



# Actual Wellpath Report

WDTN-5I-HSM AWP Proj: 16366'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot 1
Area	Monongalia County, WV	Well	WDTN-5I-HSM
Field	Monongalia	Wellbore	WDTN-5I-HSM AWB
Facility	WTN-5 Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Edsaryar
Scale	0.999942	Report Generated	26/Apr/2019 at 11:36
Convergence at slot	0.53° West	Database/Source file	WA_MPL_EASTERNU Defn/WDTN-5I-HSM AWP Proj_16366_.xml

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-39.75	4.54	1764431.99	440491.08	39°42'22.990"N	80°20'14.240"W
Facility Reference Pt			1764427.45	440530.83	39°42'23.382"N	80°20'14.303"W
Field Reference Pt			609601.22	0.00	38°23'48.753"N	84°21'09.765"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Patterson 801 (RKB) to Facility Vertical Datum	1416.91ft
Horizontal Reference Pt	Slot	Patterson 801 (RKB) to Mean Sea Level	1416.91ft
Vertical Reference Pt	Patterson 801 (RKB)	Patterson 801 (RKB) to Mud Line at Slot (Slot 1)	29.00ft
MD Reference Pt	Patterson 801 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	313.50°

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WV Department of  
Environmental Protection





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## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot I
Area	Monongalia County, WV	Well	WDTN-5I-HSM
Field	Monongalia	Wellbore	WDTN-5I-HSM AWB
Facility	WTN-5 Pad		

## WELLPATH DATA (177 stations) † = Interpolated/extrapolated station

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			(ft)	(°)	(ft/100ft)	(ft/100ft)	(ft/100ft)
0.00†	0.000	106.010	0.00	0.00	0.00	0.00	1764431.99	440491.08	39°42'22.990"N	80°20'14.240"W	0.00	0.000	0.00	0.00	0.00
29.00	0.000	106.010	29.00	0.00	0.00	0.00	1764431.99	440491.08	39°42'22.990"N	80°20'14.240"W	0.00	0.000	0.00	0.00	0.00
100.00	0.590	106.010	100.00	-0.32	-0.10	0.35	1764432.34	440490.98	39°42'22.989"N	80°20'14.236"W	0.37	106.010	0.83	0.83	149.31
200.00	0.310	209.840	200.00	-0.84	-0.48	0.71	1764432.70	440490.60	39°42'22.985"N	80°20'14.231"W	0.86	123.859	0.73	-0.28	103.83
300.00	0.150	174.730	300.00	-1.01	-0.84	0.59	1764432.58	440490.24	39°42'22.981"N	80°20'14.233"W	1.03	145.038	0.21	-0.16	-36.13
400.00	0.110	78.100	400.00	-1.16	-0.95	0.70	1764432.68	440490.12	39°42'22.980"N	80°20'14.229"W	1.18	143.897	0.20	-0.04	-95.61
500.00	0.150	54.740	500.00	-1.24	-0.86	0.90	1764432.89	440490.22	39°42'22.981"N	80°20'14.228"W	1.24	133.753	0.07	0.04	-23.36
600.00	0.320	97.580	599.99	-1.49	-0.82	1.28	1764433.27	440490.26	39°42'22.982"N	80°20'14.224"W	1.52	122.621	0.23	0.17	42.84
700.00	0.210	106.670	699.99	-1.88	-0.91	1.73	1764433.72	440490.17	39°42'22.981"N	80°20'14.218"W	1.96	117.676	0.12	-0.11	9.09
800.00	0.220	78.740	799.99	-2.16	-0.92	2.10	1764434.09	440490.16	39°42'22.981"N	80°20'14.213"W	2.29	113.779	0.10	0.03	-27.93
900.00	0.250	107.640	899.99	-2.46	-0.95	2.49	1764434.48	440490.13	39°42'22.980"N	80°20'14.208"W	2.67	110.910	0.12	0.03	28.90
1000.00	0.100	175.360	999.99	-2.72	-1.11	2.71	1764434.70	440489.97	39°42'22.979"N	80°20'14.205"W	2.92	112.209	0.23	-0.15	67.71
1100.00	0.100	320.510	1099.99	-2.70	-1.12	2.66	1764434.65	440489.96	39°42'22.979"N	80°20'14.206"W	2.89	112.933	0.19	0.00	145.16
1200.00	0.100	162.380	1199.99	-2.69	-1.14	2.63	1764434.62	440489.94	39°42'22.979"N	80°20'14.206"W	2.87	113.451	0.20	0.00	-158.13
1279.00	0.080	107.180	1278.99	-2.80	-1.22	2.70	1764434.69	440489.86	39°42'22.978"N	80°20'14.206"W	2.97	114.338	0.11	-0.03	-69.87
1403.00	0.130	2.830	1402.99	-2.79	-1.11	2.79	1764434.77	440489.97	39°42'22.979"N	80°20'14.204"W	3.00	111.635	0.14	0.04	-84.15
1488.00	0.260	265.170	1497.99	-2.57	-1.02	2.58	1764434.58	440490.06	39°42'22.980"N	80°20'14.207"W	2.78	111.512	0.32	0.14	-102.80
1592.00	0.330	263.690	1591.99	-2.26	-1.07	2.10	1764434.09	440490.01	39°42'22.979"N	80°20'14.213"W	2.36	116.893	0.07	0.07	-1.57
1687.00	0.330	265.680	1686.99	-1.90	-1.12	1.56	1764433.55	440489.96	39°42'22.979"N	80°20'14.220"W	1.92	125.647	0.01	0.00	2.09
1781.00	0.350	265.230	1780.99	-1.53	-1.16	1.00	1764432.99	440489.92	39°42'22.978"N	80°20'14.227"W	1.53	139.233	0.02	0.02	-0.48
1875.00	0.500	251.170	1874.98	-1.14	-1.32	0.33	1764432.32	440489.76	39°42'22.977"N	80°20'14.236"W	1.36	166.076	0.19	0.16	-14.96
1970.00	0.450	278.590	1969.98	-0.65	-1.40	-0.43	1764431.56	440489.68	39°42'22.976"N	80°20'14.246"W	1.46	197.304	0.24	-0.05	28.86
2064.00	0.490	259.340	2063.98	-0.11	-1.41	-1.19	1764430.80	440489.67	39°42'22.976"N	80°20'14.255"W	1.85	220.186	0.17	0.04	-20.48
2158.00	0.470	300.100	2157.97	0.50	-1.30	-1.92	1764430.07	440489.78	39°42'22.977"N	80°20'14.265"W	2.32	236.038	0.36	-0.02	43.36
2253.00	0.300	324.370	2252.97	1.13	-0.90	-2.41	1764429.58	440490.18	39°42'22.981"N	80°20'14.271"W	2.57	249.530	0.24	-0.18	25.55
2351.00	0.470	17.100	2350.97	1.56	-0.31	-2.44	1764429.55	440490.77	39°42'22.986"N	80°20'14.271"W	2.46	282.862	0.38	0.17	53.81
2445.00	0.370	19.690	2444.97	1.85	0.35	-2.22	1764429.77	440491.43	39°42'22.993"N	80°20'14.269"W	2.25	278.935	0.11	-0.11	2.76
2540.00	0.330	1.300	2539.97	2.16	0.91	-2.11	1764429.88	440491.99	39°42'22.998"N	80°20'14.267"W	2.30	283.350	0.12	-0.04	-19.36
2634.00	0.350	24.730	2633.96	2.43	1.44	-1.99	1764430.01	440492.52	39°42'23.004"N	80°20'14.266"W	2.45	306.012	0.15	0.02	24.93
2728.00	0.540	24.620	2727.96	2.67	2.11	-1.68	1764430.31	440493.19	39°42'23.010"N	80°20'14.262"W	2.69	321.418	0.20	0.20	-0.12





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Area	Monongalia County, WV	Well	WDTN-5I-HSM
Field	Monongalia	Wellbore	WDTN-5I-HSM AWB
Facility	WTN-5 Pad		

## WELLPATH DATA (177 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 (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)
2823.00	0.470	10.750	2822.96	3.02	2.90	-1.42	1764430.57	440493.98	39°42'23.018"N	80°20'14.259"W	3.23	333.861	0.15	-0.07	-14.60
2917.00	0.590	7.680	2916.95	3.52	3.75	-1.28	1764430.71	440494.83	39°42'23.027"N	80°20'14.257"W	3.97	341.111	0.13	0.13	-3.27
2971.00	0.460	6.050	2970.95	3.81	4.25	-1.22	1764430.77	440495.33	39°42'23.031"N	80°20'14.256"W	4.42	343.910	0.24	-0.24	-3.02
3053.00	0.630	353.170	3052.95	4.36	5.02	-1.24	1764430.75	440496.10	39°42'23.039"N	80°20'14.257"W	5.17	346.088	0.25	0.21	-15.71
3148.00	0.500	339.460	3147.94	5.13	5.93	-1.45	1764430.54	440497.01	39°42'23.048"N	80°20'14.260"W	6.10	346.244	0.20	-0.14	-14.43
3242.00	0.270	322.980	3241.94	5.72	6.49	-1.73	1764430.26	440497.57	39°42'23.054"N	80°20'14.263"W	6.71	345.084	0.27	-0.24	-17.53
3337.00	0.600	323.350	3336.94	6.43	7.07	-2.16	1764429.83	440498.15	39°42'23.059"N	80°20'14.269"W	7.39	343.002	0.35	0.35	0.39
3431.00	0.510	316.800	3430.93	7.33	7.77	-2.74	1764429.25	440498.85	39°42'23.066"N	80°20'14.276"W	8.24	340.564	0.12	-0.10	-6.97
3525.00	0.460	307.710	3524.93	8.13	8.30	-3.33	1764428.67	440499.38	39°42'23.071"N	80°20'14.284"W	8.94	338.172	0.10	-0.05	-9.67
3620.00	0.510	295.990	3619.93	8.91	8.72	-4.01	1764427.98	440499.80	39°42'23.075"N	80°20'14.293"W	9.60	335.321	0.12	0.05	-12.34
3714.00	0.570	290.390	3713.92	9.74	9.07	-4.82	1764427.17	440500.15	39°42'23.079"N	80°20'14.303"W	10.27	331.998	0.08	0.06	-5.96
3809.00	2.350	168.530	3808.90	8.58	7.32	-4.88	1764427.11	440498.40	39°42'23.062"N	80°20'14.303"W	8.80	326.334	2.84	1.87	-128.27
3903.00	6.300	154.000	3902.61	2.17	0.79	-2.23	1764429.76	440491.87	39°42'22.997"N	80°20'14.269"W	2.37	289.607	4.33	4.20	-15.46
3998.00	9.290	154.040	3996.73	-9.90	-10.79	3.41	1764435.40	440480.29	39°42'22.883"N	80°20'14.195"W	11.31	162.451	3.15	3.15	0.04
4092.00	9.370	151.060	4089.48	-24.30	-24.31	10.44	1764442.42	440466.78	39°42'22.750"N	80°20'14.104"W	26.45	156.764	0.52	0.09	-3.17
4187.00	8.960	149.470	4183.27	-38.79	-37.45	17.94	1764449.92	440453.64	39°42'22.621"N	80°20'14.006"W	41.52	154.406	0.51	-0.43	-1.67
4281.00	8.420	146.130	4276.19	-52.54	-49.46	25.49	1764457.48	440441.62	39°42'22.503"N	80°20'13.908"W	55.65	152.738	0.79	-0.57	-3.55
4376.00	8.670	155.380	4370.14	-65.97	-61.75	32.35	1764464.34	440429.33	39°42'22.382"N	80°20'13.819"W	69.71	152.351	1.47	0.26	9.74
4471.00	9.330	167.680	4463.98	-78.99	-75.78	36.98	1764468.96	440415.30	39°42'22.244"N	80°20'13.758"W	84.32	153.992	2.14	0.69	12.95
4565.00	9.250	171.540	4556.75	-91.24	-90.70	39.71	1764471.70	440400.38	39°42'22.097"N	80°20'13.721"W	99.01	156.354	0.67	-0.09	4.11
4660.00	8.230	169.560	4650.64	-102.75	-104.94	42.07	1764474.06	440386.15	39°42'21.956"N	80°20'13.659"W	113.06	158.155	1.12	-1.07	-2.08
4754.00	7.250	166.020	4743.79	-113.19	-117.31	44.72	1764476.71	440373.77	39°42'21.834"N	80°20'13.654"W	125.55	159.133	1.16	-1.04	-3.77
4833.00	9.760	170.520	4841.69	-125.16	-131.65	47.61	1764479.60	440359.43	39°42'21.693"N	80°20'13.615"W	140.00	160.118	2.62	2.54	4.55
4947.00	9.950	167.810	4834.30	-138.23	-147.45	50.64	1764482.63	440343.64	39°42'21.537"N	80°20'13.575"W	155.90	161.046	0.53	0.20	-2.88
5041.00	8.750	165.830	5027.05	-150.98	-162.32	54.10	1764486.09	440328.77	39°42'21.390"N	80°20'13.529"W	171.10	161.566	1.32	-1.28	-2.11
5136.00	8.360	161.880	5121.00	-163.16	-175.89	58.02	1764490.01	440315.20	39°42'21.257"N	80°20'13.477"W	185.21	161.744	0.74	-0.41	-4.16
5230.00	8.220	162.340	5214.02	-175.06	-188.79	62.13	1764494.17	440302.30	39°42'21.130"N	80°20'13.422"W	198.77	161.769	0.16	-0.15	0.49
5325.00	7.770	162.970	5308.09	-186.60	-201.40	66.19	1764498.11	440289.69	39°42'21.005"N	80°20'13.367"W	211.98	161.823	0.48	-0.47	0.66
5419.00	10.290	169.770	5400.92	-198.90	-215.74	69.48	1764501.46	440275.35	39°42'20.864"N	80°20'13.326"W	226.65	162.149	2.91	2.68	7.23
5514.00	12.550	168.180	5494.04	-214.24	-234.20	73.10	1764505.09	440256.90	39°42'20.682"N	80°20'13.277"W	245.34	162.665	2.40	2.38	-1.67





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Field	Monongalia	Wellbore	WDTN-5I-HSM AWB
Facility	WTN-5 Pad		

## WELLPATH DATA (177 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
5608.00	12.090	167.070	5585.87	-230.84	-253.79	77.40	1764509.38	440237.31	39°42'20.489"N	80°20'13.220"W	265.33	163.040	0.55	-0.49	-1.18
5703.00	10.600	169.970	5679.01	-246.15	-272.09	81.14	1764513.13	440219.01	39°42'20.308"N	80°20'13.170"W	283.93	163.394	1.68	-1.57	3.05
5798.00	10.350	167.540	5772.43	-260.25	-289.03	84.51	1764516.49	440202.07	39°42'20.141"N	80°20'13.125"W	301.13	163.702	0.53	-0.26	-2.56
5892.00	9.760	165.650	5864.99	-273.99	-304.99	88.30	1764520.29	440186.11	39°42'19.984"N	80°20'13.074"W	317.52	163.853	0.72	-0.63	-2.01
5987.00	9.330	162.230	5958.67	-287.56	-320.12	92.65	1764524.63	440170.97	39°42'19.835"N	80°20'13.017"W	333.26	163.859	0.75	-0.45	-3.60
6081.00	9.370	160.640	6051.42	-301.06	-334.60	97.51	1764529.50	440156.50	39°42'19.692"N	80°20'12.953"W	348.52	163.752	0.28	0.04	-1.69
6176.00	8.890	156.010	6145.22	-314.72	-348.60	103.06	1764535.04	440142.52	39°42'19.554"N	80°20'12.880"W	363.52	163.530	0.92	-0.51	-4.87
6270.00	8.790	150.960	6238.10	-328.28	-361.52	109.50	1764541.48	440129.58	39°42'19.427"N	80°20'12.796"W	377.74	163.149	0.83	-0.11	-5.37
6365.00	11.090	162.560	6331.68	-343.20	-376.58	115.76	1764547.75	440114.52	39°42'19.279"N	80°20'12.714"W	393.98	162.913	3.20	2.42	12.21
6461.00	13.000	162.100	6425.56	-360.75	-395.67	121.85	1764553.83	440095.43	39°42'19.091"N	80°20'12.634"W	414.01	162.883	1.99	1.99	-0.48
6554.00	14.870	159.070	6515.82	-380.70	-416.77	129.33	1764561.31	440074.33	39°42'18.883"N	80°20'12.536"W	436.38	162.760	2.16	2.01	-3.26
6648.00	14.460	155.600	6606.76	-402.45	-438.73	138.48	1764570.47	440052.38	39°42'18.667"N	80°20'12.416"W	460.06	162.482	1.03	-0.44	-3.69
6743.00	13.630	154.720	6698.92	-423.88	-459.65	148.16	1764580.15	440031.46	39°42'18.461"N	80°20'12.290"W	482.94	162.134	0.90	-0.87	-0.93
6837.00	11.270	162.730	6790.71	-442.22	-478.44	155.62	1764587.60	440012.67	39°42'18.276"N	80°20'12.192"W	503.11	161.982	3.11	-2.51	8.52
6932.00	8.480	170.710	6884.30	-455.90	-494.22	159.51	1764591.49	439996.89	39°42'18.120"N	80°20'12.141"W	519.32	162.112	3.26	-2.94	8.40
7028.00	8.010	174.270	6979.31	-466.61	-507.86	161.32	1764593.30	439983.25	39°42'17.986"N	80°20'12.116"W	532.87	162.378	0.72	-0.49	3.71
7072.00	8.850	172.980	7022.83	-471.54	-514.27	162.04	1764594.02	439976.84	39°42'17.922"N	80°20'12.106"W	539.20	162.511	1.96	1.91	-2.93
7119.00	7.560	168.870	7069.35	-476.85	-520.89	163.08	1764595.06	439970.22	39°42'17.857"N	80°20'12.092"W	545.82	162.616	3.01	-2.74	-8.74
7213.00	4.010	134.320	7162.88	-485.19	-529.26	166.63	1764598.61	439961.85	39°42'17.774"N	80°20'12.045"W	554.87	162.524	5.13	-3.78	-36.76
7308.00	4.080	160.620	7257.65	-491.52	-534.77	170.13	1764602.10	439956.34	39°42'17.720"N	80°20'12.000"W	561.18	162.353	1.94	0.07	27.68
7402.00	5.790	261.360	7351.44	-491.58	-538.64	166.54	1764598.52	439952.47	39°42'17.682"N	80°20'12.045"W	563.80	162.819	8.17	1.82	107.17
7497.00	13.280	290.070	7445.10	-478.61	-535.61	151.53	1764593.51	439955.50	39°42'17.710"N	80°20'12.238"W	556.63	164.204	9.11	7.88	30.22
7591.00	19.330	299.210	7535.29	-453.60	-524.30	127.78	1764599.76	439966.81	39°42'17.820"N	80°20'12.543"W	539.65	166.303	6.97	6.44	9.72
7686.00	26.160	309.130	7622.89	-417.42	-503.38	97.77	1764599.75	439967.73	39°42'18.024"N	80°20'12.929"W	512.79	169.009	8.22	7.19	10.44
7780.00	34.720	317.650	7703.89	-369.95	-470.45	63.58	1764495.57	440020.66	39°42'18.346"N	80°20'13.371"W	474.72	172.303	10.18	9.11	9.06
7875.00	43.600	317.200	7777.48	-310.16	-426.33	23.02	1764455.01	440064.78	39°42'18.779"N	80°20'13.895"W	426.95	176.910	9.35	9.35	-2.57
7969.00	51.680	314.780	7840.97	-240.83	-376.49	25.26	1764406.73	440114.62	39°42'19.267"N	80°20'14.519"W	377.33	183.839	8.80	8.60	-0.47
8063.00	62.260	312.500	7891.94	-162.14	-322.25	-82.27	1764399.72	440168.85	39°42'19.797"N	80°20'15.254"W	332.59	194.322	11.44	11.26	-2.43
8158.00	67.950	312.230	7931.91	-76.02	-264.21	-145.92	1764286.08	440226.89	39°42'20.365"N	80°20'16.076"W	301.83	208.912	6.00	5.99	-0.28
8252.00	71.460	311.930	7964.51	-12.10	-205.14	-211.35	1764220.65	440285.96	39°42'20.943"N	80°20'16.920"W	294.53	225.855	3.75	3.73	-0.32





# Actual Wellpath Report

WDTN-5I-HSM AWP Proj: 16366  
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## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot 1
Area	Monongalia County, WV	Well	WDTN-5I-HSM
Field	Monongalia	Wellbore	WDTN-5I-HSM AWB
Facility	WTN-5 Pad		

## WELLPATH DATA (177 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)
8347.00	74.870	311.840	7992.02	102.98	-144.44	-279.03	1764152.97	440346.65	39°42'21.536"N	80°20'17.793"W	314.20	242.632	3.59	3.59	-0.09
8441.00	78.450	312.050	8013.71	194.40	-83.31	-347.05	1764084.96	440407.77	39°42'22.134"N	80°20'18.671"W	356.91	256.501	3.81	3.81	0.22
8536.00	82.970	312.330	8029.04	288.10	-20.36	-416.50	1764015.52	440470.72	39°42'22.750"N	80°20'19.567"W	417.00	267.201	4.77	4.76	0.29
8630.00	89.020	313.440	8035.60	381.82	43.42	-485.17	1763946.85	440534.50	39°42'23.374"N	80°20'20.453"W	487.11	275.114	6.54	6.44	1.18
8724.00	88.920	313.510	8037.29	475.81	108.09	-553.37	1763878.65	440599.16	39°42'24.007"N	80°20'21.333"W	563.83	281.052	0.13	-0.11	0.17
8819.00	88.490	313.350	8039.44	570.78	173.38	-622.35	1763809.68	440664.42	39°42'24.646"N	80°20'22.223"W	646.05	285.567	0.48	-0.45	-0.17
8913.00	88.370	310.170	8042.01	664.69	235.95	-692.43	1763739.60	440727.05	39°42'25.258"N	80°20'23.127"W	731.53	288.817	3.38	-0.13	-3.38
9008.00	88.400	310.700	8044.69	759.52	297.55	-764.71	1763667.33	440788.61	39°42'25.860"N	80°20'24.060"W	820.56	291.261	0.56	0.03	0.56
9102.00	88.980	310.360	8046.84	853.37	358.62	-836.13	1763595.91	440849.67	39°42'26.457"N	80°20'24.981"W	909.79	293.214	0.72	0.62	-0.36
9196.00	88.830	311.960	8048.64	947.27	420.47	-906.89	1763525.15	440911.52	39°42'27.061"N	80°20'25.893"W	999.62	294.874	1.71	-0.16	1.70
9291.00	88.620	308.220	8050.75	1042.06	481.62	-979.54	1763452.51	440972.67	39°42'27.659"N	80°20'26.830"W	1091.54	296.183	3.94	-0.22	-3.94
9385.00	89.450	309.070	8052.33	1135.71	540.32	-1052.94	1763379.11	441031.36	39°42'28.232"N	80°20'27.776"W	1183.48	297.165	1.26	0.88	0.90
9479.00	88.280	306.660	8054.20	1229.22	598.00	-1127.13	1763304.93	441089.04	39°42'28.795"N	80°20'28.733"W	1275.94	297.948	2.85	-1.24	-2.56
9574.00	88.120	313.710	8057.18	1323.96	659.23	-1199.62	1763232.44	441150.27	39°42'29.394"N	80°20'29.667"W	1368.82	298.790	7.42	-0.17	7.42
9668.00	88.250	315.770	8060.16	1417.88	725.36	-1266.36	1763165.71	441216.39	39°42'30.041"N	80°20'30.529"W	1459.38	299.804	2.19	0.14	2.19
9763.00	88.150	317.210	8063.14	1512.71	794.22	-1331.73	1763100.34	441285.25	39°42'30.716"N	80°20'31.374"W	1550.58	300.811	1.52	-0.11	1.52
9857.00	88.920	317.390	8065.55	1606.47	863.28	-1395.45	1763036.62	441354.31	39°42'31.392"N	80°20'32.197"W	1640.90	301.742	0.84	0.82	0.19
9952.00	88.650	314.640	8067.56	1701.35	931.61	-1461.41	1762970.67	441422.63	39°42'32.061"N	80°20'33.049"W	1733.09	302.516	2.91	-0.28	-2.89
10046.00	86.980	317.160	8071.15	1795.18	999.06	-1526.77	1762905.31	441490.08	39°42'32.722"N	80°20'33.894"W	1824.59	303.199	3.21	-1.78	2.68
10141.00	89.510	323.330	8074.06	1889.43	1072.02	-1587.46	1762844.63	441563.03	39°42'33.437"N	80°20'34.679"W	1915.53	304.031	7.02	2.66	6.49
10235.00	89.510	320.590	8074.86	1982.39	1146.04	-1645.37	1762786.72	441637.05	39°42'34.163"N	80°20'35.429"W	2005.16	304.858	2.91	0.00	-2.91
10330.00	87.940	316.530	8076.98	2076.98	1217.22	-1708.22	1762723.88	441708.23	39°42'34.861"N	80°20'36.242"W	2097.53	305.473	4.58	-1.65	-4.27
10424.00	88.090	315.260	8080.23	2170.84	1284.68	-1773.60	1762658.50	441778.68	39°42'35.522"N	80°20'37.066"W	2189.99	305.917	1.36	0.16	-1.35
10519.00	88.830	314.810	8082.79	2265.77	1351.87	-1840.71	1762591.40	441842.87	39°42'36.179"N	80°20'37.953"W	2283.80	306.295	0.91	0.78	-0.47
10613.00	91.420	315.870	8082.58	2359.71	1418.73	-1906.77	1762525.33	441909.72	39°42'36.834"N	80°20'38.806"W	2376.67	306.651	2.98	2.76	1.13
10708.00	91.660	312.830	8080.03	2454.65	1485.10	-1974.67	1762457.44	441976.09	39°42'37.484"N	80°20'39.663"W	2470.80	306.946	3.21	0.25	-3.20
10802.00	89.940	306.110	8078.71	2548.35	1544.81	-2047.19	1762387.93	442033.80	39°42'38.067"N	80°20'40.618"W	2564.65	307.038	7.38	-1.83	-7.15
10897.00	90.710	308.050	8078.18	2642.75	1602.09	-2122.97	1762309.15	442093.07	39°42'38.626"N	80°20'41.555"W	2659.64	307.040	2.20	0.81	2.04
10991.00	89.320	308.870	8078.15	2736.39	1660.55	-2196.57	1762235.55	442151.53	39°42'39.197"N	80°20'42.543"W	2753.61	307.088	1.72	-1.48	0.87
11085.00	90.860	310.010	8078.00	2830.15	1720.26	-2269.17	1762162.96	442211.24	39°42'39.780"N	80°20'43.479"W	2847.53	307.166	2.04	1.64	1.21





# Actual Wellpath Report

WDTN-5I-HSM AWP Proj: 16366'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot 1
Area	Monongalia County, WV	Well	WDTN-5I-HSM
Field	Monongalia	Wellbore	WDTN-5I-HSM AWB
Facility	WTN-5 Pad		

## WELLPATH DATA (177 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			(ft)	(°)	(ft/100ft)	(ft/100ft)	(°/100ft)
11180.00	90.710	315.470	8076.70	2925.09	1784.71	-2338.90	1762093.23	442275.68	39°42'40.41"N	80°20'44.37"W	2942.05	307.346	5.75	-0.16	5.75
11274.00	91.290	318.560	8075.06	3018.89	1853.45	-2402.98	1762029.16	442344.42	39°42'41.08"N	80°20'45.207"W	3034.73	307.644	3.34	0.62	3.29
11369.00	90.280	321.100	8073.76	3113.29	1926.03	-2464.25	1761967.89	442416.99	39°42'41.796"N	80°20'46.000"W	3127.63	308.011	2.88	-1.06	2.67
11463.00	88.920	315.850	8074.41	3206.90	1996.38	-2526.54	1761905.60	442487.34	39°42'42.148"N	80°20'46.806"W	3220.08	308.314	5.77	-1.45	-5.59
11558.00	90.830	314.300	8074.62	3301.86	2063.63	-2593.62	1761838.53	442554.59	39°42'43.143"N	80°20'47.672"W	3314.43	308.508	2.59	2.01	-1.63
11652.00	92.620	315.400	8071.79	3395.78	2129.89	-2660.23	1761771.92	442620.85	39°42'43.792"N	80°20'48.532"W	3407.82	308.682	2.23	1.90	1.17
11747.00	92.030	314.160	8067.94	3490.68	2196.75	-2727.60	1761704.55	442687.70	39°42'44.446"N	80°20'49.402"W	3502.22	308.847	1.44	-0.62	-1.31
11842.00	90.490	311.880	8065.85	3585.64	2261.55	-2797.04	1761635.12	442752.49	39°42'45.080"N	80°20'50.299"W	3596.94	308.957	2.90	-1.62	-2.40
11936.00	90.620	312.180	8064.94	3679.61	2324.48	-2866.86	1761565.31	442815.42	39°42'45.696"N	80°20'51.200"W	3690.81	309.036	0.35	0.14	0.32
12031.00	90.580	312.880	8063.94	3774.59	2388.69	-2936.86	1761495.31	442879.63	39°42'46.324"N	80°20'52.103"W	3785.63	309.123	0.74	-0.04	0.74
12125.00	90.400	312.390	8063.14	3868.57	2452.36	-3006.01	1761426.16	442943.29	39°42'46.947"N	80°20'52.996"W	3879.45	309.208	0.56	-0.19	-0.52
12220.00	90.370	310.850	8062.50	3963.52	2515.45	-3077.03	1761355.15	443006.38	39°42'47.563"N	80°20'53.912"W	3974.37	309.266	1.62	-0.03	-1.62
12315.00	91.170	312.000	8061.22	4058.44	2578.30	-3148.25	1761283.93	443069.22	39°42'48.178"N	80°20'54.831"W	4069.29	309.316	1.47	0.84	-1.21
12409.00	91.780	311.520	8058.81	4152.37	2640.88	-3218.34	1761213.84	443131.81	39°42'48.790"N	80°20'55.735"W	4163.17	309.371	0.83	0.65	-0.51
12504.00	90.980	311.050	8056.52	4247.27	2703.55	-3289.71	1761142.48	443194.46	39°42'49.402"N	80°20'56.656"W	4258.09	309.414	0.98	-0.84	-0.49
12598.00	91.510	311.530	8054.47	4341.18	2765.56	-3360.32	1761071.87	443256.47	39°42'50.009"N	80°20'57.567"W	4352.02	309.455	0.76	0.56	0.51
12692.00	91.820	311.710	8051.74	4435.09	2827.97	-3430.56	1761001.63	443318.88	39°42'50.619"N	80°20'58.473"W	4445.92	309.500	0.38	0.33	0.19
12787.00	91.480	311.610	8049.01	4530.00	2891.09	-3501.51	1760930.69	443381.99	39°42'51.236"N	80°20'59.389"W	4540.81	309.545	0.37	-0.36	-0.11
12881.00	91.540	312.040	8046.53	4623.93	2953.75	-3571.53	1760860.67	443444.65	39°42'51.849"N	80°21'00.292"W	4634.70	309.592	0.46	0.06	0.46
12976.00	91.660	312.950	8043.88	4718.87	3017.90	-3641.55	1760790.66	443508.80	39°42'52.476"N	80°21'01.196"W	4729.55	309.650	0.97	0.13	0.96
13070.00	91.910	314.210	8040.95	4812.83	3082.67	-3709.61	1760722.60	443573.56	39°42'53.110"N	80°21'02.075"W	4823.28	309.726	1.37	0.27	1.34
13165.00	92.090	313.300	8037.63	4907.77	3148.33	-3778.19	1760654.03	443639.22	39°42'53.752"N	80°21'02.960"W	4917.99	309.804	0.98	0.19	-0.96
13259.00	91.690	312.040	8034.53	5001.70	3212.00	-3847.26	1760584.96	443702.89	39°42'54.375"N	80°21'03.852"W	5011.82	309.858	1.41	-0.43	-1.34
13354.00	91.690	312.640	8031.73	5096.64	3275.96	-3917.45	1760514.77	443766.84	39°42'55.001"N	80°21'04.758"W	5106.70	309.904	0.63	0.00	0.63
13448.00	91.380	312.830	8029.21	5190.60	3339.72	-3986.47	1760445.76	443830.60	39°42'55.624"N	80°21'05.649"W	5200.55	309.955	0.39	-0.33	0.20
13542.00	91.570	314.730	8026.79	5284.56	3404.74	-4054.31	1760377.98	443895.61	39°42'56.250"N	80°21'06.525"W	5294.31	310.023	2.03	0.20	2.02
13637.00	91.380	314.260	8024.35	5379.52	3471.30	-4122.06	1760310.12	443962.17	39°42'56.912"N	80°21'07.399"W	5388.99	310.102	0.53	-0.20	-0.49
13731.00	91.820	315.000	8021.72	5473.46	3537.31	-4188.93	1760243.32	444028.17	39°42'57.558"N	80°21'08.263"W	5482.67	310.179	0.92	0.47	0.79
13824.00	91.420	314.900	8019.10	5566.39	3602.98	-4254.72	1760177.53	444093.85	39°42'58.201"N	80°21'09.113"W	5575.31	310.259	0.44	-0.43	-0.11
13918.00	91.820	316.970	8016.44	5660.27	3670.50	-4320.06	1760112.19	444161.36	39°42'58.862"N	80°21'09.957"W	5668.82	310.353	2.24	0.43	2.20





# Actual Wellpath Report

WDTN-5I-HSM AWP Proj: 16366'  
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REFERENCE WELLPATH IDENTIFICATION		Slot	Slot 1
Operator	CNX GAS COMPANY, LLC	Well	WDTN-5I-HSM
Area	Monongalia County, WV	Wellbore	WDTN-5I-HSM AWB
Field	Monongalia		
Facility	WTFN-5 Pad		

WELLPATH DATA (177 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]
14012.00	91.850	316.990	8013.43	5754.04	3739.19	-4384.16	1760048.09	444230.04	39°42'59.53"N	80°21'10.786"W	5762.15	310.460	0.04	0.03	0.02
14105.00	92.560	317.240	8009.85	5846.79	3807.28	-4447.40	1759984.86	444298.13	39°43'00.202"N	80°21'11.603"W	5854.46	310.566	0.81	0.76	0.27
14199.00	92.430	315.770	8005.76	5940.57	3875.40	-4512.04	1759920.22	444366.25	39°43'00.869"N	80°21'12.439"W	5947.88	310.659	1.57	-0.14	-1.56
14293.00	91.690	313.260	8002.38	6034.48	3941.26	-4579.02	1759855.25	444432.10	39°43'01.513"N	80°21'13.304"W	6041.60	310.719	2.78	-0.79	-2.67
14386.00	91.750	311.350	7999.59	6127.42	4003.82	-4647.76	1759782.81	444494.66	39°43'02.125"N	80°21'14.191"W	6134.52	310.743	2.05	0.06	-2.05
14480.00	91.450	309.180	7996.96	6221.23	4064.55	-4719.46	1759712.81	444555.38	39°43'02.719"N	80°21'15.116"W	6228.47	310.736	2.33	-0.32	-2.31
14574.00	91.850	310.000	7994.25	6314.97	4124.43	-4791.87	1759640.41	444615.26	39°43'03.304"N	80°21'16.050"W	6322.41	310.719	0.97	0.43	0.87
14668.00	91.420	310.410	7991.57	6408.77	4185.08	-4863.63	1759568.65	444675.91	39°43'03.896"N	80°21'16.975"W	6416.37	310.712	0.63	-0.46	0.44
14761.00	91.380	310.550	7989.30	6501.62	4245.44	-4934.35	1759497.94	444736.26	39°43'04.486"N	80°21'17.888"W	6509.34	310.708	0.16	-0.04	0.15
14855.00	91.320	310.920	7987.09	6595.48	4306.76	-5005.56	1759426.74	444797.58	39°43'05.089"N	80°21'18.806"W	6603.32	310.709	0.40	-0.06	0.39
14949.00	91.420	311.270	7984.84	6689.37	4368.53	-5076.38	1759355.92	444859.35	39°43'05.689"N	80°21'19.720"W	6697.29	310.714	0.39	0.11	0.37
15043.00	91.540	311.500	7982.41	6783.28	4430.66	-5146.88	1759285.42	444921.47	39°43'06.297"N	80°21'20.630"W	6791.25	310.723	0.28	0.13	0.24
15137.00	91.380	311.700	7980.02	6877.19	4493.04	-5217.15	1759215.16	444983.85	39°43'06.906"N	80°21'21.537"W	6885.21	310.735	0.27	-0.17	0.21
15231.00	91.260	313.470	7977.85	6971.15	4556.63	-5286.34	1759145.97	445047.44	39°43'07.528"N	80°21'22.430"W	6979.13	310.760	1.89	-0.13	1.88
15326.00	91.540	315.240	7975.53	7066.11	4623.03	-5354.24	1759078.07	445113.83	39°43'08.178"N	80°21'23.307"W	7073.91	310.808	1.89	0.29	1.86
15420.00	91.540	316.310	7973.00	7160.00	4690.36	-5419.78	1759012.54	445181.16	39°43'08.837"N	80°21'24.154"W	7167.53	310.873	1.14	0.00	1.14
15515.00	91.540	316.660	7970.45	7254.84	4759.23	-5485.17	1758947.15	445250.02	39°43'09.512"N	80°21'24.999"W	7262.05	310.947	0.37	0.00	0.37
15609.00	91.450	317.170	7968.00	7348.64	4827.86	-5549.36	1758882.97	445318.65	39°43'10.184"N	80°21'25.829"W	7355.51	311.023	0.55	-0.10	0.54
15703.00	91.570	317.110	7965.52	7442.42	4896.74	-5613.27	1758819.06	445387.52	39°43'10.859"N	80°21'26.655"W	7448.95	311.100	0.14	0.13	-0.06
15798.00	91.540	317.390	7962.94	7537.18	4966.47	-5677.73	1758754.60	445457.25	39°43'11.542"N	80°21'27.488"W	7543.38	311.177	0.30	-0.03	0.29
15892.00	91.140	316.180	7960.74	7631.00	5034.96	-5742.08	1758690.25	445525.94	39°43'12.212"N	80°21'28.320"W	7636.90	311.246	1.36	-0.43	-1.29
15987.00	90.580	315.560	7959.32	7725.90	5103.14	-5808.22	1758624.12	445593.91	39°43'12.880"N	80°21'29.175"W	7731.59	311.303	0.88	-0.59	-0.65
16081.00	90.770	316.670	7958.21	7819.80	5170.88	-5873.38	1758558.97	445661.65	39°43'13.543"N	80°21'30.017"W	7825.25	311.360	1.20	0.20	1.18
16176.00	90.520	316.880	7957.14	7914.64	5240.10	-5938.44	1758493.91	445730.86	39°43'14.221"N	80°21'30.858"W	7919.83	311.425	0.34	-0.26	0.22
16270.00	90.490	315.180	7956.31	8008.54	5307.75	-6003.69	1758428.66	445798.51	39°43'14.884"N	80°21'31.701"W	8013.52	311.479	1.81	-0.03	-1.81
16341.00	90.680	315.200	7955.59	8079.50	5358.12	-6053.73	1758378.63	445848.87	39°43'15.377"N	80°21'32.348"W	8084.37	311.512	0.27	0.00	0.03
16366.00	90.680	315.200	7955.29	8104.49	5375.85	-6071.34	1758361.01	445866.61	39°43'15.550"N	80°21'32.575"W	8109.32	311.523	0.00	0.00	0.00





# Actual Wellpath Report

WDTN-5I-HSM AWP Proj: 16366'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot 1
Area	Monongalia County, WV	Well	WDTN-5I-HSM
Field	Monongalia	Wellbore	WDTN-5I-HSM AWB
Facility	WTN-5 Pad		

HOLE & CASING SECTIONS - Ref Wellbore: WDTN-5I-HSM AWB											
Ref Wellpath: WDTN-5I-HSM AWP Proj: 16366'											
String/Diameter	Start MD	End MD	Interval	Start TVD	End TVD	Start N/S	Start E/W	End N/S	End E/W		
	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]	[ft]		[ft]
20in Conductor	29.00	129.00	100.00	29.00	129.00	0.00	0.00	-0.19	0.00		0.59
17.5in Open Hole	129.00	1388.00	1259.00	129.00	1387.99	-0.19	0.59	-1.14	0.00		2.79
13.375in Casing Surface	29.00	1358.20	1329.20	29.00	1358.19	0.00	0.00	-1.19	0.00		2.78
12.25in Open Hole	1388.00	3010.00	1622.00	1387.99	3009.95	-1.14	2.79	4.58	0.00		-1.22
9.625in Casing Intermediate	29.00	2971.60	2942.60	29.00	2971.55	0.00	0.00	4.25	0.00		-1.22
8.75in Open Hole	3010.00	7099.00	4089.00	3009.95	7049.54	4.58	-1.21	-518.21	0.00		162.60
8.5in Open Hole	7099.00	16366.00	9267.00	7049.54	7955.29	-518.21	162.60	5375.85	0.00		-6071.34
5.5in Casing Production	29.00	16366.00	16337.00	29.00	7955.29	0.00	0.00	5375.85	0.00		-6071.34

TARGETS											
Name	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape			
	[ft]	[ft]	[ft]	[US ft]	[US ft]						
WDTN-5I-HSM BHL Rev-4	7997.58	5356.17	-6090.47	1758341.88	4458846.93	39°43'15.354"N	80°21'32.818"W	point			
WDTN-5I-HSM LP Rev-4	8025.00	-50.99	-392.50	1764039.51	440440.10	39°42'22.450"N	80°20'19.256"W	point			

WELLPATH COMPOSITION - Ref Wellbore: WDTN-5I-HSM AWB											
Ref Wellpath: WDTN-5I-HSM AWP Proj: 16366'											
Start MD	End MD	Positional Uncertainty Model		Log Name/Comment		Wellbore					
[ft]	[ft]										
29.00	1279.00	VESSE	GyroFlex v4	01	VES Gyro <17-1/2"> (100-1279)		WDTN-5I-HSM AWB				
1279.00	2971.00	BHI	Navitrak (Axial)	02	APS EM <12-1/4"> (1279)(1403-2971)		WDTN-5I-HSM AWB				
2971.00	7028.00	BHI	Navitrak (Axial)	03	APS EM <8-3/4"> (2971)(3053-7028)		WDTN-5I-HSM AWB				
7028.00	16341.00	BHI	AutoTrak Curve (Short)	04	BH AT Curve <8-1/2"> (7028)(7072-16341)		WDTN-5I-HSM AWB				
16341.00	16366.00	Blind	Drilling (std)		Projection to bit		WDTN-5I-HSM AWB				





**Actual Wellpath Report**  
 WDTN-5I-HSM AWP Proj: 16366'  
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**REFERENCE WELLPATH IDENTIFICATION**

Operator	CNX GAS COMPANY, LLC	Slot	Slot I
Area	Monongalia County, WV	Well	WDTN-5I-HSM
Field	Monongalia	Wellbore	WDTN-5I-HSM AWB
Facility	WTN-5 Pad		

**COMMENTS**

**Wellpath general comments**  
 API: 47-061-01793-0000  
 BH Job #: 109627480  
 Rig: Patterson 801  
 Duration: 4/15/2019-4/23/2019  
 VES Gyro <17-1/2"> (100'-1279')  
 APS EM <12-1/4"> (1279')(1403'-2971')  
 APS EM <8-3/4"> (2971')(3053'-7028')  
 BH AT Curve <8-1/2"> (7028')(7072'-16341')  
 Projected MD at TD: 16366'

RECEIVED  
 Office of Oil and Gas  
 WV Department of  
 Environmental Protection  
 OCT 28 2019