

47-001-03238

PHL13EHS

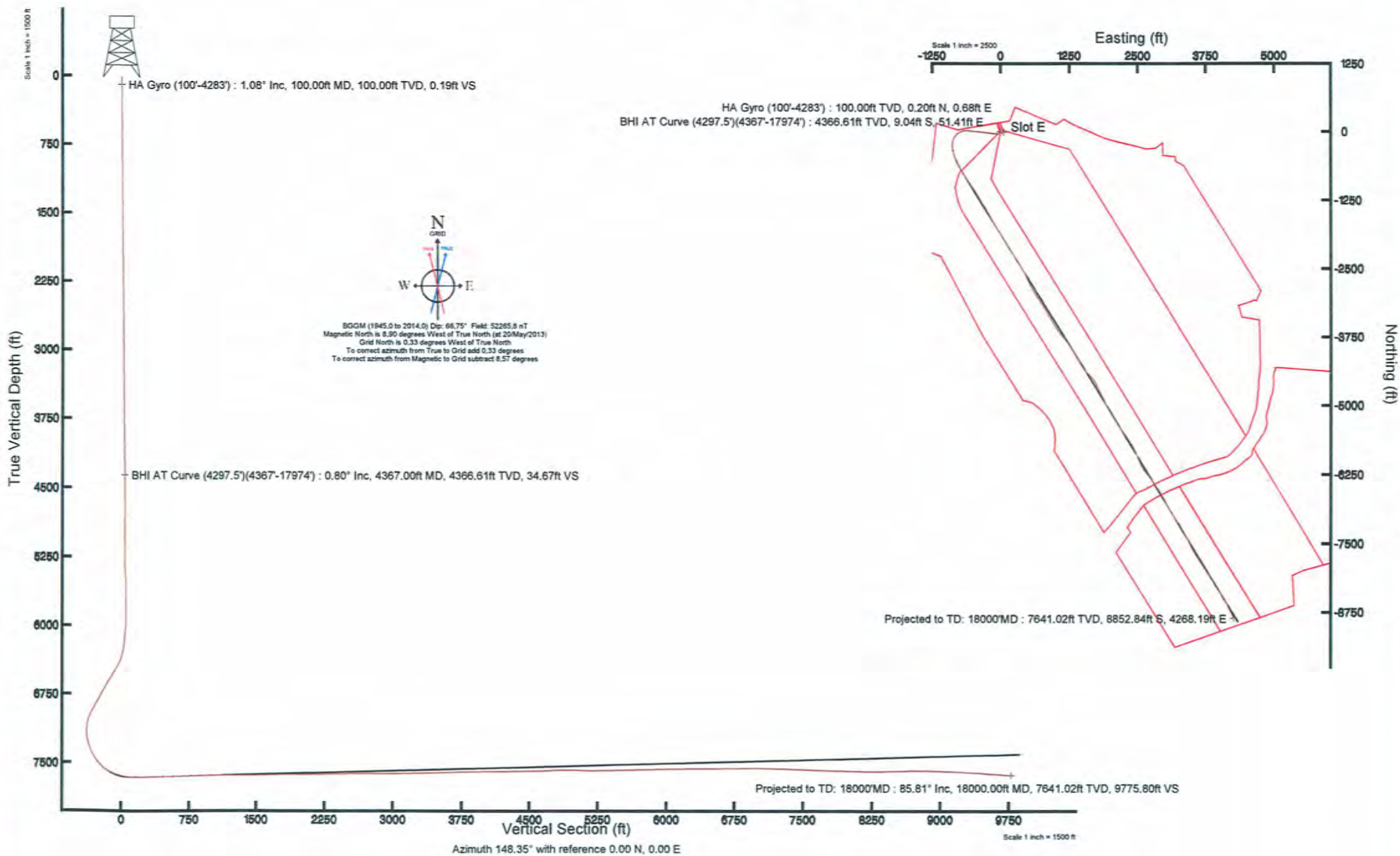
# CNX GAS COMPANY, LLC

Location: Barbour County, WV  
 Field: Barbour  
 Facility: PHL13 Pad

Slot: Slot E  
 Well: PHL13EHS  
 Wellbore: PHL13EHS PWB



Plot reference wellpath is True Vertical Section (TVD) - PWB	
True vertical depths are referenced to Patterson 201 (RT)	Grid System: NAD83 (Lambert West Virginia SP, Northern Zone (KT01), US Feet)
Measured depths are referenced to Patterson 201 (RT)	North Reference: Grid north
Patterson 201 (RT) to Mean Sea Level: 1951.6 feet	Scale: True distance
Mean Sea Level to Mean Sea Level (M.S.L.): Slot (E) Other	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: thomaz on 24/May/2013





## Actual Wellpath Report

PHL13EHS AWP Proj: 18000'MD

Page 1 of 10



### REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot E
Area	Barbour County, WV	Well	PHL13EHS
Field	Barbour	Wellbore	PHL13EHS 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	24/May/2013 at 10:46
Convergence at slot	0.33° West	Database/Source file	WA_Eastern_US/PHL13EHS_AWB.xml

### WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-35.40	-71.08	1854739.95	261695.67	39°13'02.536"N	80°00'45.670"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	1551.60ft
Horizontal Reference Pt	Slot	Patterson 331 (RT) to Mean Sea Level	1551.60ft
Vertical Reference Pt	Patterson 331 (RT)	Patterson 331 (RT) to Mud Line at Slot (Slot E)	1551.60ft
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°



# Actual Wellpath Report

PHL13EHS AWP Proj: 18000'MD

Page 2 of 10



REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot E
Area	Barbour County, WV	Well	PHL13EHS
Field	Barbour	Wellbore	PHL13EHS AWB
Facility	PHL13 Pad		

WELLPATH DATA (212 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	73.890	0.00	0.00	0.00	0.00	1854739.95	261695.67	39°13'02.536"N	80°00'45.670"W	0.00	0.000	0.00	0.00	0.00
24.50	0.000	73.890	24.50	0.00	0.00	0.00	1854739.95	261695.67	39°13'02.536"N	80°00'45.670"W	0.00	0.000	0.00	0.00	0.00
114.50	1.290	73.890	114.49	0.27	0.28	0.97	1854740.92	261695.95	39°13'02.539"N	80°00'45.658"W	1.01	73.890	1.43	1.43	0.00
214.50	1.450	77.170	214.46	0.98	0.87	3.29	1854743.24	261696.54	39°13'02.545"N	80°00'45.629"W	3.40	75.109	0.18	0.16	3.28
314.50	1.210	87.230	314.44	1.90	1.21	5.58	1854745.53	261696.88	39°13'02.548"N	80°00'45.600"W	5.71	77.793	0.33	-0.24	10.06
414.50	0.710	68.160	414.42	2.51	1.49	7.21	1854747.16	261697.16	39°13'02.551"N	80°00'45.579"W	7.36	78.334	0.59	-0.50	-19.07
514.50	1.080	70.300	514.41	2.82	2.04	8.67	1854748.62	261697.71	39°13'02.557"N	80°00'45.561"W	8.90	76.782	0.37	0.37	2.14
614.50	0.930	68.340	614.40	3.15	2.65	10.31	1854750.26	261698.32	39°13'02.563"N	80°00'45.540"W	10.65	75.568	0.15	-0.15	-1.96
714.50	1.270	74.600	714.38	3.60	3.25	12.13	1854752.08	261698.92	39°13'02.569"N	80°00'45.517"W	12.56	75.017	0.36	0.34	6.26
814.50	1.280	83.910	814.35	4.39	3.66	14.31	1854754.26	261699.33	39°13'02.573"N	80°00'45.489"W	14.77	75.655	0.21	0.01	9.31
914.50	0.700	87.090	914.34	5.17	3.81	16.03	1854755.98	261699.48	39°13'02.575"N	80°00'45.467"W	16.48	76.634	0.58	-0.58	3.18
1014.50	0.910	86.820	1014.33	5.84	3.88	17.44	1854757.38	261699.55	39°13'02.575"N	80°00'45.449"W	17.86	77.440	0.21	0.21	-0.27
1114.50	0.690	84.280	1114.32	6.48	3.99	18.83	1854758.78	261699.66	39°13'02.577"N	80°00'45.432"W	19.25	78.039	0.22	-0.22	-2.54
1214.50	0.650	77.780	1214.31	6.94	4.17	19.98	1854759.93	261699.84	39°13'02.578"N	80°00'45.417"W	20.41	78.215	0.09	-0.04	-6.50
1314.50	0.560	104.250	1314.30	7.48	4.17	21.01	1854760.96	261699.84	39°13'02.578"N	80°00'45.404"W	21.42	78.778	0.29	-0.09	26.47
1414.50	0.480	120.070	1414.30	8.20	3.84	21.85	1854761.79	261699.51	39°13'02.575"N	80°00'45.393"W	22.18	80.035	0.16	-0.08	15.82
1514.50	0.500	96.950	1514.30	8.84	3.58	22.64	1854762.59	261699.25	39°13'02.573"N	80°00'45.383"W	22.92	81.026	0.20	0.02	-23.12
1614.50	0.890	98.430	1614.29	9.61	3.41	23.84	1854763.79	261699.08	39°13'02.571"N	80°00'45.368"W	24.08	81.863	0.39	0.39	1.48
1714.50	0.610	85.150	1714.28	10.35	3.34	25.14	1854765.09	261699.01	39°13'02.571"N	80°00'45.351"W	25.36	82.432	0.33	-0.28	-13.28
1814.50	0.880	99.090	1814.27	11.09	3.26	26.43	1854766.38	261698.93	39°13'02.570"N	80°00'45.335"W	26.63	82.960	0.32	0.27	13.94
1914.50	0.750	125.280	1914.26	12.19	2.76	27.72	1854767.67	261698.43	39°13'02.565"N	80°00'45.318"W	27.86	84.305	0.39	-0.13	26.19
2014.50	0.640	113.140	2014.26	13.25	2.17	28.77	1854768.72	261697.84	39°13'02.559"N	80°00'45.305"W	28.85	85.693	0.18	-0.11	-12.14
2114.50	0.470	101.790	2114.25	13.99	1.86	29.69	1854769.63	261697.53	39°13'02.556"N	80°00'45.293"W	29.74	86.408	0.20	-0.17	-11.35
2214.50	0.410	115.660	2214.25	14.57	1.62	30.41	1854770.36	261697.29	39°13'02.554"N	80°00'45.284"W	30.45	86.941	0.12	-0.06	13.87
2314.50	0.710	131.980	2314.24	15.47	1.06	31.19	1854771.14	261696.73	39°13'02.548"N	80°00'45.274"W	31.21	88.062	0.34	0.30	16.32
2414.50	0.760	125.610	2414.23	16.67	0.25	32.19	1854772.14	261695.92	39°13'02.540"N	80°00'45.262"W	32.19	89.546	0.10	0.05	-6.37
2514.50	0.500	86.270	2514.23	17.49	-0.10	33.17	1854773.12	261695.57	39°13'02.537"N	80°00'45.249"W	33.17	90.178	0.49	-0.26	-39.34
2614.50	0.330	105.170	2614.23	17.91	-0.15	33.88	1854773.83	261695.52	39°13'02.537"N	80°00'45.240"W	33.88	90.253	0.22	-0.17	18.90
2714.50	0.790	97.670	2714.22	18.55	-0.32	34.84	1854774.79	261695.35	39°13'02.535"N	80°00'45.228"W	34.84	90.522	0.46	0.46	-7.50
2814.50	0.720	117.210	2814.21	19.53	-0.70	36.08	1854776.03	261694.97	39°13'02.531"N	80°00'45.212"W	36.09	91.106	0.27	-0.07	19.54



# Actual Wellpath Report

PHL13EHS AWP Proj: 18000'MD

Page 3 of 10



REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot E
Area	Barbour County, WV	Well	PHL13EHS
Field	Barbour	Wellbore	PHL13EHS AWB
Facility	PHL13 Pad		

WELLPATH DATA (212 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	0.480	84.140	2914.21	20.25	-0.94	37.06	1854777.01	261694.73	39°13'02.529"N	80°00'45.200"W	37.07	91.455	0.41	-0.24	-33.07
3014.50	0.450	108.680	3014.20	20.73	-1.02	37.85	1854777.80	261694.65	39°13'02.528"N	80°00'45.190"W	37.86	91.550	0.20	-0.03	24.54
3114.50	0.360	124.490	3114.20	21.32	-1.33	38.48	1854778.43	261694.34	39°13'02.525"N	80°00'45.182"W	38.50	91.976	0.14	-0.09	15.81
3214.50	0.750	106.990	3214.20	22.10	-1.70	39.36	1854779.31	261693.97	39°13'02.522"N	80°00'45.170"W	39.40	92.468	0.42	0.39	-17.50
3314.50	0.750	114.740	3314.19	23.14	-2.16	40.58	1854780.53	261693.51	39°13'02.517"N	80°00'45.155"W	40.64	93.049	0.10	0.00	7.75
3414.50	0.470	97.440	3414.18	23.94	-2.49	41.58	1854781.53	261693.18	39°13'02.514"N	80°00'45.142"W	41.66	93.425	0.33	-0.28	-17.30
3514.50	0.680	138.700	3514.18	24.78	-2.99	42.38	1854782.33	261692.68	39°13'02.509"N	80°00'45.132"W	42.49	94.033	0.45	0.21	41.26
3614.50	0.460	113.560	3614.17	25.70	-3.59	43.14	1854783.09	261692.08	39°13'02.503"N	80°00'45.122"W	43.29	94.762	0.33	-0.22	-25.14
3714.50	0.800	110.210	3714.17	26.58	-4.00	44.17	1854784.11	261691.67	39°13'02.499"N	80°00'45.109"W	44.35	95.170	0.34	0.34	-3.35
3814.50	0.680	136.440	3814.16	27.71	-4.67	45.23	1854785.18	261691.00	39°13'02.493"N	80°00'45.096"W	45.47	95.891	0.36	-0.12	26.23
3914.50	0.900	115.800	3914.15	28.95	-5.44	46.35	1854786.29	261690.23	39°13'02.485"N	80°00'45.081"W	46.66	96.693	0.36	0.22	-20.64
4014.50	0.620	124.610	4014.14	30.11	-6.09	47.50	1854787.45	261689.58	39°13'02.479"N	80°00'45.067"W	47.89	97.304	0.30	-0.28	8.81
4114.50	0.980	120.480	4114.13	31.36	-6.83	48.68	1854788.63	261688.84	39°13'02.471"N	80°00'45.052"W	49.16	97.985	0.36	0.36	-4.13
4214.50	0.820	134.300	4214.12	32.81	-7.76	49.93	1854789.88	261687.91	39°13'02.462"N	80°00'45.036"W	50.53	98.837	0.27	-0.16	13.82
4297.50	0.660	130.520	4297.11	33.84	-8.49	50.72	1854790.67	261687.18	39°13'02.455"N	80°00'45.025"W	51.42	99.501	0.20	-0.19	-4.55
4367.00	0.800	126.630	4366.61	34.67	-9.04	51.41	1854791.36	261686.63	39°13'02.450"N	80°00'45.017"W	52.20	99.970	0.21	0.20	-5.60
4461.00	0.680	128.810	4460.60	35.81	-9.78	52.37	1854792.32	261685.89	39°13'02.442"N	80°00'45.004"W	53.28	100.576	0.13	-0.13	2.32
4556.00	0.650	136.080	4555.59	36.86	-10.52	53.19	1854793.13	261685.15	39°13'02.435"N	80°00'44.994"W	54.22	101.189	0.09	-0.03	7.65
4651.00	0.630	154.150	4650.59	37.91	-11.38	53.79	1854793.74	261684.29	39°13'02.427"N	80°00'44.986"W	54.98	101.944	0.21	-0.02	19.02
4745.00	0.790	72.890	4744.58	38.59	-11.65	54.63	1854794.58	261684.02	39°13'02.424"N	80°00'44.976"W	55.86	102.040	0.99	0.17	-86.45
4839.00	2.940	265.500	4838.55	37.65	-11.65	52.85	1854792.80	261684.02	39°13'02.424"N	80°00'44.998"W	54.12	102.433	3.95	2.29	-178.07
4934.00	0.030	179.690	4933.51	36.56	-11.87	50.42	1854790.37	261683.80	39°13'02.422"N	80°00'45.029"W	51.80	103.245	3.09	-3.06	-90.33
5028.00	0.880	128.450	5027.50	37.26	-12.34	50.98	1854790.93	261683.33	39°13'02.417"N	80°00'45.022"W	52.46	103.607	0.92	0.90	-54.51
5122.00	0.790	71.630	5121.49	38.09	-12.59	52.16	1854792.11	261683.09	39°13'02.415"N	80°00'45.007"W	53.66	103.564	0.85	-0.10	-60.45
5216.00	2.700	219.600	5215.46	38.95	-14.09	51.37	1854791.32	261681.58	39°13'02.400"N	80°00'45.017"W	53.26	105.336	3.61	2.03	157.41
5310.00	0.070	76.690	5309.43	39.68	-15.78	50.01	1854789.96	261679.89	39°13'02.383"N	80°00'45.034"W	52.44	107.512	2.93	-2.80	-152.03
5405.00	2.150	125.450	5404.41	41.34	-16.80	51.52	1854791.47	261678.87	39°13'02.373"N	80°00'45.015"W	54.19	108.061	2.22	2.19	51.33
5500.00	4.690	115.180	5499.23	46.23	-19.49	56.49	1854796.44	261676.18	39°13'02.347"N	80°00'44.951"W	59.75	109.034	2.74	2.67	-10.81
5594.00	0.380	94.670	5593.12	49.63	-21.15	60.28	1854800.23	261674.52	39°13'02.330"N	80°00'44.903"W	63.88	109.333	4.61	-4.59	-21.82
5689.00	0.100	81.360	5688.12	49.85	-21.16	60.67	1854800.62	261674.51	39°13'02.330"N	80°00'44.898"W	64.26	109.228	0.30	-0.29	-14.01



# Actual Wellpath Report

PHL13EHS AWP Proj: 18000'MD

Page 4 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot E
Area	Barbour County, WV	Well	PHL13EHS
Field	Barbour	Wellbore	PHL13EHS AWB
Facility	PHL13 Pad		

## WELLPATH DATA (212 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]
5782.00	0.040	126.130	5781.12	49.91	-21.17	60.78	1854800.73	261674.50	39°13'02.330"N	80°00'44.897"W	64.36	109.202	0.08	-0.06	48.14
5874.00	0.100	63.540	5873.12	49.95	-21.15	60.88	1854800.83	261674.52	39°13'02.330"N	80°00'44.895"W	64.45	109.159	0.10	0.07	-68.03
5969.00	4.120	244.160	5968.04	49.61	-22.60	57.88	1854797.83	261673.07	39°13'02.316"N	80°00'44.933"W	62.14	111.331	4.44	4.23	-188.82
6019.00	9.440	256.620	6017.67	48.14	-24.34	52.27	1854792.22	261671.34	39°13'02.299"N	80°00'45.005"W	57.66	114.966	10.98	10.64	24.92
6063.00	13.630	260.130	6060.77	45.09	-26.06	43.65	1854783.60	261669.61	39°13'02.281"N	80°00'45.114"W	50.84	120.840	9.65	9.52	7.98
6112.00	16.600	257.060	6108.07	40.70	-28.62	31.13	1854771.08	261667.05	39°13'02.255"N	80°00'45.273"W	42.29	132.588	6.28	6.06	-6.27
6158.00	16.370	257.900	6152.18	36.42	-31.45	18.39	1854758.34	261664.22	39°13'02.226"N	80°00'45.435"W	36.43	149.679	0.72	-0.50	1.83
6206.00	15.960	258.000	6198.29	31.94	-34.24	5.32	1854745.27	261661.43	39°13'02.198"N	80°00'45.600"W	34.65	171.162	0.86	-0.85	0.21
6253.00	18.630	263.670	6243.16	26.55	-36.41	-8.46	1854731.49	261659.26	39°13'02.176"N	80°00'45.775"W	37.38	193.083	6.71	5.68	12.06
6296.00	22.410	267.830	6283.43	19.58	-37.48	-23.49	1854716.47	261658.19	39°13'02.164"N	80°00'45.966"W	44.23	212.073	9.42	8.79	9.67
6347.00	28.370	269.040	6329.48	8.60	-38.05	-45.33	1854694.62	261657.62	39°13'02.157"N	80°00'46.244"W	59.19	229.993	11.73	11.69	2.37
6391.00	32.430	270.330	6367.42	-2.99	-38.16	-67.59	1854672.36	261657.51	39°13'02.155"N	80°00'46.527"W	77.62	240.555	9.35	9.23	2.93
6440.00	38.450	273.330	6407.33	-18.69	-37.20	-95.97	1854643.98	261658.48	39°13'02.163"N	80°00'46.887"W	102.93	248.815	12.79	12.29	6.12
6491.00	43.130	276.150	6445.93	-38.48	-34.40	-129.15	1854610.80	261661.27	39°13'02.189"N	80°00'47.309"W	133.66	255.084	9.86	9.18	5.53
6534.00	44.800	277.410	6476.88	-57.04	-30.88	-158.79	1854581.16	261664.80	39°13'02.222"N	80°00'47.686"W	161.77	258.997	4.38	3.88	2.93
6629.00	44.840	277.040	6544.27	-99.07	-22.45	-225.23	1854514.73	261673.22	39°13'02.301"N	80°00'48.530"W	226.34	264.307	0.28	0.04	-0.39
6724.00	44.830	275.920	6611.64	-140.42	-14.90	-291.78	1854448.18	261680.78	39°13'02.372"N	80°00'49.377"W	292.16	267.078	0.83	-0.01	-1.18
6818.00	43.290	276.030	6679.19	-180.33	-8.09	-356.79	1854383.17	261687.58	39°13'02.436"N	80°00'50.203"W	356.88	268.701	1.64	-1.64	0.12
6912.00	41.790	275.890	6748.44	-219.11	-1.49	-420.00	1854319.97	261694.18	39°13'02.498"N	80°00'51.007"W	420.00	269.797	1.60	-1.60	-0.15
7006.00	41.850	276.210	6818.50	-257.44	5.11	-482.33	1854257.64	261700.78	39°13'02.559"N	80°00'51.799"W	482.35	270.608	0.24	0.06	0.34
7100.00	41.870	275.740	6888.51	-295.74	11.64	-544.71	1854195.26	261707.31	39°13'02.620"N	80°00'52.592"W	544.84	271.225	0.33	0.02	-0.50
7194.00	41.990	276.250	6958.44	-334.10	18.20	-607.18	1854132.79	261713.87	39°13'02.682"N	80°00'53.386"W	607.45	271.717	0.38	0.13	0.54
7244.00	40.430	268.740	6996.08	-352.59	19.67	-640.04	1854099.93	261715.34	39°13'02.694"N	80°00'53.804"W	640.34	271.760	10.37	-3.12	-15.02
7289.00	39.220	258.830	7030.67	-364.96	16.59	-668.61	1854071.36	261712.26	39°13'02.662"N	80°00'54.167"W	668.82	271.421	14.35	-2.69	-22.02
7338.00	39.410	249.820	7068.61	-373.48	8.22	-698.44	1854041.54	261703.89	39°13'02.578"N	80°00'54.545"W	698.48	270.674	11.65	0.39	-18.39
7383.00	39.380	245.270	7103.39	-378.04	-2.69	-724.82	1854015.16	261692.98	39°13'02.469"N	80°00'54.879"W	724.82	269.788	6.42	-0.07	-10.11
7431.00	37.390	241.870	7141.02	-380.77	-15.93	-751.50	1853988.47	261679.74	39°13'02.336"N	80°00'55.217"W	751.67	268.786	6.04	-4.15	-7.08
7479.00	37.350	235.960	7179.18	-381.06	-30.96	-776.43	1853963.55	261664.71	39°13'02.186"N	80°00'55.533"W	777.05	267.717	7.47	-0.08	-12.31
7525.00	35.570	229.000	7216.19	-378.31	-47.55	-798.10	1853941.88	261648.12	39°13'02.021"N	80°00'55.807"W	799.52	266.590	9.78	-3.87	-15.13
7572.00	35.320	219.660	7254.51	-371.73	-67.00	-817.10	1853922.88	261628.68	39°13'01.828"N	80°00'56.047"W	819.84	265.313	11.53	-0.53	-19.87



# Actual Wellpath Report

PHL13EHS AWP Proj: 18000'MD  
Page 5 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot E
Area	Barbour County, WV	Well	PHL13EHS
Field	Barbour	Wellbore	PHL13EHS AWB
Facility	PHL13 Pad		

## WELLPATH DATA (212 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]
7618.00	36.260	212.560	7291.84	-361.54	-88.71	-832.92	1853907.06	261606.97	39°13'01.612"N	80°00'56.246"W	837.63	263.921	9.25	2.04	-15.43
7665.00	36.210	208.530	7329.76	-348.59	-112.62	-847.03	1853892.95	261583.05	39°13'01.375"N	80°00'56.424"W	854.48	262.426	5.07	-0.11	-8.57
7713.00	35.590	202.920	7368.65	-333.44	-137.95	-859.25	1853880.74	261557.72	39°13'01.124"N	80°00'56.577"W	870.25	260.879	6.97	-1.29	-11.69
7760.00	37.680	194.220	7406.39	-315.49	-164.49	-868.11	1853871.87	261531.18	39°13'00.861"N	80°00'56.688"W	883.55	259.271	11.90	4.45	-18.51
7808.00	38.970	189.560	7444.05	-293.92	-193.60	-874.22	1853865.76	261502.07	39°13'00.573"N	80°00'56.764"W	895.40	257.513	6.59	2.69	-9.71
7854.00	41.490	183.240	7479.18	-270.52	-223.10	-877.48	1853862.50	261472.58	39°13'00.281"N	80°00'56.803"W	905.40	255.735	10.42	5.48	-13.74
7905.00	46.330	176.530	7515.93	-240.37	-258.42	-877.32	1853862.66	261437.26	39°12'59.932"N	80°00'56.798"W	914.59	253.588	13.16	9.49	-13.16
7949.00	51.440	172.760	7544.86	-210.66	-291.40	-874.19	1853865.79	261404.28	39°12'59.607"N	80°00'56.756"W	921.48	251.565	13.28	11.61	-8.57
7999.00	57.570	169.760	7573.88	-173.17	-331.60	-867.97	1853872.01	261364.08	39°12'59.210"N	80°00'56.674"W	929.15	249.091	13.20	12.26	-6.00
8044.00	62.950	167.770	7596.20	-136.56	-369.90	-860.34	1853879.64	261325.78	39°12'58.831"N	80°00'56.574"W	936.49	246.735	12.56	11.96	-4.42
8093.00	67.890	166.110	7616.58	-94.34	-413.29	-850.26	1853889.72	261282.39	39°12'58.403"N	80°00'56.443"W	945.39	244.077	10.54	10.08	-3.39
8138.00	73.330	163.890	7631.51	-53.68	-454.27	-839.27	1853900.71	261241.42	39°12'57.999"N	80°00'56.300"W	954.32	241.575	12.95	12.09	-4.93
8188.00	76.050	160.480	7644.72	-6.87	-500.17	-824.51	1853915.47	261195.52	39°12'57.546"N	80°00'56.110"W	964.36	238.758	8.54	5.44	-6.82
8233.00	79.700	156.600	7654.17	36.42	-541.09	-808.41	1853931.57	261154.59	39°12'57.142"N	80°00'55.902"W	972.78	236.204	11.70	8.11	-8.62
8282.00	84.110	151.750	7661.07	84.66	-584.73	-787.28	1853952.70	261110.96	39°12'56.712"N	80°00'55.630"W	980.67	233.398	13.30	9.00	-9.90
8327.00	88.060	150.260	7664.15	129.49	-623.99	-765.52	1853974.46	261071.70	39°12'56.325"N	80°00'55.351"W	987.62	230.816	9.38	8.78	-3.31
8375.00	91.970	150.180	7664.13	177.46	-665.64	-741.68	1853998.29	261030.05	39°12'55.915"N	80°00'55.045"W	996.58	228.093	8.15	8.15	-0.17
8421.00	91.200	149.840	7662.86	223.42	-705.47	-718.70	1854021.28	260990.23	39°12'55.523"N	80°00'54.750"W	1007.08	225.532	1.83	-1.67	-0.74
8514.00	91.780	145.240	7660.44	316.36	-783.89	-668.82	1854071.16	260911.81	39°12'54.751"N	80°00'54.111"W	1030.44	220.471	4.98	0.62	-4.95
8610.00	91.480	146.210	7657.71	412.22	-863.19	-614.77	1854125.20	260832.51	39°12'53.970"N	80°00'53.419"W	1059.74	215.459	1.06	-0.31	1.01
8705.00	91.420	143.370	7655.31	506.99	-940.77	-560.02	1854179.95	260754.93	39°12'53.206"N	80°00'52.717"W	1094.84	210.764	2.99	-0.06	-2.99
8799.00	90.680	144.480	7653.58	600.69	-1016.73	-504.68	1854235.29	260678.97	39°12'52.459"N	80°00'52.009"W	1135.10	206.399	1.42	-0.79	1.18
8892.00	91.570	148.100	7651.76	693.60	-1094.07	-453.09	1854286.88	260601.64	39°12'51.697"N	80°00'51.348"W	1184.18	202.496	4.01	0.96	3.89
8986.00	91.450	149.560	7649.28	787.56	-1174.47	-404.45	1854335.51	260521.24	39°12'50.905"N	80°00'50.724"W	1242.16	199.002	1.56	-0.13	1.55
9080.00	91.450	149.250	7646.90	881.51	-1255.36	-356.63	1854383.34	260440.36	39°12'50.108"N	80°00'50.110"W	1305.03	195.859	0.33	0.00	-0.33
9174.00	91.970	148.200	7644.10	975.47	-1335.66	-307.85	1854432.11	260360.06	39°12'49.317"N	80°00'49.485"W	1370.68	192.979	1.25	0.55	-1.12
9270.00	91.110	149.100	7641.52	1071.43	-1417.61	-257.92	1854482.04	260278.11	39°12'48.510"N	80°00'48.844"W	1440.89	190.312	1.30	-0.90	0.94
9364.00	90.340	150.790	7640.33	1165.38	-1498.96	-210.85	1854529.11	260196.76	39°12'47.709"N	80°00'48.241"W	1513.72	188.007	1.98	-0.82	1.80
9457.00	90.220	153.430	7639.87	1258.17	-1581.15	-167.35	1854572.60	260114.57	39°12'46.899"N	80°00'47.682"W	1589.99	186.042	2.84	-0.13	2.84
9552.00	89.690	149.630	7639.95	1353.01	-1664.65	-122.07	1854617.88	260031.08	39°12'46.076"N	80°00'47.101"W	1669.12	184.194	4.04	-0.56	-4.00

47-001-03238

PHL13EHS



# Actual Wellpath Report

PHL13EHS AWP Proj: 18000'MD

Page 6 of 10



BAKER HUGHES

## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot E
Area	Barbour County, WV	Well	PHL13EHS
Field	Barbour	Wellbore	PHL13EHS AWB
Facility	PHL13 Pad		

## WELLPATH DATA (212 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [ft]	Grid North [ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]
9647.00	90.620	147.860	7639.69	1448.00	-1745.86	-72.79	1854667.17	259949.88	39°12'45.27"N	80°00'46.46"W	1747.37	182.387	2.10	0.98	-1.86
9741.00	90.650	149.370	7638.65	1541.99	-1826.10	-23.84	1854716.11	259869.64	39°12'44.48"N	80°00'45.84"W	1826.25	180.748	1.61	0.03	1.61
9836.00	91.510	146.820	7636.86	1636.97	-1906.72	26.36	1854766.31	259789.02	39°12'43.62"N	80°00'45.19"W	1906.91	179.208	2.83	0.91	-2.68
9931.00	91.020	147.220	7634.76	1731.92	-1986.40	78.06	1854818.01	259709.35	39°12'42.90"N	80°00'44.53"W	1987.93	177.750	0.67	-0.52	0.42
10023.00	90.680	148.200	7633.40	1823.90	-2064.16	127.20	1854867.14	259631.59	39°12'42.14"N	80°00'43.90"W	2068.07	176.474	1.13	-0.37	1.07
10118.00	90.340	148.440	7632.55	1918.88	-2145.76	175.82	1854915.76	259549.98	39°12'41.33"N	80°00'43.28"W	2152.96	175.316	2.17	-0.36	2.14
10213.00	89.940	148.440	7632.32	2013.86	-2227.48	224.27	1854964.21	259468.27	39°12'40.53"N	80°00'42.66"W	2238.74	174.251	1.93	-0.42	-1.88
10304.00	90.980	146.710	7631.59	2104.85	-2304.28	273.06	1855013.00	259391.47	39°12'39.77"N	80°00'42.03"W	2320.40	173.242	2.22	1.14	-1.90
10400.00	90.830	148.830	7630.07	2200.82	-2385.48	324.25	1855064.18	259310.28	39°12'38.97"N	80°00'41.37"W	2407.41	172.260	2.21	-0.16	2.21
10495.00	90.860	150.450	7628.67	2295.79	-2467.44	372.26	1855112.19	259228.32	39°12'38.17"N	80°00'40.76"W	2495.36	171.421	1.71	0.03	1.71
10590.00	90.990	150.740	7627.14	2390.70	-2550.19	418.89	1855158.83	259145.58	39°12'37.35"N	80°00'40.16"W	2584.36	170.672	0.33	0.14	0.31
10682.00	91.540	154.770	7625.10	2482.39	-2631.94	460.99	1855200.92	259063.82	39°12'36.54"N	80°00'39.62"W	2672.01	170.065	4.42	0.60	4.38
10776.00	89.820	155.730	7623.99	2575.70	-2717.30	500.34	1855240.27	258978.47	39°12'35.70"N	80°00'39.11"W	2762.98	169.567	2.10	-1.83	1.02
10870.00	90.090	152.390	7624.06	2669.22	-2801.82	541.45	1855281.38	258893.96	39°12'34.87"N	80°00'38.58"W	2853.65	169.062	3.56	0.29	-3.55
10965.00	89.910	151.350	7624.06	2764.03	-2885.59	586.24	1855326.17	258810.18	39°12'34.04"N	80°00'38.01"W	2944.54	168.516	1.11	-0.19	-1.09
11059.00	90.220	148.050	7623.96	2858.00	-2966.74	633.66	1855373.59	258729.04	39°12'33.24"N	80°00'37.40"W	3033.66	167.943	3.53	0.33	-3.51
11154.00	90.740	146.030	7623.16	2952.96	-3046.44	685.34	1855425.27	258649.34	39°12'32.46"N	80°00'36.74"W	3122.58	167.322	2.20	0.55	-2.13
11248.00	90.800	149.740	7621.90	3046.87	-3124.29	738.01	1855477.93	258571.49	39°12'31.69"N	80°00'36.06"W	3210.27	166.709	0.24	0.10	-0.23
11341.00	90.890	149.740	7620.52	3139.84	-3202.94	787.59	1855527.51	258492.84	39°12'30.92"N	80°00'35.43"W	3298.35	166.185	4.23	0.10	4.23
11435.00	91.110	150.060	7618.88	3233.79	-3284.25	834.72	1855574.64	258411.53	39°12'30.13"N	80°00'34.82"W	3388.67	165.740	0.41	0.23	0.34
11529.00	91.510	148.810	7616.74	3327.74	-3365.17	882.51	1855622.43	258330.62	39°12'29.32"N	80°00'34.21"W	3478.96	165.305	1.40	0.43	-1.33
11623.00	91.570	148.900	7614.21	3421.71	-3445.59	931.11	1855671.02	258250.20	39°12'28.53"N	80°00'33.59"W	3569.18	164.878	0.12	0.06	0.10
11718.00	91.480	149.220	7611.68	3516.66	-3527.05	979.93	1855719.85	258168.75	39°12'27.71"N	80°00'32.96"W	3660.64	164.473	0.35	-0.09	0.34
11814.00	91.630	147.140	7609.08	3612.62	-3608.58	1030.53	1855770.44	258087.22	39°12'26.92"N	80°00'32.31"W	3752.85	164.062	2.17	0.16	-2.17
11909.00	91.420	144.300	7606.55	3707.48	-3687.05	1084.01	1855823.92	258008.76	39°12'26.15"N	80°00'31.63"W	3843.10	163.616	3.00	-0.22	-2.99
12004.00	90.920	139.270	7604.61	3801.81	-3761.65	1142.75	1855882.66	257934.16	39°12'25.42"N	80°00'30.88"W	3931.39	163.102	5.32	-0.53	-5.29
12097.00	91.020	144.360	7603.03	3894.16	-3834.71	1200.21	1855940.12	257861.10	39°12'24.70"N	80°00'30.14"W	4018.15	162.621	5.47	0.11	5.47
12192.00	90.890	147.580	7601.45	3989.05	-3913.42	1253.36	1855993.27	257782.39	39°12'23.92"N	80°00'29.46"W	4109.23	162.241	3.39	-0.14	3.39
12286.00	90.890	148.810	7599.99	4083.04	-3993.30	1302.90	1856042.80	257702.52	39°12'23.14"N	80°00'28.83"W	4200.47	161.930	1.31	0.00	1.31
12380.00	90.950	148.140	7598.48	4177.03	-4073.41	1352.04	1856091.94	257622.41	39°12'22.35"N	80°00'28.20"W	4291.93	161.638	0.72	0.06	-0.71

47-001-0323B

PHL13EHS



**BAKER  
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# Actual Wellpath Report

PHL13EHS AWP Proj: 180007MD

Page 7 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot E
Area	Barbour County, WV	Well	PHL13EHS
Field	Barbour	Wellbore	PHL13EHS AWB
Facility	PHL13 Pad		

## WELLPATH DATA (212 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]
12475.00	90.890	149.640	7596.95	4272.01	-4154.74	1401.12	1856141.02	257541.08	39°12'21.551"N	80°00'27.571"W	4384.63	161.364	1.58	-0.06	1.58
12569.00	90.860	149.220	7595.52	4365.98	-4235.66	1448.92	1856188.82	257460.16	39°12'20.753"N	80°00'26.958"W	4476.63	161.115	0.45	-0.03	-0.45
12635.00	90.770	146.670	7594.18	4459.96	-4315.31	1498.80	1856238.70	257380.51	39°12'19.969"N	80°00'26.318"W	4568.19	160.847	2.71	-0.10	-2.71
12757.00	90.280	137.310	7593.32	4553.27	-4389.29	1556.62	1856296.51	257306.54	39°12'19.241"N	80°00'25.578"W	4657.14	160.473	9.97	-0.52	-9.96
12852.00	90.800	133.250	7592.42	4645.79	-4456.78	1623.45	1856363.34	257239.05	39°12'18.578"N	80°00'24.725"W	4743.25	159.985	4.31	0.55	-4.27
12945.00	94.160	143.960	7588.38	4737.21	-4526.36	1684.80	1856424.68	257169.47	39°12'17.893"N	80°00'23.940"W	4829.75	159.584	12.06	3.61	11.52
13040.00	91.880	152.960	7583.37	4831.97	-4607.13	1734.36	1856474.25	257088.71	39°12'17.098"N	80°00'23.305"W	4922.77	159.371	9.76	-2.40	9.47
13135.00	89.850	153.800	7581.94	4926.59	-4692.04	1776.92	1856516.80	257003.80	39°12'16.261"N	80°00'22.758"W	5017.24	159.258	2.31	-2.14	0.88
13229.00	87.380	153.490	7584.21	5020.16	-4776.24	1818.63	1856558.52	256919.60	39°12'15.431"N	80°00'22.222"W	5110.76	159.155	2.65	-2.63	-0.33
13324.00	88.000	151.440	7588.04	5114.83	-4860.41	1862.51	1856602.39	256835.44	39°12'14.602"N	80°00'21.659"W	5205.05	159.033	2.25	0.65	-2.16
13417.00	90.280	156.120	7589.43	5207.37	-4943.80	1903.58	1856643.46	256752.05	39°12'13.780"N	80°00'21.131"W	5297.62	158.941	5.60	2.45	5.03
13513.00	90.800	154.240	7588.53	5302.68	-5030.92	1943.87	1856683.76	256664.93	39°12'12.921"N	80°00'20.613"W	5393.41	158.874	2.03	0.54	-1.96
13608.00	90.770	147.470	7587.23	5397.52	-5113.84	1990.11	1856729.99	256582.01	39°12'12.104"N	80°00'20.020"W	5487.43	158.736	7.13	-0.03	-7.13
13702.00	91.350	149.120	7585.49	5491.50	-5193.79	2039.50	1856779.38	256502.06	39°12'11.316"N	80°00'19.387"W	5579.88	158.561	1.86	0.62	1.76
13796.00	91.260	147.420	7583.35	5585.48	-5273.72	2088.92	1856828.80	256422.14	39°12'10.529"N	80°00'18.753"W	5672.37	158.391	1.81	-0.10	-1.81
13890.00	91.350	147.270	7581.20	5679.44	-5352.84	2139.63	1856879.50	256343.02	39°12'09.750"N	80°00'18.104"W	5764.63	158.212	0.19	0.10	-0.16
13985.00	91.320	140.720	7578.99	5774.09	-5429.63	2195.43	1856935.30	256266.23	39°12'08.994"N	80°00'17.389"W	5856.69	157.984	6.89	-0.03	-6.89
14079.00	91.290	143.170	7576.83	5867.47	-5503.62	2253.36	1856993.22	256192.24	39°12'08.266"N	80°00'16.648"W	5947.06	157.734	2.61	-0.03	2.61
14173.00	91.450	145.120	7574.60	5961.28	-5580.76	2305.90	1857046.87	256115.12	39°12'07.507"N	80°00'15.961"W	6038.80	157.541	4.28	0.17	4.28
14268.00	90.550	147.120	7572.94	6056.19	-5659.94	2359.90	1857099.77	256036.23	39°12'06.730"N	80°00'15.284"W	6131.94	157.365	2.38	-0.95	-2.18
14362.00	90.550	149.770	7572.04	6150.15	-5738.85	2410.47	1857150.33	255957.03	39°12'05.950"N	80°00'14.636"W	6224.52	157.216	4.95	0.00	4.95
14456.00	90.580	156.110	7571.11	6243.79	-5822.51	2453.21	1857193.07	255873.37	39°12'05.125"N	80°00'14.087"W	6318.21	157.153	6.74	0.03	6.74
14551.00	90.620	158.160	7570.12	6337.67	-5910.03	2490.12	1857229.98	255785.85	39°12'04.262"N	80°00'13.612"W	6413.20	157.153	2.16	0.04	2.16
14645.00	90.800	156.390	7568.95	6430.52	-5996.73	2526.42	1857266.28	255699.16	39°12'03.408"N	80°00'13.144"W	6507.19	157.154	1.89	0.19	-1.88
14738.00	90.680	152.130	7567.75	6522.99	-6080.47	2566.80	1857306.66	255615.42	39°12'02.582"N	80°00'12.626"W	6600.05	157.114	4.58	-0.13	-4.58
14832.00	90.550	147.190	7566.74	6616.94	-6161.57	2614.27	1857354.12	255534.32	39°12'01.783"N	80°00'12.017"W	6693.23	157.009	5.26	-0.14	-5.26
14926.00	90.800	139.870	7565.63	6710.53	-6237.10	2670.10	1857409.95	255458.79	39°12'01.040"N	80°00'11.302"W	6784.61	156.824	7.79	0.27	-7.79
15020.00	90.740	141.840	7564.37	6803.72	-6310.00	2729.43	1857469.28	255385.90	39°12'00.323"N	80°00'10.544"W	6875.01	156.609	2.10	-0.06	2.10
15113.00	90.520	144.210	7563.34	6896.30	-6384.28	2785.36	1857525.21	255311.62	39°11'59.591"N	80°00'09.828"W	6965.44	156.429	2.56	-0.24	2.55
15207.00	89.450	143.870	7563.37	6990.04	-6460.37	2840.56	1857580.40	255235.53	39°11'58.842"N	80°00'09.121"W	7057.27	156.265	1.19	-1.14	-0.36





# Actual Wellpath Report

PHL13EHS AWP Proj: 18000'MD

Page 8 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot E
Area	Barbour County, WV	Well	PHL13EHS
Field	Barbour	Wellbore	PHL13EHS AWB
Facility	PHL13 Pad		

## WELLPATH DATA (212 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]
15300.00	89.350	146.400	7564.34	7082.88	-6536.66	2893.71	1857633.56	255159.24	39°11'58.091"N	80°00'08.441"W	7148.53	156.122	2.72	-0.11	2.72
15394.00	87.970	149.360	7566.54	7176.83	-6616.24	2943.67	1857683.52	255079.66	39°11'57.308"N	80°00'07.801"W	7241.54	156.015	3.47	-1.47	3.15
15487.00	88.180	151.020	7569.67	7269.73	-6696.89	2989.88	1857729.72	254999.02	39°11'56.513"N	80°00'07.208"W	7334.01	155.941	1.80	0.23	1.78
15581.00	88.150	153.040	7572.68	7363.48	-6779.86	3033.94	1857773.78	254916.05	39°11'55.695"N	80°00'06.642"W	7427.74	155.892	2.15	-0.03	2.15
15675.00	88.150	151.850	7575.71	7457.19	-6863.15	3077.40	1857817.24	254832.76	39°11'54.875"N	80°00'06.084"W	7521.52	155.849	1.27	0.00	-1.27
15768.00	86.890	146.730	7579.74	7550.06	-6943.01	3124.83	1857864.67	254752.91	39°11'54.088"N	80°00'05.476"W	7613.80	155.769	5.66	-1.35	-5.51
15861.00	88.370	144.380	7583.58	7642.86	-7019.63	3177.38	1857917.22	254676.29	39°11'53.333"N	80°00'04.803"W	7705.26	155.646	2.98	1.59	-2.53
15930.00	88.310	144.660	7585.58	7711.68	-7075.80	3217.42	1857957.25	254620.13	39°11'52.781"N	80°00'04.291"W	7772.94	155.548	0.41	-0.09	0.41
15955.00	88.180	144.870	7586.35	7736.62	-7096.21	3231.83	1857971.67	254599.72	39°11'52.580"N	80°00'04.106"W	7797.49	155.514	0.99	-0.52	0.84
16050.00	88.610	147.100	7589.01	7831.49	-7174.91	3284.95	1858024.78	254521.01	39°11'51.805"N	80°00'03.426"W	7891.15	155.400	2.39	0.45	2.35
16143.00	88.650	150.890	7591.23	7924.44	-7254.59	3332.83	1858072.67	254441.34	39°11'51.020"N	80°00'02.812"W	7983.54	155.325	4.07	0.04	4.08
16237.00	88.430	150.770	7593.63	8018.33	-7336.64	3378.64	1858118.46	254359.29	39°11'50.211"N	80°00'02.225"W	8077.22	155.273	0.27	-0.23	-0.13
16330.00	88.650	153.260	7596.00	8111.10	-7418.73	3422.26	1858162.08	254277.20	39°11'49.402"N	80°00'01.665"W	8170.03	155.236	2.69	0.24	2.68
16422.00	89.630	155.380	7597.38	8202.58	-7501.63	3462.12	1858201.94	254194.31	39°11'48.585"N	80°00'01.153"W	8262.01	155.226	2.54	1.07	2.30
16517.00	90.370	152.250	7597.38	8297.14	-7586.87	3504.03	1858243.86	254109.07	39°11'47.745"N	80°00'00.614"W	8356.96	155.210	3.39	0.78	-3.29
16610.00	90.280	149.240	7596.85	8390.04	-7668.00	3549.48	1858289.30	254027.95	39°11'46.946"N	80°00'00.031"W	8449.67	155.161	3.24	-0.10	-3.24
16704.00	91.390	145.870	7595.48	8484.01	-7747.30	3599.89	1858339.71	253948.64	39°11'46.165"N	79°59'59.385"W	8542.83	155.077	3.77	1.18	-3.59
16798.00	91.320	146.010	7593.26	8577.90	-7825.16	3652.52	1858392.34	253870.79	39°11'45.398"N	79°59'58.711"W	8635.62	154.978	0.17	-0.07	0.15
16891.00	91.260	148.210	7591.17	8670.85	-7903.23	3703.01	1858442.83	253792.73	39°11'44.629"N	79°59'58.065"W	8727.73	154.895	2.37	-0.06	2.37
16985.00	89.880	147.060	7590.23	8764.83	-7982.62	3753.32	1858493.14	253713.34	39°11'43.847"N	79°59'57.420"W	8820.98	154.818	1.91	-1.47	-1.22
17078.00	88.890	143.910	7591.23	8857.70	-8059.23	3806.01	1858545.82	253636.73	39°11'43.093"N	79°59'56.745"W	8912.74	154.721	3.55	-1.06	-3.39
17172.00	88.060	149.360	7593.73	8951.59	-8137.68	3857.67	1858597.48	253558.28	39°11'42.320"N	79°59'56.084"W	9005.75	154.637	5.86	-0.88	5.80
17266.00	87.600	150.050	7597.29	9045.49	-8218.78	3905.05	1858644.86	253477.18	39°11'41.521"N	79°59'55.476"W	9099.33	154.586	0.88	-0.49	0.73
17359.00	87.600	146.090	7601.19	9138.39	-8297.63	3954.19	1858693.99	253398.34	39°11'40.745"N	79°59'54.846"W	9191.64	154.520	4.25	0.00	-4.26
17452.00	86.800	144.060	7605.73	9231.12	-8373.78	4007.36	1858747.17	253322.19	39°11'39.995"N	79°59'54.166"W	9283.28	154.426	2.34	-0.86	-2.18
17548.00	86.830	144.980	7611.06	9326.76	-8451.84	4063.00	1858802.80	253244.14	39°11'39.227"N	79°59'53.454"W	9377.71	154.325	0.96	0.03	0.96
17641.00	86.460	151.180	7616.51	9419.55	-8530.60	4112.06	1858851.86	253165.38	39°11'38.451"N	79°59'52.825"W	9469.96	154.264	6.67	-0.40	6.67
17735.00	86.150	155.810	7622.57	9512.96	-8614.52	4153.91	1858893.71	253081.46	39°11'37.624"N	79°59'52.287"W	9563.73	154.257	4.93	-0.33	4.93
17829.00	86.090	155.390	7628.93	9605.99	-8699.93	4192.65	1858932.45	252996.05	39°11'36.782"N	79°59'51.789"W	9657.49	154.270	0.45	-0.06	-0.45
17921.00	85.960	153.320	7635.31	9697.26	-8782.66	4232.37	1858972.17	252913.32	39°11'35.966"N	79°59'51.279"W	9749.26	154.271	2.25	-0.14	-2.25



# Actual Wellpath Report

PHL13EHS AWP Proj: 18000'MD

Page 9 of 10



## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot E
Area	Barbour County, WV	Well	PHL13EHS
Field	Barbour	Wellbore	PHL13EHS AWB
Facility	PHL13 Pad		

## WELLPATH DATA (212 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]
17974.00	85.810	152.780	7639.12	9749.95	-8829.79	4256.33	1858996.13	252866.20	39°11'35.502"N	79°59'50.971"W	9802.12	154.264	1.05	-0.28	-1.02
18000.00	85.810	152.780	7641.02	9775.80	-8852.84	4268.19	1859007.99	252843.14	39°11'35.274"N	79°59'50.819"W	9828.04	154.260	0.00	0.00	0.00

## HOLE & CASING SECTIONS - Ref Wellbore: PHL13EHS AWB Ref Wellpath: PHL13EHS AWP Proj: 18000'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	2033.50	2009.00	24.50	2033.25	0.00	0.00	2.09	28.96



## Actual Wellpath Report

PHL13EHS AWP Proj: 18000'MD

Page 10 of 10



### REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot E
Area	Barbour County, WV	Well	PHL13EHS
Field	Barbour	Wellbore	PHL13EHS AWB
Facility	PHL13 Pad		

### TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
PHL13EHS PBHL Rev-3		7410.81	-8915.35	4343.81	1859083.60	252780.64	39°11'34.661"N	79°59'49.854"W	point
PHL13EHS PBHL Rev-4		7418.66	-8660.00	4186.43	1858926.23	253035.98	39°11'37.176"N	79°59'51.871"W	point
PHL13EHS PBHL Rev-2		7512.46	-8915.35	4343.81	1859083.60	252780.64	39°11'34.661"N	79°59'49.854"W	point
PHL13EHS PBHL Rev-1		7517.70	-8660.00	4186.43	1858926.23	253035.98	39°11'37.176"N	79°59'51.871"W	point
PHL13EHS LP Rev-4		7662.00	-749.26	-689.25	1854050.72	260946.44	39°12'55.092"N	80°00'54.373"W	point
PHL13EHS LP Rev-3		7679.91	-749.26	-689.25	1854050.72	260946.44	39°12'55.092"N	80°00'54.373"W	point

### WELLPATH COMPOSITION - Ref Wellbore: PHL13EHS AWB Ref Wellpath: PHL13EHS AWP Proj: 18000'MD

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	4297.50	Generic gyro - northseeking (Standard)	HA Gyro (100'-4283')	PHL13EHS AWB
4297.50	17974.00	NaviTrak (MagCorr)	BHI AT Curve (4297.5)(4367'-17974')	PHL13EHS AWB
17974.00	18000.00	Blind Drilling (std)	Projection to bit	PHL13EHS AWB