	40°12'04.654"N	80°37'51.381"W	3995.11	324.521	0.89	-0.03	-0.89
10037.00	90.710	335.730	5963.00	4034.98	3337.39	-2356.16	1743431.13	14600331.86	40°12'05.486"N	80°37'51.858"W	4085.30	324.778	0.64	0.07	-0.64
10129.00	90.490	335.860	5962.04	4126.92	3421.30	-2393.88	1743393.42	14600415.74	40°12'06.317"N	80°37'52.340"W	4175.64	325.020	0.28	-0.24	0.14
10222.00	90.520	336.650	5961.22	4219.83	3506.42	-2431.32	1743355.99	14600500.83	40°12'07.160"N	80°37'52.818"W	4266.89	325.263	0.85	0.03	0.85
10315.00	90.770	337.500	5960.17	4312.67	3592.07	-2467.55	1743319.78	14600586.44	40°12'08.008"N	80°37'53.280"W	4357.95	325.513	0.95	0.27	0.91
10407.00	90.890	337.570	5958.84	4404.46	3677.08	-2502.70	1743284.65	14600671.42	40°12'08.849"N	80°37'53.729"W	4447.97	325.760	0.15	0.13	0.08
10500.00	90.860	337.400	5957.42	4497.26	3762.98	-2538.31	1743249.05	14600757.29	40°12'09.699"N	80°37'54.183"W	4539.06	325.999	0.19	-0.03	-0.18

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Actual Wellpath Report

Kathy Mayhew BRK 1H AWP Proj: 24188'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 1H
Field	Brooke	Wellbore	Kathy Mayhew BRK 1H AWB
Facility	Kathy Mayhew BRK Pad		

WELLPATH DATA (269 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]
10593.00	90.860	336.510	5956.02	4590.10	3848.55	-2574.71	1743212.67	14600842.82	40°12'10.547"N	80°37'54.647"W	4630.38	326.217	0.96	0.00	-0.96
10685.00	90.860	336.110	5954.64	4682.00	3932.79	-2611.67	1743175.72	14600927.03	40°12'11.380"N	80°37'55.119"W	4720.98	326.413	0.43	0.00	-0.43
10777.00	90.800	335.880	5953.31	4773.93	4016.82	-2649.09	1743138.31	14601011.03	40°12'12.212"N	80°37'55.597"W	4811.71	326.595	0.26	-0.07	-0.25
10870.00	90.740	333.860	5952.06	4866.90	4101.01	-2688.58	1743098.84	14601095.18	40°12'13.046"N	80°37'56.102"W	4903.75	326.752	2.17	-0.06	-2.17
10963.00	90.520	334.170	5951.04	4959.89	4184.60	-2729.32	1743058.11	14601178.74	40°12'13.874"N	80°37'56.622"W	4996.01	326.886	0.41	-0.24	0.33
11054.00	90.430	334.660	5950.28	5050.88	4266.67	-2768.62	1743018.83	14601260.78	40°12'14.686"N	80°37'57.124"W	5086.23	327.021	0.55	-0.10	0.54
11146.00	90.280	336.350	5949.71	5142.83	4350.39	-2802.76	1742980.70	14601344.47	40°12'15.515"N	80°37'57.611"W	5177.24	327.171	1.84	-0.16	1.84
11238.00	90.860	338.020	5948.40	5234.66	4435.18	-2842.43	1742945.04	14601429.23	40°12'16.355"N	80°37'58.067"W	5267.85	327.345	1.92	0.63	1.82
11330.00	90.800	338.650	5947.46	5326.36	4520.68	-2876.39	1742911.10	14601514.69	40°12'17.201"N	80°37'58.500"W	5358.19	327.532	0.69	-0.07	0.68
11423.00	90.580	339.130	5946.34	5418.99	4607.43	-2909.89	1742877.62	14601601.40	40°12'18.059"N	80°37'58.927"W	5449.39	327.725	0.57	-0.24	0.52
11516.00	90.580	338.880	5945.40	5511.59	4694.25	-2943.20	1742844.31	14601688.19	40°12'18.919"N	80°37'59.352"W	5540.62	327.913	0.27	0.00	-0.27
11609.00	90.680	339.100	5944.38	5604.20	4781.06	-2976.55	1742810.98	14601774.97	40°12'19.778"N	80°37'59.777"W	5631.91	328.095	0.26	0.11	0.24
11702.00	90.520	336.910	5943.41	5696.94	4867.28	-3011.37	1742776.17	14601861.16	40°12'20.631"N	80°38'00.221"W	5723.53	328.255	2.36	-0.17	-2.35
11794.00	90.620	334.180	5942.49	5788.88	4951.02	-3049.45	1742738.10	14601944.86	40°12'21.460"N	80°38'00.707"W	5814.79	328.370	2.97	0.11	-2.97
11886.00	90.620	334.520	5941.50	5880.87	5033.95	-3089.28	1742698.30	14602027.76	40°12'22.282"N	80°38'01.216"W	5906.29	328.463	0.37	0.00	0.37
11979.00	90.770	336.180	5940.37	5973.83	5118.46	-3128.06	1742659.53	14602112.24	40°12'23.118"N	80°38'01.711"W	5998.62	328.570	1.79	0.16	1.78
12071.00	90.770	337.440	5939.13	6065.69	5203.02	-3164.28	1742623.32	14602196.76	40°12'23.955"N	80°38'02.174"W	6089.67	328.694	1.37	0.00	1.37
12164.00	90.740	338.890	5937.91	6158.41	5289.34	-3198.87	1742588.75	14602283.05	40°12'24.810"N	80°38'02.615"W	6181.41	328.835	1.56	-0.03	1.56
12257.00	90.650	340.730	5936.78	6250.88	5376.61	-3230.96	1742556.67	14602370.29	40°12'25.674"N	80°38'03.024"W	6272.73	328.997	1.98	-0.10	1.98
12350.00	91.140	342.550	5935.32	6342.99	5464.86	-3260.25	1742527.39	14602458.51	40°12'26.547"N	80°38'03.397"W	6363.49	329.180	2.03	0.53	1.96
12442.00	91.080	338.820	5933.54	6434.29	5551.65	-3290.67	1742496.98	14602545.26	40°12'27.406"N	80°38'03.784"W	6453.63	329.343	4.05	-0.07	-4.05
12535.00	90.950	336.380	5931.89	6527.06	5637.62	-3326.10	1742461.56	14602631.19	40°12'28.257"N	80°38'04.236"W	6545.66	329.460	2.63	-0.14	-2.62
12628.00	90.950	334.260	5930.35	6620.01	5722.10	-3364.93	1742422.75	14602715.65	40°12'29.093"N	80°38'04.732"W	6638.16	329.542	2.28	0.00	-2.28
12720.00	90.740	333.510	5929.00	6712.00	5804.70	-3405.42	1742382.28	14602798.21	40°12'29.911"N	80°38'05.250"W	6729.89	329.601	0.85	-0.23	-0.82
12813.00	90.710	333.610	5927.82	6804.99	5887.97	-3446.82	1742340.89	14602881.45	40°12'30.735"N	80°38'05.779"W	6822.67	329.655	0.11	-0.03	0.11
12906.00	90.430	333.210	5926.89	6897.99	5971.13	-3488.45	1742299.28	14602964.57	40°12'31.559"N	80°38'06.311"W	6915.46	329.706	0.52	-0.30	-0.43
12999.00	90.490	332.010	5926.15	6990.96	6053.70	-3531.23	1742256.51	14603047.11	40°12'32.377"N	80°38'06.858"W	7008.34	329.744	1.29	0.06	-1.29
13092.00	90.580	332.440	5925.28	7083.92	6135.98	-3574.57	1742213.19	14603129.36	40°12'33.191"N	80°38'07.412"W	7101.25	329.777	0.47	0.10	0.46
13184.00	90.620	332.610	5924.32	7175.90	6217.60	-3617.01	1742170.77	14603210.95	40°12'34.000"N	80°38'07.955"W	7193.14	329.812	0.19	0.04	0.18
13277.00	90.550	332.480	5923.37	7268.87	6300.12	-3659.89	1742127.91	14603293.44	40°12'34.817"N	80°38'08.503"W	7286.03	329.847	0.16	-0.08	-0.14

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Actual Wellpath Report

Kathy Mayhew BRK 1H AWP Proj: 24188'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 1H
Field	Brooke	Wellbore	Kathy Mayhew BRK 1H AWB
Facility	Kathy Mayhew BRK Pad		

WELLPATH DATA (269 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]
13370.00	90.520	333.420	5922.50	7361.86	6382.94	-3702.18	1742085.63	14603376.23	40°12'35.637"N	80°38'09.044"W	7378.89	329.886	1.01	-0.03	1.01
13462.00	90.550	336.520	5921.64	7453.82	6466.29	-3741.09	1742046.73	14603459.54	40°12'36.462"N	80°38'09.541"W	7470.52	329.948	3.37	0.03	3.37
13554.00	91.020	339.020	5920.38	7545.58	6551.43	-3775.89	1742011.95	14603544.65	40°12'37.305"N	80°38'09.985"W	7561.66	330.043	2.76	0.51	2.72
13647.00	90.860	337.300	5918.85	7638.29	6637.74	-3810.49	1741977.37	14603630.93	40°12'38.159"N	80°38'10.427"W	7653.72	330.141	1.86	-0.17	-1.85
13739.00	90.860	334.750	5917.47	7730.21	6721.79	-3847.86	1741940.01	14603714.94	40°12'38.991"N	80°38'10.904"W	7745.23	330.211	2.77	0.00	-2.77
13832.00	90.860	336.420	5916.07	7823.15	6806.46	-3886.30	1741901.59	14603799.58	40°12'39.830"N	80°38'11.395"W	7837.81	330.275	1.80	0.00	1.80
13925.00	90.800	338.810	5914.73	7915.92	6892.44	-3921.71	1741866.19	14603885.53	40°12'40.681"N	80°38'11.847"W	7930.04	330.361	2.57	-0.06	2.57
14017.00	91.050	341.740	5913.24	8007.31	6979.02	-3952.72	1741835.16	14603972.07	40°12'41.538"N	80°38'12.242"W	8020.66	330.474	3.20	0.27	3.18
14110.00	91.140	340.850	5911.46	8099.49	7067.09	-3982.57	1741805.35	14604060.11	40°12'42.409"N	80°38'12.622"W	8112.01	330.597	0.96	0.10	-0.96
14203.00	90.950	336.660	5909.77	8192.11	7153.74	-4016.26	1741771.68	14604146.72	40°12'43.267"N	80°38'13.052"W	8204.04	330.689	4.51	-0.20	-4.51
14294.00	90.950	334.100	5908.18	8283.05	7236.44	-4054.16	1741733.79	14604229.40	40°12'44.086"N	80°38'13.536"W	8294.72	330.741	2.81	0.11	-2.81
14387.00	90.920	332.870	5906.58	8376.03	7319.65	-4095.67	1741692.30	14604312.57	40°12'44.909"N	80°38'14.066"W	8387.60	330.771	1.33	-0.14	-1.32
14479.00	90.920	333.080	5905.10	8468.01	7401.59	-4137.47	1741650.51	14604394.48	40°12'45.721"N	80°38'14.601"W	8479.52	330.795	0.23	0.00	0.23
14572.00	90.800	334.710	5903.71	8561.00	7485.09	-4178.38	1741609.61	14604477.95	40°12'46.548"N	80°38'15.124"W	8572.37	330.829	1.76	-0.13	1.75
14664.00	90.860	335.330	5902.37	8652.97	7568.48	-4217.23	1741570.78	14604561.30	40°12'47.373"N	80°38'15.620"W	8664.11	330.873	0.68	0.07	0.67
14756.00	90.860	336.230	5900.99	8744.90	7652.37	-4254.97	1741533.06	14604645.16	40°12'48.204"N	80°38'16.102"W	8755.77	330.925	0.98	0.00	0.98
14849.00	90.770	336.500	5899.67	8837.79	7737.56	-4292.25	1741495.79	14604730.32	40°12'49.047"N	80°38'16.578"W	8848.35	330.982	0.31	-0.10	0.29
14941.00	90.580	336.070	5898.59	8929.70	7821.78	-4329.25	1741458.81	14604814.51	40°12'49.881"N	80°38'17.051"W	8939.95	331.036	0.51	-0.21	-0.47
15034.00	90.550	336.900	5897.67	9022.59	7907.06	-4366.35	1741421.72	14604899.75	40°12'50.725"N	80°38'17.525"W	9032.53	331.092	0.89	-0.03	0.89
15127.00	90.580	337.440	5896.75	9115.41	7992.86	-4402.21	1741385.88	14604985.52	40°12'51.574"N	80°38'17.982"W	9124.98	331.155	0.90	0.03	0.90
15218.00	90.620	337.440	5895.80	9206.20	8076.98	-4436.90	1741351.20	14605069.61	40°12'52.407"N	80°38'18.425"W	9215.41	331.219	0.33	0.04	-0.33
15311.00	90.580	336.780	5894.83	9299.04	8162.65	-4473.07	1741315.04	14605155.25	40°12'53.255"N	80°38'18.887"W	9307.91	331.278	0.71	-0.04	-0.71
15404.00	90.580	336.200	5893.88	9391.93	8247.93	-4510.17	1741277.96	14605240.49	40°12'54.099"N	80°38'19.360"W	9400.53	331.329	0.62	0.00	-0.62
15497.00	90.650	338.290	5892.89	9484.75	8333.68	-4546.13	1741242.01	14605326.21	40°12'54.948"N	80°38'19.820"W	9493.03	331.387	2.25	0.08	2.25
15590.00	90.430	339.680	5892.01	9577.36	8420.49	-4579.48	1741208.67	14605412.98	40°12'55.807"N	80°38'20.245"W	9585.21	331.460	1.51	-0.24	1.49
15681.00	90.340	339.500	5891.40	9667.89	8505.78	-4611.22	1741176.95	14605498.23	40°12'56.651"N	80°38'20.649"W	9675.30	331.537	0.22	-0.10	-0.20
15773.00	90.400	336.610	5890.80	9759.62	8591.10	-4645.59	1741142.59	14605583.52	40°12'57.496"N	80°38'21.088"W	9766.70	331.598	3.14	0.07	-3.14
15866.00	90.620	335.540	5889.98	9852.54	8676.10	-4683.31	1741104.89	14605668.50	40°12'58.337"N	80°38'21.570"W	9859.42	331.640	1.17	0.24	-1.15
15959.00	90.580	334.820	5889.00	9945.51	8760.51	-4722.34	1741065.87	14605752.87	40°12'59.173"N	80°38'22.069"W	9952.24	331.673	0.78	-0.04	-0.77
16052.00	90.620	335.120	5888.03	10038.48	8844.77	-4761.69	1741026.54	14605837.10	40°13'00.007"N	80°38'22.571"W	10045.08	331.704	0.33	0.04	0.32

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Actual Wellpath Report

Kathy Mayhew BRK 1H AWP Proj: 24188'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 1H
Field	Brooke	Wellbore	Kathy Mayhew BRK 1H AWB
Facility	Kathy Mayhew BRK Pad		

WELLPATH DATA (269 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]
16145.00	90.580	335.850	5887.05	10131.44	8929.38	-4800.27	1740987.96	14605921.67	40°13'00.845"N	80°38'23.064"W	10137.87	331.738	0.79	-0.04	0.78
16237.00	90.580	336.310	5886.12	10223.36	9013.47	-4837.57	1740950.68	14606005.73	40°13'01.678"N	80°38'23.541"W	10229.61	331.777	0.50	0.00	0.50
16329.00	90.580	337.030	5885.19	10315.24	9097.95	-4874.01	1740914.26	14606090.17	40°13'02.514"N	80°38'24.006"W	10321.27	331.821	0.78	0.00	0.78
16422.00	90.770	339.060	5884.10	10407.97	9184.19	-4908.77	1740879.51	14606176.39	40°13'03.367"N	80°38'24.450"W	10413.71	331.876	2.19	0.20	2.18
16515.00	91.170	338.780	5882.52	10500.58	9270.96	-4942.22	1740846.08	14606263.12	40°13'04.226"N	80°38'24.876"W	10506.00	331.939	0.52	0.43	-0.30
16606.00	90.920	337.840	5880.86	10591.28	9355.50	-4975.84	1740812.46	14606347.62	40°13'05.063"N	80°38'25.305"W	10596.43	331.993	1.07	-0.27	-1.03
16699.00	90.920	338.540	5879.37	10683.99	9441.83	-5010.39	1740777.93	14606433.92	40°13'05.917"N	80°38'25.746"W	10688.88	332.047	0.75	0.00	0.75
16791.00	90.890	337.920	5877.92	10775.70	9527.26	-5044.51	1740743.83	14606519.32	40°13'06.763"N	80°38'26.181"W	10780.34	332.100	0.67	-0.03	-0.67
16882.00	90.920	337.390	5876.48	10866.48	9611.41	-5079.10	1740709.25	14606603.44	40°13'07.596"N	80°38'26.623"W	10870.90	332.146	0.58	0.03	-0.58
16974.00	90.800	335.810	5875.10	10958.36	9695.83	-5115.63	1740672.73	14606687.83	40°13'08.432"N	80°38'27.089"W	10962.61	332.183	1.72	-0.13	-1.72
17066.00	90.800	333.230	5873.81	11050.33	9778.87	-5155.20	1740633.17	14606770.83	40°13'09.254"N	80°38'27.595"W	11054.52	332.203	2.80	0.00	-2.80
17159.00	90.860	332.530	5872.47	11143.31	9861.64	-5197.59	1740590.80	14606853.57	40°13'10.073"N	80°38'28.137"W	11147.50	332.208	0.76	0.06	-0.75
17252.00	90.980	333.530	5870.97	11236.29	9944.51	-5239.77	1740548.64	14606936.41	40°13'10.894"N	80°38'28.677"W	11240.48	332.215	1.08	0.13	1.08
17343.00	90.920	336.750	5869.46	11327.24	10027.06	-5278.01	1740510.41	14607018.92	40°13'11.711"N	80°38'29.165"W	11331.34	332.239	3.54	-0.07	3.54
17436.00	90.860	337.820	5868.02	11420.05	10112.83	-5313.92	1740474.52	14607104.66	40°13'12.560"N	80°38'29.624"W	11423.97	332.280	1.15	-0.06	1.15
17528.00	90.950	337.310	5866.57	11511.84	10197.86	-5349.02	1740439.43	14607189.66	40°13'13.402"N	80°38'30.072"W	11515.57	332.322	0.56	0.10	-0.55
17620.00	90.890	336.290	5865.09	11603.70	10282.40	-5385.26	1740403.20	14607274.17	40°13'14.239"N	80°38'30.535"W	11607.28	332.357	1.11	-0.07	-1.11
17713.00	90.770	335.480	5863.74	11696.59	10367.61	-5422.51	1740365.97	14607359.34	40°13'15.082"N	80°38'31.010"W	11700.04	332.389	0.24	-0.13	0.20
17805.00	90.800	335.390	5862.48	11788.52	10451.60	-5460.02	1740328.47	14607443.30	40°13'15.914"N	80°38'31.490"W	11791.85	332.417	1.19	0.03	-1.18
17897.00	90.950	335.280	5861.08	11880.47	10535.20	-5498.41	1740290.10	14607526.87	40°13'16.741"N	80°38'31.980"W	11883.73	332.440	0.20	0.16	-0.12
17990.00	90.800	334.660	5859.66	11973.44	10619.45	-5537.75	1740250.77	14607611.09	40°13'17.576"N	80°38'32.483"W	11976.62	332.459	0.69	-0.16	-0.67
18083.00	90.800	334.060	5858.36	12066.43	10703.29	-5577.99	1740210.55	14607694.89	40°13'18.406"N	80°38'32.997"W	12069.56	332.474	0.65	0.00	-0.65
18176.00	90.830	333.650	5857.03	12159.42	10786.76	-5618.97	1740169.59	14607778.33	40°13'19.232"N	80°38'33.521"W	12162.53	332.484	0.44	0.03	-0.44
18269.00	90.740	334.880	5855.76	12252.40	10870.53	-5659.35	1740129.23	14607862.07	40°13'20.062"N	80°38'34.037"W	12255.47	332.498	1.33	-0.10	1.32
18361.00	90.650	337.000	5854.64	12344.33	10954.53	-5696.85	1740091.74	14607946.03	40°13'20.893"N	80°38'34.516"W	12347.30	332.524	2.31	-0.10	2.30
18454.00	90.950	340.250	5853.34	12436.97	11041.11	-5730.74	1740057.86	14608032.58	40°13'21.750"N	80°38'34.949"W	12439.75	332.569	3.51	0.32	3.49
18546.00	90.830	342.410	5851.92	12528.16	11128.25	-5760.18	1740028.43	14608119.69	40°13'22.612"N	80°38'35.324"W	12530.67	332.633	2.35	-0.13	2.35
18639.00	90.890	343.320	5850.52	12619.98	11217.11	-5787.58	1740001.04	14608208.52	40°13'23.492"N	80°38'35.672"W	12622.19	332.708	0.98	0.06	0.98
18732.00	90.890	343.100	5849.08	12711.71	11306.14	-5814.44	1739974.19	14608297.51	40°13'24.372"N	80°38'36.014"W	12713.63	332.784	0.24	0.00	-0.24
18823.00	91.080	341.110	5847.51	12801.74	11392.72	-5842.40	1739946.25	14608384.05	40°13'25.229"N	80°38'36.370"W	12803.42	332.850	2.20	0.21	-2.19

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Actual Wellpath Report

Kathy Mayhew BRK 1H AWP Proj: 24188'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 1H
Field	Brooke	Wellbore	Kathy Mayhew BRK 1H AWB
Facility	Kathy Mayhew BRK Pad		

WELLPATH DATA (269 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]
18916.00	91.170	336.640	5845.68	12894.33	11479.43	-5875.90	1739912.76	14608470.73	40°13'26.087"N	80°38'36.797"W	12895.87	332.894	4.81	0.10	-4.81
19008.00	90.890	334.910	5844.03	12986.25	11563.31	-5913.64	1739875.03	14608554.58	40°13'26.918"N	80°38'37.280"W	12987.74	332.914	1.90	-0.30	-1.88
19101.00	90.830	335.230	5842.63	13079.22	11647.64	-5962.84	1739835.85	14608638.87	40°13'27.752"N	80°38'37.781"W	13080.66	332.929	0.35	-0.06	0.34
19194.00	90.710	335.170	5841.38	13172.18	11732.05	-5991.84	1739796.86	14608723.25	40°13'28.588"N	80°38'38.279"W	13173.58	332.946	0.14	-0.13	-0.06
19287.00	90.680	335.350	5840.26	13265.14	11816.51	-6030.76	1739757.96	14608807.68	40°13'29.424"N	80°38'38.776"W	13266.50	332.962	0.20	-0.03	0.19
19379.00	90.580	336.030	5839.24	13357.09	11900.35	-6068.63	1739720.10	14608891.48	40°13'30.254"N	80°38'39.260"W	13358.39	332.981	0.75	-0.11	0.74
19472.00	90.620	336.500	5838.27	13449.99	11985.48	-6106.06	1739682.68	14608976.58	40°13'31.097"N	80°38'39.739"W	13451.23	333.003	0.51	0.04	0.51
19565.00	90.680	336.240	5837.22	13542.89	12070.67	-6143.34	1739645.42	14609061.74	40°13'31.940"N	80°38'40.215"W	13544.07	333.026	0.29	0.06	-0.28
19657.00	90.620	335.620	5836.17	13727.73	12239.78	-6218.33	1739608.37	14609145.91	40°13'32.774"N	80°38'40.688"W	13635.92	333.048	0.07	-0.07	0.00
19750.00	90.770	334.710	5834.04	13820.70	12324.17	-6257.39	1739531.42	14609230.78	40°13'33.614"N	80°38'41.173"W	13728.79	333.067	0.67	0.00	-0.67
19843.00	90.650	334.380	5832.89	13913.68	12408.13	-6297.36	1739491.47	14609399.07	40°13'34.450"N	80°38'41.672"W	13821.72	333.082	0.99	0.16	-0.98
19936.00	90.740	334.600	5831.76	14006.67	12492.06	-6337.40	1739451.43	14609482.97	40°13'35.281"N	80°38'42.183"W	13914.69	333.091	0.38	-0.13	-0.35
20029.00	90.680	335.950	5830.62	14098.63	12575.62	-6375.88	1739412.97	14609566.49	40°13'36.112"N	80°38'42.695"W	14007.65	333.101	0.26	0.10	0.24
20121.00	90.710	338.010	5829.49	14191.47	12661.20	-6412.24	1739376.62	14609652.04	40°13'37.787"N	80°38'43.651"W	14192.35	333.140	2.22	0.03	2.22
20214.00	90.980	339.960	5828.12	14284.07	12748.00	-6445.59	1739343.29	14609738.81	40°13'38.646"N	80°38'44.076"W	14284.86	333.178	2.12	0.29	2.10
20307.00	90.980	339.340	5826.54	14375.58	12834.25	-6477.58	1739311.31	14609825.02	40°13'39.499"N	80°38'44.484"W	14376.26	333.219	0.67	0.00	-0.67
20492.00	90.830	337.270	5825.07	14468.27	12920.64	-6511.95	1739276.95	14609911.38	40°13'40.354"N	80°38'44.923"W	14468.88	333.252	2.23	-0.16	-2.23
20585.00	90.890	335.780	5823.68	14561.15	13005.94	-6548.99	1739239.93	14609996.64	40°13'41.199"N	80°38'45.396"W	14561.72	333.273	1.60	0.06	-1.60
20678.00	90.950	335.410	5822.19	14654.09	13090.61	-6587.41	1739201.52	14610081.29	40°13'42.037"N	80°38'45.887"W	14654.63	333.288	0.40	0.06	-0.40
20770.00	90.980	333.340	5820.64	14746.07	13173.55	-6627.19	1739161.76	14610164.19	40°13'42.858"N	80°38'46.396"W	14746.60	333.294	2.25	0.03	-2.25
20863.00	90.950	333.240	5819.07	14839.05	13256.61	-6668.99	1739119.98	14610247.22	40°13'43.680"N	80°38'46.930"W	14839.58	333.294	0.11	-0.03	-0.11
20956.00	90.980	333.410	5817.50	14932.03	13339.70	-6710.73	1739078.25	14610330.28	40°13'44.503"N	80°38'47.464"W	14932.57	333.295	0.19	0.03	0.18
21048.00	90.950	333.960	5815.95	15024.02	13422.16	-6751.51	1739037.49	14610412.70	40°13'45.320"N	80°38'47.986"W	15024.55	333.297	0.60	-0.03	0.60
21137.00	90.620	333.750	5814.73	15113.01	13502.04	-6790.73	1738998.29	14610492.56	40°13'46.111"N	80°38'48.487"W	15113.54	333.300	0.44	-0.37	-0.24
21230.00	90.430	334.110	5813.88	15206.01	13585.58	-6831.59	1738957.44	14610576.06	40°13'46.938"N	80°38'49.010"W	15206.53	333.304	0.44	-0.20	0.39
21322.00	90.650	334.540	5813.02	15298.00	13668.49	-6871.45	1738917.59	14610658.94	40°13'47.759"N	80°38'49.520"W	15298.51	333.310	0.52	0.24	0.47
21415.00	90.860	337.350	5811.79	15390.92	13753.40	-6909.35	1738879.71	14610743.81	40°13'48.599"N	80°38'50.004"W	15391.40	333.326	3.03	0.23	3.02
21508.00	90.770	337.990	5810.47	15483.69	13839.42	-6944.68	1738844.39	14610829.80	40°13'49.450"N	80°38'50.455"W	15484.12	333.352	0.69	-0.10	0.69
21601.00	90.740	338.380	5809.24	15576.41	13925.75	-6979.24	1738809.85	14610916.10	40°13'50.305"N	80°38'50.896"W	15576.79	333.381	0.42	-0.03	0.42

Actual Wellpath Report
Kathy Mayhew BRK 1H AWP Proj: 24188'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 1H
Field	Brooke	Wellbore	Kathy Mayhew BRK 1H AWB
Facility	Kathy Mayhew BRK Pad		

WELLPATH DATA (269 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]
21693.00	90.710	339.390	5808.08	15668.03	14011.56	-7012.38	1738776.72	14611001.88	40°13'51.154"N	80°38'51.319"W	15668.36	333.413	1.10	-0.03	1.10
21783.00	90.740	339.240	5806.94	15757.61	14095.75	-7044.17	1738744.94	14611086.04	40°13'51.987"N	80°38'51.725"W	15757.87	333.447	0.17	0.03	-0.17
21876.00	90.740	338.520	5805.74	15850.23	14182.50	-7077.68	1738711.45	14611172.75	40°13'52.846"N	80°38'52.152"W	15850.45	333.479	0.77	0.00	-0.77
21969.00	90.800	337.670	5804.49	15942.96	14268.78	-7112.37	1738676.77	14611258.99	40°13'53.700"N	80°38'52.595"W	15943.14	333.506	0.92	0.06	-0.91
22061.00	90.770	338.760	5803.23	16034.67	14354.20	-7146.51	1738642.64	14611344.38	40°13'54.545"N	80°38'53.031"W	16034.82	333.533	1.19	-0.03	1.18
22151.00	91.200	338.860	5801.68	16124.31	14438.10	-7179.03	1738610.13	14611428.25	40°13'55.376"N	80°38'53.446"W	16124.43	333.562	0.49	0.48	0.11
22244.00	91.110	338.200	5799.81	16216.97	14524.63	-7213.07	1738576.11	14611514.74	40°13'56.232"N	80°38'53.880"W	16217.06	333.591	0.72	-0.10	-0.71
22336.00	91.110	335.100	5798.02	16308.83	14609.07	-7249.52	1738539.67	14611599.15	40°13'57.068"N	80°38'54.346"W	16308.90	333.608	3.37	0.00	-3.37
22426.00	91.170	337.790	5796.23	16398.71	14691.54	-7285.48	1738503.73	14611681.59	40°13'57.884"N	80°38'54.805"W	16398.77	333.623	2.99	0.07	2.99
22516.00	91.080	336.310	5794.46	16488.54	14774.40	-7320.56	1738468.66	14611764.42	40°13'58.705"N	80°38'55.254"W	16488.59	333.642	1.65	-0.10	-1.64
22606.00	91.080	335.760	5792.77	16578.45	14856.63	-7357.11	1738432.12	14611846.61	40°13'59.519"N	80°38'55.721"W	16578.49	333.655	0.61	0.00	-0.61
22696.00	90.580	335.320	5791.46	16668.40	14938.54	-7394.37	1738394.88	14611928.50	40°14'00.330"N	80°38'56.197"W	16668.44	333.665	0.74	-0.56	-0.49
22788.00	90.620	335.210	5790.50	16760.37	15022.10	-7432.86	1738356.40	14612012.02	40°14'01.157"N	80°38'56.689"W	16760.39	333.674	0.13	0.04	-0.12
22877.00	90.620	335.180	5789.54	16849.33	15102.88	-7470.20	1738319.08	14612092.77	40°14'01.956"N	80°38'57.166"W	16849.36	333.682	0.03	0.00	-0.03
22969.00	90.620	336.420	5788.54	16941.27	15186.79	-7507.91	1738281.38	14612176.65	40°14'02.787"N	80°38'57.648"W	16941.29	333.694	1.35	0.00	1.35
23062.00	90.550	336.800	5787.59	17034.15	15272.14	-7544.83	1738244.48	14612261.97	40°14'03.632"N	80°38'58.120"W	17034.16	333.709	0.42	-0.08	0.41
23155.00	90.580	336.490	5786.68	17127.03	15357.52	-7581.69	1738207.63	14612347.31	40°14'04.477"N	80°38'58.591"W	17127.04	333.725	0.33	0.03	-0.33
23248.00	90.520	337.370	5785.78	17219.88	15443.08	-7618.13	1738171.20	14612432.83	40°14'05.324"N	80°38'59.056"W	17219.89	333.743	0.95	-0.06	0.95
23340.00	90.250	336.700	5784.16	17311.73	15527.78	-7654.03	1738135.32	14612517.51	40°14'06.162"N	80°38'59.515"W	17311.73	333.760	0.79	-0.29	-0.73
23433.00	90.220	336.960	5784.78	17404.60	15613.28	-7690.62	1738098.74	14612602.97	40°14'07.009"N	80°38'59.982"W	17404.60	333.777	0.28	-0.03	0.28
23526.00	90.220	336.220	5784.43	17497.49	15698.62	-7727.57	1738061.81	14612688.28	40°14'07.854"N	80°39'00.454"W	17497.49	333.792	0.80	0.00	-0.80
23617.00	90.250	336.370	5784.05	17588.40	15781.94	-7764.15	1738025.24	14612771.57	40°14'08.678"N	80°39'00.922"W	17588.40	333.804	0.17	0.03	0.16
23706.00	90.310	336.850	5783.62	17677.29	15863.63	-7799.49	1737989.92	14612853.22	40°14'09.487"N	80°39'01.373"W	17677.29	333.819	0.54	0.07	0.54
23799.00	90.620	337.360	5782.86	17770.13	15949.30	-7835.66	1737953.76	14612938.86	40°14'10.335"N	80°39'01.835"W	17770.14	333.836	0.64	0.33	0.55
23892.00	90.650	338.100	5781.83	17862.90	16035.36	-7870.91	1737918.53	14613024.88	40°14'11.187"N	80°39'02.285"W	17862.92	333.856	0.80	0.03	0.80
23985.00	90.680	337.140	5780.75	17955.69	16121.34	-7906.31	1737883.13	14613110.84	40°14'12.038"N	80°39'02.738"W	17955.71	333.876	1.03	0.03	-1.03
24077.00	90.680	335.900	5779.66	18047.57	16205.72	-7942.97	1737846.50	14613195.18	40°14'12.873"N	80°39'03.206"W	18047.61	333.889	1.35	0.00	-1.35
24163.00	90.950	335.160	5778.44	18133.52	16283.99	-7978.58	1737810.89	14613273.42	40°14'13.648"N	80°39'03.661"W	18133.56	333.897	0.92	0.31	-0.86
24188.00	90.950	335.160	5778.02	18158.51	16306.67	-7989.09	1737800.40	14613296.09	40°14'13.872"N	80°39'03.795"W	18158.55	333.898	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Kathy Mayhew BRK 1H AWB Ref Wellpath: Kathy Mayhew BRK 1H AWP Proj: 24188'

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]
20in Conductor	26.00	126.00	100.00	26.00	126.00	0.00	0.00	-0.41	-0.52
17.5in Open Hole	126.00	552.00	426.00	126.00	551.99	-0.41	-0.52	-0.46	-2.84
13.375in Casing Surface	26.00	528.00	502.00	26.00	527.99	0.00	0.00	-0.49	-2.91
12.25in Open Hole	552.00	1826.00	1274.00	551.99	1823.94	-0.46	-2.84	-0.69	45.36
9.625in Casing Intermediate	26.00	1798.00	1772.00	26.00	1795.94	0.00	0.00	-0.72	45.59
8.75in Open Hole	1798.00	5430.00	3632.00	1795.94	5324.02	-0.72	45.59	-481.62	-610.05
8.5in Open Hole	5430.00	24188.00	18758.00	5324.02	5778.02	-481.62	-610.05	16306.67	-7989.09
5.5in Casing Production	26.00	24188.00	24162.00	26.00	5778.02	0.00	0.00	16306.67	-7989.09

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Kathy Mayhew BRK 1H BHL Rev-5	5773.89	16290.61	-8024.51	1737764.98	14613280.03	40°14'13.715"N	80°39'04.253"W	point
Kathy Mayhew BRK 1H BHL Rev-6	5773.89	16296.61	-8010.76	1737778.72	14613286.03	40°14'13.774"N	80°39'04.075"W	point
Kathy Mayhew BRK 1H LP Rev-7	6005.19	88.09	-901.64	1744885.08	14597083.83	40°11'33.317"N	80°37'33.290"W	point

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Actual Wellpath Report

Kathy Mayhew BRK 1H AWP Proj: 24188'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	SOUTHWESTERN ENERGY	Slot	Slot 1H
Area	Brooke County, WV	Well	Kathy Mayhew BRK 1H
Field	Brooke	Wellbore	Kathy Mayhew BRK 1H AWB
Facility	Kathy Mayhew BRK Pad		

WELLPATH COMPOSITION - Ref Wellbore: Kathy Mayhew BRK 1H AWB Ref Wellpath: Kathy Mayhew BRK 1H AWP Proj: 24188'			
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment
26.00	481.00	Gyrodata standard - Drop gyro or Multi-shot	01_Gyrodata MS Gyro <17-1/2"> (100'-481')
481.00	847.00	Gyrodata standard - Drop gyro or Multi-shot	02_Gyrodata MS Gyro <12-1/4"> (481')(573'-847')
847.00	1746.00	OWSG MWD rev2 + HRGM + Axial Correction	03_Gyrodata MWD <12-1/4"> (847')(914'-1746')
1746.00	5354.00	OWSG MWD rev2 + HRGM	04_Gyrodata MWD <8-3/4"> (1746')(1840'-5354')
5354.00	24163.00	BHI AutoTrak Curve (Short)	05_BH AT Curve <8-1/2"> (5354')(5417'-24163')
24163.00	24188.00	Blind Drilling (std)	Projection to bit
			Kathy Mayhew BRK 1H AWB
			Kathy Mayhew BRK 1H AWB
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Actual Wellpath Report

Kathy Mayhew BRK 1H AWP Proj: 24188'
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REFERENCE WELLPATH IDENTIFICATION		
Operator	SOUTHWESTERN ENERGY	Slot 1H
Area	Brooke County, WV	Kathy Mayhew BRK 1H
Field	Brooke	Kathy Mayhew BRK 1H AWB
Facility	Kathy Mayhew BRK Pad	

COMMENTS
<p>Wellpath general comments API: 47-009-00203-0000 BH Job #: 109994974A Rig: SDC 41 Duration: 09/07/2019 - 09/14/2019</p>

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