

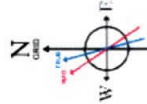
SOUTHWESTERN ENERGY

Location: Brooke County, WV
 Field: Brooke
 Facility: Barry Greathouse A BRK Pad Wellbore: Barry Greathouse A BRK 6H PWB

Plot reference wellpath is Barry Greathouse A BRK 6H PWP Rev-C @ Grid System: NAD83 / UTM Zone 17 North, US feet
 True vertical depths are referenced to SDC 40 (RKB)
 Measured depths are referenced to SDC 40 (RKB)
 SDC 40 (RKB) to Mean Sea Level: 1163.3 feet
 Mean Sea Level to Ground level (At Slot: Slot #6H): -1137.3 feet
 Coordinates are in feet referenced to Slot

Slot: Slot #6H
 Well: Barry Greathouse A BRK 6H
 Barry Greathouse A BRK 6H PWB

North Reference: Grid north
 Scale: True distance
 Depths are in feet
 Created by: atenjen on 2019-05-30
 Database: WA_MPL_EASTERNUS_Defn



Magnetic North is 67.46° Field 52486 n.T.
 Grid North is 0.24 degrees East of True North
 To correct azimuth from True to Grid subtract 0.24 degrees
 To correct azimuth from Magnetic to Grid subtract 6.34 degrees

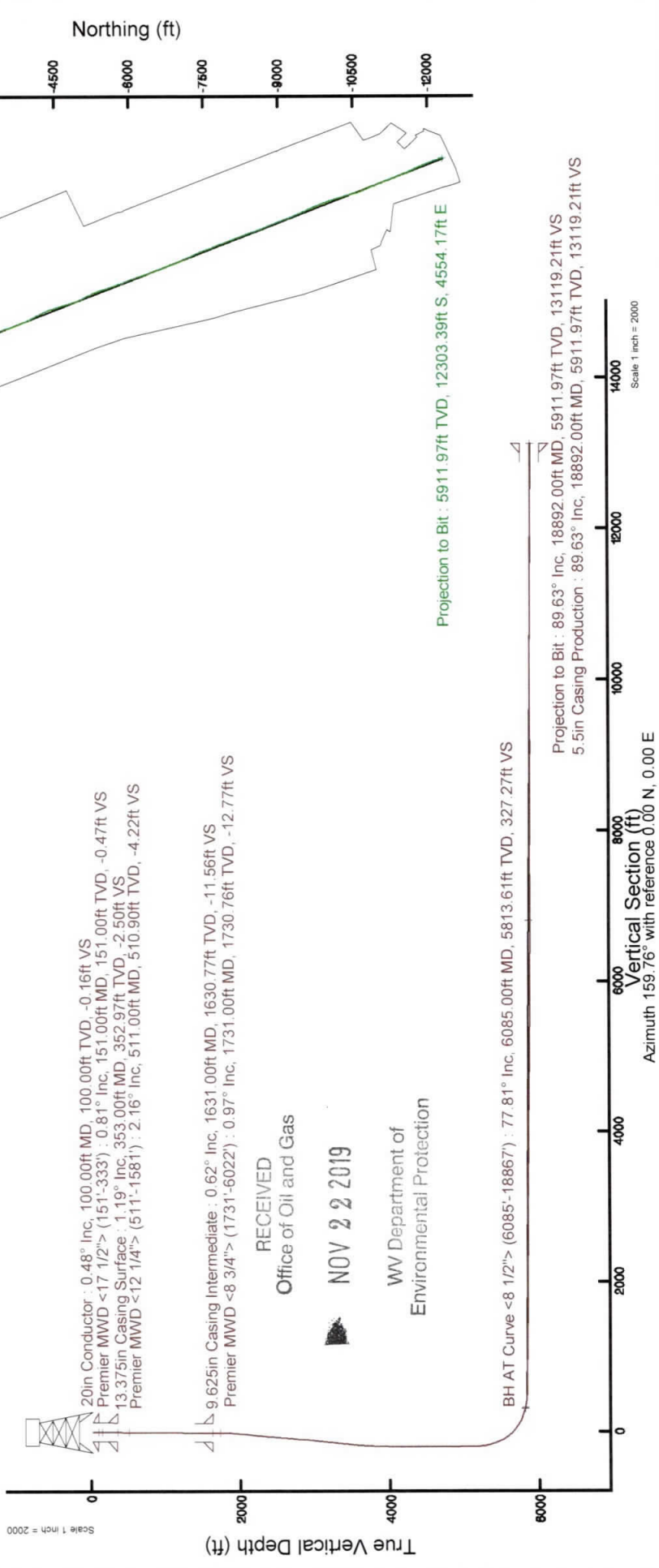
20in Conductor : 0.48° Inc, 100.00ft MD, 100.00ft TVD, -0.16ft VS
 Premier MWD <17 1/2"> : 0.81° Inc, 151.00ft MD, 151.00ft TVD, -0.47ft VS
 13.375in Casing Surface : 1.19° Inc, 353.00ft MD, 352.97ft TVD, -2.50ft VS
 Premier MWD <12 1/4"> : 2.16° Inc, 511.00ft MD, 510.90ft TVD, -4.22ft VS

9.625in Casing Intermediate : 0.62° Inc, 1631.00ft MD, 1630.77ft TVD, -11.56ft VS
 Premier MWD <8 3/4"> : 0.97° Inc, 1731.00ft MD, 1730.76ft TVD, -12.77ft VS

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BH AT Curve <8 1/2"> : 6085°-18867° : 77.81° Inc, 6085.00ft MD, 5813.61ft TVD, 327.27ft VS

Projection to Bit : 89.63° Inc, 18892.00ft MD, 5911.97ft TVD, 13119.21ft VS
 5.5in Casing Production : 89.63° Inc, 18892.00ft MD, 5911.97ft TVD, 13119.21ft VS



Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Barry Greathouse A BRK Pad	1742183.879	14596655.836	40°11'29.197"N 80°38'08.133"W
Slot #6H	Local N (ft)	Grid East (US ft)	Grid North (US ft)
31.83	-13.03	1742170.855	14596687.657
40°11'29.512"N	80°38'08.299"W		
Comments			
SDC 40 (RKB) to Ground level (At Slot: Slot #6H) : 26ft			
Mean Sea Level to Ground level (At Slot: Slot #6H) : -1137.3ft			
SDC 40 (RKB) to Mean Sea Level : 1163.3ft			
API: 47-009-00230-0000			
BH Job #: 109602841			
Rig: SDC 40			
Duration: 05/17/2019 - 05/20/2019			



REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Barry Greathouse A BRK 6H
Field	Brooke	Wellbore	Barry Greathouse A BRK 6H AWB
Facility	Barry Greathouse A BRK Pad		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Atenjen
Scale	0.999612	Report Generated	5/30/2019 at 4:30:20 PM
Convergence at slot	0.24° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Barry_Greathouse_A_BRK_6H_AWP_Proj_18892_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	31.83	-13.03	1742170.86	14596687.66	40°11'29.512"N	80°38'08.299"W
Facility Reference Pt			1742183.88	14596655.84	40°11'29.197"N	80°38'08.133"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM

Calculation method	Minimum curvature	SDC 40 (RKB) to Facility Vertical Datum	1163.30ft
Horizontal Reference Pt	Slot	SDC 40 (RKB) to Mean Sea Level	1163.30ft
Vertical Reference Pt	SDC 40 (RKB)	SDC 40 (RKB) to Ground Level at Slot (Slot #6H)	26.00ft
MD Reference Pt	SDC 40 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	159.76°

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Actual Wellpath Report
Barry Greathouse A BRK 6H AWP Proj: 18892'
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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #6H
SOUTHWESTERN ENERGY	Well	Barry Greathouse A BRK 6H
Area	Wellbore	Barry Greathouse A BRK 6H AWB
Field		
Facility		

WELLPATH DATA (211 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	281.700	0.00	0.00	0.00	0.00	1742170.85	14596687.66	40°11'29.512"N	80°38'08.299"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	281.700	26.00	0.00	0.00	0.00	1742170.85	14596687.66	40°11'29.512"N	80°38'08.299"W	0.00	0.000	0.00	0.00	0.00
151.00	0.810	281.700	151.00	-0.47	0.18	-0.87	1742169.99	14596687.84	40°11'29.514"N	80°38'08.310"W	0.88	281.700	0.65	0.65	-62.64
243.00	0.830	293.230	242.99	-1.27	0.57	-2.11	1742168.74	14596688.23	40°11'29.518"N	80°38'08.326"W	2.19	285.185	0.18	0.02	12.53
303.00	0.860	308.120	302.98	-1.95	1.02	-2.87	1742167.99	14596688.68	40°11'29.522"N	80°38'08.336"W	3.04	289.636	0.37	0.05	24.82
333.00	1.080	282.530	332.98	-2.30	1.22	-3.32	1742167.54	14596688.88	40°11'29.524"N	80°38'08.342"W	3.54	290.225	1.60	0.73	-85.30
511.00	2.160	267.310	510.90	-4.22	1.43	-8.31	1742162.55	14596689.09	40°11'29.527"N	80°38'08.406"W	8.43	279.765	0.65	0.61	-8.55
601.00	1.730	268.640	600.85	-5.17	1.32	-11.36	1742159.50	14596688.97	40°11'29.526"N	80°38'08.446"W	11.44	276.618	0.48	-0.48	1.48
694.00	0.990	288.030	693.82	-6.12	1.53	-13.53	1742157.33	14596689.19	40°11'29.528"N	80°38'08.473"W	13.62	276.467	0.93	-0.80	20.85
787.00	0.900	282.610	786.81	-7.01	1.94	-15.01	1742155.85	14596689.60	40°11'29.532"N	80°38'08.492"W	15.13	277.373	0.14	-0.10	-5.83
880.00	0.800	277.620	879.80	-7.71	2.19	-16.36	1742154.50	14596689.84	40°11'29.534"N	80°38'08.510"W	16.51	277.614	0.13	-0.11	-5.37
973.00	0.900	280.860	972.79	-8.39	2.41	-17.72	1742153.14	14596690.07	40°11'29.537"N	80°38'08.527"W	17.89	277.747	0.12	0.11	3.48
1065.00	0.530	285.210	1064.78	-9.01	2.66	-18.84	1742152.02	14596690.31	40°11'29.539"N	80°38'08.542"W	19.03	278.031	0.41	-0.40	4.73
1158.00	0.680	276.590	1157.78	-9.51	2.83	-19.81	1742151.06	14596690.49	40°11'29.541"N	80°38'08.554"W	20.01	278.145	0.19	0.16	-9.27
1251.00	0.290	330.580	1250.78	-9.99	3.10	-20.47	1742150.39	14596690.76	40°11'29.544"N	80°38'08.563"W	20.70	278.620	0.60	-0.42	58.05
1344.00	0.050	329.070	1343.78	-10.27	3.34	-20.61	1742150.26	14596691.00	40°11'29.546"N	80°38'08.565"W	20.88	279.215	0.26	-0.26	-1.62
1436.00	0.190	359.740	1435.77	-10.45	3.53	-20.63	1742150.23	14596691.19	40°11'29.548"N	80°38'08.565"W	20.93	279.711	0.16	0.15	33.34
1529.00	0.210	336.170	1528.77	-10.76	3.84	-20.70	1742150.17	14596691.50	40°11'29.551"N	80°38'08.566"W	21.05	280.511	0.09	0.02	-25.34
1581.00	0.500	341.550	1580.77	-11.09	4.14	-20.81	1742150.06	14596691.80	40°11'29.554"N	80°38'08.567"W	21.22	281.259	0.56	0.56	10.35
1731.00	0.970	303.820	1730.76	-12.77	5.47	-22.07	1742148.79	14596693.12	40°11'29.567"N	80°38'08.583"W	22.74	283.920	0.43	0.31	-25.15
1821.00	1.080	305.500	1820.75	-14.09	6.39	-23.39	1742147.47	14596694.04	40°11'29.576"N	80°38'08.600"W	24.25	285.270	0.13	0.12	1.87
1912.00	4.050	313.260	1911.65	-17.67	9.09	-26.43	1742144.43	14596696.74	40°11'29.603"N	80°38'08.639"W	27.95	288.973	3.28	3.26	8.53
2005.00	7.350	306.680	2004.17	-25.60	14.89	-33.60	1742137.27	14596702.54	40°11'29.661"N	80°38'08.731"W	36.75	293.907	3.61	3.55	-7.08
2098.00	8.170	303.110	2096.32	-35.88	22.06	-43.90	1742126.97	14596709.70	40°11'29.732"N	80°38'08.864"W	49.13	296.675	1.02	0.88	-3.84
2190.00	8.500	302.350	2187.35	-46.53	29.27	-55.12	1742115.75	14596716.91	40°11'29.804"N	80°38'09.008"W	62.41	297.965	0.38	0.36	-0.83
2283.00	7.330	294.560	2279.47	-56.17	35.41	-66.33	1742104.55	14596723.05	40°11'29.865"N	80°38'09.152"W	75.19	298.097	1.70	-1.26	-8.38
2373.00	7.250	289.940	2368.74	-63.88	39.73	-76.89	1742094.00	14596727.37	40°11'29.908"N	80°38'09.288"W	86.55	297.329	0.66	-0.09	-5.13
2466.00	7.330	286.210	2460.99	-71.19	43.39	-88.10	1742082.79	14596731.03	40°11'29.944"N	80°38'09.432"W	98.21	296.221	0.52	0.09	-4.01
2558.00	7.390	281.810	2552.23	-77.82	46.24	-99.53	1742071.37	14596733.88	40°11'29.973"N	80°38'09.579"W	109.74	294.919	0.62	0.07	-4.78
2652.00	7.380	289.370	2645.45	-84.87	49.48	-111.14	1742059.76	14596737.12	40°11'30.006"N	80°38'09.729"W	121.66	293.999	1.03	-0.01	8.04

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Barry Greathouse A BRK 6H AWP Proj: 18892

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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #6H
SOUTHWESTERN ENERGY	Well	Barry Greathouse A BRK 6H
Area	Wellbore	Barry Greathouse A BRK 6H AWB
Field		
Facility		

WELLPATH DATA (211 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]
2745.00	7.670	294.770	2737.65	-93.07	54.06	-122.41	1742048.49	14596741.70	40°11'30.051"N	80°38'09.874"W	133.82	293.828	0.82	0.31	5.81
2837.00	7.860	288.420	2828.81	-101.34	58.62	-133.95	1742036.95	14596746.25	40°11'30.097"N	80°38'10.022"W	146.22	293.635	0.95	0.21	-6.90
2930.00	7.590	301.840	2920.97	-110.16	63.87	-145.20	1742025.71	14596751.50	40°11'30.149"N	80°38'10.167"W	158.63	293.743	1.96	-0.29	14.43
3023.00	7.860	301.650	3013.13	-120.02	70.46	-155.85	1742015.07	14596758.09	40°11'30.215"N	80°38'10.304"W	171.04	294.327	0.31	0.31	-0.20
3115.00	8.040	296.230	3104.24	-129.65	76.61	-166.99	1742003.93	14596764.24	40°11'30.276"N	80°38'10.447"W	183.72	294.644	0.83	0.17	-5.89
3208.00	6.630	310.390	3196.49	-139.04	82.96	-176.91	1741994.01	14596770.59	40°11'30.339"N	80°38'10.574"W	195.40	295.124	2.45	-1.52	15.23
3301.00	6.490	312.220	3288.88	-148.38	89.97	-184.90	1741986.03	14596777.60	40°11'30.409"N	80°38'10.677"W	205.62	295.948	0.27	-0.15	1.97
3394.00	6.630	307.140	3381.27	-157.57	96.75	-193.07	1741977.86	14596784.37	40°11'30.476"N	80°38'10.782"W	215.95	296.616	0.64	0.15	-5.46
3486.00	6.090	317.250	3472.71	-166.55	103.54	-200.61	1741970.32	14596791.15	40°11'30.543"N	80°38'10.879"W	225.76	297.298	1.35	-0.59	10.99
3579.00	6.120	318.120	3565.18	-175.71	110.85	-207.27	1741963.66	14596798.46	40°11'30.616"N	80°38'10.964"W	235.05	298.138	0.10	0.03	0.94
3672.00	3.720	318.440	3657.83	-183.13	116.80	-212.58	1741958.35	14596804.41	40°11'30.675"N	80°38'11.032"W	242.56	298.786	2.58	-2.58	0.34
3764.00	3.010	314.120	3749.67	-188.09	120.72	-216.30	1741954.64	14596808.33	40°11'30.714"N	80°38'11.080"W	247.70	299.166	0.82	-0.77	-4.70
3857.00	2.910	317.310	3842.55	-192.47	124.15	-219.65	1741951.29	14596811.76	40°11'30.748"N	80°38'11.123"W	252.31	299.476	0.21	-0.11	3.43
3950.00	1.130	340.390	3935.49	-195.57	126.75	-221.56	1741949.38	14596814.36	40°11'30.774"N	80°38'11.147"W	255.25	299.773	2.07	-1.91	24.82
4043.00	0.890	337.400	4028.47	-197.21	128.28	-222.15	1741948.80	14596815.89	40°11'30.789"N	80°38'11.155"W	256.52	300.005	0.26	-0.26	-3.22
4135.00	0.910	345.280	4120.46	-198.65	129.65	-222.61	1741948.34	14596817.25	40°11'30.802"N	80°38'11.161"W	257.61	300.217	0.14	0.02	8.57
4228.00	0.560	105.210	4213.46	-199.12	130.24	-222.35	1741948.59	14596817.85	40°11'30.808"N	80°38'11.158"W	257.69	300.359	1.38	-0.38	128.96
4321.00	0.850	108.960	4306.45	-198.42	129.90	-221.26	1741949.68	14596817.50	40°11'30.805"N	80°38'11.143"W	256.58	300.416	0.32	0.31	4.03
4410.00	0.660	114.050	4395.44	-197.65	129.47	-220.17	1741950.77	14596817.08	40°11'30.800"N	80°38'11.129"W	255.42	300.458	0.23	-0.21	5.72
4503.00	0.460	78.180	4488.44	-197.22	129.33	-219.32	1741951.62	14596816.94	40°11'30.799"N	80°38'11.118"W	254.61	300.528	0.42	-0.22	-38.57
4596.00	0.460	92.950	4581.43	-197.02	129.39	-218.58	1741952.36	14596817.00	40°11'30.800"N	80°38'11.109"W	254.00	300.624	0.13	0.00	15.88
4688.00	0.440	35.080	4673.43	-197.07	130.23	-218.07	1741952.93	14596817.27	40°11'30.802"N	80°38'11.102"W	253.65	300.742	0.47	-0.02	-62.90
4781.00	0.380	24.830	4766.43	-197.50	130.66	-217.67	1741953.27	14596817.84	40°11'30.808"N	80°38'11.097"W	253.66	300.892	0.10	-0.06	-11.02
4874.00	0.830	122.930	4859.43	-197.17	130.15	-216.98	1741953.96	14596817.75	40°11'30.807"N	80°38'11.088"W	253.02	300.956	1.03	0.48	105.48
4967.00	0.770	117.580	4952.42	-196.17	129.49	-215.86	1741955.08	14596817.10	40°11'30.800"N	80°38'11.074"W	251.72	300.969	0.10	-0.06	-5.75
5059.00	0.650	101.580	5044.41	-195.44	129.10	-214.80	1741956.14	14596816.71	40°11'30.797"N	80°38'11.060"W	250.61	301.007	0.25	-0.13	-17.39
5152.00	0.580	106.570	5137.40	-194.88	128.86	-213.83	1741957.11	14596816.47	40°11'30.794"N	80°38'11.048"W	249.66	301.074	0.09	-0.08	5.37
5243.00	6.530	150.880	5228.19	-189.48	124.20	-210.87	1741960.07	14596811.81	40°11'30.748"N	80°38'11.010"W	244.73	300.498	6.73	6.54	48.69
5336.00	12.660	167.200	5319.86	-174.14	109.63	-206.03	1741964.90	14596797.24	40°11'30.604"N	80°38'10.948"W	233.38	298.017	7.15	6.59	17.55
5429.00	19.320	166.480	5409.22	-148.72	84.71	-200.17	1741970.76	14596772.33	40°11'30.357"N	80°38'10.874"W	217.36	292.936	7.16	7.16	-0.77

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Actual Wellpath Report
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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #6H
SOUTHWESTERN ENERGY	Well	Barry Greathouse A BRK 6H
Area	Wellbore	Barry Greathouse A BRK 6H AWB
Field		
Facility		

WELLPATH DATA (211 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]
5521.00	27.460	162.000	5493.59	-112.35	49.67	-190.04	1741980.89	14596737.31	40°11'30.011"N	80°38'10.745"W	196.42	284.648	9.05	8.85	-4.87
5614.00	35.660	159.590	5572.77	-63.73	3.79	-173.93	1741996.99	14596691.45	40°11'29.557"N	80°38'10.540"W	173.97	271.249	8.92	8.82	-2.59
5704.00	43.770	160.240	5641.94	-6.27	-50.18	-154.23	1742016.69	14596637.50	40°11'29.022"N	80°38'10.289"W	162.18	251.977	9.02	9.01	0.72
5794.00	54.160	160.150	5700.95	61.52	-113.96	-131.25	1742039.65	14596573.74	40°11'28.391"N	80°38'09.996"W	173.82	229.033	11.54	11.54	-0.10
5886.00	62.010	159.810	5749.55	139.55	-187.28	-104.53	1742066.37	14596500.45	40°11'27.666"N	80°38'09.556"W	214.47	209.168	8.54	8.53	-0.37
5933.00	67.110	159.570	5769.73	181.98	-227.07	-89.80	1742081.09	14596460.68	40°11'27.272"N	80°38'09.468"W	244.18	201.578	10.86	10.85	-0.51
5976.00	71.570	159.220	5784.90	222.20	-264.72	-75.64	1742095.24	14596423.04	40°11'26.899"N	80°38'09.288"W	275.31	195.947	10.40	10.37	-0.81
6022.00	74.270	158.430	5798.41	266.16	-305.71	-59.76	1742111.12	14596382.06	40°11'26.493"N	80°38'09.085"W	311.50	191.060	6.09	5.87	-1.72
6085.00	77.810	158.160	5813.61	327.27	-362.51	-37.15	1742133.72	14596325.29	40°11'25.931"N	80°38'08.797"W	364.41	185.851	5.63	5.62	-0.43
6151.00	80.760	158.450	5825.87	392.09	-422.76	-13.18	1742157.68	14596285.06	40°11'25.335"N	80°38'08.491"W	422.96	181.786	4.49	4.47	0.44
6197.00	84.540	159.840	5831.76	437.70	-465.38	3.05	1742173.91	14596222.45	40°11'24.913"N	80°38'08.284"W	465.39	179.624	8.75	8.22	3.02
6244.00	87.350	159.380	5835.08	484.58	-509.32	19.39	1742190.23	14596178.53	40°11'24.478"N	80°38'08.076"W	509.69	177.820	6.06	5.98	-0.98
6336.00	89.260	157.990	5837.80	576.52	-594.99	52.81	1742223.65	14596092.90	40°11'23.630"N	80°38'07.650"W	597.33	174.928	2.57	2.08	-1.51
6429.00	89.320	155.980	5838.96	669.40	-680.57	89.17	1742259.99	14596007.35	40°11'22.783"N	80°38'07.186"W	686.39	172.536	2.16	0.06	-2.16
6522.00	89.320	155.940	5840.06	762.19	-765.50	127.05	1742297.86	14595922.45	40°11'21.942"N	80°38'06.703"W	775.97	170.576	0.04	0.00	-0.04
6615.00	90.090	159.000	5840.54	855.10	-851.39	162.68	1742333.47	14595836.60	40°11'21.092"N	80°38'06.248"W	866.79	169.183	3.39	0.83	3.29
6707.00	88.770	156.240	5841.45	947.02	-936.45	197.70	1742368.48	14595751.57	40°11'20.250"N	80°38'05.801"W	957.09	168.079	3.33	-1.43	-3.00
6800.00	89.420	157.650	5842.92	1039.89	-1022.01	234.12	1742404.88	14595666.05	40°11'19.403"N	80°38'05.337"W	1048.48	167.097	1.67	0.70	1.52
6893.00	89.780	157.450	5843.57	1132.82	-1107.96	269.63	1742440.38	14595580.13	40°11'18.552"N	80°38'04.884"W	1140.29	166.322	0.44	0.39	-0.22
6986.00	88.520	155.430	5844.95	1225.65	-1193.19	306.80	1742477.53	14595494.93	40°11'17.709"N	80°38'04.409"W	1232.00	165.580	2.56	-1.35	-2.17
7078.00	89.080	158.290	5846.88	1317.50	-1277.76	342.94	1742513.66	14595410.34	40°11'16.871"N	80°38'03.948"W	1322.98	164.976	3.17	0.61	3.11
7171.00	89.350	160.680	5848.15	1410.48	-1364.85	375.53	1742546.23	14595323.40	40°11'16.010"N	80°38'03.533"W	1415.57	164.616	2.59	0.29	2.57
7264.00	89.170	161.720	5849.35	1503.45	-1452.88	405.49	1742576.19	14595235.35	40°11'15.138"N	80°38'03.151"W	1508.40	164.406	1.13	-0.19	1.12
7356.00	89.450	162.390	5850.46	1595.36	-1540.39	433.84	1742604.52	14595147.86	40°11'14.272"N	80°38'02.791"W	1600.32	164.271	0.79	0.30	0.73
7449.00	89.720	163.250	5851.14	1688.23	-1629.24	461.31	1742631.98	14595059.05	40°11'13.393"N	80°38'02.442"W	1693.29	164.191	0.97	0.29	0.92
7542.00	89.880	161.610	5851.46	1781.12	-1717.90	489.38	1742660.04	14594970.43	40°11'12.516"N	80°38'02.085"W	1786.24	164.099	1.77	0.17	-1.76
7635.00	89.780	159.450	5851.74	1874.11	-1805.57	520.37	1742691.03	14594882.79	40°11'11.648"N	80°38'01.690"W	1879.07	163.923	2.33	-0.11	-2.32
7727.00	89.880	157.660	5852.01	1966.08	-1891.20	554.01	1742724.65	14594797.19	40°11'10.801"N	80°38'01.261"W	1970.68	163.673	1.95	0.11	-1.95
7820.00	90.000	157.440	5852.11	2059.02	-1977.15	589.52	1742760.15	14594711.27	40°11'09.950"N	80°38'00.808"W	2063.17	163.397	0.27	0.13	-0.24
7910.00	89.570	157.390	5852.44	2148.94	-2060.25	624.09	1742794.70	14594628.21	40°11'09.127"N	80°38'00.367"W	2152.70	163.147	0.48	-0.48	-0.06

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Barry Greathouse A BRK 6H AWP Proj: 18892

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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #6H
SOUTHWESTERN ENERGY	Well	Barry Greathouse A BRK 6H
Brooke County, WV	Wellbore	Barry Greathouse A BRK 6H AWB
Brooke		
Barry Greathouse A BRK Pad		

WELLPATH DATA (211 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]
8002.00	89.630	158.510	5853.09	2240.89	-2145.52	658.63	1742829.22	14594542.98	40°11'08.283"N	80°37'59.927"W	2244.33	162.935	1.22	0.07	1.22
8092.00	88.250	158.450	5854.75	2330.85	-2229.23	691.63	1742862.22	14594459.30	40°11'07.455"N	80°37'59.506"W	2334.06	162.763	1.53	-1.53	-0.07
8185.00	89.050	160.760	5856.94	2423.82	-2316.37	724.03	1742894.60	14594372.19	40°11'06.592"N	80°37'59.093"W	2426.89	162.642	2.63	0.86	2.48
8277.00	90.000	161.030	5857.71	2515.79	-2403.30	754.14	1742924.70	14594285.30	40°11'05.732"N	80°37'58.710"W	2518.84	162.578	1.07	1.03	0.29
8370.00	89.660	159.540	5857.98	2608.79	-2490.84	785.51	1742956.06	14594197.79	40°11'04.866"N	80°37'58.310"W	2611.77	162.497	1.64	-0.37	-1.60
8463.00	89.780	160.040	5858.44	2701.79	-2578.11	817.64	1742988.18	14594105.55	40°11'04.002"N	80°37'57.901"W	2704.66	162.404	0.55	0.13	0.54
8551.00	90.490	159.880	5858.23	2789.78	-2660.79	847.80	1743018.32	14594027.91	40°11'03.184"N	80°37'57.517"W	2792.59	162.327	0.83	0.81	-0.18
8648.00	89.230	157.100	5858.47	2886.75	-2751.02	883.36	1743053.87	14593937.71	40°11'02.291"N	80°37'57.063"W	2889.36	162.198	3.15	-1.30	-2.87
8738.00	89.200	156.380	5859.70	2976.61	-2833.70	918.90	1743089.39	14593855.07	40°11'01.472"N	80°37'56.610"W	2978.96	162.033	0.80	-0.03	-0.80
8831.00	89.200	157.430	5861.00	3069.49	-2919.23	955.37	1743125.85	14593769.56	40°11'00.626"N	80°37'56.144"W	3071.59	161.878	1.13	0.00	1.13
8924.00	89.230	156.900	5862.27	3162.38	-3004.94	991.46	1743161.93	14593683.89	40°10'59.777"N	80°37'55.684"W	3164.27	161.740	0.57	0.03	-0.57
9016.00	89.010	158.380	5863.68	3254.31	-3090.01	1026.45	1743196.91	14593598.86	40°10'58.935"N	80°37'55.238"W	3256.03	161.624	1.63	-0.24	1.61
9109.00	89.230	159.800	5865.11	3347.29	-3176.87	1059.64	1743230.08	14593512.03	40°10'58.075"N	80°37'54.815"W	3348.93	161.554	1.54	0.24	1.53
9202.00	89.080	159.820	5866.48	3440.28	-3264.14	1091.73	1743262.16	14593424.79	40°10'57.212"N	80°37'54.406"W	3441.88	161.507	0.16	-0.16	0.02
9295.00	89.170	160.790	5867.90	3533.26	-3351.69	1123.07	1743293.49	14593337.27	40°10'56.345"N	80°37'54.007"W	3534.85	161.475	1.05	0.10	1.04
9385.00	89.110	161.560	5869.26	3623.22	-3436.87	1152.11	1743322.52	14593252.13	40°10'55.502"N	80°37'53.637"W	3624.83	161.468	0.86	-0.07	0.86
9477.00	89.260	162.060	5870.56	3715.16	-3524.26	1180.83	1743351.22	14593164.77	40°10'54.637"N	80°37'53.272"W	3716.82	161.476	0.57	0.16	0.54
9567.00	89.420	161.540	5871.60	3805.09	-3609.75	1208.93	1743379.32	14593079.31	40°10'53.792"N	80°37'52.914"W	3806.81	161.484	0.60	0.18	-0.58
9660.00	89.450	160.490	5872.52	3898.06	-3697.69	1239.19	1743409.56	14592991.41	40°10'52.921"N	80°37'52.529"W	3899.81	161.473	1.13	0.03	-1.13
9752.00	89.570	158.920	5873.31	3990.06	-3783.97	1271.10	1743441.45	14592905.16	40°10'52.067"N	80°37'52.123"W	3991.76	161.432	1.71	0.13	-1.71
9845.00	89.940	157.040	5873.70	4083.01	-3870.18	1305.96	1743476.31	14592818.98	40°10'51.214"N	80°37'51.678"W	4084.59	161.353	2.06	0.40	-2.02
9938.00	89.690	155.400	5874.00	4175.83	-3955.28	1343.46	1743513.79	14592733.92	40°10'50.371"N	80°37'51.200"W	4177.22	161.239	1.78	-0.27	-1.76
10030.00	89.080	153.580	5874.99	4267.43	-4038.31	1383.08	1743553.39	14592650.93	40°10'49.549"N	80°37'50.694"W	4268.58	161.094	2.09	-0.66	-1.98
10123.00	89.320	151.720	5876.29	4359.70	-4120.90	1425.80	1743596.10	14592568.37	40°10'48.732"N	80°37'50.148"W	4360.58	160.915	2.02	0.26	-2.00
10216.00	89.010	152.580	5877.64	4451.87	-4203.12	1469.24	1743639.52	14592486.18	40°10'47.917"N	80°37'49.593"W	4452.51	160.732	0.98	-0.33	0.92
10308.00	89.200	156.470	5879.08	4543.46	-4286.15	1508.80	1743679.06	14592403.18	40°10'47.095"N	80°37'49.087"W	4543.95	160.607	4.23	0.21	4.23
10401.00	89.320	159.760	5880.28	4636.40	-4372.42	1543.46	1743713.71	14592316.94	40°10'46.241"N	80°37'48.646"W	4636.85	160.557	3.54	0.13	3.54
10494.00	89.600	160.750	5881.16	4729.39	-4459.95	1574.87	1743745.11	14592229.45	40°10'45.375"N	80°37'48.245"W	4729.84	160.551	1.11	0.30	1.06
10587.00	89.170	163.450	5882.16	4822.30	-4548.44	1603.45	1743773.68	14592141.00	40°10'44.499"N	80°37'47.882"W	4822.79	160.581	2.94	-0.46	2.90
10679.00	88.950	164.030	5883.67	4914.06	-4636.74	1629.21	1743799.43	14592052.72	40°10'43.626"N	80°37'47.555"W	4914.64	160.640	0.67	-0.24	0.63



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Barry Greathouse A BRK 6H AWP Proj: 18892'

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Southwestern Energy
WV Department of
Environmental Protection

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Barry Greathouse A BRK 6H
Field	Brooke	Wellbore	Barry Greathouse A BRK 6H AWB
Facility	Barry Greathouse A BRK Pad		

WELLPATH DATA (211 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]
10772.00	89.320	164.670	5885.07	5006.75	-4726.29	1654.29	1743824.50	14591963.22	40°10'42.740"N	80°37'47.237"W	5007.44	160.709	0.79	0.40	0.69
10865.00	89.510	164.160	5886.02	5099.44	-4815.86	1679.28	1743849.48	14591873.67	40°10'41.854"N	80°37'46.920"W	5100.24	160.776	0.59	0.20	-0.55
10958.00	89.600	160.600	5886.74	5192.33	-4904.48	1707.42	1743877.61	14591785.09	40°10'40.977"N	80°37'46.562"W	5193.19	160.805	3.83	0.10	-3.83
11051.00	89.570	155.620	5887.42	5285.26	-4990.75	1742.08	1743912.26	14591698.86	40°10'40.123"N	80°37'46.120"W	5286.06	160.758	5.35	-0.03	-5.35
11143.00	89.420	153.270	5888.23	5376.85	-5073.74	1781.77	1743951.93	14591615.90	40°10'39.301"N	80°37'45.613"W	5377.50	160.650	2.56	-0.16	-2.55
11236.00	89.140	153.780	5889.40	5469.29	-5156.98	1823.22	1743993.37	14591532.69	40°10'38.477"N	80°37'45.083"W	5469.79	160.529	0.63	-0.30	0.55
11329.00	89.110	155.730	5890.82	5561.92	-5241.08	1862.88	1744033.01	14591448.62	40°10'37.644"N	80°37'44.577"W	5562.31	160.433	2.10	-0.03	2.10
11421.00	89.880	157.850	5891.63	5653.79	-5325.63	1899.13	1744069.25	14591364.11	40°10'36.807"N	80°37'44.115"W	5654.11	160.374	2.45	0.84	2.30
11511.00	89.720	160.420	5891.94	5743.78	-5409.72	1931.19	1744101.29	14591280.05	40°10'35.975"N	80°37'43.706"W	5744.09	160.354	2.86	-0.18	2.86
11604.00	89.200	162.530	5892.82	5836.73	-5497.89	1960.73	1744130.82	14591191.91	40°10'35.102"N	80°37'43.330"W	5837.06	160.372	2.34	-0.56	2.27
11696.00	89.720	162.800	5893.69	5928.60	-5585.71	1988.14	1744158.22	14591104.13	40°10'34.233"N	80°37'42.982"W	5928.98	160.408	0.64	0.57	0.29
11789.00	89.660	160.950	5894.19	6021.53	-5674.09	2017.07	1744187.14	14591015.78	40°10'33.359"N	80°37'42.614"W	6021.95	160.430	1.99	-0.06	-1.99
11881.00	89.940	160.050	5894.51	6113.52	-5760.81	2047.78	1744217.84	14590929.10	40°10'32.500"N	80°37'42.223"W	6113.94	160.431	1.02	0.30	-0.98
11974.00	89.940	159.210	5894.61	6206.52	-5847.99	2080.15	1744250.20	14590841.95	40°10'31.638"N	80°37'41.811"W	6206.93	160.419	0.90	0.00	-0.90
12064.00	89.880	158.530	5894.75	6296.51	-5931.94	2112.60	1744282.63	14590758.03	40°10'30.807"N	80°37'41.397"W	6296.90	160.397	0.76	-0.07	-0.76
12157.00	89.420	158.830	5895.32	6389.49	-6018.57	2146.41	1744316.43	14590671.43	40°10'29.949"N	80°37'40.966"W	6389.86	160.372	0.59	-0.49	0.32
12247.00	89.880	160.360	5895.87	6479.49	-6102.92	2177.78	1744347.79	14590587.12	40°10'29.114"N	80°37'40.567"W	6479.85	160.361	1.78	0.51	1.70
12340.00	89.850	161.330	5896.09	6572.47	-6190.77	2208.30	1744378.29	14590499.30	40°10'28.245"N	80°37'40.178"W	6572.84	160.368	1.04	-0.03	1.04
12432.00	89.910	161.450	5896.28	6664.43	-6277.96	2237.66	1744407.64	14590412.15	40°10'27.382"N	80°37'39.805"W	6664.83	160.382	0.15	0.07	0.13
12525.00	90.000	161.470	5896.35	6757.39	-6366.13	2267.23	1744437.20	14590324.01	40°10'26.510"N	80°37'39.429"W	6757.81	160.397	0.10	0.10	0.02
12618.00	89.910	160.510	5896.43	6850.37	-6454.06	2297.52	1744467.48	14590236.11	40°10'25.639"N	80°37'39.043"W	6850.80	160.405	1.04	-0.10	-1.03
12711.00	89.750	159.400	5896.70	6943.37	-6541.43	2329.40	1744499.35	14590148.78	40°10'24.775"N	80°37'38.637"W	6943.80	160.399	1.21	-0.17	-1.19
12800.00	89.570	159.040	5897.23	7032.36	-6624.63	2360.97	1744530.91	14590065.61	40°10'23.951"N	80°37'38.235"W	7032.78	160.384	0.45	-0.20	-0.40
12892.00	89.880	160.180	5897.67	7124.36	-6710.87	2393.03	1744562.95	14589979.41	40°10'23.098"N	80°37'37.827"W	7124.77	160.374	1.28	0.34	1.24
12982.00	90.280	160.160	5897.55	7214.36	-6795.53	2423.56	1744593.47	14589894.78	40°10'22.260"N	80°37'37.438"W	7214.77	160.372	0.44	0.44	-0.02
13071.00	90.620	159.660	5896.85	7303.35	-6879.11	2454.13	1744624.02	14589811.23	40°10'21.433"N	80°37'37.049"W	7303.76	160.366	0.68	0.38	-0.56
13160.00	91.320	159.020	5895.34	7392.34	-6962.38	2485.52	1744655.41	14589728.00	40°10'20.608"N	80°37'36.649"W	7392.73	160.354	1.07	0.79	-0.72
13249.00	90.340	156.790	5894.05	7481.27	-7044.82	2518.99	1744688.87	14589645.58	40°10'19.792"N	80°37'36.222"W	7481.64	160.325	2.74	-1.10	-2.51
13338.00	89.820	155.760	5893.93	7570.11	-7126.30	2554.80	1744724.66	14589564.14	40°10'18.986"N	80°37'35.765"W	7570.42	160.277	1.30	-0.58	-1.16
13428.00	89.970	155.350	5894.09	7659.86	-7208.23	2592.05	1744761.89	14589482.24	40°10'18.174"N	80°37'35.290"W	7660.11	160.222	0.49	0.17	-0.46

Actual Wellpath Report

Barry Greathouse A BRK 6H AWP Proj: 18892'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Barry Greathouse A BRK 6H
Field	Brooke	Wellbore	Barry Greathouse A BRK 6H AWB
Facility	Barry Greathouse A BRK Pad		

WELLPATH DATA (211 stations)

MID [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]
13516.00	89.540	154.430	5894.47	7747.54	-7287.91	2629.39	1744799.22	14589402.59	40°10'17.386"N	80°37'34.813"W	7747.73	160.161	1.15	-0.49	-1.05
13606.00	88.890	156.610	5895.70	7837.28	-7369.81	2666.68	1744836.49	14589320.72	40°10'16.575"N	80°37'34.337"W	7837.43	160.108	2.53	-0.72	2.42
13694.00	89.350	159.750	5897.05	7925.23	-7451.49	2699.38	1744869.18	14589239.08	40°10'15.766"N	80°37'33.920"W	7925.36	160.087	3.61	0.52	3.57
13783.00	89.910	160.130	5897.63	8014.23	-7535.09	2729.90	1744899.69	14589155.51	40°10'14.939"N	80°37'33.532"W	8014.35	160.085	0.76	0.63	0.43
13871.00	89.750	158.620	5897.89	8102.22	-7617.44	2760.90	1744930.68	14589073.19	40°10'14.124"N	80°37'33.137"W	8102.35	160.077	1.73	-0.18	-1.72
13961.00	89.690	157.750	5898.33	8192.19	-7701.00	2794.35	1744964.11	14588989.67	40°10'13.297"N	80°37'32.711"W	8192.29	160.056	0.97	-0.07	-0.97
14049.00	89.690	158.730	5898.80	8280.15	-7782.72	2826.97	1744996.72	14588907.97	40°10'12.488"N	80°37'32.295"W	8280.25	160.037	1.11	0.00	1.11
14139.00	89.910	159.820	5899.12	8370.15	-7866.90	2858.82	1745028.56	14588823.83	40°10'11.654"N	80°37'31.889"W	8370.24	160.029	1.24	0.24	1.21
14228.00	90.220	160.380	5899.02	8459.14	-7950.58	2889.11	1745058.84	14588740.18	40°10'10.826"N	80°37'31.503"W	8459.24	160.030	0.72	0.35	0.63
14317.00	89.880	158.270	5898.94	8548.14	-8033.85	2920.53	1745090.25	14588656.95	40°10'10.002"N	80°37'31.103"W	8548.23	160.022	2.40	-0.38	-2.37
14406.00	89.690	158.810	5899.27	8637.12	-8116.67	2953.09	1745122.79	14588574.15	40°10'09.182"N	80°37'30.688"W	8637.20	160.007	0.64	-0.21	0.61
14496.00	89.780	159.530	5899.69	8727.11	-8200.79	2985.09	1745154.79	14588490.07	40°10'08.350"N	80°37'30.281"W	8727.18	159.998	0.81	0.10	0.80
14585.00	89.820	159.730	5900.00	8816.11	-8284.22	3016.07	1745185.75	14588406.66	40°10'07.524"N	80°37'29.886"W	8816.18	159.995	0.23	0.04	0.22
14674.00	90.030	160.640	5900.12	8905.10	-8367.95	3046.24	1745215.91	14588322.97	40°10'06.695"N	80°37'29.502"W	8905.18	159.997	1.05	0.24	1.02
14767.00	88.120	160.150	5901.62	8998.08	-8455.55	3077.44	1745247.10	14588235.41	40°10'05.828"N	80°37'29.105"W	8998.16	160.001	2.12	-2.05	-0.53
14860.00	90.310	159.320	5902.89	9091.07	-8542.78	3109.65	1745279.29	14588148.21	40°10'04.965"N	80°37'28.695"W	9091.15	159.998	2.52	2.35	-0.89
14952.00	90.990	160.260	5901.85	9183.06	-8629.10	3141.43	1745311.06	14588061.92	40°10'04.111"N	80°37'28.290"W	9183.14	159.996	1.26	0.74	1.02
15045.00	91.200	158.610	5900.07	9276.04	-8716.16	3174.09	1745343.71	14587974.90	40°10'03.249"N	80°37'27.874"W	9276.11	159.990	1.79	0.23	-1.77
15138.00	90.310	156.200	5898.85	9368.94	-8802.01	3209.82	1745379.42	14587889.08	40°10'02.399"N	80°37'27.419"W	9369.00	159.965	2.76	-0.96	-2.59
15230.00	90.000	157.890	5898.60	9460.84	-8886.72	3245.69	1745415.28	14587804.41	40°10'01.561"N	80°37'26.961"W	9460.88	159.936	1.87	-0.34	1.84
15323.00	89.720	159.180	5898.82	9553.81	-8973.26	3279.73	1745449.30	14587717.89	40°10'00.704"N	80°37'26.528"W	9553.85	159.923	1.42	-0.30	1.39
15416.00	90.030	160.660	5899.03	9646.81	-9060.61	3311.65	1745481.22	14587630.58	40°09'59.839"N	80°37'26.121"W	9646.85	159.923	1.63	0.33	1.59
15508.00	90.860	160.170	5898.12	9738.80	-9147.28	3342.49	1745512.04	14587543.94	40°09'58.982"N	80°37'25.729"W	9738.84	159.927	1.05	0.90	-0.53
15601.00	89.380	158.300	5898.12	9831.79	-9234.24	3375.46	1745545.00	14587457.02	40°09'58.121"N	80°37'25.309"W	9831.83	159.921	2.56	-1.59	-2.01
15694.00	89.630	157.290	5898.92	9924.73	-9320.33	3410.61	1745580.13	14587370.96	40°09'57.269"N	80°37'24.861"W	9924.76	159.901	1.12	0.27	-1.09
15786.00	89.660	156.810	5899.49	10016.62	-9405.05	3446.48	1745615.99	14587286.28	40°09'56.430"N	80°37'24.403"W	10016.64	159.875	0.52	0.03	-0.52
15879.00	90.120	156.600	5899.67	10109.49	-9490.47	3483.26	1745652.75	14587200.89	40°09'55.584"N	80°37'23.934"W	10109.50	159.846	0.54	0.49	-0.23
15972.00	89.910	155.270	5899.65	10202.28	-9575.38	3521.18	1745690.66	14587116.01	40°09'54.744"N	80°37'23.450"W	10202.29	159.810	1.45	-0.23	-1.43
16065.00	89.290	155.940	5900.29	10295.04	-9660.08	3559.59	1745729.06	14587031.35	40°09'53.905"N	80°37'22.960"W	10295.04	159.772	0.98	-0.67	0.72
16157.00	89.720	158.230	5901.09	10386.93	-9744.81	3595.41	1745764.86	14586946.65	40°09'53.066"N	80°37'22.503"W	10386.93	159.748	2.53	0.47	2.49



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WV Department of Environmental Protection

Actual Wellpath Report

Barry Greathouse A BRK 6H AWP Proj: 18892
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REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Barry Greathouse A BRK 6H
Field	Brooke	Wellbore	Barry Greathouse A BRK 6H AWB
Facility	Barry Greathouse A BRK Pad		

WELLPATH DATA (211 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]
16250.00	89.720	158.570	5901.54	10479.90	-9831.28	3629.64	1745799.08	14586860.22	40°09'52.210"N	80°37'22.067"W	10479.90	159.736	0.37	0.00	0.37
16343.00	89.630	159.850	5902.07	10572.89	-9918.22	3662.65	1745832.08	14586773.31	40°09'51.350"N	80°37'21.647"W	10572.89	159.732	1.38	-0.10	1.38
16432.00	89.630	160.950	5902.65	10661.88	-10002.06	3692.50	1745861.92	14586689.50	40°09'50.520"N	80°37'21.267"W	10661.88	159.737	1.24	0.00	1.24
16522.00	89.690	161.970	5903.18	10751.84	-10087.38	3721.12	1745890.52	14586604.21	40°09'49.676"N	80°37'20.903"W	10751.84	159.752	1.14	0.07	1.13
16615.00	89.820	162.540	5903.58	10844.75	-10175.96	3749.46	1745918.86	14586515.67	40°09'48.799"N	80°37'20.543"W	10844.75	159.773	0.63	0.14	0.61
16707.00	89.690	163.110	5903.97	10936.62	-10263.85	3776.63	1745946.01	14586427.81	40°09'47.930"N	80°37'20.198"W	10936.62	159.799	0.64	-0.14	0.62
16800.00	89.720	164.450	5904.45	11029.38	-10353.15	3802.61	1745971.98	14586338.55	40°09'47.046"N	80°37'19.868"W	11029.39	159.832	1.44	0.03	1.44
16893.00	90.000	165.120	5904.68	11122.03	-10442.89	3827.01	1745996.38	14586248.84	40°09'46.158"N	80°37'19.558"W	11122.05	159.874	0.78	0.30	0.72
16989.00	89.940	163.290	5904.73	11217.73	-10535.26	3853.14	1746022.50	14586156.51	40°09'45.244"N	80°37'19.227"W	11217.77	159.911	1.91	-0.06	-1.91
17078.00	90.770	161.380	5904.18	11306.64	-10620.06	3880.15	1746049.49	14586071.74	40°09'44.405"N	80°37'18.884"W	11306.69	159.930	2.34	0.93	-2.15
17171.00	88.920	158.150	5904.43	11399.62	-10707.30	3912.31	1746081.64	14585984.53	40°09'43.542"N	80°37'18.474"W	11399.67	159.928	4.00	-1.99	-3.47
17261.00	90.000	157.030	5905.28	11489.55	-10790.50	3946.62	1746115.93	14585901.37	40°09'42.718"N	80°37'18.037"W	11489.59	159.910	1.73	1.20	-1.24
17354.00	88.920	155.800	5906.15	11582.38	-10875.72	3983.83	1746153.13	14585816.18	40°09'41.874"N	80°37'17.562"W	11582.41	159.882	1.76	-1.16	-1.32
17446.00	89.880	157.880	5907.12	11674.25	-10960.30	4020.00	1746189.29	14585731.63	40°09'41.037"N	80°37'17.101"W	11674.27	159.858	2.49	1.04	2.26
17539.00	89.690	157.440	5907.47	11767.19	-11046.32	4055.35	1746224.63	14585645.65	40°09'40.186"N	80°37'16.651"W	11767.20	159.841	0.52	-0.20	-0.47
17632.00	89.350	158.480	5908.24	11860.14	-11132.52	4090.25	1746259.51	14585559.48	40°09'39.332"N	80°37'16.206"W	11860.15	159.826	1.18	-0.37	1.12
17725.00	89.750	160.350	5908.98	11953.13	-11219.57	4122.95	1746292.19	14585472.46	40°09'38.471"N	80°37'15.789"W	11953.14	159.823	2.06	0.43	2.01
17817.00	89.480	160.050	5909.59	12045.12	-11306.13	4154.11	1746323.34	14585385.94	40°09'37.614"N	80°37'15.393"W	12045.13	159.826	0.44	-0.29	-0.33
17910.00	90.310	158.900	5909.76	12138.12	-11393.22	4186.72	1746355.94	14585298.88	40°09'36.752"N	80°37'14.978"W	12138.13	159.823	1.52	0.89	-1.24
18002.00	90.150	157.680	5909.39	12230.09	-11478.70	4220.75	1746389.95	14585213.44	40°09'35.906"N	80°37'14.544"W	12230.09	159.811	1.34	-0.17	-1.33
18095.00	90.180	156.970	5909.13	12323.00	-11564.51	4256.60	1746425.79	14585127.66	40°09'35.056"N	80°37'14.087"W	12323.01	159.793	0.76	0.03	-0.76
18185.00	89.970	156.370	5909.01	12412.87	-11647.15	4292.24	1746461.42	14585045.05	40°09'34.238"N	80°37'13.633"W	12412.87	159.770	0.71	-0.23	-0.67
18277.00	90.310	155.160	5908.78	12504.65	-11731.04	4330.00	1746499.17	14584961.20	40°09'33.408"N	80°37'13.151"W	12504.65	159.741	1.37	0.37	-1.32
18370.00	89.540	155.890	5908.11	12597.39	-11815.68	4368.53	1746537.68	14584876.59	40°09'32.570"N	80°37'12.659"W	12597.40	159.709	1.14	-0.83	0.78
18463.00	89.660	157.930	5909.56	12690.27	-11901.22	4405.00	1746574.14	14584791.08	40°09'31.723"N	80°37'12.194"W	12690.28	159.689	2.20	0.13	2.19
18552.00	89.630	158.670	5910.11	12779.24	-11983.91	4437.91	1746607.03	14584708.42	40°09'30.904"N	80°37'11.775"W	12779.25	159.679	0.83	-0.03	0.83
18642.00	89.750	159.800	5910.59	12869.23	-12068.07	4469.82	1746638.93	14584624.30	40°09'30.071"N	80°37'11.369"W	12869.24	159.676	1.26	0.13	1.26
18735.00	89.720	159.890	5911.02	12962.23	-12155.37	4501.86	1746670.96	14584537.03	40°09'29.207"N	80°37'10.961"W	12962.24	159.677	0.10	-0.03	0.10
18824.00	89.630	160.640	5911.53	13051.22	-12239.14	4531.91	1746701.00	14584453.29	40°09'28.378"N	80°37'10.578"W	13051.24	159.681	0.85	-0.10	0.84
18867.00	89.630	161.010	5911.81	13094.22	-12279.75	4546.03	1746715.12	14584412.69	40°09'27.976"N	80°37'10.399"W	13094.23	159.685	0.86	0.00	0.86

Actual Wellpath Report

Barry Greathouse A BRK 6H AWP Proj: 18892'

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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #6H
SOUTHWESTERN ENERGY	Well	Barry Greathouse A BRK 6H
Area	Wellbore	Barry Greathouse A BRK 6H AWP
Field		
Facility		

WELLPATH DATA (211 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]
18892.00	89.630	161.010	5911.97	13119.21	-12303.39	4554.17	1746723.25	14584389.06	40°09'27.742"N	80°37'10.295"W	13119.22	159.688	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Barry Greathouse A BRK 6H AWP Proj: 18892'

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]	End E/W [ft]
20in Conductor	26.00	100.00	74.00	26.00	100.00	0.00	0.00	0.00	0.00	-0.30
17.5in Open Hole	100.00	353.00	253.00	100.00	352.97	0.06	0.06	-0.30	1.30	-3.71
13.375in Casing Surface	26.00	353.00	327.00	26.00	352.97	0.00	0.00	0.00	1.30	-3.71
12.25in Open Hole	353.00	1631.00	1278.00	352.97	1630.77	1.30	1.30	-3.71	4.57	-21.04
9.625in Casing Intermediate	26.00	1631.00	1605.00	26.00	1630.77	0.00	0.00	0.00	4.57	-21.04
8.75in Open Hole	1632.00	6109.00	4477.00	1631.77	5818.45	4.57	4.57	-21.05	-384.34	-28.43
8.5in Open Hole	6109.00	18892.00	12783.00	5818.45	5911.97	-384.34	-12303.39	-28.43	-12303.39	4554.17
5.5in Casing Production	26.00	18892.00	18866.00	26.00	5911.97	0.00	-12303.39	0.00	-12303.39	4554.17

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Barry Greathouse A BRK 6H LP Rev-6	5833.04	-425.04	-8.43	1742162.43	14596262.78	40°11'25.312"N	80°38'08.430"W	point
Barry Greathouse A BRK 6H BHL Rev-5	5919.90	-12308.78	4541.52	1746710.60	14584383.68	40°09'27.689"N	80°37'10.458"W	point

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY		Slot	Slot #6H
Area	Brooke County, WV		Well	Barry Greathouse A BRK 6H
Field	Brooke		Wellbore	Barry Greathouse A BRK 6H AWB
Facility	Barry Greathouse A BRK Pad			

WELLPATH COMPOSITION - Ref Wellbore: Barry Greathouse A BRK 6H AWB Ref Wellpath: Barry Greathouse A BRK 6H AWP Proj: 18892'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	333.00	OWSG MWD rev2 + HRGM	01_Premier MWD <17 1/2"> (151'-333')	Barry Greathouse A BRK 6H AWB
333.00	1581.00	OWSG MWD rev2 + HRGM	02_Premier MWD <12 1/4"> (511'-1581')	Barry Greathouse A BRK 6H AWB
1581.00	6022.00	OWSG MWD rev2 + HRGM	03_Premier MWD <8 3/4"> (1731'-6022')	Barry Greathouse A BRK 6H AWB
6022.00	18867.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8 1/2"> (6085'-18867')	Barry Greathouse A BRK 6H AWB
18867.00	18892.00	Blind Drilling (std)	Projection to bit	Barry Greathouse A BRK 6H AWB

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WV Department of
Environmental Protection

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot #6H
Area	Brooke County, WV	Well	Barry Greathouse A BRK 6H
Field	Brooke	Wellbore	Barry Greathouse A BRK 6H AWB
Facility	Barry Greathouse A BRK Pad		

COMMENTS

Wellpath general comments
API: 47-009-00230-0000
BH Job #: 109802841
Rig: SDC 40
Duration: 05/17/2019 - 05/20/2019

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