

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 201H
Area	Brooke County, WV	Well	Margaret Corbin BRK 201H
Field	Brooke	Wellbore	Margaret Corbin BRK 201H 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	Atenjen
Scale	0.999620	Report Generated	6/21/2019 at 3:17:52 PM
Convergence at slot	0.31° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Margaret_Corbin_BRK_201H_AWP_Proj_14176_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-20.44	-12.40	1773729.77	14611268.02	40°13'52.169"N	80°31'20.477"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 201H)	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	326.97°

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Margaret Corbin BRK 201H AWP Proj: 14176'

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Area	Brooke County, WV	Well	Margaret Corbin BRK 201H
Field	Brooke	Wellbore	Margaret Corbin BRK 201H AWB
Facility	Margaret Corbin Pad		

WELLPATH DATA (164 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	27.750	0.00	0.00	0.00	0.00	1773729.77	14611268.02	40°13'52.169"N	80°31'20.477"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	27.750	26.00	0.00	0.00	0.00	1773729.77	14611268.02	40°13'52.169"N	80°31'20.477"W	0.00	0.000	0.00	0.00	0.00
100.00	0.310	27.750	100.00	0.10	0.18	0.09	1773729.86	14611268.20	40°13'52.170"N	80°31'20.476"W	0.20	27.750	0.42	0.42	37.50
200.00	0.260	353.380	200.00	0.43	0.64	0.19	1773729.96	14611268.66	40°13'52.175"N	80°31'20.475"W	0.67	16.734	0.18	-0.05	-34.37
300.00	0.160	322.370	300.00	0.78	0.98	0.08	1773729.85	14611269.00	40°13'52.178"N	80°31'20.476"W	0.98	4.770	0.15	-0.10	-31.01
400.00	0.170	43.570	400.00	0.95	1.20	0.10	1773729.87	14611269.22	40°13'52.181"N	80°31'20.476"W	1.20	4.713	0.21	0.01	81.20
460.00	0.300	67.440	460.00	0.94	1.32	0.31	1773730.07	14611269.34	40°13'52.182"N	80°31'20.473"W	1.36	13.004	0.27	0.22	39.78
551.00	0.240	116.550	551.00	0.73	1.33	0.70	1773730.46	14611269.35	40°13'52.182"N	80°31'20.468"W	1.50	27.661	0.25	-0.07	53.97
642.00	0.720	207.790	641.99	0.29	0.74	0.60	1773730.37	14611268.76	40°13'52.176"N	80°31'20.470"W	0.95	39.163	0.84	0.53	100.26
755.00	2.590	229.260	754.94	-0.40	-1.56	-1.67	1773728.10	14611266.46	40°13'52.153"N	80°31'20.499"W	2.28	226.912	1.72	1.65	19.00
847.00	4.380	227.860	846.77	-1.23	-5.27	-5.85	1773723.93	14611262.75	40°13'52.117"N	80°31'20.553"W	7.87	227.955	1.95	1.95	-1.52
915.00	5.640	224.420	914.51	-2.37	-9.40	-10.11	1773719.66	14611258.62	40°13'52.076"N	80°31'20.608"W	13.81	227.082	1.90	1.85	-5.06
964.00	6.440	230.060	963.24	-3.22	-12.89	-13.90	1773715.87	14611255.14	40°13'52.042"N	80°31'20.657"W	18.96	227.175	2.03	1.63	11.51
1055.00	7.330	219.490	1053.58	-5.58	-20.64	-21.51	1773708.27	14611247.39	40°13'51.966"N	80°31'20.756"W	29.81	226.177	1.70	0.98	-11.62
1145.00	7.940	223.700	1142.78	-8.73	-29.57	-29.45	1773700.33	14611238.47	40°13'51.878"N	80°31'20.859"W	41.73	224.890	0.92	0.68	4.68
1237.00	7.900	222.330	1233.91	-11.79	-38.84	-38.10	1773691.68	14611229.20	40°13'51.787"N	80°31'20.971"W	54.41	224.454	0.21	-0.04	-1.49
1330.00	8.430	218.300	1325.96	-15.59	-48.91	-46.63	1773683.16	14611219.13	40°13'51.688"N	80°31'21.082"W	67.58	223.633	0.84	0.57	-4.33
1423.00	9.940	217.210	1417.77	-20.48	-60.65	-55.71	1773674.08	14611207.39	40°13'51.572"N	80°31'21.200"W	82.36	222.568	1.63	1.62	-1.17
1515.00	10.390	217.120	1508.33	-25.99	-73.59	-65.52	1773664.28	14611194.46	40°13'51.445"N	80°31'21.327"W	98.53	221.678	0.49	0.49	-0.10
1608.00	11.090	218.070	1599.70	-31.73	-87.32	-76.09	1773653.70	14611180.73	40°13'51.310"N	80°31'21.464"W	115.82	221.070	0.78	0.75	1.02
1651.00	11.210	214.970	1641.88	-34.64	-94.00	-81.04	1773648.76	14611174.06	40°13'51.244"N	80°31'21.529"W	124.11	220.765	1.42	0.28	-7.21
1726.00	11.140	210.430	1715.46	-40.60	-106.22	-88.89	1773640.91	14611161.84	40°13'51.124"N	80°31'21.631"W	138.51	219.923	1.18	-0.09	-6.05
1816.00	13.820	205.840	1803.33	-50.05	-123.40	-97.98	1773631.83	14611144.67	40°13'50.955"N	80°31'21.749"W	157.57	218.450	3.17	2.98	-5.10
1908.00	17.630	203.110	1891.87	-63.50	-146.11	-108.24	1773621.57	14611121.97	40°13'50.731"N	80°31'21.883"W	181.84	216.532	4.22	4.14	-2.97
2001.00	20.240	200.610	1979.83	-80.88	-174.13	-119.43	1773610.38	14611093.96	40°13'50.454"N	80°31'22.029"W	211.15	214.446	2.94	2.81	-2.69
2094.00	21.770	205.950	2066.66	-99.31	-204.69	-132.64	1773597.18	14611063.41	40°13'50.153"N	80°31'22.202"W	243.91	212.944	2.63	1.65	5.74
2186.00	21.650	213.560	2152.15	-114.85	-234.18	-149.50	1773580.33	14611033.93	40°13'49.863"N	80°31'22.421"W	277.83	212.553	3.06	-0.13	8.27
2279.00	22.690	217.110	2238.28	-127.76	-262.79	-169.80	1773560.03	14611005.34	40°13'49.581"N	80°31'22.685"W	312.87	212.869	1.82	1.12	3.82
2372.00	22.210	213.800	2324.23	-140.77	-291.70	-190.40	1773539.44	14610976.44	40°13'49.296"N	80°31'22.952"W	348.34	213.134	1.45	-0.52	-3.56
2464.00	22.260	220.380	2409.41	-152.59	-319.43	-211.37	1773518.48	14610948.72	40°13'49.023"N	80°31'23.225"W	383.03	213.493	2.71	0.05	7.15

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Area	Brooke County, WV	Well	Margaret Corbin BRK 201H
Field	Brooke	Wellbore	Margaret Corbin BRK 201H AWB
Facility	Margaret Corbin Pad		

WELLPATH DATA (164 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]
2557.00	21.460	218.540	2495.72	-163.00	-346.15	-233.38	1773496.48	14610922.00	40°13'48.761"N	80°31'23.510"W	417.48	213.989	1.13	-0.86	-1.98
2650.00	21.390	220.010	2582.29	-173.32	-372.45	-254.88	1773474.98	14610895.72	40°13'48.502"N	80°31'23.789"W	451.31	214.386	0.58	-0.08	1.58
2741.00	20.470	217.600	2667.29	-183.44	-397.77	-275.26	1773454.61	14610870.41	40°13'48.253"N	80°31'24.054"W	483.72	214.684	1.38	-1.01	-2.65
2833.00	22.590	218.820	2752.87	-194.28	-424.28	-296.16	1773433.72	14610843.90	40°13'47.992"N	80°31'24.325"W	517.42	214.916	2.36	2.30	1.33
2926.00	21.860	216.870	2838.96	-205.80	-452.05	-317.74	1773412.15	14610816.14	40°13'47.719"N	80°31'24.605"W	552.55	215.103	1.12	-0.78	-2.10
3018.00	23.140	217.240	2923.95	-217.79	-480.14	-338.96	1773390.94	14610788.06	40°13'47.442"N	80°31'24.881"W	587.74	215.220	1.40	1.39	0.40
3110.00	22.840	215.680	3008.65	-230.37	-509.04	-360.31	1773369.59	14610759.18	40°13'47.158"N	80°31'25.158"W	623.66	215.292	0.74	-0.33	-1.70
3203.00	22.080	214.150	3094.59	-243.70	-538.17	-380.66	1773349.26	14610730.06	40°13'46.871"N	80°31'25.422"W	659.18	215.272	1.03	-0.82	-1.65
3295.00	21.710	213.890	3179.95	-257.08	-566.60	-399.85	1773330.07	14610701.64	40°13'46.591"N	80°31'25.672"W	693.48	215.211	0.42	-0.40	-0.28
3388.00	20.590	212.210	3266.69	-270.67	-594.72	-418.16	1773311.77	14610673.53	40°13'46.314"N	80°31'25.910"W	727.01	215.112	1.37	-1.20	-1.81
3481.00	22.090	214.260	3353.81	-284.27	-623.01	-436.72	1773293.22	14610645.25	40°13'46.035"N	80°31'26.151"W	760.83	215.030	1.80	1.61	2.20
3573.00	21.300	212.530	3438.80	-297.87	-651.40	-455.44	1773274.50	14610616.88	40°13'45.756"N	80°31'26.394"W	794.82	214.961	1.10	-0.86	-1.88
3665.00	20.470	209.530	3524.75	-312.19	-679.48	-472.36	1773257.59	14610588.80	40°13'45.479"N	80°31'26.614"W	827.54	214.806	1.47	-0.90	-3.26
3758.00	20.630	214.060	3611.84	-326.07	-707.21	-489.55	1773240.40	14610561.09	40°13'45.206"N	80°31'26.838"W	860.12	214.692	1.72	0.17	4.87
3850.00	22.200	214.330	3697.49	-339.07	-734.99	-508.43	1773221.53	14610533.32	40°13'44.933"N	80°31'27.083"W	893.71	214.674	1.71	1.71	0.29
3942.00	21.750	210.770	3782.81	-353.28	-763.99	-526.96	1773203.02	14610504.33	40°13'44.647"N	80°31'27.324"W	928.09	214.596	1.53	-0.49	-3.87
4035.00	21.450	213.290	3869.28	-367.72	-793.01	-545.10	1773184.87	14610475.32	40°13'44.361"N	80°31'27.560"W	962.29	214.504	1.05	-0.32	2.71
4128.00	21.880	214.350	3955.71	-381.22	-821.53	-564.22	1773165.77	14610446.81	40°13'44.080"N	80°31'27.809"W	996.62	214.481	0.63	0.46	1.14
4220.00	22.760	214.740	4040.81	-394.54	-850.31	-584.03	1773145.96	14610418.04	40°13'43.797"N	80°31'28.066"W	1031.56	214.483	0.97	0.96	0.42
4313.00	21.950	211.810	4126.83	-408.74	-879.86	-603.44	1773126.56	14610388.50	40°13'43.506"N	80°31'28.318"W	1066.91	214.444	1.48	-0.87	-3.15
4406.00	23.420	212.340	4212.63	-423.83	-910.25	-622.49	1773107.51	14610358.12	40°13'43.207"N	80°31'28.566"W	1102.75	214.367	1.60	1.58	0.57
4498.00	22.470	210.120	4297.35	-439.39	-940.91	-641.10	1773088.92	14610327.48	40°13'42.905"N	80°31'28.808"W	1138.56	214.269	1.40	-1.03	-2.41
4591.00	22.260	212.990	4383.36	-454.58	-971.05	-659.61	1773070.41	14610297.34	40°13'42.608"N	80°31'29.049"W	1173.89	214.187	1.20	-0.23	3.09
4683.00	21.040	209.770	4468.87	-469.21	-1000.01	-677.30	1773052.73	14610268.40	40°13'42.323"N	80°31'29.279"W	1207.79	214.109	1.85	-1.33	-3.50
4775.00	21.400	212.210	4554.63	-483.79	-1028.54	-694.44	1773035.59	14610239.87	40°13'42.042"N	80°31'29.502"W	1241.03	214.026	1.04	0.39	2.65
4868.00	21.770	215.590	4641.11	-497.18	-1056.93	-713.53	1773016.52	14610211.50	40°13'41.762"N	80°31'29.750"W	1275.23	214.023	1.39	0.40	3.63
4960.00	21.060	213.770	4726.76	-509.92	-1084.54	-732.64	1772997.41	14610183.89	40°13'41.490"N	80°31'29.998"W	1308.81	214.040	1.06	-0.77	-1.98
5053.00	21.240	217.030	4813.50	-522.24	-1111.88	-752.08	1772977.98	14610156.57	40°13'41.221"N	80°31'30.251"W	1342.35	214.074	1.28	0.19	3.51
5146.00	20.360	215.370	4900.44	-533.94	-1138.52	-771.59	1772958.48	14610129.93	40°13'40.959"N	80°31'30.504"W	1375.35	214.126	1.14	-0.95	-1.78
5238.00	19.530	212.780	4986.92	-546.14	-1164.50	-789.18	1772940.89	14610103.96	40°13'40.703"N	80°31'30.733"W	1406.72	214.125	1.32	-0.90	-2.82

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5330.00	19.360	219.070	5073.68	-557.13	-1189.27	-807.12	1772922.96	14610079.20	40°13'40.459"N	80°31'30.966"W	1437.29	214.163	2.28	-0.18	6.84
5423.00	18.080	217.480	5161.76	-566.68	-1212.69	-825.61	1772904.47	14610055.79	40°13'40.229"N	80°31'31.206"W	1467.06	214.247	1.48	-1.38	-1.71
5515.00	18.150	237.460	5249.29	-571.33	-1231.75	-846.40	1772883.69	14610036.74	40°13'40.042"N	80°31'31.475"W	1494.52	214.495	6.72	0.08	21.72
5608.00	20.060	258.870	5337.27	-565.24	-1242.63	-874.30	1772855.80	14610025.86	40°13'39.936"N	80°31'31.835"W	1519.39	215.130	7.76	2.05	23.02
5701.00	21.230	277.560	5424.39	-548.32	-1243.50	-906.68	1772823.44	14610025.00	40°13'39.929"N	80°31'32.253"W	1538.94	216.097	7.17	1.26	20.10
5793.00	23.550	290.600	5509.50	-522.66	-1234.83	-940.42	1772789.71	14610033.66	40°13'40.016"N	80°31'32.687"W	1552.16	217.292	5.94	2.52	14.17
5886.00	29.890	299.470	5592.56	-487.10	-1216.87	-978.04	1772752.10	14610051.62	40°13'40.196"N	80°31'33.171"W	1561.20	218.790	8.04	6.82	9.54
5979.00	34.990	308.840	5671.08	-441.14	-1188.71	-1019.03	1772711.12	14610079.76	40°13'40.476"N	80°31'33.698"W	1565.72	220.605	7.69	5.48	10.80
6072.00	42.390	314.230	5743.64	-385.13	-1150.06	-1062.34	1772667.84	14610118.40	40°13'40.860"N	80°31'34.253"W	1565.63	222.730	8.74	7.96	5.08
6164.00	47.320	317.760	5808.84	-321.45	-1103.35	-1107.33	1772622.86	14610165.09	40°13'41.324"N	80°31'34.830"W	1563.19	225.103	6.00	5.36	3.84
6257.00	51.330	321.720	5869.46	-251.51	-1049.51	-1152.83	1772577.38	14610218.91	40°13'41.859"N	80°31'35.413"W	1559.00	227.686	5.39	4.31	4.26
6302.00	53.310	323.190	5896.97	-216.01	-1021.27	-1174.53	1772555.69	14610247.14	40°13'42.139"N	80°31'35.691"W	1556.44	228.992	5.10	4.40	3.27
6355.00	55.850	321.380	5927.68	-172.97	-987.12	-1200.95	1772529.28	14610281.28	40°13'42.478"N	80°31'36.029"W	1554.57	230.582	5.54	4.79	-3.42
6418.00	56.450	322.700	5962.78	-120.85	-945.86	-1233.13	1772497.11	14610322.52	40°13'42.887"N	80°31'36.441"W	1554.12	232.510	1.98	0.95	2.10
6464.00	60.230	324.910	5986.92	-81.76	-914.27	-1256.23	1772474.01	14610354.10	40°13'43.201"N	80°31'36.737"W	1553.71	233.953	9.18	8.22	4.80
6510.00	66.080	327.070	6007.68	-40.75	-880.25	-1279.16	1772451.09	14610388.11	40°13'43.538"N	80°31'37.030"W	1552.77	235.466	13.39	12.72	4.70
6556.00	71.170	329.240	6024.44	2.06	-843.87	-1301.74	1772428.52	14610424.47	40°13'43.899"N	80°31'37.319"W	1551.34	237.046	11.90	11.07	4.72
6603.00	74.550	331.000	6038.29	46.90	-804.93	-1324.11	1772406.17	14610463.40	40°13'44.285"N	80°31'37.604"W	1549.57	238.704	8.03	7.19	3.74
6649.00	78.570	332.340	6048.98	91.48	-765.56	-1345.33	1772384.95	14610502.76	40°13'44.675"N	80°31'37.875"W	1547.90	240.358	9.19	8.74	2.91
6696.00	82.470	334.040	6056.72	137.55	-724.19	-1366.23	1772364.06	14610544.11	40°13'45.085"N	80°31'38.142"W	1546.30	242.074	9.03	8.30	3.62
6742.00	85.380	335.950	6061.59	182.84	-682.74	-1385.56	1772344.74	14610585.54	40°13'45.495"N	80°31'38.388"W	1544.64	243.768	7.55	6.33	4.15
6788.00	87.850	337.590	6064.31	228.08	-640.55	-1403.67	1772326.63	14610627.72	40°13'45.913"N	80°31'38.619"W	1542.92	245.471	6.44	5.37	3.57
6835.00	90.220	339.510	6065.10	274.11	-596.82	-1420.85	1772309.46	14610671.43	40°13'46.346"N	80°31'38.837"W	1541.11	247.216	6.49	5.04	4.09
6881.00	90.580	339.100	6063.78	319.05	-553.78	-1437.11	1772293.21	14610714.45	40°13'46.772"N	80°31'39.044"W	1540.12	248.926	1.19	0.78	-0.89
6973.00	90.520	338.690	6063.90	409.06	-467.96	-1470.23	1772260.10	14610800.24	40°13'47.622"N	80°31'39.465"W	1542.91	252.344	0.45	-0.07	-0.45
7066.00	90.490	337.290	6063.08	500.34	-381.74	-1505.09	1772225.26	14610886.42	40°13'48.476"N	80°31'39.909"W	1552.74	255.768	1.51	-0.03	-1.51
7159.00	90.460	336.340	6062.31	591.97	-296.26	-1541.70	1772188.66	14610971.88	40°13'49.323"N	80°31'40.375"W	1569.91	259.122	1.02	-0.03	-1.02
7251.00	90.520	337.070	6061.52	682.64	-211.76	-1578.08	1772152.29	14611056.34	40°13'50.160"N	80°31'40.838"W	1592.22	262.357	0.80	0.07	0.79
7344.00	90.550	337.960	6060.65	774.06	-125.84	-1613.64	1772116.74	14611142.23	40°13'51.011"N	80°31'41.291"W	1618.54	265.541	0.96	0.03	0.96
7436.00	90.460	338.370	6059.84	864.31	-40.44	-1647.86	1772082.54	14611227.60	40°13'51.856"N	80°31'41.726"W	1648.36	268.594	0.46	-0.10	0.45

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Actual Wellpath Report

Margaret Corbin BRK 201H AWP Proj: 14176'

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Environmental Protection

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 201H
Area	Brooke County, WV	Well	Margaret Corbin BRK 201H
Field	Brooke	Wellbore	Margaret Corbin BRK 201H AWB
Facility	Margaret Corbin Pad		

WELLPATH DATA (164 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]
7529.00	90.460	339.180	6059.09	955.34	46.25	-1681.53	1772048.88	14611314.25	40°13'52.715"N	80°31'42.154"W	1682.16	271.575	0.87	0.00	0.87
7622.00	90.460	339.940	6058.35	1046.10	133.39	-1714.01	1772016.42	14611401.36	40°13'53.577"N	80°31'42.567"W	1719.19	274.450	0.82	0.00	0.82
7715.00	90.520	338.840	6057.55	1136.92	220.43	-1746.74	1771983.70	14611488.37	40°13'54.439"N	80°31'42.983"W	1760.59	277.192	1.18	0.06	-1.18
7807.00	90.580	337.560	6056.67	1227.15	305.85	-1780.90	1771949.55	14611573.75	40°13'55.285"N	80°31'43.418"W	1806.98	279.745	1.39	0.07	-1.39
7899.00	90.490	336.870	6055.81	1317.68	390.66	-1816.53	1771913.93	14611658.54	40°13'56.125"N	80°31'43.871"W	1858.06	282.137	0.76	-0.10	-0.76
7991.00	90.550	338.620	6054.97	1408.05	475.80	-1851.37	1771879.10	14611743.64	40°13'56.968"N	80°31'44.315"W	1911.53	284.413	1.90	0.07	1.90
8084.00	90.490	341.940	6054.13	1498.53	563.33	-1882.75	1771847.74	14611831.14	40°13'57.835"N	80°31'44.713"W	1965.22	286.658	3.57	-0.06	3.57
8177.00	90.550	342.730	6053.29	1588.21	651.94	-1910.97	1771819.53	14611919.72	40°13'58.712"N	80°31'45.071"W	2019.11	288.838	0.85	0.06	0.85
8268.00	90.490	343.080	6052.46	1675.71	738.92	-1937.71	1771792.79	14612006.66	40°13'59.573"N	80°31'45.410"W	2073.82	290.874	0.39	-0.07	0.39
8361.00	90.460	341.840	6051.69	1765.32	827.59	-1965.74	1771764.78	14612095.30	40°14'00.451"N	80°31'45.765"W	2132.85	292.831	1.33	-0.03	-1.33
8453.00	90.520	339.680	6050.90	1854.66	914.44	-1996.05	1771734.48	14612182.12	40°14'01.310"N	80°31'46.150"W	2195.55	294.614	2.35	0.07	-2.35
8546.00	90.890	339.130	6049.76	1945.47	1001.49	-2028.77	1771701.78	14612269.13	40°14'02.172"N	80°31'46.566"W	2262.49	296.273	0.71	0.40	-0.59
8639.00	90.860	338.600	6048.34	2036.47	1088.23	-2062.29	1771668.26	14612355.83	40°14'03.031"N	80°31'46.992"W	2331.80	297.820	0.57	-0.03	-0.57
8732.00	90.890	336.160	6046.92	2127.92	1174.06	-2098.06	1771632.51	14612441.63	40°14'03.881"N	80°31'47.447"W	2404.22	299.231	2.62	0.03	-2.62
8824.00	91.020	334.640	6045.38	2218.91	1257.69	-2136.35	1771594.24	14612525.23	40°14'04.710"N	80°31'47.935"W	2479.07	300.486	1.66	0.14	-1.65
8917.00	90.860	336.530	6043.86	2310.84	1342.36	-2174.78	1771555.82	14612609.87	40°14'05.548"N	80°31'48.425"W	2555.70	301.685	2.04	-0.17	2.03
9010.00	90.860	338.390	6042.46	2402.27	1428.24	-2210.43	1771520.19	14612695.72	40°14'06.399"N	80°31'48.879"W	2631.70	302.868	2.00	0.00	2.00
9103.00	90.830	338.800	6041.09	2493.36	1514.82	-2244.36	1771486.26	14612782.26	40°14'07.256"N	80°31'49.311"W	2707.74	304.017	0.44	-0.03	0.44
9195.00	90.800	339.230	6039.78	2583.32	1600.71	-2277.31	1771453.33	14612868.12	40°14'08.107"N	80°31'49.729"W	2783.59	305.103	0.47	-0.03	0.47
9288.00	90.860	340.600	6038.43	2673.95	1688.04	-2309.24	1771421.41	14612955.42	40°14'08.971"N	80°31'50.135"W	2860.43	306.167	1.47	0.06	1.47
9381.00	90.830	341.180	6037.06	2764.20	1775.91	-2339.68	1771390.98	14613043.25	40°14'09.841"N	80°31'50.522"W	2937.34	307.200	0.62	-0.03	0.62
9474.00	90.770	341.560	6035.76	2854.27	1864.02	-2369.39	1771361.28	14613131.33	40°14'10.714"N	80°31'50.899"W	3014.73	308.193	0.41	-0.06	0.41
9566.00	90.800	341.310	6034.50	2943.35	1951.23	-2398.68	1771332.01	14613218.51	40°14'11.577"N	80°31'51.271"W	3092.08	309.127	0.27	0.03	-0.27
9659.00	90.860	341.830	6033.16	3033.34	2039.45	-2428.08	1771302.62	14613306.69	40°14'12.450"N	80°31'51.644"W	3170.95	310.028	0.56	0.06	0.56
9752.00	90.740	342.060	6031.86	3123.17	2127.86	-2456.90	1771273.81	14613395.07	40°14'13.325"N	80°31'52.009"W	3250.25	310.895	0.28	-0.13	0.25
9844.00	90.740	342.900	6030.67	3211.81	2215.59	-2484.59	1771246.13	14613482.76	40°14'14.194"N	80°31'52.360"W	3328.96	311.724	0.91	0.00	0.91
9937.00	90.860	343.040	6029.37	3301.20	2304.50	-2511.82	1771218.90	14613571.64	40°14'15.074"N	80°31'52.705"W	3408.81	312.535	0.20	0.13	0.15
10030.00	90.680	341.540	6028.12	3390.88	2393.08	-2540.11	1771190.63	14613660.19	40°14'15.950"N	80°31'53.064"W	3489.84	313.293	1.62	-0.19	-1.61
10122.00	90.740	338.070	6026.98	3480.56	2479.40	-2571.86	1771158.89	14613746.48	40°14'16.805"N	80°31'53.468"W	3572.39	313.951	3.77	0.07	-3.77
10215.00	90.800	337.050	6025.73	3571.97	2565.35	-2607.36	1771123.40	14613832.40	40°14'17.656"N	80°31'53.919"W	3657.78	314.535	1.10	0.06	-1.10



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Margaret Corbin BRK 201H AWP Proj: 14176'

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WV Department of
Environmental Protection

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 201H
Area	Brooke County, WV	Well	Margaret Corbin BRK 201H
Field	Brooke	Wellbore	Margaret Corbin BRK 201H AWB
Facility	Margaret Corbin Pad		

WELLPATH DATA (164 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]
10307.00	90.650	336.980	6024.57	3662.55	2660.04	-2643.28	1771087.50	14613917.05	40°14'18.495"N	80°31'54.377"W	3742.95	315.073	0.18	-0.16	-0.08
10399.00	90.740	337.060	6023.45	3753.13	2734.74	-2679.20	1771051.59	14614001.71	40°14'19.334"N	80°31'54.834"W	3828.43	315.588	0.13	0.10	0.09
10489.00	90.650	335.100	6022.36	3841.99	2817.00	-2715.68	1771015.12	14614083.94	40°14'20.149"N	80°31'55.299"W	3912.85	316.049	2.18	-0.10	-2.18
10581.00	90.710	333.440	6021.27	3933.23	2899.87	-2755.62	1770795.20	14614166.78	40°14'20.970"N	80°31'55.808"W	4000.33	316.461	1.81	0.07	-1.80
10672.00	90.650	334.940	6020.19	4023.50	2981.78	-2795.24	1770935.60	14614248.66	40°14'21.781"N	80°31'56.314"W	4087.10	316.849	1.65	-0.07	1.65
10765.00	90.580	338.220	6019.19	4115.18	3067.10	-2832.19	1770898.66	14614333.95	40°14'22.626"N	80°31'56.784"W	4174.74	317.280	3.53	-0.08	3.53
10857.00	90.580	339.430	6018.26	4205.21	3152.88	-2865.42	1770865.44	14614419.70	40°14'23.476"N	80°31'57.207"W	4260.44	317.735	1.32	0.00	1.32
10949.00	90.680	340.440	6017.25	4294.86	3239.29	-2896.99	1770833.89	14614506.08	40°14'24.331"N	80°31'57.608"W	4345.75	318.193	1.10	0.11	1.10
11042.00	90.650	341.670	6016.17	4385.06	3327.25	-2927.18	1770803.71	14614594.00	40°14'25.202"N	80°31'57.992"W	4431.58	318.660	1.32	-0.03	1.32
11134.00	90.460	341.940	6015.28	4473.98	3414.64	-2955.90	1770775.00	14614681.36	40°14'26.067"N	80°31'58.356"W	4516.32	319.119	0.36	-0.21	0.29
11227.00	90.620	340.750	6014.40	4564.07	3502.75	-2985.65	1770745.26	14614769.44	40°14'26.939"N	80°31'58.734"W	4602.54	319.557	1.29	0.17	-1.28
11318.00	90.620	338.230	6013.41	4652.89	3587.97	-3017.53	1770713.39	14614854.62	40°14'27.783"N	80°31'59.139"W	4688.18	319.936	2.77	0.00	-2.77
11411.00	90.580	338.440	6012.44	4744.06	3674.40	-3051.86	1770679.08	14614941.02	40°14'28.639"N	80°31'59.576"W	4776.51	320.288	0.23	-0.04	0.23
11504.00	91.050	338.020	6011.12	4835.26	3760.76	-3086.35	1770644.60	14615027.34	40°14'29.494"N	80°32'00.015"W	4865.06	320.625	0.68	0.51	-0.45
11596.00	90.950	337.980	6009.51	4925.55	3846.04	-3120.81	1770610.15	14615112.60	40°14'30.339"N	80°32'00.453"W	4952.93	320.943	0.12	-0.11	-0.04
11689.00	91.110	337.920	6007.84	5016.83	3932.23	-3155.71	1770575.26	14615198.75	40°14'31.192"N	80°32'00.897"W	5041.92	321.252	0.18	0.17	-0.06
11781.00	90.980	337.100	6006.16	5107.26	4017.21	-3190.90	1770540.09	14615283.70	40°14'32.034"N	80°32'01.345"W	5130.29	321.540	0.90	-0.14	-0.89
11873.00	90.860	336.160	6004.68	5197.95	4101.66	-3227.39	1770503.61	14615368.11	40°14'32.870"N	80°32'01.810"W	5219.16	321.803	1.03	-0.13	-1.02
11965.00	91.230	336.270	6003.01	5288.74	4185.83	-3264.49	1770466.53	14615452.25	40°14'33.704"N	80°32'02.283"W	5308.30	322.050	0.42	0.40	0.12
12057.00	91.170	337.260	6001.08	5379.37	4270.35	-3300.77	1770430.26	14615536.74	40°14'34.541"N	80°32'02.745"W	5397.31	322.298	1.08	-0.07	1.08
12150.00	91.260	337.530	5999.11	5470.82	4356.18	-3336.51	1770394.53	14615622.54	40°14'35.391"N	80°32'03.200"W	5487.13	322.551	0.31	0.10	0.29
12243.00	91.320	338.160	5997.01	5562.12	4442.29	-3371.57	1770359.48	14615708.62	40°14'36.244"N	80°32'03.646"W	5576.87	322.803	0.68	0.06	0.68
12335.00	91.350	335.290	5994.87	5652.76	4526.77	-3407.91	1770323.16	14615793.07	40°14'37.080"N	80°32'04.109"W	5666.18	323.026	3.12	0.03	-3.12
12428.00	91.110	338.230	5992.87	5744.37	4612.20	-3444.60	1770286.49	14615878.46	40°14'37.926"N	80°32'04.577"W	5756.53	323.246	3.17	-0.26	3.16
12521.00	91.170	338.290	5991.02	5835.56	4698.57	-3479.04	1770252.06	14615964.80	40°14'38.782"N	80°32'05.015"W	5846.39	323.482	0.09	0.06	0.06
12613.00	91.110	340.270	5989.19	5925.42	4784.60	-3511.58	1770219.53	14616050.79	40°14'39.633"N	80°32'05.429"W	5934.94	323.724	2.15	-0.07	2.15
12706.00	91.080	337.670	5987.42	6016.36	4871.38	-3544.94	1770186.18	14616137.54	40°14'40.493"N	80°32'05.853"W	6024.69	323.956	2.80	-0.03	-2.80
12798.00	91.110	338.270	5985.66	6106.66	4956.64	-3579.44	1770151.69	14616222.78	40°14'41.337"N	80°32'06.292"W	6113.98	324.165	0.65	0.03	0.65
12891.00	91.050	336.720	5983.90	6198.07	5042.54	-3615.03	1770116.11	14616308.64	40°14'42.188"N	80°32'06.745"W	6204.49	324.363	1.67	-0.06	-1.67
12984.00	91.050	336.280	5982.20	6289.77	5127.82	-3652.11	1770079.05	14616393.88	40°14'43.032"N	80°32'07.218"W	6295.43	324.541	0.47	0.00	-0.47

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Actual Wellpath Report

Margaret Corbin BRK 201H AWP Proj: 14176'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 201H
Area	Brooke County, WV	Well	Margaret Corbin BRK 201H
Field	Brooke	Wellbore	Margaret Corbin BRK 201H AWB
Facility	Margaret Corbin Pad		

WELLPATH DATA (164 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]
13076.00	90.980	336.590	5980.57	6380.51	5212.13	-3688.89	1770042.29	14616478.16	40°14'43.867"N	80°32'07.686"W	6385.47	324.711	0.35	-0.08	0.34
13169.00	91.260	339.210	5978.75	6471.79	5298.27	-3723.87	1770007.32	146165664.27	40°14'44.721"N	80°32'08.132"W	6476.02	324.899	2.83	0.30	2.82
13261.00	91.020	341.480	5976.92	6561.27	5384.89	-3754.80	1769976.40	14616650.86	40°14'45.578"N	80°32'08.525"W	6564.72	325.113	2.48	-0.26	2.47
13354.00	90.680	341.820	5975.54	6651.23	5473.15	-3784.08	1769947.14	14616739.09	40°14'46.452"N	80°32'08.896"W	6653.92	325.340	0.52	-0.37	0.37
13446.00	90.710	342.590	5974.43	6739.99	5560.74	-3812.19	1769919.03	14616826.64	40°14'47.319"N	80°32'09.253"W	6742.01	325.567	0.84	0.03	0.84
13539.00	90.830	342.670	5973.18	6829.53	5649.49	-3839.95	1769891.28	14616915.36	40°14'48.197"N	80°32'09.605"W	6830.96	325.796	0.16	0.13	0.09
13631.00	90.770	341.430	5971.89	6918.35	5737.01	-3868.30	1769862.94	14617002.84	40°14'49.063"N	80°32'09.965"W	6919.32	326.009	1.35	-0.07	-1.35
13724.00	90.340	339.570	5970.99	7008.76	5824.66	-3899.34	1769831.91	14617090.46	40°14'49.931"N	80°32'10.359"W	7009.39	326.200	2.05	-0.46	-2.00
13815.00	90.310	338.980	5970.47	7097.67	5909.77	-3931.55	1769799.72	14617175.54	40°14'50.774"N	80°32'10.769"W	7098.06	326.366	0.65	-0.03	-0.65
13906.00	90.340	341.380	5969.96	7186.25	5995.37	-3962.40	1769768.88	14617261.11	40°14'51.621"N	80°32'11.161"W	7186.45	326.539	2.64	0.03	2.64
13999.00	90.180	338.950	5969.54	7276.79	6082.85	-3993.95	1769737.34	14617348.55	40°14'52.487"N	80°32'11.562"W	7276.86	326.711	2.62	-0.17	-2.61
14091.00	90.310	339.430	5969.14	7366.70	6168.85	-4026.64	1769704.67	14617434.51	40°14'53.339"N	80°32'11.977"W	7366.71	326.866	0.54	0.14	0.52
14151.00	90.090	337.970	5968.93	7425.45	6224.75	-4048.43	1769682.88	14617490.39	40°14'53.892"N	80°32'12.255"W	7425.45	326.961	2.46	-0.37	-2.43
14176.00	90.090	337.970	5968.89	7449.99	6247.92	-4057.81	1769673.51	14617513.56	40°14'54.122"N	80°32'12.374"W	7449.99	326.998	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Margaret Corbin BRK 201H AWB Ref Wellpath: Margaret Corbin BRK 201H AWP Proj: 14176'

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	End N/S [ft]	Start E/W [ft]	End E/W [ft]
20in Conductor	26.00	100.00	74.00	26.00	100.00	0.00	0.18	0.00	0.09
17.5in Open Hole	100.00	458.00	358.00	100.00	458.00	0.18	1.32	0.09	0.30
13.375in Casing Surface	26.00	458.00	432.00	26.00	458.00	0.00	1.32	0.00	0.30
12.25in Open Hole	458.00	1705.00	1247.00	458.00	1694.86	1.32	-102.75	0.30	-86.79
9.625in Casing Intermediate	26.00	1705.00	1679.00	26.00	1694.86	0.00	-102.75	0.00	-86.79
8.75in Open Hole	1705.00	6380.00	4675.00	1694.86	5941.67	-102.75	-970.87	-86.79	-1213.81
8.5in Open Hole	6380.00	14176.00	7796.00	5941.67	5968.89	-970.87	6247.92	-1213.81	-4057.81
5.5in Casing Production	26.00	14176.00	14150.00	26.00	5968.89	0.00	6247.92	0.00	-4057.81

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Margaret Corbin BRK 201H AWP Proj: 14176'
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 201H
Area	Brooke County, WV	Well	Margaret Corbin BRK 201H
Field	Brooke	Wellbore	Margaret Corbin BRK 201H AWB
Facility	Margaret Corbin Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Margaret Corbin BRK 201H BHL Rev-4	5969.30	6248.99	-4063.11	1769668.21	14617514.63	40°14'54.133"N	80°32'12.442"W	point
Margaret Corbin BRK 201H LP Rev-4	6069.38	-632.17	-1402.77	1772327.53	14610636.09	40°13'45.996"N	80°31'38.607"W	point
Margaret Corbin BRK LL 1	6500.10	4272.68	-7583.42	1766149.24	14615539.07	40°14'34.783"N	80°32'57.971"W	polygon
Margaret Corbin BRK LL 2	6500.10	4993.82	-645.18	1773084.84	14616259.94	40°14'41.551"N	80°31'28.450"W	polygon
Margaret Corbin BRK LL 3	6500.10	-919.87	-2024.14	1771706.40	14610348.50	40°13'43.186"N	80°31'46.638"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: Margaret Corbin BRK 201H AWB Ref Wellpath: Margaret Corbin BRK 201H AWP Proj: 14176'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	460.00	OWSG MWD rev2 + HRGM	01 Premier MWD Surveys <17-1/2"> (100'-460')	Margaret Corbin BRK 201H AWB
460.00	1651.00	OWSG MWD rev2 + HRGM	02 Premier MWD Surveys <12-1/4">(460')(551'-1651')	Margaret Corbin BRK 201H AWB
1651.00	6302.00	OWSG MWD rev2 + HRGM	03 Premier MWD Surveys <8-3/4">(1651')(1726'-6302')	Margaret Corbin BRK 201H AWB
6302.00	14151.00	BHI AutoTrak Curve (Short)	04 BH AT Curve <8-1/2"> (6302')(6355'-14151')	Margaret Corbin BRK 201H AWB
14151.00	14176.00	Blind Drilling (std)	Projection to bit	Margaret Corbin BRK 201H AWB

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Margaret Corbin BRK 201H AWP Proj: 14176'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY		Slot	Slot 201H
Area	Brooke County, WV		Well	Margaret Corbin BRK 201H
Field	Brooke		Wellbore	Margaret Corbin BRK 201H AWB
Facility	Margaret Corbin Pad			

COMMENTS

Wellpath general comments

API: 47-009-00229-0000
 BH Job #: 109858263
 Rig: SDC 41
 Duration: 06/312/2019 - 06/13/2019