

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Marshall County, WV	Well	Arthur Waryck MSH 3H
Field	Marshall	Wellbore	Arthur Waryck MSH 3H AWB
Facility	Arthur Waryck MSH Pad		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 17 North, US	Software System	WellArchitect® 5.1
North Reference	feet	User	Atenjen
Scale	Grid	Report Generated	8/12/2019 at 3:34:54 PM
Convergence at slot	0.999610	Database/Source file	WA_MPL_EASTERNUS_Defn/Arthur_Waryck_MSH_3H_AWP_Proj_18677_.xml
	0.21° East		

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	51.82	-1.01	1732650.71	14426463.07	39°43'27.005"N	80°40'19.088"W
Facility Reference Pt			1732651.72	14426411.27	39°43'26.493"N	80°40'19.078"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.478"W

WELLPATH DATUM

Calculation method	Minimum curvature	SDC 46 (KB) to Facility Vertical Datum	1352.20ft
Horizontal Reference Pt	Slot	SDC 46 (KB) to Mean Sea Level	1352.20ft
Vertical Reference Pt	SDC 46 (KB)	SDC 46 (KB) to Mud Line at Slot (Slot 3H)	26.00ft
MD Reference Pt	SDC 46 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	312.48°

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Marshall		
Arthur Waryck MSH Pad		

WELLPATH DATA (217 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	340.030	0.00	0.00	0.00	0.00	1732650.71	14426463.07	39°43'27.005"N	80°40'19.088"W	0.00	0.000	0.00	0.00	0.00
26.00	0.000	340.030	26.00	0.00	0.00	0.00	1732650.71	14426463.07	39°43'27.005"N	80°40'19.088"W	0.00	0.000	0.00	0.00	0.00
50.00	0.150	340.030	50.00	0.03	0.03	-0.01	1732650.70	14426463.10	39°43'27.005"N	80°40'19.089"W	0.03	340.030	0.62	0.63	-83.21
100.00	0.120	141.030	100.00	0.03	0.05	0.00	1732650.71	14426463.12	39°43'27.006"N	80°40'19.088"W	0.05	359.826	0.53	-0.06	322.00
150.00	0.270	111.270	150.00	-0.13	-0.03	0.14	1732650.85	14426463.04	39°43'27.005"N	80°40'19.087"W	0.15	103.076	0.35	0.30	-59.52
200.00	0.220	123.250	200.00	-0.33	-0.13	0.33	1732651.04	14426462.94	39°43'27.004"N	80°40'19.084"W	0.36	111.120	0.14	-0.10	23.96
250.00	0.080	85.620	250.00	-0.45	-0.18	0.45	1732651.16	14426462.89	39°43'27.003"N	80°40'19.083"W	0.48	111.731	0.33	-0.28	-75.26
300.00	0.070	61.430	300.00	-0.48	-0.16	0.51	1732651.22	14426462.91	39°43'27.004"N	80°40'19.082"W	0.53	107.560	0.07	-0.02	-48.38
350.00	0.130	164.100	350.00	-0.54	-0.20	0.55	1732651.26	14426462.87	39°43'27.003"N	80°40'19.081"W	0.59	110.029	0.32	0.12	205.34
400.00	0.110	283.480	400.00	-0.55	-0.24	0.52	1732651.23	14426462.83	39°43'27.003"N	80°40'19.082"W	0.58	115.157	0.41	-0.04	238.76
450.00	0.120	189.740	450.00	-0.54	-0.28	0.47	1732651.17	14426462.79	39°43'27.002"N	80°40'19.083"W	0.55	121.494	0.34	0.02	-187.48
500.00	0.200	158.400	500.00	-0.64	-0.42	0.49	1732651.20	14426462.65	39°43'27.001"N	80°40'19.082"W	0.64	130.541	0.23	0.16	-62.68
550.00	0.280	189.530	550.00	-0.79	-0.62	0.50	1732651.21	14426462.45	39°43'26.999"N	80°40'19.082"W	0.80	141.072	0.30	0.16	62.26
600.00	0.080	188.650	600.00	-0.87	-0.77	0.47	1732651.18	14426462.30	39°43'26.997"N	80°40'19.082"W	0.91	148.487	0.40	-0.40	-1.76
650.00	0.050	92.180	650.00	-0.91	-0.81	0.49	1732651.20	14426462.26	39°43'26.997"N	80°40'19.082"W	0.95	148.751	0.20	-0.06	-192.94
675.00	0.090	298.620	675.00	-0.90	-0.80	0.48	1732651.19	14426462.27	39°43'26.997"N	80°40'19.082"W	0.94	148.797	0.55	0.16	-614.24
778.00	0.440	315.810	778.00	-0.42	-0.48	0.14	1732650.85	14426462.59	39°43'27.000"N	80°40'19.087"W	0.50	163.878	0.34	0.34	16.69
869.00	0.740	52.180	868.99	-0.18	0.13	0.36	1732651.07	14426463.20	39°43'27.006"N	80°40'19.084"W	0.38	69.724	0.99	0.33	105.90
959.00	3.110	65.830	958.94	-1.24	1.49	3.05	1732653.75	14426464.56	39°43'27.020"N	80°40'19.049"W	3.39	63.950	2.66	2.63	15.17
1050.00	5.850	68.030	1049.65	-4.22	4.24	9.60	1732660.31	14426467.30	39°43'27.047"N	80°40'18.965"W	10.49	66.195	3.02	3.01	2.42
1140.00	6.470	78.890	1139.13	-9.21	6.93	18.83	1732669.53	14426470.00	39°43'27.073"N	80°40'18.847"W	20.06	69.799	1.46	0.69	12.07
1231.00	5.300	97.320	1229.66	-15.69	7.38	28.03	1732678.73	14426470.45	39°43'27.077"N	80°40'18.729"W	28.99	75.248	2.43	-1.29	20.25
1321.00	5.690	117.210	1319.25	-23.39	4.81	36.12	1732686.82	14426467.88	39°43'27.051"N	80°40'18.626"W	36.44	82.414	2.15	0.43	22.10
1411.00	6.500	136.340	1408.75	-32.78	-0.92	43.61	1732694.30	14426464.27	39°43'26.995"N	80°40'18.530"W	43.62	91.202	2.42	0.90	21.26
1502.00	7.090	137.850	1499.11	-43.51	-8.81	50.93	1732701.62	14426454.26	39°43'26.916"N	80°40'18.437"W	51.69	99.809	0.68	0.65	1.66
1592.00	6.260	136.340	1588.50	-53.94	-16.47	58.05	1732708.73	14426446.60	39°43'26.840"N	80°40'18.346"W	60.34	105.843	0.94	-0.92	-1.68
1682.00	6.400	132.200	1677.96	-63.85	-23.39	65.15	1732715.84	14426439.69	39°43'26.772"N	80°40'18.256"W	69.22	109.751	0.53	0.16	-4.60
1773.00	6.410	134.340	1768.39	-74.00	-30.35	72.54	1732723.22	14426432.73	39°43'26.703"N	80°40'18.162"W	78.63	112.703	0.26	0.01	2.35
1863.00	5.750	134.960	1857.88	-83.52	-37.05	79.32	1732730.00	14426426.04	39°43'26.636"N	80°40'18.075"W	87.55	115.034	0.74	-0.73	0.69
1954.00	5.470	135.020	1948.44	-92.41	-43.34	85.62	1732736.29	14426419.75	39°43'26.574"N	80°40'17.995"W	95.96	116.847	0.31	-0.31	0.07

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Field		
Facility		

WELLPATH DATA (217 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]
2045.00	5.450	136.390	2039.03	-101.05	-49.53	91.66	1732742.34	14426413.56	39°43'26.512"N	80°40'17.918"W	104.19	118.386	0.14	-0.02	1.51
2135.00	5.410	141.930	2128.63	-109.50	-55.97	97.23	1732747.90	14426407.12	39°43'26.449"N	80°40'17.847"W	112.18	119.926	0.58	-0.04	6.16
2226.00	5.320	146.880	2219.23	-117.82	-62.88	102.18	1732752.85	14426400.22	39°43'26.380"N	80°40'17.784"W	119.97	121.608	0.52	-0.10	5.44
2316.00	5.550	143.730	2308.83	-126.13	-69.88	107.03	1732757.70	14426393.22	39°43'26.311"N	80°40'17.722"W	127.82	123.141	0.42	0.26	-3.50
2406.00	5.470	140.270	2398.41	-134.65	-76.69	112.35	1732763.01	14426386.41	39°43'26.243"N	80°40'17.654"W	136.03	124.318	0.38	-0.09	-3.84
2497.00	5.590	136.940	2488.99	-143.36	-83.26	118.15	1732768.81	14426379.84	39°43'26.178"N	80°40'17.580"W	144.54	125.174	0.38	0.13	-3.66
2587.00	4.790	135.930	2578.62	-151.49	-89.17	123.75	1732774.41	14426373.94	39°43'26.119"N	80°40'17.509"W	152.53	125.773	0.89	-0.89	-1.12
2677.00	3.790	133.060	2668.36	-158.21	-93.90	128.54	1732779.20	14426369.21	39°43'26.073"N	80°40'17.448"W	159.18	126.148	1.14	-1.11	-3.19
2790.00	3.580	126.750	2781.13	-165.46	-98.56	134.10	1732784.75	14426364.55	39°43'26.026"N	80°40'17.377"W	166.42	126.315	0.40	-0.19	-5.58
2880.00	6.080	118.210	2870.81	-172.87	-102.49	140.55	1732791.20	14426360.62	39°43'25.987"N	80°40'17.295"W	173.95	126.101	2.88	2.78	-9.49
2970.00	9.720	117.210	2959.94	-184.82	-108.22	151.51	1732802.16	14426354.89	39°43'25.930"N	80°40'17.155"W	186.19	125.538	4.05	4.04	-1.11
3061.00	10.450	115.190	3049.53	-200.12	-115.25	165.81	1732816.45	14426347.87	39°43'25.860"N	80°40'16.972"W	201.93	124.802	0.89	0.80	-2.22
3151.00	8.960	117.710	3138.24	-214.69	-121.98	179.40	1732830.04	14426341.14	39°43'25.793"N	80°40'16.798"W	216.94	124.213	1.72	-1.66	2.80
3241.00	8.690	126.160	3227.18	-228.22	-129.25	191.09	1732841.73	14426333.87	39°43'25.721"N	80°40'16.649"W	230.70	124.073	1.47	-0.30	9.39
3331.00	8.240	125.020	3316.20	-241.37	-136.96	201.87	1732852.50	14426326.16	39°43'25.644"N	80°40'16.511"W	243.94	124.156	0.53	-0.50	-1.27
3422.00	9.040	123.440	3406.16	-254.90	-144.65	213.17	1732863.80	14426318.48	39°43'25.568"N	80°40'16.367"W	257.61	124.158	0.92	0.88	-1.74
3512.00	9.060	118.820	3495.04	-268.77	-151.96	225.28	1732875.90	14426311.17	39°43'25.495"N	80°40'16.212"W	271.74	124.001	0.81	0.02	-5.13
3603.00	8.970	124.380	3584.92	-282.76	-159.42	237.41	1732888.03	14426303.71	39°43'25.421"N	80°40'16.058"W	285.97	123.881	0.96	-0.10	6.11
3693.00	9.060	130.800	3673.81	-296.78	-168.01	248.57	1732899.18	14426295.13	39°43'25.336"N	80°40'15.915"W	300.02	124.055	1.12	0.10	7.13
3783.00	8.370	128.990	3762.77	-310.41	-176.76	259.02	1732909.63	14426286.38	39°43'25.249"N	80°40'15.782"W	313.59	124.310	0.82	-0.77	-2.01
3874.00	7.560	124.730	3852.90	-322.95	-184.34	269.09	1732919.70	14426278.80	39°43'25.174"N	80°40'15.653"W	326.18	124.413	1.10	-0.89	-4.68
3964.00	8.430	127.220	3942.02	-335.39	-191.70	279.21	1732929.81	14426271.44	39°43'25.100"N	80°40'15.524"W	338.69	124.473	1.04	0.97	2.77
4055.00	9.490	131.790	4031.91	-349.53	-200.74	290.12	1732940.71	14426262.41	39°43'25.011"N	80°40'15.385"W	352.79	124.680	1.40	1.16	5.02
4145.00	8.880	131.740	4120.76	-363.89	-210.31	300.83	1732951.42	14426252.85	39°43'24.916"N	80°40'15.248"W	367.05	124.957	0.68	-0.68	-0.06
4236.00	7.710	127.620	4210.80	-377.00	-218.71	310.91	1732961.50	14426244.45	39°43'24.832"N	80°40'15.120"W	380.13	125.125	1.44	-1.29	-4.53
4325.00	8.270	132.920	4298.94	-389.35	-226.71	320.32	1732970.91	14426236.45	39°43'24.753"N	80°40'15.000"W	392.44	125.289	1.04	0.63	5.96
4416.00	9.790	136.490	4388.81	-403.61	-236.78	330.44	1732981.02	14426226.38	39°43'24.653"N	80°40'14.871"W	406.52	125.624	1.78	1.67	3.92
4507.00	9.210	131.950	4478.56	-418.61	-247.26	341.19	1732991.76	14426215.91	39°43'24.549"N	80°40'14.734"W	421.36	125.931	1.04	-0.64	-4.99
4597.00	9.820	133.310	4567.32	-433.49	-257.34	352.13	1733002.70	14426205.83	39°43'24.449"N	80°40'14.594"W	436.14	126.160	0.72	0.68	1.51
4687.00	9.220	129.630	4656.09	-448.36	-267.20	363.27	1733013.83	14426195.97	39°43'24.351"N	80°40'14.452"W	450.95	126.337	0.95	-0.67	-4.09

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4778.00	9.660	134.100	4745.85	-463.28	-277.17	374.36	1733024.93	14426186.01	39°43'24.252"N	80°40'14.310"W	465.80	126.515	0.94	0.48	4.91
4868.00	9.080	131.410	4834.65	-477.93	-287.12	385.11	1733035.67	14426176.06	39°43'24.154"N	80°40'14.173"W	480.36	126.706	0.81	-0.64	-2.99
4958.00	8.260	127.710	4923.62	-491.47	-295.77	395.55	1733046.11	14426167.42	39°43'24.068"N	80°40'14.040"W	493.91	126.787	1.10	-0.91	-4.11
5049.00	8.820	129.300	5013.62	-504.95	-304.19	406.12	1733056.67	14426159.00	39°43'23.984"N	80°40'13.905"W	507.41	126.833	0.67	0.62	1.75
5139.00	9.760	130.370	5102.43	-519.46	-313.50	417.28	1733067.82	14426149.69	39°43'23.892"N	80°40'13.763"W	521.92	126.918	1.06	1.04	1.19
5230.00	9.390	126.610	5192.17	-534.56	-322.92	429.11	1733079.65	14426140.27	39°43'23.798"N	80°40'13.612"W	537.04	126.963	0.80	-0.41	-4.13
5319.00	8.570	122.400	5280.08	-548.31	-330.81	440.54	1733091.08	14426132.39	39°43'23.720"N	80°40'13.466"W	550.91	126.903	1.18	-0.92	-4.73
5410.00	8.930	125.400	5370.02	-561.99	-338.53	452.02	1733102.55	14426124.67	39°43'23.643"N	80°40'13.319"W	564.74	126.831	0.64	0.40	3.30
5501.00	9.810	131.480	5458.82	-576.59	-347.66	463.46	1733113.99	14426115.55	39°43'23.553"N	80°40'13.173"W	579.36	126.875	1.47	0.98	6.76
5591.00	9.100	129.930	5548.49	-592.09	-357.77	475.21	1733125.74	14426105.44	39°43'23.452"N	80°40'13.023"W	594.83	126.975	0.29	0.00	-1.70
5681.00	9.090	122.390	5637.27	-606.75	-366.50	487.10	1733137.61	14426096.72	39°43'23.366"N	80°40'12.872"W	609.57	126.958	1.59	-0.80	-8.38
5771.00	8.860	126.360	5726.17	-620.64	-374.41	498.68	1733149.19	14426088.80	39°43'23.287"N	80°40'12.724"W	623.59	126.900	0.73	-0.26	4.41
5861.00	10.050	132.340	5814.95	-635.38	-383.81	510.07	1733160.58	14426079.41	39°43'23.194"N	80°40'12.579"W	638.34	126.961	1.71	1.32	6.64
5951.00	10.070	131.300	5903.56	-651.10	-394.30	521.78	1733172.29	14426068.93	39°43'23.090"N	80°40'12.429"W	654.01	127.077	0.20	0.02	-1.16
6042.00	7.820	124.720	5993.45	-665.19	-403.07	532.85	1733183.35	14426060.15	39°43'23.002"N	80°40'12.288"W	668.13	127.106	2.71	-2.47	-7.23
6132.00	5.560	125.220	6082.83	-675.59	-409.08	541.45	1733191.94	14426054.15	39°43'22.943"N	80°40'12.178"W	678.61	127.072	2.51	-2.51	0.56
6223.00	5.000	128.160	6173.45	-683.91	-414.07	548.16	1733198.66	14426049.16	39°43'22.893"N	80°40'12.092"W	686.98	127.066	0.68	-0.62	3.23
6313.00	4.260	133.000	6263.15	-691.17	-418.77	553.69	1733204.19	14426044.46	39°43'22.846"N	80°40'12.022"W	694.22	127.101	0.93	-0.82	5.38
6403.00	2.270	319.760	6353.09	-692.74	-419.69	554.99	1733205.48	14426043.54	39°43'22.837"N	80°40'12.005"W	695.81	127.097	7.24	-2.21	-192.49
6494.00	8.800	319.820	6443.62	-684.04	-412.99	549.33	1733199.82	14426050.24	39°43'22.904"N	80°40'12.078"W	687.26	126.936	7.18	7.18	0.07
6584.00	14.410	320.210	6531.74	-666.10	-399.11	537.71	1733188.21	14426064.11	39°43'23.041"N	80°40'12.226"W	669.64	126.585	6.23	6.23	0.43
6674.00	21.360	317.790	6617.34	-638.65	-378.34	519.51	1733170.01	14426084.87	39°43'23.247"N	80°40'12.458"W	642.68	126.065	7.76	7.72	-2.69
6765.00	25.990	307.790	6700.69	-602.24	-363.83	492.59	1733143.11	14426109.38	39°43'23.491"N	80°40'12.801"W	606.50	125.690	6.72	5.09	-10.99
6855.00	32.250	308.080	6779.28	-568.61	-326.91	458.07	1733108.60	14426136.29	39°43'23.758"N	80°40'13.241"W	562.76	125.514	6.96	6.96	0.32
6945.00	37.870	310.920	6852.92	-507.00	-293.97	418.26	1733068.81	14426169.21	39°43'24.085"N	80°40'13.749"W	511.24	125.101	6.50	6.24	3.16
7036.00	45.420	313.250	6920.88	-446.59	-253.41	373.48	1733024.05	14426209.76	39°43'24.487"N	80°40'14.320"W	451.34	124.157	8.47	8.30	2.56
7126.00	53.850	313.760	6979.12	-378.09	-206.23	323.80	1732974.39	14426256.92	39°43'24.955"N	80°40'14.954"W	383.90	122.493	9.38	9.37	0.57
7217.00	58.600	314.580	7029.69	-302.50	-153.53	269.58	1732920.18	14426309.60	39°43'25.478"N	80°40'15.646"W	310.23	119.663	5.27	5.22	0.90
7307.00	66.560	312.340	7071.11	-222.69	-98.67	211.60	1732862.23	14426364.44	39°43'26.022"N	80°40'16.385"W	233.48	115.000	9.12	8.84	-2.49
7398.00	77.910	311.090	7098.83	-136.19	-41.12	147.00	1732797.65	14426421.96	39°43'26.593"N	80°40'17.209"W	152.64	105.629	12.54	12.47	-1.37



REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 3H
SOUTHWESTERN ENERGY	Well	Arthur Waryck MSH 3H
Area	Wellbore	Arthur Waryck MSH 3H AWB
Field		
Facility		

WELLPATH DATA (217 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]
7488.00	85.510	309.870	7111.80	-47.25	16.64	79.30	1732729.98	14426479.71	39°43'27.167"N	80°40'18.073"W	81.03	78.148	8.55	8.44	-1.36
7578.00	88.210	310.170	7116.73	42.53	74.43	10.49	1732661.19	14426537.47	39°43'27.740"N	80°40'18.951"W	75.16	8.021	3.02	3.00	0.33
7618.00	88.340	311.340	7117.93	82.49	100.53	-19.80	1732630.92	14426563.56	39°43'27.999"N	80°40'19.337"W	102.46	348.859	2.94	0.33	2.93
7649.00	89.110	311.730	7118.62	113.48	121.08	-43.00	1732607.73	14426584.10	39°43'28.203"N	80°40'19.633"W	128.48	340.449	2.78	2.48	1.26
7739.00	89.450	312.860	7119.75	203.47	181.64	-109.56	1732541.19	14426644.63	39°43'28.804"N	80°40'20.482"W	212.12	328.902	1.31	0.38	1.26
7829.00	89.420	314.510	7120.64	293.44	243.79	-174.64	1732476.14	14426706.77	39°43'29.421"N	80°40'21.312"W	299.89	324.384	1.83	-0.03	1.83
7919.00	89.380	314.960	7121.58	383.37	307.13	-238.57	1732412.23	14426770.08	39°43'30.049"N	80°40'22.127"W	388.90	322.161	0.50	-0.04	0.50
8010.00	89.450	314.620	7122.51	474.29	371.24	-303.15	1732347.68	14426834.17	39°43'30.685"N	80°40'22.951"W	479.29	320.766	0.38	0.08	-0.37
8100.00	89.600	314.830	7123.26	564.21	434.57	-367.09	1732283.76	14426897.47	39°43'31.313"N	80°40'23.766"W	568.87	319.812	0.29	0.17	0.23
8191.00	89.690	313.720	7123.82	655.17	498.10	-432.24	1732218.64	14426960.97	39°43'31.943"N	80°40'24.597"W	659.50	319.049	1.22	0.10	-1.22
8281.00	89.570	314.330	7124.40	745.13	560.64	-496.96	1732153.95	14427023.49	39°43'32.564"N	80°40'25.423"W	749.19	318.446	0.69	-0.13	0.68
8371.00	89.910	314.600	7124.81	835.08	623.68	-561.19	1732089.74	14427086.51	39°43'33.189"N	80°40'26.242"W	838.99	318.019	0.48	0.38	0.30
8462.00	89.820	314.010	7125.03	926.03	687.25	-626.31	1732024.65	14427150.05	39°43'33.820"N	80°40'27.072"W	929.82	317.656	0.66	-0.10	-0.65
8552.00	89.940	312.920	7125.21	1016.02	749.16	-691.63	1731959.35	14427211.93	39°43'34.434"N	80°40'27.905"W	1019.60	317.287	1.22	0.13	-1.21
8642.00	89.720	310.360	7125.48	1106.00	808.95	-758.88	1731892.12	14427271.70	39°43'35.027"N	80°40'28.763"W	1109.19	316.829	2.85	-0.24	-2.84
8733.00	90.150	311.400	7125.59	1196.96	868.51	-827.69	1731823.35	14427331.24	39°43'35.618"N	80°40'29.641"W	1199.74	316.379	1.24	0.47	1.14
8823.00	89.820	312.000	7125.61	1286.95	928.38	-894.88	1731756.18	14427391.08	39°43'36.212"N	80°40'30.498"W	1289.46	316.053	0.76	-0.37	0.67
8914.00	89.600	311.790	7126.07	1377.95	989.14	-962.62	1731688.47	14427451.83	39°43'36.815"N	80°40'31.362"W	1380.23	315.779	0.33	-0.24	-0.23
9004.00	90.150	311.410	7126.27	1467.93	1048.90	-1029.92	1731621.19	14427511.56	39°43'37.408"N	80°40'32.221"W	1470.01	315.523	0.74	0.61	-0.42
9094.00	89.230	311.610	7126.75	1557.92	1108.54	-1097.31	1731553.83	14427571.18	39°43'38.000"N	80°40'33.081"W	1559.80	315.292	1.05	-1.02	0.22
9185.00	89.450	310.270	7127.80	1648.88	1168.17	-1166.05	1731485.12	14427630.78	39°43'38.592"N	80°40'33.988"W	1650.54	315.052	1.49	0.24	-1.47
9275.00	89.380	310.730	7128.72	1738.82	1226.61	-1234.48	1731416.71	14427689.20	39°43'39.172"N	80°40'34.831"W	1740.27	314.817	0.52	-0.08	0.51
9366.00	89.690	311.940	7129.46	1829.80	1286.97	-1302.81	1731348.41	14427749.28	39°43'39.768"N	80°40'35.703"W	1831.10	314.644	1.37	0.34	1.33
9456.00	90.280	312.120	7129.88	1919.79	1346.97	-1369.66	1731281.59	14427809.51	39°43'40.366"N	80°40'36.556"W	1921.01	314.522	0.69	0.66	0.20
9546.00	90.580	312.700	7129.81	2009.79	1407.67	-1436.11	1731215.17	14427870.18	39°43'40.968"N	80°40'37.403"W	2010.95	314.427	0.73	0.33	0.64
9637.00	89.940	310.110	7128.39	2100.76	1467.85	-1504.35	1731146.95	14427930.34	39°43'41.565"N	80°40'38.274"W	2101.82	314.296	2.93	-0.70	-2.85
9727.00	89.970	310.900	7128.46	2190.71	1526.30	-1572.78	1731078.54	14427988.77	39°43'42.146"N	80°40'39.147"W	2191.63	314.141	0.88	0.03	0.88
9818.00	90.000	310.660	7128.49	2281.67	1585.74	-1641.69	1731009.66	14428048.19	39°43'42.735"N	80°40'40.026"W	2282.48	314.007	0.27	0.03	-0.26
9908.00	89.820	310.570	7128.63	2371.62	1644.33	-1710.01	1730941.37	14428106.75	39°43'43.317"N	80°40'40.898"W	2372.33	313.878	0.22	-0.20	-0.10
9999.00	89.940	310.640	7128.82	2462.57	1703.55	-1779.10	1730872.31	14428165.95	39°43'43.905"N	80°40'41.780"W	2463.19	313.757	0.15	0.13	0.08

REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 3H
SOUTHWESTERN ENERGY	Well	Arthur Waryck MSH 3H
Area	Wellbore	Arthur Waryck MSH 3H AWB
Field		
Facility		

WELLPATH DATA (217 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]
10089.00	90.120	310.850	7128.77	2552.53	1762.29	-1847.29	1730804.15	14428224.67	39°43'44.488"N	80°40'42.650"W	2553.07	313.651	0.31	0.20	0.23
10179.00	89.880	309.790	7128.77	2642.47	1820.53	-1915.90	1730735.56	14428282.88	39°43'45.066"N	80°40'43.525"W	2642.92	313.538	1.21	-0.27	-1.18
10269.00	89.910	311.770	7128.94	2732.42	1879.31	-1984.05	1730667.44	14428341.64	39°43'45.649"N	80°40'44.395"W	2732.81	313.447	2.20	0.03	2.20
10360.00	90.370	311.850	7128.72	2823.42	1939.98	-2051.88	1730599.64	14428402.29	39°43'46.251"N	80°40'45.260"W	2823.78	313.394	0.51	0.51	0.09
10450.00	90.180	311.980	7128.28	2913.41	2000.10	-2118.85	1730532.69	14428462.38	39°43'46.847"N	80°40'46.114"W	2913.75	313.349	0.26	-0.21	0.14
10540.00	90.520	312.070	7127.73	3003.41	2060.35	-2185.70	1730465.86	14428522.61	39°43'47.445"N	80°40'46.967"W	3003.72	313.309	0.39	0.38	0.10
10631.00	90.400	312.620	7127.00	3094.40	2121.64	-2252.96	1730398.63	14428583.88	39°43'48.053"N	80°40'47.825"W	3094.70	313.281	0.62	-0.13	0.60
10721.00	90.460	312.880	7126.33	3184.40	2182.73	-2319.05	1730332.57	14428644.95	39°43'48.659"N	80°40'48.668"W	3184.70	313.266	0.30	0.07	0.29
10812.00	90.650	313.610	7125.45	3275.39	2245.08	-2385.33	1730266.31	14428707.26	39°43'49.278"N	80°40'49.514"W	3275.69	313.265	0.83	0.21	0.80
10902.00	90.220	312.220	7124.76	3365.38	2306.35	-2451.24	1730200.43	14428768.52	39°43'49.886"N	80°40'50.355"W	3365.69	313.256	1.62	-0.48	-1.54
10993.00	90.580	312.130	7124.13	3456.37	2367.45	-2518.68	1730133.02	14428829.59	39°43'50.492"N	80°40'51.215"W	3456.67	313.227	0.41	0.40	-0.10
11083.00	90.220	311.500	7123.50	3546.37	2427.45	-2585.75	1730065.97	14428889.57	39°43'51.087"N	80°40'52.071"W	3546.64	313.191	0.81	-0.40	-0.70
11174.00	90.310	311.230	7123.08	3637.35	2487.59	-2654.05	1729997.70	14428949.68	39°43'51.684"N	80°40'52.942"W	3637.59	313.146	0.31	0.10	-0.30
11264.00	90.310	311.400	7122.59	3727.33	2547.01	-2721.65	1729930.13	14429009.08	39°43'52.274"N	80°40'53.805"W	3727.55	313.102	0.19	0.00	0.19
11355.00	90.430	311.360	7122.00	3818.31	2607.16	-2789.93	1729861.88	14429069.21	39°43'52.870"N	80°40'54.676"W	3818.50	313.060	0.14	0.13	-0.04
11446.00	90.150	311.470	7121.54	3909.29	2667.36	-2858.17	1729793.66	14429129.38	39°43'53.468"N	80°40'55.547"W	3909.47	313.022	0.33	-0.31	0.12
11536.00	90.550	312.070	7120.99	3999.28	2727.31	-2925.29	1729726.57	14429189.31	39°43'54.063"N	80°40'56.403"W	3999.44	312.994	0.80	0.44	0.67
11627.00	90.400	311.400	7120.24	4090.27	2787.88	-2993.20	1729658.69	14429249.86	39°43'54.664"N	80°40'57.270"W	4090.42	312.966	0.75	-0.16	-0.74
11717.00	90.370	312.030	7119.63	4180.26	2847.77	-3060.38	1729591.53	14429309.72	39°43'55.258"N	80°40'58.127"W	4180.39	312.939	0.70	-0.03	0.70
11808.00	90.980	312.770	7118.56	4271.25	2909.13	-3127.57	1729524.37	14429371.06	39°43'55.866"N	80°40'58.984"W	4271.38	312.928	1.05	0.67	0.81
11898.00	90.800	311.430	7117.16	4361.24	2969.46	-3194.34	1729457.62	14429431.36	39°43'56.465"N	80°40'59.836"W	4361.36	312.911	1.50	-0.20	-1.49
11989.00	90.710	311.890	7115.97	4452.22	3029.94	-3262.32	1729389.67	14429491.82	39°43'57.065"N	80°41'00.703"W	4452.33	312.885	0.52	-0.10	0.51
12079.00	90.830	312.230	7114.76	4542.21	3090.23	-3329.13	1729322.88	14429552.08	39°43'57.663"N	80°41'01.556"W	4542.31	312.869	0.40	0.13	0.38
12169.00	91.080	312.290	7113.26	4632.20	3150.74	-3395.73	1729256.81	14429612.58	39°43'58.264"N	80°41'02.406"W	4632.30	312.857	0.29	0.28	0.07
12260.00	91.230	311.930	7111.42	4723.18	3211.75	-3463.23	1729188.84	14429673.56	39°43'58.869"N	80°41'03.267"W	4723.27	312.842	0.43	0.16	-0.40
12350.00	91.050	312.260	7109.63	4813.16	3272.07	-3530.00	1729122.10	14429733.86	39°43'59.467"N	80°41'04.119"W	4813.25	312.828	0.42	-0.20	0.37
12440.00	91.080	311.790	7107.96	4903.14	3332.31	-3596.84	1729055.28	14429794.07	39°44'00.065"N	80°41'04.972"W	4903.22	312.814	0.52	0.03	-0.52
12531.00	91.200	311.950	7106.15	4994.11	3393.04	-3664.59	1728987.55	14429854.78	39°44'00.668"N	80°41'05.836"W	4994.19	312.797	0.22	0.13	0.18
12621.00	90.980	311.770	7104.44	5084.09	3453.08	-3731.61	1728920.56	14429914.80	39°44'01.263"N	80°41'06.691"W	5084.16	312.780	0.32	-0.24	-0.20
12711.00	91.140	311.810	7102.77	5174.07	3513.05	-3798.70	1728853.50	14429974.74	39°44'01.858"N	80°41'07.547"W	5174.13	312.763	0.18	0.18	0.04

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Marshall County, WV	Well	Arthur Waryck MSH 3H
Field	Marshall	Wellbore	Arthur Waryck MSH 3H AWB
Facility	Arthur Waryck MSH Pad		

WELLPATH DATA (217 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]
12802.00	91.200	312.260	7100.91	5265.05	3573.97	-3866.28	1728785.95	14430035.64	39°44'02.463"N	80°41'08.410"W	5265.11	312.750	0.50	0.07	0.49
12892.00	91.480	312.900	7098.81	5355.02	3634.85	-3932.53	1728719.72	14430096.49	39°44'03.067"N	80°41'09.255"W	5355.08	312.747	0.78	0.31	0.71
12982.00	91.050	313.320	7096.82	5445.00	3696.34	-3998.22	1728654.06	14430157.96	39°44'03.677"N	80°41'10.093"W	5445.06	312.753	0.67	-0.48	0.47
13072.00	91.420	312.800	7094.88	5534.97	3757.77	-4063.96	1728588.35	14430219.37	39°44'04.286"N	80°41'10.932"W	5535.04	312.758	0.71	0.41	-0.58
13163.00	91.230	313.010	7092.78	5625.94	3819.71	-4130.60	1728521.73	14430281.28	39°44'04.900"N	80°41'11.782"W	5626.01	312.761	0.31	-0.21	0.23
13253.00	91.140	312.930	7090.92	5715.92	3881.04	-4196.44	1728455.92	14430342.59	39°44'05.509"N	80°41'12.622"W	5715.99	312.764	0.13	-0.10	-0.09
13344.00	91.140	312.340	7089.10	5806.90	3942.66	-4263.37	1728389.01	14430404.19	39°44'06.120"N	80°41'13.476"W	5806.97	312.762	0.65	0.00	-0.65
13434.00	91.450	312.720	7087.07	5896.88	4003.49	-4329.68	1728322.73	14430464.99	39°44'06.723"N	80°41'14.322"W	5896.95	312.758	0.54	0.34	0.42
13524.00	91.200	312.020	7084.99	5986.85	4064.12	-4396.15	1728256.28	14430525.60	39°44'07.325"N	80°41'15.170"W	5986.92	312.753	0.83	-0.28	-0.78
13615.00	90.770	312.410	7083.43	6077.84	4125.26	-4463.54	1728188.92	14430586.71	39°44'07.931"N	80°41'16.030"W	6077.90	312.744	0.64	-0.47	0.43
13705.00	91.540	313.490	7081.61	6167.82	4186.57	-4529.40	1728123.09	14430647.99	39°44'08.540"N	80°41'16.870"W	6167.88	312.747	1.47	0.86	1.20
13796.00	91.200	313.480	7079.44	6258.78	4249.17	-4595.40	1728057.11	14430710.57	39°44'09.161"N	80°41'17.712"W	6258.85	312.758	0.37	-0.37	-0.01
13886.00	90.620	312.180	7078.01	6348.76	4310.34	-4661.40	1727991.14	14430771.72	39°44'09.767"N	80°41'18.554"W	6348.84	312.759	1.58	-0.64	-1.44
13976.00	91.630	312.650	7076.24	6438.74	4371.04	-4727.83	1727924.73	14430832.39	39°44'10.370"N	80°41'19.402"W	6438.81	312.754	1.24	1.12	0.52
14066.00	91.450	312.390	7073.82	6528.71	4431.84	-4794.14	1727858.45	14430893.17	39°44'10.973"N	80°41'20.248"W	6528.78	312.751	0.35	-0.20	-0.29
14157.00	91.660	312.820	7071.35	6619.67	4493.42	-4861.09	1727791.52	14430954.73	39°44'11.584"N	80°41'21.102"W	6619.75	312.749	0.53	0.23	0.47
14247.00	91.540	312.070	7068.84	6709.64	4554.13	-4927.48	1727725.16	14431015.42	39°44'12.186"N	80°41'21.950"W	6709.71	312.745	0.84	-0.13	-0.83
14337.00	91.290	312.540	7066.62	6799.61	4614.69	-4994.02	1727658.65	14431075.95	39°44'12.787"N	80°41'22.799"W	6799.68	312.739	0.59	-0.28	0.52
14427.00	92.030	311.220	7064.01	6889.57	4674.75	-5061.00	1727591.69	14431135.98	39°44'13.382"N	80°41'23.653"W	6889.63	312.728	1.68	0.82	-1.47
14518.00	91.660	311.020	7061.08	6980.49	4734.56	-5129.52	1727523.20	14431195.77	39°44'13.976"N	80°41'24.528"W	6980.55	312.707	0.46	-0.41	-0.22
14608.00	91.320	308.820	7058.74	7070.37	4792.29	-5198.52	1727454.23	14431253.48	39°44'14.549"N	80°41'25.408"W	7070.41	312.672	2.47	-0.38	-2.44
14698.00	91.290	309.110	7056.69	7160.17	4848.87	-5268.48	1727384.30	14431310.04	39°44'15.110"N	80°41'26.301"W	7160.20	312.625	0.32	-0.03	0.32
14789.00	91.230	310.120	7054.69	7251.04	4906.88	-5338.56	1727316.25	14431368.93	39°44'15.686"N	80°41'27.196"W	7251.05	312.587	1.11	-0.07	1.11
14879.00	91.290	311.740	7052.71	7340.98	4965.83	-5406.54	1727246.29	14431426.95	39°44'16.271"N	80°41'28.064"W	7340.99	312.567	1.80	0.07	1.80
14969.00	91.630	311.660	7050.41	7430.94	5025.68	-5473.71	1727179.15	14431486.78	39°44'16.865"N	80°41'28.921"W	7430.95	312.557	0.39	0.38	-0.09
15060.00	91.660	312.570	7047.80	7521.90	5086.68	-5541.19	1727111.70	14431547.76	39°44'17.470"N	80°41'29.782"W	7521.91	312.551	1.00	0.03	1.00
15150.00	91.690	311.260	7045.17	7611.86	5146.78	-5608.13	1727044.78	14431607.83	39°44'18.066"N	80°41'30.636"W	7611.86	312.544	1.46	0.03	-1.46
15241.00	91.450	311.670	7042.68	7702.81	5207.01	-5676.30	1726976.64	14431668.04	39°44'18.664"N	80°41'31.506"W	7702.81	312.531	0.52	-0.26	0.45
15331.00	91.600	311.920	7040.28	7792.77	5266.97	-5743.37	1726909.59	14431727.98	39°44'19.258"N	80°41'32.362"W	7792.77	312.522	0.32	0.17	0.28
15422.00	91.660	312.010	7037.69	7883.73	5327.80	-5811.01	1726841.98	14431788.78	39°44'19.862"N	80°41'33.225"W	7883.73	312.516	0.12	0.07	0.10

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Marshall County, WV	Well	Arthur Waryck MSH 3H
Field	Marshall	Wellbore	Arthur Waryck MSH 3H AWB
Facility	Arthur Waryck MSH Pad		

WELLPATH DATA (217 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]
15512.00	91.940	313.600	7034.87	7973.68	5388.92	-5877.00	1726776.01	14431849.88	39°44'20.468"N	80°41'34.067"W	7973.68	312.519	1.79	0.31	1.77
15603.00	91.600	312.570	7032.06	8064.63	5451.05	-5943.43	1726709.61	14431911.98	39°44'21.084"N	80°41'34.915"W	8064.63	312.526	1.19	-0.37	-1.13
15693.00	91.720	312.890	7029.45	8154.59	5512.09	-6009.51	1726643.56	14431973.00	39°44'21.690"N	80°41'35.758"W	8154.59	312.528	0.38	0.13	0.36
15783.00	91.880	312.620	7026.62	8244.55	5573.16	-6075.56	1726577.53	14432034.04	39°44'22.296"N	80°41'36.601"W	8244.55	312.530	0.35	0.18	-0.30
15873.00	91.880	312.970	7023.67	8334.50	5634.27	-6141.57	1726511.55	14432095.13	39°44'22.902"N	80°41'37.443"W	8334.50	312.530	0.39	0.00	0.39
15964.00	91.720	312.550	7020.81	8425.45	5696.02	-6208.35	1726444.80	14432156.86	39°44'23.514"N	80°41'38.295"W	8425.45	312.536	0.49	-0.18	-0.46
16054.00	91.660	312.170	7018.16	8515.41	5756.64	-6274.82	1726378.35	14432217.45	39°44'24.116"N	80°41'39.144"W	8515.41	312.534	0.43	-0.07	-0.42
16144.00	92.030	313.160	7015.26	8605.36	5817.60	-6340.97	1726312.23	14432278.39	39°44'24.720"N	80°41'39.988"W	8605.36	312.535	1.17	0.41	1.10
16235.00	91.790	313.120	7012.23	8696.30	5879.79	-6407.33	1726245.89	14432340.55	39°44'25.337"N	80°41'40.835"W	8696.30	312.542	0.27	-0.26	-0.04
16325.00	91.480	313.200	7009.66	8786.26	5941.33	-6472.95	1726180.30	14432402.07	39°44'25.948"N	80°41'41.672"W	8786.26	312.548	0.36	-0.34	0.09
16415.00	91.690	313.460	7007.17	8876.22	6003.06	-6538.40	1726114.88	14432463.78	39°44'26.560"N	80°41'42.507"W	8876.22	312.556	0.37	0.23	0.29
16505.00	91.750	312.960	7004.47	8966.17	6064.65	-6603.96	1726049.34	14432525.35	39°44'27.171"N	80°41'43.344"W	8966.17	312.562	0.56	0.07	-0.56
16595.00	91.450	313.620	7001.95	9056.12	6126.34	-6669.45	1725983.88	14432587.01	39°44'27.783"N	80°41'44.179"W	9056.12	312.570	0.81	-0.33	0.73
16686.00	91.510	313.030	6999.60	9147.08	6188.76	-6735.62	1725917.73	14432649.40	39°44'28.402"N	80°41'45.024"W	9147.08	312.577	0.65	0.07	-0.65
16776.00	91.540	312.600	6997.21	9237.05	6249.90	-6801.62	1725851.76	14432710.52	39°44'29.008"N	80°41'45.866"W	9237.05	312.579	0.48	0.03	-0.48
16867.00	91.260	311.190	6994.99	9328.02	6310.65	-6869.34	1725784.07	14432771.25	39°44'29.611"N	80°41'46.730"W	9328.02	312.573	1.58	-0.31	-1.55
16957.00	91.510	311.980	6992.81	9417.98	6370.37	-6936.63	1725716.80	14432830.94	39°44'30.203"N	80°41'47.589"W	9417.98	312.563	0.92	0.28	0.88
17048.00	91.790	311.930	6990.19	9508.94	6431.18	-7004.28	1725649.18	14432891.73	39°44'30.806"N	80°41'48.452"W	9508.94	312.557	0.31	0.31	-0.05
17138.00	91.570	311.720	6987.55	9598.89	6491.17	-7071.32	1725582.17	14432951.70	39°44'31.402"N	80°41'49.308"W	9598.89	312.551	0.34	-0.24	-0.23
17229.00	91.320	311.420	6985.26	9689.85	6551.54	-7139.38	1725514.13	14433012.04	39°44'32.000"N	80°41'50.177"W	9689.85	312.541	0.43	-0.27	-0.33
17319.00	91.600	311.840	6982.96	9779.81	6611.30	-7206.63	1725446.91	14433071.78	39°44'32.593"N	80°41'51.035"W	9779.81	312.533	0.56	0.31	0.47
17409.00	91.720	312.090	6980.36	9869.77	6671.46	-7273.52	1725380.05	14433131.91	39°44'33.190"N	80°41'51.889"W	9869.77	312.528	0.31	0.13	0.28
17500.00	91.510	311.410	6977.79	9960.73	6732.03	-7341.38	1725312.21	14433192.46	39°44'33.791"N	80°41'52.755"W	9960.73	312.521	0.78	-0.23	-0.75
17590.00	91.290	311.130	6975.59	10050.68	6791.38	-7409.01	1725244.61	14433251.78	39°44'34.380"N	80°41'53.618"W	10050.68	312.510	0.40	-0.24	-0.31
17680.00	91.940	311.080	6973.06	10140.62	6850.52	-7476.79	1725176.85	14433310.91	39°44'34.966"N	80°41'54.483"W	10140.62	312.497	0.72	0.72	-0.06
17771.00	92.190	311.760	6969.78	10231.54	6910.69	-7544.99	1725108.68	14433371.05	39°44'35.563"N	80°41'55.354"W	10231.54	312.488	0.80	0.27	0.75
17861.00	92.190	312.160	6966.34	10321.47	6970.82	-7611.86	1725041.83	14433431.15	39°44'36.160"N	80°41'56.207"W	10321.47	312.483	0.44	0.00	0.44
17952.00	92.030	312.080	6962.99	10412.41	7031.81	-7679.32	1724974.41	14433492.12	39°44'36.765"N	80°41'57.068"W	10412.41	312.480	0.20	-0.18	-0.09
18042.00	92.190	312.470	6959.67	10502.35	7092.31	-7745.86	1724907.88	14433552.60	39°44'37.365"N	80°41'57.917"W	10502.35	312.478	0.47	0.18	0.43
18132.00	92.120	311.880	6956.29	10592.28	7152.69	-7812.52	1724841.26	14433612.96	39°44'37.964"N	80°41'58.768"W	10592.28	312.475	0.66	-0.08	-0.66

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Marshall County, WV	Well	Arthur Waryck MSH 3H
Field	Marshall	Wellbore	Arthur Waryck MSH 3H AWB
Facility	Arthur Waryck MSH Pad		

WELLPATH DATA (217 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]
18223.00	92.090	312.440	6952.95	10683.22	7213.73	-7879.93	1724773.87	14433673.97	39°44'38.569"N	80°41'59.628"W	10683.22	312.473	0.62	-0.03	0.62
18313.00	92.090	312.470	6949.67	10773.16	7274.44	-7946.28	1724707.54	14433734.66	39°44'39.172"N	80°42'00.475"W	10773.16	312.473	0.09	0.00	0.03
18403.00	92.030	312.410	6946.43	10863.10	7335.14	-8012.66	1724641.19	14433795.33	39°44'39.774"N	80°42'01.323"W	10863.10	312.472	0.09	-0.07	-0.07
18494.00	91.720	312.030	6943.45	10954.05	7396.25	-8080.02	1724573.86	14433856.42	39°44'40.380"N	80°42'02.182"W	10954.05	312.470	0.54	-0.34	-0.42
18584.00	91.820	312.280	6940.67	11044.01	7456.63	-8146.70	1724507.20	14433916.77	39°44'40.979"N	80°42'03.033"W	11044.01	312.468	0.30	0.11	0.28
18652.00	91.760	312.510	6938.55	11111.97	7502.45	-8196.90	1724457.03	14433962.58	39°44'41.433"N	80°42'03.674"W	11111.97	312.467	0.35	-0.09	0.34
18677.00	91.760	312.510	6937.78	11136.96	7519.34	-8215.32	1724438.61	14433979.46	39°44'41.601"N	80°42'03.909"W	11136.96	312.467	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Arthur Waryck MSH 3H AWB Ref Wellpath: Arthur Waryck MSH 3H AWP Proj: 18677'

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	0.05	0.00
17.5in Open Hole	100.00	663.00	563.00	100.00	663.00	0.05	0.00	-0.81	0.49
13.375in Casing Surface	26.00	663.00	637.00	26.00	663.00	0.00	0.00	-0.81	0.49
12.25in Open Hole	663.00	2738.00	2075.00	663.00	2729.24	-0.81	0.49	-96.52	131.51
9.625in Casing Intermediate	26.00	2738.00	2712.00	26.00	2729.24	0.00	0.00	-96.52	131.51
8.75in Open Hole	2738.00	7646.00	4908.00	2729.24	7118.57	-96.52	131.51	119.08	-40.76
8.5in Open Hole	7646.00	18677.00	11031.00	7118.57	6937.78	119.08	-40.76	7519.34	-8215.32
5.5in Casing Production	26.00	18677.00	18651.00	26.00	6937.78	0.00	0.00	7519.34	-8215.32

REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot 3H
SOUTHWESTERN ENERGY	Well	Arthur Waryck MSH 3H
Marshall County, WV	Wellbore	Arthur Waryck MSH 3H AWB
Marshall		
Arthur Waryck MSH Pad		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Arthur Waryck MSH 3H LP Rev-4	7115.67	43.88	42.06	1732692.75	14426506.93	39°43'27.437"N	80°40'18.548"W	point
Arthur Waryck MSH 3H BHL Rev-4	7212.00	7521.81	-8213.91	1724440.02	14433981.93	39°44'41.625"N	80°42'03.891"W	point

WELLPATH COMPOSITION - Ref Wellbore: Arthur Waryck MSH 3H AWB Ref Wellpath: Arthur Waryck MSH 3H AWP Proj: 18677'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	675.00	VESI GyroFlex v4	01_VES GyroFlex <17-1/2"> (50'-675')	Arthur Waryck MSH 3H AWB
675.00	2677.00	OWSG MWD rev2 + HRGM	02_Premier MWD <12-1/4"> (675')(778'-2677')	Arthur Waryck MSH 3H AWB
2677.00	7578.00	OWSG MWD rev2 + HRGM	03_Premier MWD <8-3/4"> (2677')(2790'-7578')	Arthur Waryck MSH 3H AWB
7578.00	18652.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8 1/2"> (7618'-18652')	Arthur Waryck MSH 3H AWB
18652.00	18677.00	Blind Drilling (std)	Projection to bit	Arthur Waryck MSH 3H AWB

REFERENCE WELLPATH IDENTIFICATION

Operator	SOUTHWESTERN ENERGY	Slot	Slot 3H
Area	Marshall County, WV	Well	Arthur Waryck MSH 3H
Field	Marshall	Wellbore	Arthur Waryck MSH 3H AWB
Facility	Arthur Waryck MSH Pad		

COMMENTS

Wellpath general comments
 API: 47-051-02183-0000
 BH Job #: 109900605
 Rig: SDC 46
 Duration: 08/05/2019 - 08/08/2019