



Actual Wellpath Report

PHL13CHS AWP Proj: 16768'MD

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REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Barbour County, WV	Well	PHL13CHS
Field	Barbour	Wellbore	PHL13CHS AWB
Facility	PHL13 Pad		

REPORT SETUP INFORMATION

Projection System	NAD27 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 4.0.0
North Reference	Grid	User	Thomsuze
Scale	0.999966	Report Generated	15/Jul/2013 at 15:13
Convergence at slot	0.33° West	Database/Source file	WA_Eastern_US/PHL13CHS_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-17.93	-35.05	1854775.98	261713.14	39°13'02.711"N	80°00'45.214"W
Facility Reference Pt			1854811.03	261731.07	39°13'02.890"N	80°00'44.770"W
Field Reference Pt			1853088.00	260038.65	39°12'46.064"N	80°01'06.538"W

WELLPATH DATUM

Calculation method	Minimum curvature	Patterson 331 (RT) to Facility Vertical Datum	1551.79ft
Horizontal Reference Pt	Slot	Patterson 331 (RT) to Mean Sea Level	1551.79ft
Vertical Reference Pt	Patterson 331 (RT)	Patterson 331 (RT) to Mud Line at Slot (Slot C)	1551.79ft
MD Reference Pt	Patterson 331 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	148.35°



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WELLPATH DATA (180 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	138.400	0.00	0.00	0.00	0.00	1854775.98	261713.14	39°13'02.711"N	80°00'45.214"W	0.00	0.000	0.00	0.00	0.00
24.50	0.000	138.400	24.50	0.00	0.00	0.00	1854775.98	261713.14	39°13'02.711"N	80°00'45.214"W	0.00	0.000	0.00	0.00	0.00
114.50	0.700	138.400	114.50	0.54	-0.41	0.37	1854776.34	261712.73	39°13'02.707"N	80°00'45.209"W	0.55	138.400	0.78	0.78	0.00
214.50	1.100	136.970	214.49	2.08	-1.57	1.43	1854777.40	261711.57	39°13'02.695"N	80°00'45.196"W	2.12	137.753	0.40	0.40	-1.43
314.50	1.160	137.370	314.47	4.02	-3.02	2.77	1854778.74	261710.12	39°13'02.681"N	80°00'45.179"W	4.09	137.474	0.06	0.06	0.40
414.50	1.210	136.460	414.44	6.05	-4.53	4.18	1854780.16	261708.61	39°13'02.666"N	80°00'45.161"W	6.16	137.283	0.05	0.05	-0.91
514.50	1.210	137.270	514.42	8.12	-6.07	5.62	1854781.60	261707.07	39°13'02.651"N	80°00'45.142"W	8.27	137.177	0.02	0.00	0.81
614.50	0.960	132.200	614.40	9.96	-7.41	6.96	1854782.94	261705.73	39°13'02.638"N	80°00'45.125"W	10.16	136.777	0.27	-0.25	-5.07
714.50	0.910	127.160	714.39	11.50	-8.45	8.21	1854784.19	261704.69	39°13'02.628"N	80°00'45.109"W	11.78	135.806	0.10	-0.05	-5.04
814.50	0.940	138.380	814.38	13.05	-9.54	9.39	1854785.37	261703.60	39°13'02.617"N	80°00'45.094"W	13.39	135.453	0.18	-0.03	11.22
914.50	0.780	135.990	914.37	14.52	-10.64	10.41	1854786.39	261702.50	39°13'02.606"N	80°00'45.081"W	14.89	135.639	0.16	-0.16	-2.39
1014.50	0.930	128.960	1014.36	15.95	-11.64	11.51	1854787.49	261701.50	39°13'02.596"N	80°00'45.067"W	16.37	135.323	0.18	0.15	-7.03
1114.50	0.890	125.100	1114.34	17.43	-12.60	12.78	1854788.76	261700.54	39°13'02.587"N	80°00'45.051"W	17.95	134.596	0.07	-0.04	-3.86
1214.50	0.850	133.110	1214.33	18.86	-13.55	13.96	1854789.93	261699.59	39°13'02.578"N	80°00'45.036"W	19.45	134.162	0.13	-0.04	8.01
1314.50	0.960	128.070	1314.32	20.36	-14.58	15.16	1854791.13	261698.56	39°13'02.568"N	80°00'45.020"W	21.03	133.883	0.14	0.11	-5.04
1414.50	0.950	137.190	1414.31	21.96	-15.70	16.38	1854792.36	261697.44	39°13'02.557"N	80°00'45.005"W	22.69	133.789	0.15	-0.01	9.12
1514.50	0.990	120.620	1514.29	23.54	-16.75	17.69	1854793.66	261696.39	39°13'02.546"N	80°00'44.988"W	24.36	133.442	0.28	0.04	-16.57
1614.50	1.010	132.800	1614.28	25.15	-17.79	19.08	1854795.05	261695.35	39°13'02.536"N	80°00'44.970"W	26.08	132.999	0.21	0.02	12.18
1714.50	1.050	128.060	1714.26	26.86	-18.95	20.44	1854796.42	261694.19	39°13'02.525"N	80°00'44.953"W	27.88	132.831	0.09	0.04	-4.74
1814.50	1.020	124.860	1814.24	28.54	-20.03	21.90	1854797.87	261693.11	39°13'02.514"N	80°00'44.934"W	29.67	132.445	0.07	-0.03	-3.20
1914.50	1.020	120.450	1914.23	30.14	-20.99	23.39	1854799.37	261692.15	39°13'02.505"N	80°00'44.915"W	31.43	131.894	0.08	0.00	-4.41
2014.50	1.020	116.520	2014.21	31.68	-21.83	24.96	1854800.93	261691.31	39°13'02.496"N	80°00'44.895"W	33.16	131.181	0.07	0.00	-3.93
2114.50	1.010	121.620	2114.20	33.23	-22.69	26.50	1854802.48	261690.45	39°13'02.488"N	80°00'44.876"W	34.89	130.571	0.09	-0.01	5.10
2214.50	1.090	131.270	2214.18	34.92	-23.78	27.97	1854803.95	261689.36	39°13'02.477"N	80°00'44.857"W	36.71	130.375	0.19	0.08	9.65
2314.50	1.080	129.820	2314.16	36.73	-25.01	29.41	1854805.38	261688.13	39°13'02.465"N	80°00'44.839"W	38.61	130.383	0.03	-0.01	-1.45
2414.50	1.010	121.340	2414.14	38.40	-26.08	30.89	1854806.86	261687.06	39°13'02.455"N	80°00'44.820"W	40.42	130.174	0.17	-0.07	-8.48
2514.50	0.980	109.280	2514.13	39.85	-26.82	32.45	1854808.42	261686.32	39°13'02.448"N	80°00'44.800"W	42.09	129.574	0.21	-0.03	-12.06
2614.50	0.990	107.060	2614.12	41.17	-27.35	34.08	1854810.05	261685.79	39°13'02.442"N	80°00'44.779"W	43.70	128.752	0.04	0.01	-2.22
2714.50	0.960	104.480	2714.10	42.42	-27.82	35.72	1854811.69	261685.32	39°13'02.438"N	80°00'44.758"W	45.27	127.912	0.05	-0.03	-2.58
2814.50	0.880	104.410	2814.09	43.58	-28.22	37.27	1854813.25	261684.92	39°13'02.434"N	80°00'44.738"W	46.75	127.128	0.08	-0.08	-0.07



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Field	Barbour	Wellbore	PHL13CHS AWB
Facility	PHL13 Pad		

WELLPATH DATA (180 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]
2914.50	0.890	114.050	2914.08	44.77	-28.72	38.72	1854814.70	261684.42	39°13'02.429"N	80°00'44.720"W	48.21	126.567	0.15	0.01	9.64
3014.50	1.160	123.290	3014.06	46.33	-29.60	40.28	1854816.25	261683.54	39°13'02.421"N	80°00'44.700"W	49.98	126.307	0.32	0.27	9.24
3114.50	1.160	124.490	3114.04	48.17	-30.72	41.96	1854817.93	261682.42	39°13'02.409"N	80°00'44.679"W	52.01	126.213	0.02	0.00	1.20
3214.50	1.230	128.130	3214.02	50.10	-31.96	43.64	1854819.61	261681.18	39°13'02.397"N	80°00'44.657"W	54.09	126.219	0.10	0.07	3.64
3314.50	1.330	125.500	3313.99	52.18	-33.30	45.43	1854821.40	261679.84	39°13'02.384"N	80°00'44.634"W	56.32	126.241	0.12	0.10	-2.63
3414.50	1.310	125.730	3413.97	54.31	-34.64	47.30	1854823.27	261678.50	39°13'02.371"N	80°00'44.611"W	58.63	126.216	0.02	-0.02	0.23
3514.50	1.280	126.630	3513.94	56.40	-35.97	49.12	1854825.10	261677.17	39°13'02.358"N	80°00'44.587"W	60.89	126.215	0.04	-0.03	0.90
3614.50	1.320	127.160	3613.91	58.51	-37.33	50.94	1854826.91	261675.81	39°13'02.345"N	80°00'44.564"W	63.16	126.239	0.04	0.04	0.53
3714.50	1.350	128.000	3713.89	60.69	-38.76	52.78	1854828.76	261674.38	39°13'02.331"N	80°00'44.541"W	65.48	126.287	0.04	0.03	0.84
3814.50	1.360	120.010	3813.86	62.84	-40.07	54.74	1854830.72	261673.07	39°13'02.318"N	80°00'44.516"W	67.84	126.207	0.19	0.01	-7.99
3914.50	1.330	126.690	3913.83	64.96	-41.36	56.70	1854832.67	261671.78	39°13'02.305"N	80°00'44.491"W	70.18	126.111	0.16	-0.03	6.68
4014.50	1.490	122.560	4013.80	67.21	-42.75	58.72	1854834.70	261670.39	39°13'02.292"N	80°00'44.465"W	72.64	126.056	0.19	0.16	-4.13
4114.50	1.350	121.460	4113.77	69.43	-44.07	60.83	1854836.80	261669.07	39°13'02.279"N	80°00'44.438"W	75.11	125.924	0.14	-0.14	-1.10
4214.50	1.430	127.020	4213.74	71.64	-45.44	62.83	1854838.80	261667.71	39°13'02.265"N	80°00'44.412"W	77.53	125.874	0.16	0.08	5.56
4314.50	1.420	128.100	4313.71	73.97	-46.95	64.80	1854840.77	261666.19	39°13'02.250"N	80°00'44.387"W	80.02	125.926	0.03	-0.01	1.08
4414.50	1.370	116.680	4413.68	76.15	-48.25	66.84	1854842.82	261664.89	39°13'02.238"N	80°00'44.361"W	82.44	125.825	0.28	-0.05	-11.42
4514.50	1.270	116.490	4513.65	78.11	-49.28	68.90	1854844.88	261663.86	39°13'02.228"N	80°00'44.335"W	84.71	125.575	0.10	-0.10	-0.19
4614.50	1.250	115.340	4613.63	79.96	-50.24	70.88	1854846.85	261662.90	39°13'02.218"N	80°00'44.310"W	86.88	125.332	0.03	-0.02	-1.15
4714.50	1.210	115.460	4713.61	81.76	-51.17	72.82	1854848.79	261661.98	39°13'02.209"N	80°00'44.285"W	89.00	125.094	0.04	-0.04	0.12
4814.50	1.370	115.820	4813.58	83.66	-52.14	74.85	1854850.82	261661.00	39°13'02.200"N	80°00'44.259"W	91.22	124.862	0.16	0.16	0.36
4914.50	1.410	112.570	4913.55	85.67	-53.13	77.06	1854853.03	261660.01	39°13'02.190"N	80°00'44.231"W	93.60	124.586	0.09	0.04	-3.25
5014.50	1.340	115.190	5013.52	87.64	-54.10	79.25	1854855.23	261659.04	39°13'02.181"N	80°00'44.203"W	95.96	124.319	0.09	-0.07	2.62
5114.50	1.350	116.590	5113.50	89.62	-55.13	81.37	1854857.34	261658.01	39°13'02.171"N	80°00'44.176"W	98.28	124.119	0.03	0.01	1.40
5214.50	1.200	116.140	5213.47	91.51	-56.12	83.36	1854859.33	261657.03	39°13'02.161"N	80°00'44.151"W	100.49	123.948	0.15	-0.15	-0.45
5314.50	0.940	120.160	5313.45	93.12	-56.99	85.01	1854860.98	261656.15	39°13'02.152"N	80°00'44.130"W	102.34	123.838	0.27	-0.26	4.02
5414.50	0.920	123.700	5413.44	94.57	-57.85	86.38	1854862.36	261655.29	39°13'02.144"N	80°00'44.112"W	103.96	123.808	0.06	-0.02	3.54
5514.50	1.000	125.670	5513.43	96.11	-58.80	87.76	1854863.74	261654.34	39°13'02.135"N	80°00'44.095"W	105.64	123.822	0.09	0.08	1.97
5614.50	0.970	124.510	5613.41	97.69	-59.79	89.17	1854865.14	261653.35	39°13'02.125"N	80°00'44.077"W	107.36	123.843	0.04	-0.03	-1.16
5714.50	0.900	130.240	5713.40	99.21	-60.78	90.47	1854866.44	261652.36	39°13'02.115"N	80°00'44.060"W	108.98	123.894	0.12	-0.07	5.73
5814.50	0.970	120.720	5813.39	100.70	-61.72	91.79	1854867.77	261651.43	39°13'02.106"N	80°00'44.043"W	110.61	123.915	0.17	0.07	-9.52



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Field	Barbour	Wellbore	PHL13CHS AWB
Facility	PHL13 Pad		

WELLPATH DATA (180 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]
5914.50	1.210	122.790	5913.37	102.41	-62.72	93.41	1854869.38	261650.42	39°13'02.096"N	80°00'44.023"W	112.51	123.880	0.24	0.24	2.07
6014.50	1.130	118.440	6013.35	104.21	-63.76	95.16	1854871.14	261649.38	39°13'02.086"N	80°00'44.000"W	114.55	123.823	0.12	-0.08	-4.35
6114.50	1.150	123.040	6113.33	105.97	-64.78	96.87	1854872.84	261648.36	39°13'02.076"N	80°00'43.979"W	116.53	123.771	0.09	0.02	4.60
6214.50	1.000	118.660	6213.31	107.64	-65.74	98.48	1854874.45	261647.40	39°13'02.067"N	80°00'43.958"W	118.41	123.727	0.17	-0.15	-4.38
6314.50	0.970	119.400	6313.29	109.14	-66.58	99.98	1854875.95	261646.56	39°13'02.058"N	80°00'43.939"W	120.12	123.660	0.03	-0.03	0.74
6414.50	0.870	122.590	6413.28	110.56	-67.40	101.36	1854877.33	261645.74	39°13'02.050"N	80°00'43.921"W	121.72	123.624	0.11	-0.10	3.19
6514.50	1.290	114.380	6513.26	112.18	-68.28	103.02	1854879.00	261644.87	39°13'02.042"N	80°00'43.900"W	123.59	123.534	0.45	0.42	-8.21
6725.00	0.980	112.620	6723.72	115.61	-69.95	106.84	1854882.82	261643.19	39°13'02.025"N	80°00'43.851"W	127.70	123.212	0.15	-0.15	-0.84
6779.00	4.460	77.690	6777.66	116.68	-69.68	109.32	1854885.29	261643.46	39°13'02.028"N	80°00'43.820"W	129.64	122.512	6.85	6.44	-64.69
6820.00	8.840	80.390	6818.37	118.39	-68.81	113.99	1854889.96	261644.33	39°13'02.037"N	80°00'43.761"W	133.15	121.118	10.71	10.68	6.59
6866.00	12.710	94.950	6863.56	122.73	-68.66	122.52	1854898.49	261644.48	39°13'02.039"N	80°00'43.652"W	140.44	119.265	10.22	8.41	31.65
6913.00	17.420	105.380	6908.94	130.97	-70.97	134.46	1854910.43	261642.17	39°13'02.017"N	80°00'43.501"W	152.04	117.826	11.52	10.02	22.19
6958.00	20.050	98.970	6951.55	140.92	-73.96	148.58	1854924.55	261639.18	39°13'01.988"N	80°00'43.321"W	165.97	116.463	7.41	5.84	-14.24
7007.00	23.390	101.450	6997.07	153.04	-77.20	166.41	1854942.39	261635.94	39°13'01.957"N	80°00'43.094"W	183.45	114.887	7.07	6.82	5.06
7053.00	27.490	99.830	7038.60	166.32	-80.83	185.83	1854961.80	261632.31	39°13'01.922"N	80°00'42.847"W	202.65	113.507	9.04	8.91	-3.52
7101.00	31.810	102.140	7080.31	182.42	-85.38	209.13	1854985.10	261627.76	39°13'01.879"N	80°00'42.551"W	225.89	112.209	9.31	9.00	4.81
7195.00	38.240	96.950	7157.26	217.76	-94.12	262.29	1855038.26	261619.02	39°13'01.795"N	80°00'41.875"W	278.67	109.741	7.53	6.84	-5.52
7290.00	45.300	95.010	7228.07	256.31	-100.64	325.19	1855101.16	261612.50	39°13'01.734"N	80°00'41.075"W	340.41	107.196	7.55	7.43	-2.04
7384.00	46.900	97.560	7293.26	297.96	-108.07	392.50	1855168.47	261605.07	39°13'01.665"N	80°00'40.219"W	407.11	105.394	2.59	1.70	2.71
7478.00	50.670	104.870	7355.23	346.08	-121.93	461.74	1855237.70	261591.21	39°13'01.532"N	80°00'39.339"W	477.57	104.793	7.09	4.01	7.78
7572.00	55.840	112.680	7411.50	404.16	-146.30	532.88	1855308.84	261566.85	39°13'01.295"N	80°00'38.433"W	552.60	105.352	8.63	5.50	8.31
7667.00	58.880	123.760	7462.85	473.23	-184.14	603.12	1855379.08	261529.00	39°13'00.925"N	80°00'37.538"W	630.61	106.978	10.32	3.20	11.66
7761.00	64.040	132.000	7507.80	550.52	-234.88	668.11	1855444.06	261478.27	39°13'00.427"N	80°00'36.709"W	708.19	109.370	9.45	5.49	8.77
7855.00	66.910	139.580	7546.86	633.92	-296.16	727.63	1855503.58	261416.99	39°12'59.825"N	80°00'35.948"W	785.59	112.147	7.94	3.05	8.06
7948.00	70.050	143.550	7580.99	719.80	-363.92	781.36	1855557.31	261349.23	39°12'59.158"N	80°00'35.260"W	861.96	114.974	5.21	3.38	4.27
8042.00	76.800	143.020	7607.79	809.49	-436.10	835.20	1855611.15	261277.06	39°12'58.448"N	80°00'34.571"W	942.20	117.571	7.20	7.18	-0.56
8136.00	86.980	146.280	7621.03	902.22	-511.91	888.93	1855664.88	261201.25	39°12'57.701"N	80°00'33.883"W	1025.80	119.936	11.36	10.83	3.47
8204.00	90.860	148.220	7622.32	970.18	-569.08	925.71	1855701.65	261144.08	39°12'57.138"N	80°00'33.412"W	1086.64	121.581	6.38	5.71	2.85
8230.00	90.950	148.100	7621.90	996.18	-591.16	939.42	1855715.36	261122.00	39°12'56.921"N	80°00'33.236"W	1109.95	122.182	0.58	0.35	-0.46
8323.00	90.980	150.400	7620.34	1089.15	-671.07	986.96	1855762.90	261042.09	39°12'56.134"N	80°00'32.626"W	1193.49	124.213	2.47	0.03	2.47



Actual Wellpath Report

PHL13CHS AWP Proj: 16768'MD
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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Barbour County, WV	Well	PHL13CHS
Field	Barbour	Wellbore	PHL13CHS AWB
Facility	PHL13 Pad		

WELLPATH DATA (180 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]
8417.00	90.990	149.540	7618.72	1183.10	-752.44	1034.00	1855809.94	260960.73	39°12'55.332"N	80°00'32.023"W	1278.79	126.043	0.91	0.01	-0.91
8511.00	90.370	148.400	7617.61	1277.08	-832.98	1082.45	1855858.38	260880.19	39°12'54.539"N	80°00'31.401"W	1365.85	127.580	1.38	-0.66	-1.21
8604.00	90.370	143.560	7617.01	1369.97	-910.04	1134.46	1855910.40	260803.13	39°12'53.780"N	80°00'30.735"W	1454.36	128.736	5.20	0.00	-5.20
8698.00	90.430	145.640	7616.35	1463.76	-986.65	1188.91	1855964.84	260726.52	39°12'53.026"N	80°00'30.038"W	1544.99	129.689	2.21	0.06	2.21
8791.00	90.430	151.570	7615.65	1556.72	-1066.00	1237.33	1856013.27	260647.18	39°12'52.244"N	80°00'29.417"W	1633.20	130.746	6.38	0.00	6.38
8884.00	90.580	147.870	7614.83	1649.67	-1146.30	1284.22	1856060.15	260566.88	39°12'51.453"N	80°00'28.815"W	1721.40	131.752	3.98	0.16	-3.98
8979.00	90.400	145.200	7614.02	1744.61	-1225.54	1336.60	1856112.52	260487.65	39°12'50.673"N	80°00'28.144"W	1813.40	132.518	2.82	-0.19	-2.81
9072.00	90.520	150.960	7613.27	1837.57	-1304.44	1385.75	1856161.67	260408.75	39°12'49.896"N	80°00'27.514"W	1903.12	133.269	6.19	0.13	6.19
9166.00	90.430	153.990	7612.49	1931.31	-1387.79	1429.18	1856205.11	260325.40	39°12'49.075"N	80°00'26.956"W	1992.11	134.158	3.22	-0.10	3.22
9260.00	90.860	149.160	7611.43	2025.13	-1470.42	1473.91	1856249.83	260242.77	39°12'48.260"N	80°00'26.382"W	2081.96	134.932	5.16	0.46	-5.14
9354.00	91.020	147.780	7609.89	2119.11	-1550.53	1523.06	1856298.98	260162.66	39°12'47.471"N	80°00'25.752"W	2173.44	135.512	1.48	0.17	-1.47
9447.00	90.920	145.970	7608.32	2212.07	-1628.40	1573.87	1856349.79	260084.79	39°12'46.704"N	80°00'25.101"W	2264.68	135.976	1.95	-0.11	-1.95
9542.00	90.710	146.410	7606.96	2306.99	-1707.33	1626.73	1856402.64	260005.87	39°12'45.927"N	80°00'24.424"W	2358.22	136.385	0.51	-0.22	0.46
9635.00	90.650	147.400	7605.86	2399.95	-1785.24	1677.50	1856453.42	259927.97	39°12'45.160"N	80°00'23.773"W	2449.71	136.782	1.07	-0.06	1.06
9729.00	90.740	149.130	7604.72	2493.94	-1865.17	1726.94	1856502.86	259848.03	39°12'44.373"N	80°00'23.139"W	2541.89	137.204	1.84	0.10	1.84
9822.00	90.890	150.680	7603.40	2586.89	-1945.63	1773.57	1856549.48	259767.58	39°12'43.580"N	80°00'22.541"W	2632.68	137.649	1.67	0.16	1.67
9916.00	90.430	154.390	7602.31	2680.62	-2029.01	1816.91	1856592.82	259684.20	39°12'42.759"N	80°00'21.984"W	2723.61	138.157	3.98	-0.49	3.95
10010.00	90.920	151.770	7601.21	2774.29	-2112.81	1859.46	1856635.37	259600.40	39°12'41.933"N	80°00'21.438"W	2814.53	138.649	2.84	0.52	-2.79
10105.00	91.050	151.450	7599.57	2869.12	-2196.37	1904.62	1856680.53	259516.84	39°12'41.109"N	80°00'20.858"W	2907.17	139.069	0.36	0.14	-0.34
10200.00	91.350	149.650	7597.58	2964.02	-2279.08	1951.32	1856727.23	259434.14	39°12'40.294"N	80°00'20.259"W	3000.31	139.430	1.92	0.32	-1.89
10294.00	91.350	148.230	7595.37	3057.99	-2359.58	1999.80	1856775.71	259353.65	39°12'39.501"N	80°00'19.637"W	3093.03	139.718	1.51	0.00	-1.51
10388.00	91.320	146.340	7593.18	3151.94	-2438.64	2050.59	1856826.49	259274.59	39°12'38.723"N	80°00'18.986"W	3186.20	139.940	2.01	-0.03	-2.01
10483.00	91.290	142.520	7591.01	3246.68	-2515.88	2105.83	1856881.73	259197.35	39°12'37.963"N	80°00'18.279"W	3280.88	140.070	4.02	-0.03	-4.02
10577.00	91.510	147.380	7588.72	3340.46	-2592.79	2159.78	1856935.68	259120.45	39°12'37.205"N	80°00'17.588"W	3374.49	140.206	5.17	0.23	5.17
10671.00	91.230	146.720	7586.47	3434.41	-2671.64	2210.89	1856986.79	259041.59	39°12'36.429"N	80°00'16.933"W	3467.81	140.391	0.76	-0.30	-0.70
10766.00	91.260	144.960	7584.41	3529.29	-2750.23	2264.22	1857040.11	258963.01	39°12'35.655"N	80°00'16.250"W	3562.37	140.536	1.85	0.03	-1.85
10861.00	90.890	147.410	7582.62	3624.20	-2829.14	2317.07	1857092.97	258884.10	39°12'34.878"N	80°00'15.573"W	3656.89	140.682	2.61	-0.39	2.58
10955.00	90.920	149.260	7581.14	3718.18	-2909.13	2366.41	1857142.30	258804.11	39°12'34.090"N	80°00'14.941"W	3750.06	140.874	1.97	0.03	1.97
11050.00	90.490	146.070	7579.97	3813.15	-2989.39	2417.21	1857193.10	258723.86	39°12'33.300"N	80°00'14.290"W	3844.39	141.041	3.39	-0.45	-3.36
11144.00	90.980	148.270	7578.76	3907.12	-3068.36	2468.17	1857244.06	258644.89	39°12'32.522"N	80°00'13.637"W	3937.85	141.187	2.40	0.52	2.34



Actual Wellpath Report

PHL13CHS AWP Proj: 16768'MD

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REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Barbour County, WV	Well	PHL13CHS
Field	Barbour	Wellbore	PHL13CHS AWB
Facility	PHL13 Pad		

WELLPATH DATA (180 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]
11238.00	91.110	149.170	7577.05	4001.10	-3148.68	2516.97	1857292.85	258564.57	39°12'31.731"N	80°00'13.011"W	4031.04	141.362	0.97	0.14	0.96
11333.00	91.450	149.790	7574.93	4096.06	-3230.50	2565.20	1857341.08	258482.76	39°12'30.925"N	80°00'12.392"W	4125.09	141.548	0.74	0.36	0.65
11428.00	91.510	151.090	7572.47	4190.96	-3313.10	2612.05	1857387.93	258400.15	39°12'30.111"N	80°00'11.791"W	4218.94	141.748	1.37	0.06	1.37
11521.00	91.390	152.380	7570.12	4283.77	-3394.99	2656.07	1857431.96	258318.27	39°12'29.304"N	80°00'11.226"W	4310.53	141.962	1.39	-0.13	1.39
11615.00	91.420	152.270	7567.81	4377.51	-3478.21	2699.72	1857475.60	258235.06	39°12'28.484"N	80°00'10.666"W	4403.00	142.182	0.12	0.03	-0.12
11712.00	91.660	146.600	7565.21	4474.42	-3561.67	2749.01	1857524.89	258151.60	39°12'27.662"N	80°00'10.034"W	4499.17	142.338	5.85	0.25	-5.85
11806.00	91.450	147.370	7562.65	4568.36	-3640.46	2800.20	1857576.08	258072.81	39°12'26.886"N	80°00'09.378"W	4592.83	142.433	0.85	-0.22	0.82
11900.00	90.950	143.880	7560.68	4662.22	-3718.01	2853.26	1857629.13	257995.26	39°12'26.122"N	80°00'08.698"W	4686.65	142.497	3.75	-0.53	-3.71
11994.00	90.860	143.600	7559.20	4755.90	-3793.80	2908.85	1857684.72	257919.48	39°12'25.376"N	80°00'07.987"W	4780.62	142.521	0.31	-0.10	-0.30
12089.00	90.920	146.770	7557.72	4850.73	-3871.78	2963.07	1857738.94	257841.50	39°12'24.609"N	80°00'07.293"W	4875.49	142.573	3.34	0.06	3.34
12185.00	90.680	145.710	7556.38	4946.66	-3951.58	3016.41	1857792.28	257761.70	39°12'23.823"N	80°00'06.609"W	4971.29	142.644	1.13	-0.25	-1.10
12279.00	90.770	144.440	7555.19	5040.49	-4028.64	3070.22	1857846.09	257684.64	39°12'23.064"N	80°00'05.920"W	5065.20	142.689	1.35	0.10	-1.35
12374.00	90.580	149.990	7554.07	5135.43	-4108.47	3121.64	1857897.51	257604.82	39°12'22.278"N	80°00'05.261"W	5159.86	142.772	5.85	-0.20	5.84
12467.00	90.650	147.040	7553.08	5228.42	-4187.77	3170.21	1857946.07	257525.52	39°12'21.497"N	80°00'04.639"W	5252.39	142.874	3.17	0.08	-3.17
12563.00	90.830	147.380	7551.84	5324.39	-4268.46	3222.19	1857998.05	257444.83	39°12'20.702"N	80°00'03.973"W	5348.11	142.951	0.40	0.19	0.35
12658.00	90.650	146.890	7550.61	5419.36	-4348.25	3273.74	1858049.60	257365.04	39°12'19.917"N	80°00'03.312"W	5442.85	143.024	0.55	-0.19	-0.52
12752.00	90.710	147.790	7549.49	5513.34	-4427.38	3324.46	1858100.32	257285.92	39°12'19.137"N	80°00'02.662"W	5536.58	143.098	0.96	0.06	0.96
12847.00	90.710	150.130	7548.32	5608.32	-4508.77	3373.44	1858149.30	257204.53	39°12'18.336"N	80°00'02.034"W	5631.08	143.196	2.46	0.00	2.46
12941.00	90.680	153.670	7547.18	5702.12	-4591.67	3417.71	1858193.56	257121.64	39°12'17.519"N	80°00'01.466"W	5724.00	143.339	3.77	-0.03	3.77
13036.00	90.590	153.140	7546.12	5796.74	-4676.61	3460.23	1858236.09	257036.70	39°12'16.681"N	80°00'00.920"W	5817.55	143.502	0.57	-0.09	-0.56
13130.00	89.970	146.550	7545.66	5890.65	-4757.84	3507.43	1858283.28	256955.47	39°12'15.881"N	80°00'00.315"W	5910.93	143.603	7.04	-0.66	-7.01
13224.00	90.030	149.800	7545.66	5984.64	-4837.70	3556.99	1858332.84	256875.61	39°12'15.095"N	79°59'59.680"W	6004.62	143.674	3.46	0.06	3.46
13319.00	89.940	154.090	7545.69	6079.43	-4921.52	3601.66	1858377.51	256791.80	39°12'14.269"N	79°59'59.106"W	6098.63	143.803	4.52	-0.09	4.52
13413.00	88.920	154.070	7546.62	6172.96	-5006.06	3642.74	1858418.59	256707.26	39°12'13.435"N	79°59'58.578"W	6191.14	143.958	1.09	-1.09	-0.02
13508.00	87.940	151.980	7549.23	6267.60	-5090.68	3685.82	1858461.66	256622.64	39°12'12.601"N	79°59'58.025"W	6284.93	144.094	2.43	-1.03	-2.20
13603.00	86.860	151.620	7553.54	6362.33	-5174.32	3730.66	1858506.51	256539.00	39°12'11.777"N	79°59'57.450"W	6378.98	144.209	1.20	-1.14	-0.38
13696.00	87.970	147.570	7557.73	6455.19	-5254.43	3777.67	1858553.51	256458.90	39°12'10.988"N	79°59'56.847"W	6471.46	144.286	4.51	1.19	-4.35
13790.00	88.580	143.200	7560.56	6549.00	-5331.74	3831.03	1858606.87	256381.59	39°12'10.227"N	79°59'56.164"W	6565.38	144.301	4.69	0.65	-4.65
13885.00	88.740	141.780	7562.78	6643.47	-5407.07	3888.86	1858664.70	256306.26	39°12'09.485"N	79°59'55.424"W	6660.31	144.276	1.50	0.17	-1.49
13979.00	88.650	145.970	7564.93	6737.14	-5482.96	3944.25	1858720.09	256230.37	39°12'08.738"N	79°59'54.715"W	6754.26	144.270	4.46	-0.10	4.46

47-001-03222

PHL13GHS



Actual Wellpath Report

PHL13CHS AWP Proj: 16768MD

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REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Barbour County, WV	Well	PHL13CHS
Field	Barbour	Wellbore	PHL13CHS AWB
Facility	PHL13 Pad		

WELLPATH DATA (180 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude [ft]	Longitude [ft]	Closure Dist [ft]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
14703.00	88.710	144.260	7567.09	6830.96	-5560.05	3998.00	1858773.83	256153.29	39°12'07.97"N	79°59'54.02"W	6848.22	144.282	1.82	-1.82
14168.00	88.610	143.190	7569.31	6925.63	-5636.61	4054.19	1858884.94	256076.73	39°12'07.22"N	79°59'53.30"W	6943.19	144.274	1.13	-1.13
14263.00	88.340	146.140	7571.84	7020.39	-5714.08	4109.11	1858884.94	255999.27	39°12'06.46"N	79°59'52.60"W	7038.14	144.279	3.12	-0.28
14357.00	87.630	149.770	7575.15	7114.31	-5793.69	4158.94	1858934.77	255919.66	39°12'05.67"N	79°59'51.96"W	7131.88	144.328	3.93	-0.76
14451.00	86.700	145.990	7579.80	7208.17	-5873.19	4208.85	1858984.68	255840.16	39°12'04.89"N	79°59'51.32"W	7225.57	144.374	4.14	-0.99
14545.00	86.920	148.480	7585.03	7302.00	-5952.11	4259.64	1859035.46	255761.25	39°12'04.11"N	79°59'50.67"W	7319.30	144.410	2.66	0.23
14640.00	86.390	155.020	7590.58	7396.62	-6035.60	4304.51	1859080.33	255677.75	39°12'03.29"N	79°59'50.10"W	7413.32	144.504	6.90	-0.56
14735.00	87.480	153.470	7595.66	7490.98	-6121.04	4345.73	1859121.55	255592.32	39°12'02.45"N	79°59'49.57"W	7506.83	144.627	1.99	-1.63
14830.00	87.470	153.750	7599.84	7585.49	-6206.05	4387.91	1859163.73	255507.31	39°12'01.61"N	79°59'49.02"W	7600.58	144.738	0.29	-0.01
14924.00	87.440	149.430	7604.02	7679.22	-6288.63	4432.58	1859208.40	255424.73	39°12'00.80"N	79°59'48.45"W	7693.81	144.822	4.59	-0.03
15018.00	87.470	147.790	7608.20	7773.13	-6368.79	4481.49	1859257.31	255344.57	39°12'00.01"N	79°59'47.82"W	7787.51	144.867	1.74	-0.03
15113.00	87.510	146.020	7612.36	7868.00	-6448.30	4533.31	1859309.12	255265.07	39°11'59.22"N	79°59'47.16"W	7882.35	144.892	1.86	0.04
15207.00	87.480	144.060	7616.46	7961.75	-6525.26	4587.12	1859362.93	255188.11	39°11'58.47"N	79°59'46.47"W	7976.26	144.894	2.08	-0.03
15302.00	87.440	140.000	7620.68	8056.06	-6600.06	4645.50	1859421.31	255113.31	39°11'57.73"N	79°59'45.72"W	8071.03	144.860	4.27	-0.04
15396.00	87.380	146.130	7624.93	8149.52	-6675.09	4701.90	1859477.71	255038.29	39°11'56.99"N	79°59'45.00"W	8164.84	144.839	6.51	-0.06
15491.00	87.410	145.230	7629.25	8244.32	-6753.47	4755.41	1859531.21	254959.92	39°11'56.22"N	79°59'44.32"W	8259.73	144.849	0.95	-0.95
15585.00	87.510	144.750	7633.41	8338.06	-6830.38	4809.28	1859585.09	254883.00	39°11'55.46"N	79°59'43.63"W	8353.64	144.851	0.52	-0.51
15679.00	87.380	149.480	7637.60	8431.92	-6909.22	4860.25	1859636.06	254804.17	39°11'54.69"N	79°59'42.97"W	8447.45	144.876	5.03	-0.14
15772.00	88.550	156.650	7640.91	8524.55	-6991.74	4902.91	1859678.71	254721.65	39°11'53.87"N	79°59'42.32"W	8539.49	144.960	6.96	1.26
15866.00	88.370	155.860	7643.44	8617.62	-7077.75	4940.74	1859716.54	254635.65	39°11'53.03"N	79°59'41.94"W	8631.66	145.082	0.88	-0.19
15963.00	86.980	153.490	7647.37	8713.86	-7165.63	4981.58	1859757.38	254547.77	39°11'52.16"N	79°59'41.42"W	8727.11	145.193	3.57	-1.43
16058.00	86.830	147.020	7652.51	8808.62	-7247.95	5028.62	1859804.42	254465.45	39°11'51.35"N	79°59'40.81"W	8821.55	145.247	6.80	-0.16
16152.00	87.940	147.700	7656.80	8902.51	-7327.02	5079.27	1859855.06	254386.38	39°11'50.57"N	79°59'40.16"W	8915.39	145.269	1.38	0.72
16247.00	89.880	145.540	7658.60	8997.43	-7406.32	5131.52	1859907.31	254307.08	39°11'49.79"N	79°59'39.49"W	9010.34	145.284	3.06	2.04
16341.00	90.950	141.750	7657.92	9091.10	-7482.01	5187.23	1859963.02	254231.40	39°11'49.04"N	79°59'38.78"W	9104.28	145.267	4.19	-1.14
16436.00	91.940	148.250	7655.52	9185.85	-7559.76	5241.67	1860017.46	254153.65	39°11'48.28"N	79°59'38.08"W	9199.19	145.264	6.92	1.04
16529.00	91.940	145.310	7652.38	9278.75	-7637.51	5292.59	1860068.38	254075.90	39°11'47.51"N	79°59'37.43"W	9292.10	145.279	3.16	0.00
16623.00	91.910	142.080	7649.22	9372.38	-7713.21	5348.21	1860123.99	254000.21	39°11'46.77"N	79°59'36.72"W	9386.00	145.263	3.43	-0.03
16718.00	92.460	147.010	7644.64	9491.99	-7810.86	5417.74	1860193.52	253902.56	39°11'45.81"N	79°59'35.83"W	9505.86	145.254	4.13	0.46
16768.00	92.460	147.010	7643.57	9516.96	-7831.81	5431.34	1860207.12	253881.61	39°11'45.60"N	79°59'35.66"W	9530.83	145.259	0.00	0.00



Actual Wellpath Report

PHL13CHS AWP Proj: 16768'MD

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REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Barbour County, WV	Well	PHL13CHS
Field	Barbour	Wellbore	PHL13CHS AWB
Facility	PHL13 Pad		

HOLE & CASING SECTIONS - Ref Wellbore: PHL13CHS AWB Ref Wellpath: PHL13CHS AWP Proj: 16768'MD

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]
9.625in Casing	24.50	2049.50	2025.00	24.50	2049.21	0.00	0.00	-22.12	25.51

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
PHL13CHS PBHL Rev-3		7463.17	-7846.66	5407.22	1860183.00	253866.76	39°11'45.456"N	79°59'35.966"W	point
PHL13CHS LP Rev-3		7613.00	-539.68	903.14	1855679.08	261173.48	39°12'57.428"N	80°00'33.701"W	point

WELLPATH COMPOSITION - Ref Wellbore: PHL13CHS AWB Ref Wellpath: PHL13CHS AWP Proj: 16768'MD

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	6514.50	Generic gyro - northseeking (Standard)	VES Gyro (100'-6500')	PHL13CHS AWB
6514.50	16743.00	NaviTrak (MagCorr)	BHI AT Curve (6514.5')(6725'-16743')	PHL13CHS AWB
16743.00	16768.00	Blind Drilling (std)	Projection to bit	PHL13CHS AWB