

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 10H
Area	Brooke County, WV	Well	Margaret Corbin BRK 10H
Field	Brooke	Wellbore	Margaret Corbin BRK 10H AWB
Facility	Margaret Corbin Pad		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Hiipthop
Scale	0.999620	Report Generated	02/Jul/2019 at 09:38
Convergence at slot	0.31° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Margaret_Corbin_BRK_10H_AWP_Proj_15830_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-12.88	6.13	1773748.29	14611275.58	40°13'52.242"N	80°31'20.238"W
Facility Reference Pt			1773742.17	14611288.45	40°13'52.370"N	80°31'20.316"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	1176.20ft
Horizontal Reference Pt	Slot	SDC 41 (RKB) to Mean Sea Level	1176.20ft
Vertical Reference Pt	SDC 41 (RKB)	SDC 41 (RKB) to Ground Level at Slot (Slot 10H)	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	175.10°

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Actual Wellpath Report

Margaret Corbin BRK 10H AWP Proj: 15830
Page 2 of 10



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Area	Brooke County, WV	Well	Margaret Corbin BRK 10H
Field	Brooke	Wellbore	Margaret Corbin BRK 10H AWB
Facility	Margaret Corbin Pad		

WELLPATH DATA (176 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	285.180	0.00	0.00	0.00	0.00	1773748.29	14611275.58	40°13'52.242"N	80°31'20.238"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	285.180	26.00	0.00	0.00	0.00	1773748.29	14611275.58	40°13'52.242"N	80°31'20.238"W	0.00	0.000	0.00	0.00	0.00
145.00	1.070	285.180	144.99	-0.38	0.29	-1.07	1773747.22	14611275.87	40°13'52.245"N	80°31'20.252"W	1.11	285.180	0.90	0.90	-62.87
244.00	0.770	274.710	243.98	-0.81	0.59	-2.63	1773745.66	14611276.17	40°13'52.248"N	80°31'20.272"W	2.69	282.607	0.35	-0.30	-10.58
335.00	0.330	283.410	334.98	-0.99	0.70	-3.49	1773744.80	14611276.28	40°13'52.250"N	80°31'20.283"W	3.56	281.314	0.49	-0.48	9.56
416.00	0.120	301.610	415.98	-1.12	0.80	-3.79	1773744.50	14611276.38	40°13'52.251"N	80°31'20.287"W	3.87	281.875	0.27	-0.26	22.47
505.00	0.100	331.560	504.98	-1.24	0.91	-3.91	1773744.38	14611276.49	40°13'52.252"N	80°31'20.288"W	4.01	283.170	0.07	-0.02	33.65
586.00	0.260	305.660	585.97	-1.43	1.08	-4.09	1773744.20	14611276.66	40°13'52.253"N	80°31'20.291"W	4.23	284.838	0.22	0.20	-31.98
687.00	0.530	321.470	686.97	-1.97	1.58	-4.57	1773743.72	14611277.16	40°13'52.258"N	80°31'20.297"W	4.83	289.111	0.29	0.27	15.65
778.00	0.690	335.170	777.97	-2.83	2.41	-5.06	1773743.23	14611277.99	40°13'52.267"N	80°31'20.303"W	5.60	295.461	0.24	0.18	15.05
869.00	0.620	337.870	868.96	-3.82	3.36	-5.48	1773742.82	14611278.94	40°13'52.276"N	80°31'20.308"W	6.43	301.555	0.08	-0.08	2.97
959.00	0.810	326.610	958.95	-4.84	4.34	-6.01	1773742.28	14611279.92	40°13'52.286"N	80°31'20.315"W	7.41	305.869	0.26	0.21	-12.51
1059.00	0.690	332.900	1058.95	-6.02	5.47	-6.67	1773741.62	14611281.05	40°13'52.297"N	80°31'20.324"W	8.63	309.351	0.15	-0.12	6.29
1139.00	0.650	324.650	1138.94	-6.86	6.27	-7.15	1773741.14	14611281.85	40°13'52.305"N	80°31'20.330"W	9.51	311.231	0.13	-0.05	-10.31
1239.00	0.940	329.930	1238.93	-8.09	7.44	-7.89	1773740.40	14611283.02	40°13'52.316"N	80°31'20.339"W	10.85	313.316	0.30	0.29	5.28
1323.00	0.720	337.800	1322.92	-9.22	8.53	-8.44	1773739.86	14611284.10	40°13'52.327"N	80°31'20.346"W	12.00	315.302	0.29	-0.26	9.37
1415.00	0.030	279.000	1414.92	-9.77	9.07	-8.68	1773739.61	14611284.64	40°13'52.332"N	80°31'20.349"W	12.55	316.247	0.77	-0.75	-63.91
1505.00	0.100	231.840	1504.92	-9.74	9.02	-8.77	1773739.53	14611284.60	40°13'52.332"N	80°31'20.350"W	12.58	315.826	0.09	0.08	-52.40
1598.00	0.140	191.040	1597.92	-9.58	8.86	-8.85	1773739.44	14611284.44	40°13'52.330"N	80°31'20.351"W	12.52	315.029	0.10	0.04	-43.87
1635.00	0.240	123.710	1634.92	-9.49	8.77	-8.79	1773739.50	14611284.35	40°13'52.330"N	80°31'20.351"W	12.42	314.927	0.61	0.27	-181.97
1697.00	0.200	158.810	1696.92	-9.31	8.60	-8.65	1773739.65	14611284.18	40°13'52.328"N	80°31'20.349"W	12.20	314.840	0.22	-0.06	56.61
1788.00	0.120	242.640	1787.92	-9.12	8.61	-8.67	1773739.62	14611283.98	40°13'52.326"N	80°31'20.349"W	12.08	314.103	0.24	-0.09	92.12
1881.00	2.800	51.990	1880.88	-10.32	9.76	-6.97	1773741.32	14611285.34	40°13'52.339"N	80°31'20.327"W	12.00	324.468	3.14	2.88	182.10
1974.00	5.000	47.190	1973.66	-14.05	13.92	-2.21	1773746.08	14611289.49	40°13'52.380"N	80°31'20.265"W	14.09	350.984	2.39	2.37	-5.16
2066.00	7.330	45.580	2065.12	-20.25	20.75	4.93	1773753.21	14611296.32	40°13'52.447"N	80°31'20.173"W	21.33	13.356	2.54	2.53	-1.75
2159.00	8.920	42.920	2157.19	-28.87	30.18	14.07	1773762.36	14611305.75	40°13'52.540"N	80°31'20.054"W	33.30	25.000	1.76	1.71	-2.86
2252.00	10.780	49.530	2248.82	-38.77	41.11	25.60	1773773.88	14611316.67	40°13'52.647"N	80°31'19.905"W	48.43	31.914	2.34	2.00	7.11
2344.00	12.180	49.510	2338.97	-49.42	52.99	39.53	1773787.80	14611328.55	40°13'52.764"N	80°31'19.725"W	66.11	36.719	1.52	1.52	-0.02
2437.00	12.430	48.050	2429.84	-61.16	66.06	54.43	1773802.70	14611341.61	40°13'52.892"N	80°31'19.531"W	85.59	39.491	0.43	0.27	-1.57
2530.00	12.740	52.080	2520.60	-72.78	79.05	69.97	1773818.23	14611354.60	40°13'53.020"N	80°31'19.330"W	105.57	41.513	1.00	0.33	4.33

Actual Wellpath Report

Margaret Corbin BRK 10H AWP Proj: 15830'

Page 3 of 10



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WELLPATH DATA (176 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]
2623.00	13.210	52.750	2611.23	-84.06	91.78	86.52	1773834.77	14611367.33	40°13'53.145"N	80°31'19.116"W	126.13	43.308	0.53	0.51	0.72
2714.00	13.480	51.960	2699.77	-95.42	104.61	103.15	1773851.40	14611380.15	40°13'53.271"N	80°31'18.901"W	146.91	44.596	0.36	0.30	-0.87
2806.00	13.600	51.670	2789.21	-107.24	117.93	120.08	1773868.32	14611393.46	40°13'53.401"N	80°31'18.682"W	168.30	45.517	0.15	0.13	-0.32
2899.00	14.040	51.310	2879.52	-119.54	131.76	137.46	1773885.70	14611407.29	40°13'53.537"N	80°31'18.456"W	190.41	46.212	0.48	0.47	-0.39
2991.00	14.430	50.430	2968.70	-132.27	146.04	155.01	1773903.24	14611421.56	40°13'53.677"N	80°31'18.229"W	212.96	46.706	0.48	0.42	-0.96
3083.00	14.870	48.910	3057.71	-145.76	161.10	172.74	1773920.96	14611436.62	40°13'53.825"N	80°31'18.000"W	236.20	46.997	0.64	0.48	-1.65
3176.00	14.430	49.000	3147.68	-159.63	176.55	190.48	1773938.69	14611452.06	40°13'53.977"N	80°31'17.770"W	259.71	47.174	0.47	-0.47	0.10
3268.00	16.150	49.570	3236.42	-173.82	192.36	208.87	1773957.08	14611467.87	40°13'54.132"N	80°31'17.532"W	283.96	47.356	1.88	1.87	0.62
3361.00	16.460	49.000	3325.68	-189.10	209.40	228.66	1773976.86	14611484.90	40°13'54.299"N	80°31'17.275"W	310.05	47.518	0.38	0.33	-0.61
3454.00	16.650	46.340	3414.83	-205.20	227.24	248.24	1773996.44	14611502.73	40°13'54.475"N	80°31'17.021"W	336.54	47.529	0.84	0.20	-2.86
3546.00	16.600	47.960	3502.98	-221.39	245.14	267.54	1774015.73	14611520.63	40°13'54.651"N	80°31'16.771"W	362.86	47.502	0.51	-0.05	1.76
3638.00	16.440	51.840	3591.19	-236.47	261.98	287.53	1774035.71	14611537.46	40°13'54.816"N	80°31'16.512"W	388.99	47.662	1.21	-0.17	4.22
3731.00	16.280	50.480	3680.42	-251.09	278.41	307.94	1774056.11	14611553.88	40°13'54.977"N	80°31'16.248"W	415.14	47.883	0.45	-0.17	-1.46
3822.00	16.240	48.620	3767.78	-265.90	294.94	327.32	1774075.49	14611570.41	40°13'55.140"N	80°31'15.997"W	440.60	47.979	0.57	-0.04	-2.04
3915.00	15.740	50.500	3857.19	-280.80	311.56	346.82	1774094.97	14611587.02	40°13'55.303"N	80°31'15.745"W	466.21	48.065	0.77	-0.54	2.02
4008.00	15.760	47.830	3946.70	-295.61	328.06	365.91	1774114.06	14611603.52	40°13'55.465"N	80°31'15.497"W	491.44	48.122	0.78	0.02	-2.87
4100.00	15.810	50.100	4035.23	-310.36	344.49	384.79	1774132.93	14611619.94	40°13'55.626"N	80°31'15.253"W	516.46	48.163	0.67	0.05	2.47
4193.00	16.940	49.860	4124.45	-325.45	361.35	404.86	1774153.00	14611636.79	40°13'55.792"N	80°31'14.993"W	542.67	48.250	1.22	1.22	-0.26
4286.00	17.130	47.660	4213.37	-341.59	379.31	425.34	1774173.47	14611654.74	40°13'55.968"N	80°31'14.728"W	569.91	48.274	0.72	0.20	-2.37
4378.00	16.510	50.200	4301.44	-357.31	396.80	445.40	1774193.52	14611672.23	40°13'56.140"N	80°31'14.468"W	596.52	48.303	1.05	-0.67	2.76
4471.00	15.840	49.570	4390.76	-372.24	413.99	465.22	1774213.33	14611688.91	40°13'56.304"N	80°31'14.211"W	622.42	48.369	0.74	-0.72	-0.68
4564.00	14.980	47.130	4480.41	-387.01	429.90	483.69	1774231.75	14611705.32	40°13'56.465"N	80°31'13.972"W	647.12	48.369	1.16	-0.92	-2.62
4656.00	15.920	47.150	4569.09	-402.09	446.57	501.65	1774249.75	14611721.98	40°13'56.629"N	80°31'13.739"W	671.63	48.324	1.02	1.02	0.02
4748.00	16.980	49.370	4657.32	-417.69	463.90	521.10	1774269.19	14611739.30	40°13'56.799"N	80°31'13.487"W	697.67	48.323	1.34	1.15	2.41
4840.00	17.020	48.530	4745.30	-433.56	481.57	541.38	1774289.47	14611756.96	40°13'56.972"N	80°31'13.224"W	724.57	48.347	0.27	0.04	-0.91
4933.00	16.980	46.320	4834.24	-450.18	499.96	561.40	1774309.48	14611775.35	40°13'57.153"N	80°31'12.965"W	751.75	48.313	0.70	-0.04	-2.38
5026.00	16.850	47.380	4923.22	-466.93	518.46	581.14	1774329.21	14611793.85	40°13'57.335"N	80°31'12.709"W	778.80	48.262	0.36	-0.14	1.14
5119.00	16.650	47.980	5012.27	-483.22	536.51	600.96	1774349.02	14611811.88	40°13'57.512"N	80°31'12.452"W	805.60	48.243	0.28	-0.22	0.65
5211.00	15.900	45.330	5100.58	-499.23	554.19	619.71	1774367.77	14611829.56	40°13'57.686"N	80°31'12.209"W	831.37	48.195	1.15	-0.82	-2.88
5303.00	15.250	49.490	5189.21	-514.34	570.91	637.88	1774385.92	14611846.27	40°13'57.850"N	80°31'11.974"W	856.05	48.171	1.40	-0.71	4.52

Actual Wellpath Report
Margaret Corbin BRK 10H AWP Proj: 15830



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MD	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect	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]
5400.00	14.820	49.540	5282.89	-528.98	587.25	657.01	1774405.05	14611862.60	40°13'58.010"N	80°31'11.726"W	881.21	48.209	0.44	-0.44	0.05
5492.00	14.090	47.280	5371.97	-542.69	602.48	674.19	1774422.23	14611877.83	40°13'58.160"N	80°31'11.503"W	904.17	48.215	1.00	-0.79	-2.46
5585.00	12.460	75.000	5462.58	-551.40	612.77	692.22	1774440.25	14611888.11	40°13'58.261"N	80°31'11.270"W	924.48	48.484	6.99	-1.75	29.81
5678.00	17.350	101.830	5552.53	-549.17	612.52	715.52	1774463.54	14611887.87	40°13'58.257"N	80°31'10.970"W	941.89	49.435	8.96	5.26	28.85
5771.00	20.810	124.640	5640.52	-534.63	600.27	742.73	1774490.74	14611875.62	40°13'58.135"N	80°31'10.620"W	954.97	51.055	8.77	3.72	24.53
5863.00	23.220	147.990	5725.97	-508.03	575.55	765.84	1774513.84	14611850.91	40°13'57.889"N	80°31'10.324"W	958.00	53.074	9.80	2.62	25.38
5956.00	28.790	162.590	5809.61	-469.78	538.57	782.29	1774530.28	14611813.94	40°13'57.523"N	80°31'10.114"W	949.75	55.455	9.08	5.99	15.70
6043.00	34.790	172.940	5883.58	-424.45	493.87	791.62	1774539.61	14611769.26	40°13'57.081"N	80°31'09.997"W	933.05	58.041	9.30	6.90	11.90
6136.00	45.220	177.500	5954.74	-364.78	434.39	796.34	1774544.32	14611709.80	40°13'56.492"N	80°31'09.940"W	907.11	61.388	11.64	11.22	4.90
6229.00	57.260	180.330	6012.86	-292.58	362.03	797.56	1774545.54	14611637.47	40°13'55.777"N	80°31'09.930"W	875.88	65.586	13.16	12.95	3.04
6321.00	67.990	186.760	6055.14	-211.98	280.68	792.30	1774540.28	14611556.15	40°13'54.974"N	80°31'10.003"W	840.54	70.493	13.20	11.66	6.99
6414.00	78.410	189.850	6081.98	-125.45	192.73	779.39	1774527.38	14611468.23	40°13'54.105"N	80°31'10.176"W	802.86	76.111	11.65	11.20	3.32
6465.00	83.490	189.930	6090.00	-76.77	143.13	770.74	1774518.74	14611418.65	40°13'53.616"N	80°31'10.291"W	783.92	79.480	9.96	9.96	0.16
6507.00	89.050	190.970	6092.73	-36.37	101.93	763.14	1774511.14	14611377.47	40°13'53.209"N	80°31'10.392"W	769.92	82.393	13.47	13.24	2.48
6599.00	89.320	188.120	6094.04	52.70	11.22	747.89	1774495.89	14611286.79	40°13'52.313"N	80°31'10.595"W	747.97	89.141	3.11	0.29	-3.10
6692.00	89.320	185.110	6095.15	143.82	-81.14	737.18	1774485.19	14611194.47	40°13'51.401"N	80°31'10.739"W	741.63	96.282	3.24	0.00	-3.24
6785.00	89.380	183.470	6096.20	235.61	-173.88	730.22	1774478.23	14611101.77	40°13'50.485"N	80°31'10.835"W	750.64	103.393	1.76	0.06	-1.76
6877.00	89.780	182.320	6096.88	326.76	-265.75	725.58	1774473.59	14611009.93	40°13'49.578"N	80°31'10.902"W	772.71	110.116	1.32	0.43	-1.25
6970.00	89.720	177.790	6097.28	419.39	-358.73	725.49	1774473.50	14610916.99	40°13'48.659"N	80°31'10.909"W	809.33	116.311	4.87	-0.06	-4.87
7063.00	89.720	176.890	6097.74	512.31	-451.63	729.80	1774477.81	14610824.13	40°13'47.741"N	80°31'10.860"W	858.24	121.751	0.97	0.00	-0.97
7153.00	89.630	175.940	6098.25	602.29	-541.45	735.43	1774483.44	14610734.34	40°13'46.853"N	80°31'10.794"W	913.25	126.362	1.06	-0.10	-1.06
7244.00	89.570	174.600	6098.88	693.28	-632.13	742.93	1774490.94	14610643.69	40°13'45.956"N	80°31'10.703"W	975.47	130.393	1.47	-0.07	-1.47
7338.00	89.600	174.550	6099.56	787.28	-725.71	751.82	1774499.82	14610550.15	40°13'45.031"N	80°31'10.595"W	1044.93	133.988	0.06	0.03	-0.05
7431.00	89.510	175.500	6100.29	880.27	-818.36	759.88	1774507.88	14610457.54	40°13'44.115"N	80°31'10.498"W	1116.75	137.122	1.03	-0.10	1.02
7524.00	89.540	177.560	6101.06	973.23	-911.18	765.51	1774513.51	14610364.75	40°13'43.198"N	80°31'10.432"W	1190.06	139.965	2.22	0.03	2.22
7617.00	89.510	181.650	6101.83	1065.92	-1004.15	766.15	1774514.15	14610271.81	40°13'42.279"N	80°31'10.430"W	1263.06	142.657	4.40	-0.03	4.40
7706.00	89.570	185.480	6102.54	1153.94	-1092.96	760.62	1774508.62	14610183.04	40°13'41.401"N	80°31'10.507"W	1331.58	145.165	4.30	0.07	4.30
7799.00	89.820	187.600	6103.04	1245.08	-1185.35	750.03	1774498.03	14610090.68	40°13'40.489"N	80°31'10.651"W	1402.71	147.676	2.30	0.27	2.28
7891.00	89.750	184.520	6103.38	1335.39	-1276.82	740.32	1774488.33	14609999.24	40°13'39.586"N	80°31'10.782"W	1475.92	149.894	3.35	-0.08	-3.35
7984.00	89.780	181.260	6103.77	1427.52	-1369.69	735.63	1774483.64	14609906.41	40°13'38.668"N	80°31'10.849"W	1554.74	151.761	3.51	0.03	-3.51

NOV 15 2019

WV Department of
Environmental Protection

Actual Wellpath Report

Margaret Corbin BRK 10H AWP Proj: 15830
Page 5 of 10

REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 10H
SOUTHWESTERN ENERGY	Well	Margaret Corbin BRK 10H
Brooke County, WV	Wellbore	Margaret Corbin BRK 10H AWB
Brooke		
Margaret Corbin Pad		

WELLPATH DATA (176 stations)

MD	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]
8076.00	89.660	178.890	6104.22	1519.17	-1461.68	735.51	1774483.52	14609814.45	40°13'37.759"N	80°31'10.857"W	1636.30	153.289	2.58	-0.13	-2.58
8169.00	89.510	178.630	6104.89	1611.97	-1554.66	737.52	1774485.53	14609721.51	40°13'36.840"N	80°31'10.838"W	1720.73	154.621	0.32	-0.16	-0.28
8262.00	89.290	178.360	6105.86	1704.81	-1647.62	739.96	1774487.97	14609628.59	40°13'35.922"N	80°31'10.813"W	1806.16	155.815	0.37	-0.24	-0.29
8355.00	89.480	177.110	6106.86	1797.70	-1740.54	743.64	1774491.65	14609535.70	40°13'35.003"N	80°31'10.772"W	1892.75	156.866	1.36	0.20	-1.34
8447.00	89.570	175.650	6107.62	1889.67	-1832.35	749.45	1774497.45	14609443.93	40°13'34.096"N	80°31'10.703"W	1979.69	157.755	1.59	0.10	-1.59
8540.00	89.480	176.730	6108.40	1982.65	-1925.14	755.63	1774503.63	14609351.17	40°13'33.178"N	80°31'10.630"W	2068.13	158.570	1.17	-0.10	1.16
8632.00	89.480	180.700	6109.23	2074.44	-2017.10	757.69	1774505.69	14609259.25	40°13'32.269"N	80°31'10.610"W	2154.71	159.412	4.32	0.00	4.32
8725.00	89.510	184.070	6110.05	2166.68	-2110.00	753.82	1774501.82	14609166.39	40°13'31.352"N	80°31'10.666"W	2240.61	160.340	3.62	0.03	3.62
8818.00	89.570	183.670	6110.80	2258.59	-2202.78	747.54	1774495.55	14609073.64	40°13'30.435"N	80°31'10.754"W	2326.17	161.255	0.43	0.06	-0.43
8910.00	89.170	182.150	6111.81	2349.72	-2294.66	742.87	1774490.88	14608981.80	40°13'29.527"N	80°31'10.822"W	2411.91	162.061	1.71	-0.43	-1.65
9003.00	89.320	181.470	6113.03	2442.08	-2387.60	739.94	1774487.94	14608888.89	40°13'28.609"N	80°31'10.865"W	2499.63	162.781	0.75	0.16	-0.73
9096.00	89.260	178.180	6114.19	2534.74	-2480.58	740.22	1774488.23	14608795.94	40°13'27.690"N	80°31'10.867"W	2588.67	163.385	3.54	-0.06	-3.54
9188.00	89.170	176.300	6115.45	2626.67	-2572.46	744.65	1774492.66	14608704.10	40°13'26.782"N	80°31'10.817"W	2678.07	163.856	2.05	-0.10	-2.04
9281.00	89.230	176.940	6116.75	2719.62	-2665.29	750.13	1774498.14	14608611.31	40°13'25.865"N	80°31'10.752"W	2768.84	164.281	0.69	0.06	0.69
9372.00	89.350	179.480	6117.87	2810.48	-2756.23	752.97	1774500.98	14608520.40	40°13'24.966"N	80°31'10.722"W	2857.23	164.720	2.79	0.13	2.79
9465.00	89.480	179.990	6118.82	2903.17	-2849.23	753.40	1774501.41	14608427.44	40°13'24.047"N	80°31'10.723"W	2947.15	165.189	0.57	0.14	0.55
9558.00	89.170	179.970	6119.92	2995.82	-2942.22	753.44	1774501.44	14608334.48	40°13'23.128"N	80°31'10.729"W	3037.16	165.636	0.33	-0.33	-0.02
9650.00	89.540	181.910	6120.95	3087.33	-3034.20	751.93	1774499.93	14608242.54	40°13'22.219"N	80°31'10.755"W	3125.98	166.081	2.15	0.40	2.11
9742.00	89.750	181.990	6121.52	3178.68	-3126.14	748.80	1774496.80	14608150.63	40°13'21.311"N	80°31'10.802"W	3214.57	166.530	0.24	0.23	0.09
9834.00	89.780	181.610	6121.90	3270.05	-3218.10	745.91	1774493.91	14608058.71	40°13'20.402"N	80°31'10.846"W	3303.41	166.950	0.41	0.03	-0.41
9927.00	89.690	179.320	6122.33	3362.63	-3311.08	745.15	1774493.16	14607965.76	40°13'19.483"N	80°31'10.862"W	3393.90	167.317	2.46	-0.10	-2.46
10020.00	89.600	181.110	6122.91	3455.26	-3404.08	744.80	1774492.81	14607872.80	40°13'18.564"N	80°31'10.873"W	3484.61	167.658	1.93	-0.10	1.92
10113.00	89.570	180.950	6123.58	3547.76	-3497.06	743.13	1774491.14	14607779.85	40°13'17.646"N	80°31'10.901"W	3575.15	168.003	0.18	-0.03	-0.17
10206.00	89.630	178.710	6124.23	3640.43	-3590.05	743.41	1774491.41	14607686.90	40°13'16.727"N	80°31'10.904"W	3666.22	168.301	2.41	0.06	-2.41
10298.00	89.630	175.900	6124.83	3732.35	-3681.94	747.73	1774495.74	14607595.05	40°13'15.818"N	80°31'10.854"W	3757.10	168.520	3.05	0.00	-3.05
10391.00	89.660	174.470	6125.40	3825.35	-3774.61	755.54	1774503.54	14607502.41	40°13'14.902"N	80°31'10.760"W	3849.48	168.681	1.54	0.03	-1.54
10484.00	89.350	175.970	6126.21	3918.34	-3867.28	763.29	1774511.29	14607409.78	40°13'13.986"N	80°31'10.667"W	3941.88	168.835	1.65	-0.33	1.61
10576.00	89.350	178.320	6127.25	4010.27	-3959.15	767.87	1774515.87	14607317.94	40°13'13.078"N	80°31'10.614"W	4032.93	169.024	2.55	0.00	2.55
10669.00	89.350	177.500	6128.30	4103.15	-4052.08	771.26	1774519.26	14607225.04	40°13'12.159"N	80°31'10.577"W	4124.83	169.223	0.88	0.00	-0.88
10762.00	89.290	176.320	6129.41	4196.10	-4144.94	776.27	1774524.27	14607132.22	40°13'11.242"N	80°31'10.519"W	4217.00	169.392	1.27	-0.06	-1.27

NOV 15 2019

WV Department of Environmental Protection

Actual Wellpath Report

Margaret Corbin BRK 10H AWP Proj: 15830'

Page 6 of 10



REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 10H
SOUTHWESTERN ENERGY	Well	Margaret Corbin BRK 10H
Brooke County, WV	Wellbore	Margaret Corbin BRK 10H AWB
Brooke		
Margaret Corbin Pad		

WELLPATH DATA (176 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]
10855.00	89.380	177.660	6130.49	4289.04	4237.80	781.16	1774529.15	14607039.40	40°13'10.324"N	80°31'10.462"W	4309.20	169.556	1.44	0.10	1.44
10947.00	89.380	179.490	6131.48	4380.86	-4329.76	783.45	1774531.44	14606947.47	40°13'09.415"N	80°31'10.439"W	4400.07	169.744	1.99	0.00	1.99
11040.00	89.380	181.540	6132.49	4473.43	-4422.75	782.61	1774530.60	14606854.52	40°13'08.496"N	80°31'10.456"W	4491.46	169.965	2.20	0.00	2.20
11133.00	89.420	181.570	6133.46	4565.84	-4515.71	780.09	1774528.08	14606761.59	40°13'07.577"N	80°31'10.495"W	4582.60	170.199	0.05	0.04	0.03
11225.00	89.420	180.930	6134.39	4657.31	-4607.68	778.08	1774526.07	14606669.65	40°13'06.669"N	80°31'10.528"W	4672.92	170.415	0.70	0.00	-0.70
11318.00	89.350	180.920	6135.39	4749.82	-4700.67	776.58	1774524.57	14606576.71	40°13'05.750"N	80°31'10.554"W	4764.38	170.619	0.08	-0.08	-0.01
11411.00	89.320	181.280	6136.47	4842.30	-4793.64	774.79	1774522.79	14606483.77	40°13'04.831"N	80°31'10.583"W	4855.85	170.819	0.39	-0.03	0.39
11503.00	89.480	181.240	6137.44	4933.77	-4885.62	772.77	1774520.76	14606391.83	40°13'03.923"N	80°31'10.616"W	4946.35	171.012	0.18	0.17	-0.04
11596.00	89.380	180.480	6138.36	5026.29	-4978.60	771.37	1774519.37	14606298.88	40°13'03.004"N	80°31'10.640"W	5038.00	171.193	0.82	-0.11	-0.82
11688.00	89.260	178.190	6139.45	5118.03	-5070.58	772.44	1774520.44	14606206.93	40°13'02.095"N	80°31'10.633"W	5129.08	171.338	2.49	-0.13	-2.49
11781.00	89.450	177.320	6140.50	5210.92	-5163.50	776.08	1774524.08	14606114.05	40°13'01.176"N	80°31'10.592"W	5221.50	171.452	0.96	0.20	-0.94
11872.00	89.170	177.810	6141.60	5301.83	-5254.41	779.95	1774527.94	14606023.17	40°13'00.278"N	80°31'10.549"W	5311.99	171.557	0.62	-0.31	0.54
11963.00	89.290	177.430	6142.82	5392.74	-5345.33	783.73	1774531.72	14605932.29	40°12'59.379"N	80°31'10.506"W	5402.48	171.659	0.44	0.13	-0.42
12054.00	89.260	178.660	6143.97	5483.61	-5436.26	786.83	1774534.82	14605841.39	40°12'58.480"N	80°31'10.473"W	5492.91	171.764	1.35	-0.03	1.35
12146.00	89.350	179.540	6145.09	5575.37	-5528.25	788.28	1774536.27	14605749.44	40°12'57.571"N	80°31'10.461"W	5584.16	171.885	0.96	0.10	0.96
12239.00	89.320	180.800	6146.17	5668.00	-5621.24	788.00	1774535.99	14605656.49	40°12'56.652"N	80°31'10.471"W	5676.20	172.020	1.36	-0.03	1.35
12331.00	89.350	181.760	6147.23	5759.46	-5713.21	785.95	1774533.94	14605564.55	40°12'55.744"N	80°31'10.504"W	5767.01	172.167	1.04	0.03	1.04
12423.00	89.080	183.310	6148.49	5850.68	-5805.11	781.88	1774529.87	14605472.69	40°12'54.836"N	80°31'10.562"W	5857.52	172.329	1.71	-0.29	1.68
12515.00	89.080	184.450	6149.97	5941.58	-5896.88	775.65	1774523.65	14605380.95	40°12'53.929"N	80°31'10.649"W	5947.68	172.507	1.24	0.00	1.24
12608.00	89.170	186.080	6151.39	6033.11	-5989.48	767.12	1774515.12	14605288.36	40°12'53.015"N	80°31'10.765"W	6038.40	172.701	1.76	0.10	1.75
12701.00	89.050	183.250	6152.84	6124.80	-6082.15	759.56	1774507.56	14605195.76	40°12'52.099"N	80°31'10.869"W	6129.39	172.882	3.05	-0.13	-3.04
12792.00	89.170	180.000	6154.25	6215.18	-6173.09	756.98	1774504.98	14605104.85	40°12'51.201"N	80°31'10.909"W	6219.33	173.009	3.57	0.13	-3.57
12885.00	89.230	177.280	6155.55	6307.99	-6266.04	759.19	1774507.19	14605011.93	40°12'50.282"N	80°31'10.887"W	6311.87	173.092	2.93	0.06	-2.92
12978.00	89.080	177.400	6156.92	6400.91	-6358.93	763.50	1774511.50	14604919.07	40°12'49.364"N	80°31'10.838"W	6404.60	173.153	0.21	-0.16	0.13
13070.00	89.170	175.370	6158.33	6492.87	-6450.73	769.30	1774517.30	14604827.31	40°12'48.457"N	80°31'10.770"W	6496.44	173.199	2.21	0.10	-2.21
13163.00	89.200	177.000	6159.65	6585.84	-6543.51	775.49	1774523.48	14604734.56	40°12'47.539"N	80°31'10.696"W	6589.31	173.241	1.75	0.03	1.75
13255.00	89.140	180.730	6160.98	6677.62	-6635.47	777.31	1774525.30	14604642.64	40°12'46.631"N	80°31'10.679"W	6680.84	173.319	4.05	-0.07	4.05
13346.00	89.110	180.300	6162.37	6768.20	-6726.46	776.49	1774524.49	14604551.69	40°12'45.732"N	80°31'10.696"W	6771.13	173.415	0.47	-0.03	-0.47
13439.00	89.080	179.770	6163.84	6860.84	-6819.44	776.44	1774524.43	14604458.74	40°12'44.813"N	80°31'10.703"W	6863.50	173.504	0.57	-0.03	-0.57
13531.00	89.140	179.890	6165.27	6952.52	-6911.43	776.71	1774524.70	14604366.78	40°12'43.904"N	80°31'10.706"W	6954.94	173.588	0.15	0.07	0.13

Actual Wellpath Report

Margaret Corbin BRK 10H AWP Proj: 15830
Page 7 of 10

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 10H
Area	Brooke County, WV	Well	Margaret Corbin BRK 10H
Field	Brooke	Wellbore	Margaret Corbin BRK 10H AWB
Facility	Margaret Corbin Pad		

WELLPATH DATA (176 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]
13624.00	89.080	179.420	6166.71	7045.21	-7004.42	777.27	1774525.26	14604273.83	40°12'42.985"N	80°31'10.705"W	7047.41	173.668	0.51	-0.06	-0.51
13716.00	89.080	178.030	6168.19	7137.01	-7096.38	779.32	1774527.31	14604181.91	40°12'42.076"N	80°31'10.686"W	7139.05	173.733	1.51	0.00	-1.51
13809.00	89.080	178.810	6169.68	7229.85	-7189.33	781.88	1774529.87	14604088.99	40°12'41.157"N	80°31'10.659"W	7231.73	173.793	0.84	0.00	0.84
13902.00	89.080	178.560	6171.18	7322.65	-7282.30	784.01	1774532.00	14603996.06	40°12'40.238"W	80°31'10.638"W	7324.38	173.855	0.27	0.00	-0.27
13994.00	89.020	175.520	6172.70	7414.58	-7374.15	788.76	1774536.75	14603904.24	40°12'39.330"N	80°31'10.583"W	7416.22	173.895	3.30	-0.07	-3.30
14087.00	89.020	174.500	6174.29	7507.56	-7466.78	796.85	1774544.84	14603811.64	40°12'38.415"N	80°31'10.485"W	7509.18	173.908	1.10	0.00	-1.10
14180.00	89.080	176.610	6175.84	7600.54	-7559.49	804.06	1774552.04	14603718.98	40°12'37.498"N	80°31'10.399"W	7602.13	173.929	2.27	0.06	2.27
14272.00	88.950	179.680	6177.42	7692.39	-7651.41	807.03	1774555.02	14603627.09	40°12'36.590"N	80°31'10.367"W	7693.86	173.979	3.34	-0.14	3.34
14365.00	89.080	178.150	6179.02	7785.16	-7744.38	808.80	1774556.78	14603534.15	40°12'35.671"N	80°31'10.351"W	7786.50	174.038	1.65	0.14	-1.65
14457.00	88.860	180.500	6180.67	7876.89	-7836.35	809.88	1774557.86	14603442.22	40°12'34.762"N	80°31'10.343"W	7878.09	174.099	2.57	-0.24	2.55
14550.00	89.110	185.100	6182.32	7969.01	-7929.20	805.34	1774553.32	14603349.40	40°12'33.845"N	80°31'10.408"W	7970.00	174.201	4.95	0.27	4.95
14643.00	89.140	185.500	6183.74	8060.53	-8021.79	796.75	1774544.73	14603256.85	40°12'32.930"N	80°31'10.525"W	8061.26	174.328	0.43	0.03	0.43
14735.00	89.170	182.820	6185.10	8151.37	-8113.53	790.08	1774538.06	14603165.14	40°12'32.024"N	80°31'10.618"W	8151.91	174.438	2.91	0.03	-2.91
14828.00	89.110	178.830	6186.49	8243.87	-8206.49	788.74	1774536.73	14603072.22	40°12'31.105"N	80°31'10.642"W	8244.31	174.510	4.29	-0.06	-4.29
14920.00	89.110	178.680	6187.92	8335.68	-8298.46	790.74	1774538.72	14602980.29	40°12'30.196"N	80°31'10.622"W	8336.05	174.557	0.16	0.00	-0.16
15012.00	89.350	179.400	6189.16	8427.45	-8390.44	792.28	1774540.26	14602888.34	40°12'29.288"N	80°31'10.609"W	8427.76	174.606	0.82	0.26	0.78
15105.00	89.780	180.320	6189.86	8520.12	-8483.44	792.50	1774540.49	14602795.38	40°12'28.369"N	80°31'10.612"W	8520.37	174.663	1.09	0.46	0.99
15198.00	89.630	179.400	6190.34	8612.80	-8576.43	792.73	1774540.72	14602702.42	40°12'27.450"N	80°31'10.616"W	8612.99	174.719	1.00	-0.16	-0.99
15289.00	89.820	177.840	6190.78	8703.63	-8667.40	794.92	1774542.91	14602611.49	40°12'26.550"N	80°31'10.594"W	8703.78	174.760	1.73	0.21	-1.71
15379.00	89.690	178.420	6191.16	8793.50	-8757.35	797.86	1774545.85	14602521.57	40°12'25.661"N	80°31'10.562"W	8793.62	174.794	0.66	-0.14	0.64
15472.00	89.660	177.920	6191.69	8886.36	-8850.30	800.83	1774548.81	14602428.65	40°12'24.743"N	80°31'10.531"W	8886.46	174.830	0.54	-0.03	-0.54
15565.00	89.750	178.940	6192.17	8979.20	-8943.27	803.38	1774551.36	14602335.73	40°12'23.824"N	80°31'10.504"W	8979.28	174.867	1.10	0.10	1.10
15658.00	89.660	180.430	6192.65	9071.90	-9036.26	803.89	1774551.87	14602242.77	40°12'22.905"N	80°31'10.504"W	9071.95	174.916	1.61	-0.10	1.60
15750.00	89.780	182.340	6193.10	9163.34	-9128.23	801.67	1774549.65	14602150.83	40°12'21.996"N	80°31'10.539"W	9163.36	174.981	2.08	0.13	2.08
15805.00	89.690	182.920	6193.35	9217.87	-9183.17	799.14	1774547.13	14602095.91	40°12'21.454"N	80°31'10.576"W	9217.88	175.027	1.07	-0.16	1.05
15830.00	89.690	182.920	6193.49	9242.64	-9208.14	797.87	1774545.85	14602070.96	40°12'21.207"N	80°31'10.594"W	9242.64	175.048	0.00	0.00	0.00

NOV 15 2019

WV Department of
Environmental Protection

Actual Wellpath Report

Margaret Corbin BRK 10H AWP Proj: 15830'

Page 8 of 10



REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 10H
SOUTHWESTERN ENERGY	Well	Margaret Corbin BRK 10H
Brooke County, WV	Wellbore	Margaret Corbin BRK 10H AWB
Brooke		
Margaret Corbin Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Margaret Corbin BRK 10H AWB Ref Wellpath: Margaret Corbin BRK 10H AWP Proj: 15830'

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	100.00	74.00	26.00	100.00	0.00	0.00	0.11	-0.41
17.5in Open Hole	100.00	485.00	385.00	100.00	484.98	0.11	-0.41	0.88	-3.89
13.375in Casing Surface	26.00	452.00	426.00	26.00	451.98	0.00	0.00	0.84	-3.85
12.25in Open Hole	485.00	1706.00	1221.00	484.98	1705.92	0.88	-3.89	8.57	-8.64
9.625in Casing Intermediate	26.00	1694.00	1668.00	26.00	1693.92	0.00	0.00	8.61	-8.65
8.75in Open Hole	1706.00	6027.00	4321.00	1705.92	5870.35	8.57	-8.64	502.78	790.39
8.5in Open Hole	6027.00	15830.00	9803.00	5870.35	6193.49	502.78	790.39	-9208.14	797.87
5.5in Casing Production	26.00	15830.00	15804.00	26.00	6193.49	0.00	0.00	-9208.14	797.87

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Margaret Corbin BRK 10H LP Rev-4	6094.00	47.20	745.63	1774493.64	14611322.76	40°13'52.669"N	80°31'10.621"W	point
Margaret Corbin BRK 10H LP Rev-5	6096.37	-153.51	746.71	1774494.72	14611122.13	40°13'50.686"N	80°31'10.621"W	point
Margaret Corbin BRK 10H BHL Rev-4	6203.30	-9210.84	790.12	1774538.11	14602068.26	40°12'21.181"N	80°31'10.694"W	point

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Margaret Corbin BRK 10H AWP Proj: 15830'

Page 9 of 10



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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 10H
Area	Brooke County, WV	Well	Margaret Corbin BRK 10H
Field	Brooke	Wellbore	Margaret Corbin BRK 10H AWB
Facility	Margaret Corbin Pad		

WELLPATH COMPOSITION - Ref Wellbore: Margaret Corbin BRK 10H AWB Ref Wellpath: Margaret Corbin BRK 10H AWP Proj: 15830'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	416.00	BHI NaviTrak (Axial)	01_APS EM <17-1/2">(145'-416')	Margaret Corbin BRK 10H AWB
416.00	1635.00	BHI NaviTrak (Axial)	02_APS EM <12-1/4">(505'-1635')	Margaret Corbin BRK 10H AWB
1635.00	5956.00	BHI NaviTrak (Axial)	03_APS EM <8-3/4">(1697'-5956')	Margaret Corbin BRK 10H AWB
5956.00	15805.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8-1/2">(5956')(6043'-15805')	Margaret Corbin BRK 10H AWB
15805.00	15830.00	Blind Drilling (std)	Projection to bit	Margaret Corbin BRK 10H AWB

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Environmental Protection

Actual Wellpath Report

Margaret Corbin BRK 10H AWP Proj: 15830'
Page 10 of 10



REFERENCE WELLPATH IDENTIFICATION

Operator	Area	Field	Facility	Slot	Well	Wellbore	Slot 10H
SOUTHWESTERN ENERGY	Brooke County, WV	Brooke	Margaret Corbin Pad				
				Well	Margaret Corbin BRK 10H		
				Wellbore	Margaret Corbin BRK 10H AWB		

COMMENTS

Wellpath general comments
API: 47-009-00279-0000
BH Job #: 109858213
Rig: SDC 41
Duration: 6/16/19 - 6/25/19