



# CNX GAS COMPANY, LLC

Location: Tyler County, WV  
 Field: Tyler  
 Facility: SHR-31 Pad

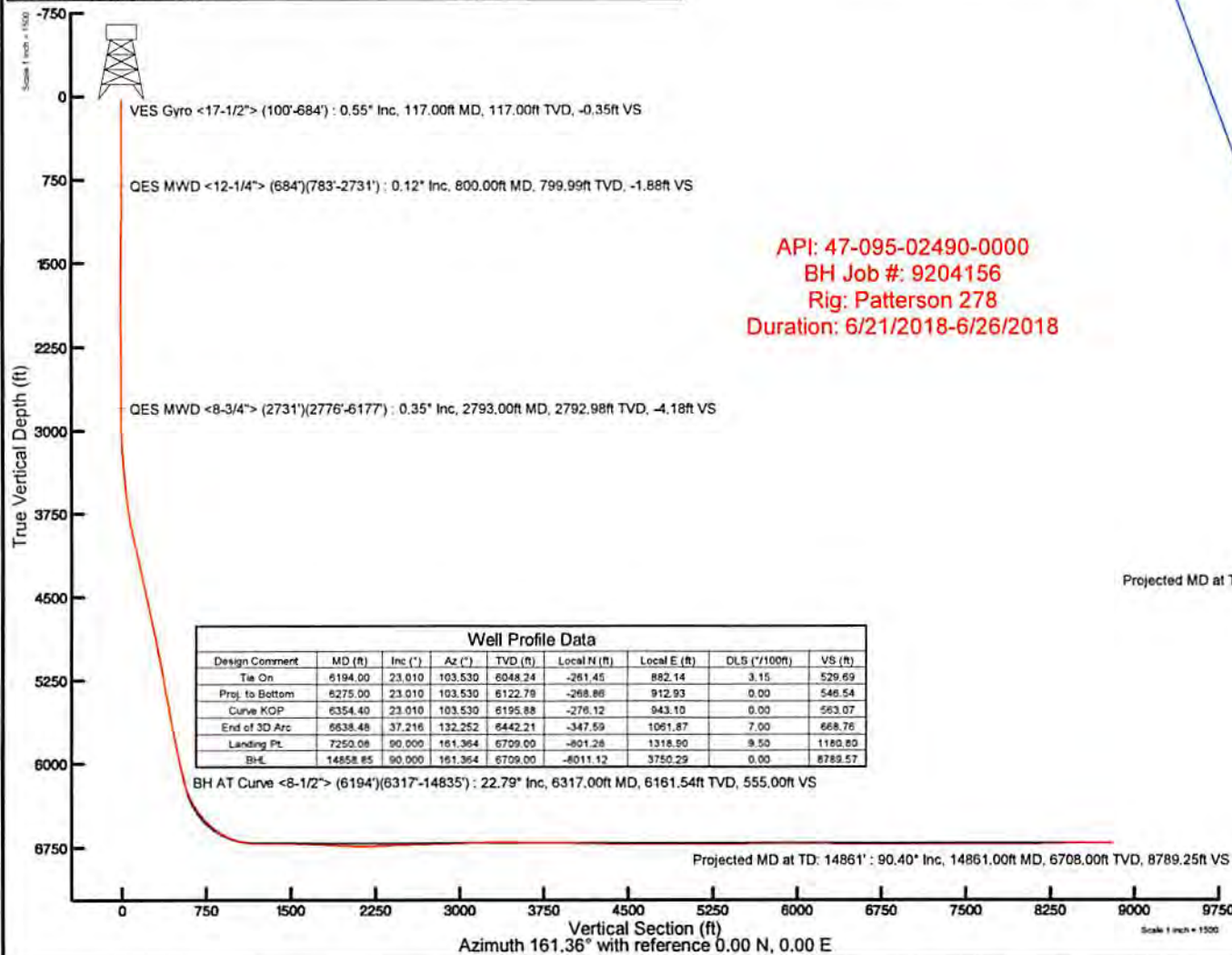
Slot: Slot C  
 Well: SHR-31C-HSM  
 Wellbore: SHR-31C-HSM PWB

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 May 7 2018  
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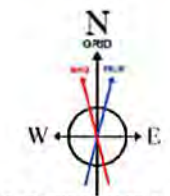
Plot reference wellbore is SHR-31C-HSM PWB Rev-B.0	Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (470), US feet
True vertical depths are referenced to Patterson 278 (RKB)	North Reference: Grid north
Measured depths are referenced to Patterson 278 (RKB)	Scale: True distance
Patterson 278 (RKB) to Mean Sea Level: 1120.4 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot C) -1091.4 feet	Created by: ehwaryan on 2018-07-07
Coordinates are in feet referenced to S44	Database: WA_MPL_EASTERNNE_Data

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
SHR-31 Pad	1626556.880	337850.350	39°25'12.198"N	80°49'18.906"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Longitude
Slot C	35.82	41.56	1626598.440	337886.170	80°49'18.383"W
Patterson 278 (RKB) to Ground level (At Slot: Slot C)	29ft				
Mean Sea Level to Ground level (At Slot: Slot C)	-1091.4ft				
Patterson 278 (RKB) to Mean Sea Level	1120.4ft				



API: 47-095-02490-0000  
 BH Job #: 9204156  
 Rig: Patterson 278  
 Duration: 6/21/2018-6/26/2018

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	6194.00	23.010	103.530	6048.24	-261.45	892.14	3.15	529.69
Proj. to Bottom	6275.00	23.010	103.530	6122.79	-268.86	912.93	0.00	546.54
Curve KOP	6354.40	23.010	103.530	6195.88	-276.12	943.10	0.00	563.07
End of 3D Arc	6638.48	37.216	132.252	6442.21	-347.59	1061.87	7.00	668.76
Landing Pt.	7250.08	90.000	161.364	6709.00	-801.26	1318.90	9.50	1180.80
BH-L	14858.85	90.000	161.364	6709.00	-801.12	3750.29	0.00	8789.57



User specified (HDGM) Dip: 66.64° Field: 52016 nT  
 Magnetic North is 7.59 degrees West of True North (at 20Jun2018)  
 Grid North is 0.84 degrees West of True North  
 To correct azimuth from True to Grid add 0.84 degrees  
 To correct azimuth from Magnetic to Grid subtract 6.75 degrees



# Actual Wellpath Report

SHR-31C-HSM AWP Proj: 14861'  
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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Tyler County, WV	Well	SHR-31C-HSM
Field	Tyler	Wellbore	SHR-31C-HSM AWB
Facility	SHR-31 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	0.999947	Report Generated	07/Jul/2018 at 11:05
Convergence at slot	0.84° West	Database/Source file	WA_MPL_EASTERNUS_Defn/SHR-31C-HSM_AWP_Proj_14861_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	35.82	41.56	1626598.44	337886.17	39°25'12.558"N	80°49'18.383"W
Facility Reference Pt			1626556.88	337850.35	39°25'12.198"N	80°49'18.906"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 278 (RKB) to Facility Vertical Datum	1120.40ft
Horizontal Reference Pt	Slot	Patterson 278 (RKB) to Mean Sea Level	1120.40ft
Vertical Reference Pt	Patterson 278 (RKB)	Patterson 278 (RKB) to Ground Level at Slot (Slot C)	29.00ft
MD Reference Pt	Patterson 278 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	161.36°



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SHR-31C-HSM AWP Proj: 14861'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Tyler County, WV	Well	SHR-31C-HSM
Field	Tyler	Wellbore	SHR-31C-HSM AWB
Facility	SHR-31 Pad		

## WELLPATH DATA (166 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	308.340	0.00	0.00	0.00	0.00	1626598.44	337886.17	39°25'12.558"N	80°49'18.383"W	0.00	0.000	0.00	0.00	0.00
29.00	0.000	308.340	29.00	0.00	0.00	0.00	1626598.44	337886.17	39°25'12.558"N	80°49'18.383"W	0.00	0.000	0.00	0.00	0.00
117.00	0.550	308.340	117.00	-0.35	0.26	-0.33	1626598.11	337886.43	39°25'12.561"N	80°49'18.388"W	0.42	308.340	0.63	0.63	-58.70
217.00	0.260	294.040	217.00	-0.91	0.65	-0.91	1626597.53	337886.82	39°25'12.565"N	80°49'18.395"W	1.12	305.481	0.30	-0.29	-14.30
317.00	0.130	178.070	317.00	-0.96	0.63	-1.12	1626597.32	337886.80	39°25'12.565"N	80°49'18.398"W	1.28	299.441	0.34	-0.13	-115.97
417.00	0.200	343.580	417.00	-1.02	0.69	-1.16	1626597.28	337886.86	39°25'12.565"N	80°49'18.398"W	1.35	300.489	0.33	0.07	165.51
517.00	0.290	326.600	516.99	-1.44	1.06	-1.35	1626597.09	337887.23	39°25'12.569"N	80°49'18.401"W	1.72	308.190	0.11	0.09	-16.98
617.00	0.100	355.040	616.99	-1.77	1.36	-1.50	1626596.94	337887.53	39°25'12.572"N	80°49'18.403"W	2.03	312.255	0.21	-0.19	28.44
701.00	0.120	273.100	700.99	-1.87	1.44	-1.59	1626596.85	337887.61	39°25'12.572"N	80°49'18.404"W	2.15	312.102	0.17	0.02	-97.55
800.00	0.120	89.300	799.99	-1.88	1.45	-1.59	1626596.85	337887.62	39°25'12.573"N	80°49'18.404"W	2.15	312.240	0.24	0.00	177.98
930.00	0.170	310.280	929.99	-2.00	1.57	-1.60	1626596.84	337887.74	39°25'12.574"N	80°49'18.404"W	2.25	314.437	0.21	0.04	-106.94
1014.00	0.420	347.860	1013.99	-2.42	1.95	-1.76	1626596.68	337888.12	39°25'12.578"N	80°49'18.406"W	2.63	317.933	0.36	0.30	44.74
1099.00	0.420	338.260	1098.99	-3.04	2.55	-1.95	1626596.49	337888.72	39°25'12.583"N	80°49'18.409"W	3.21	322.650	0.08	0.00	-11.29
1186.00	0.120	28.570	1185.99	-3.42	2.92	-2.02	1626596.42	337889.09	39°25'12.587"N	80°49'18.410"W	3.55	325.375	0.41	-0.34	57.83
1270.00	0.290	6.840	1269.99	-3.67	3.21	-1.95	1626596.49	337889.38	39°25'12.590"N	80°49'18.409"W	3.76	328.718	0.22	0.20	-25.87
1441.00	0.110	87.430	1440.99	-4.01	3.65	-1.74	1626596.70	337889.82	39°25'12.594"N	80°49'18.406"W	4.04	334.555	0.17	-0.11	47.13
1525.00	0.070	343.920	1524.99	-4.04	3.70	-1.67	1626596.77	337889.87	39°25'12.595"N	80°49'18.405"W	4.06	335.721	0.17	-0.05	-123.23
1611.00	0.100	96.270	1610.99	-4.06	3.75	-1.61	1626596.83	337889.92	39°25'12.595"N	80°49'18.404"W	4.08	336.735	0.17	0.03	130.64
1696.00	0.410	72.450	1695.99	-4.03	3.83	-1.25	1626597.19	337890.00	39°25'12.596"N	80°49'18.400"W	4.03	341.966	0.38	0.36	-28.02
1780.00	0.410	96.880	1779.98	-3.89	3.88	-0.66	1626597.78	337890.05	39°25'12.597"N	80°49'18.392"W	3.94	350.330	0.21	0.00	29.08
1864.00	0.240	56.190	1863.98	-3.81	3.95	-0.22	1626598.22	337890.12	39°25'12.597"N	80°49'18.387"W	3.95	356.850	0.33	-0.20	-48.44
1948.00	0.300	70.700	1947.98	-3.86	4.12	0.14	1626598.58	337890.29	39°25'12.599"N	80°49'18.382"W	4.12	1.900	0.11	0.07	17.27
2034.00	0.160	106.490	2033.98	-3.79	4.16	0.46	1626598.90	337890.33	39°25'12.600"N	80°49'18.378"W	4.18	6.372	0.23	-0.16	41.62
2118.00	0.150	103.530	2117.98	-3.66	4.10	0.68	1626599.12	337890.27	39°25'12.599"N	80°49'18.375"W	4.15	9.471	0.02	-0.01	-3.52
2203.00	0.100	124.940	2202.98	-3.55	4.03	0.85	1626599.29	337890.20	39°25'12.598"N	80°49'18.373"W	4.12	11.948	0.08	-0.06	25.19
2288.00	0.130	115.930	2287.98	-3.42	3.94	1.00	1626599.44	337890.11	39°25'12.598"N	80°49'18.371"W	4.07	14.228	0.04	0.04	-10.60
2372.00	0.230	331.270	2371.98	-3.52	4.05	1.00	1626599.44	337890.22	39°25'12.599"N	80°49'18.371"W	4.17	13.931	0.41	0.12	-172.21
2455.00	0.040	93.070	2454.98	-3.67	4.19	0.95	1626599.39	337890.36	39°25'12.600"N	80°49'18.372"W	4.30	12.807	0.31	-0.23	146.75
2541.00	0.160	95.810	2540.98	-3.61	4.18	1.10	1626599.54	337890.35	39°25'12.600"N	80°49'18.370"W	4.32	14.778	0.14	0.14	3.19
2625.00	0.270	9.620	2624.98	-3.74	4.36	1.25	1626599.69	337890.53	39°25'12.602"N	80°49'18.368"W	4.54	16.016	0.36	0.13	-102.61



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SHR-31C-HSM AWP Proj: 14861'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Tyler County, WV	Well	SHR-31C-HSM
Field	Tyler	Wellbore	SHR-31C-HSM AWB
Facility	SHR-31 Pad		

WELLPATH DATA (166 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]	
2711.00	0.240	308.210	2710.98	-4.06	4.68	1.15	1626599.59	337890.85	39°25'12.605"N	80°49'18.370"W	4.81	13.761	0.30	-0.03	-71.41	
2748.00	0.130	79.070	2747.98	-4.12	4.73	1.13	1626599.57	337890.90	39°25'12.605"N	80°49'18.370"W	4.86	13.380	0.92	-0.30	353.68	
2793.00	0.350	277.160	2792.98	-4.18	4.76	1.04	1626599.48	337890.93	39°25'12.606"N	80°49'18.371"W	4.87	12.320	1.06	0.49	-359.80	
2880.00	0.660	291.790	2879.98	-4.62	4.98	0.31	1626598.75	337891.15	39°25'12.608"N	80°49'18.380"W	4.99	3.567	0.38	0.36	16.82	
2966.00	0.480	126.110	2965.97	-4.64	4.95	0.14	1626598.58	337891.12	39°25'12.607"N	80°49'18.382"W	4.95	1.636	1.32	-0.21	-192.65	
3052.00	3.660	106.680	3051.91	-2.76	3.95	3.06	1626601.50	337890.12	39°25'12.598"N	80°49'18.345"W	5.00	37.797	3.73	3.70	-22.59	
3136.00	6.020	107.210	3135.60	1.37	1.88	9.84	1626608.28	337888.05	39°25'12.578"N	80°49'18.258"W	10.02	79.208	2.81	2.81	0.63	
3221.00	8.010	103.930	3219.96	7.17	-0.87	19.85	1626618.29	337885.30	39°25'12.553"N	80°49'18.130"W	19.87	92.508	2.39	2.34	-3.86	
3305.00	9.620	99.790	3302.97	13.66	-3.47	32.44	1626630.88	337882.70	39°25'12.529"N	80°49'17.969"W	32.63	96.108	2.06	1.92	-4.93	
3389.00	10.200	100.090	3385.71	20.58	-5.97	46.68	1626645.12	337880.20	39°25'12.506"N	80°49'17.787"W	47.06	97.286	0.69	0.69	0.36	
3474.00	10.840	99.160	3469.28	27.92	-8.56	61.98	1626660.42	337877.61	39°25'12.483"N	80°49'17.592"W	62.57	97.862	0.78	0.75	-1.09	
3560.00	12.610	100.060	3553.49	36.20	-11.49	79.21	1626677.65	337874.68	39°25'12.456"N	80°49'17.372"W	80.04	98.251	2.07	2.06	1.05	
3646.00	14.270	101.490	3637.13	46.03	-15.24	98.84	1626697.28	337870.93	39°25'12.422"N	80°49'17.121"W	100.01	98.764	1.97	1.93	1.66	
3729.00	15.810	103.860	3717.28	57.24	-19.98	119.85	1626718.28	337866.19	39°25'12.378"N	80°49'16.853"W	121.50	99.467	2.00	1.86	2.86	
3813.00	17.340	105.260	3797.79	70.37	-26.02	143.03	1626741.47	337860.15	39°25'12.322"N	80°49'16.556"W	145.38	100.310	1.88	1.82	1.67	
3897.00	17.650	106.330	3877.91	84.65	-32.90	167.33	1626765.76	337853.28	39°25'12.258"N	80°49'16.245"W	170.53	101.122	0.53	0.37	1.27	
3983.00	18.730	110.240	3959.61	100.79	-41.34	192.80	1626791.23	337844.83	39°25'12.178"N	80°49'15.919"W	197.18	102.102	1.89	1.26	4.55	
4067.00	18.920	113.330	4039.12	118.37	-51.40	217.96	1626816.39	337834.77	39°25'12.082"N	80°49'15.597"W	223.94	103.269	1.21	0.23	3.68	
4153.00	19.400	111.490	4120.36	136.90	-62.15	244.05	1626842.48	337824.02	39°25'11.980"N	80°49'15.262"W	251.84	104.288	0.90	0.56	-2.14	
4237.00	20.000	108.740	4199.44	154.61	-71.88	270.64	1626869.06	337814.30	39°25'11.887"N	80°49'14.922"W	280.02	104.874	1.31	0.71	-3.27	
4321.00	19.710	109.560	4278.45	172.09	-81.24	297.59	1626896.01	337804.94	39°25'11.799"N	80°49'14.577"W	308.48	105.269	0.48	-0.35	0.98	
4408.00	19.430	109.500	4360.42	190.10	-90.98	325.05	1626923.48	337795.20	39°25'11.707"N	80°49'14.225"W	337.54	105.636	0.32	-0.32	-0.07	
4494.00	19.390	110.160	4441.53	207.88	-100.67	351.94	1626950.36	337785.50	39°25'11.615"N	80°49'13.880"W	366.05	105.963	0.26	-0.05	0.77	
4581.00	19.380	108.670	4523.60	225.68	-110.27	379.17	1626977.59	337775.90	39°25'11.524"N	80°49'13.532"W	394.88	106.216	0.57	-0.01	-1.71	
4666.00	19.360	108.640	4603.79	242.76	-119.29	405.88	1627004.30	337766.89	39°25'11.439"N	80°49'13.190"W	423.05	106.378	0.03	-0.02	-0.04	
4750.00	19.510	106.250	4683.01	259.22	-127.66	432.54	1627030.96	337758.51	39°25'11.360"N	80°49'12.848"W	450.99	106.444	0.96	0.18	-2.85	
4835.00	20.440	105.940	4762.89	275.76	-135.71	460.44	1627058.85	337750.47	39°25'11.284"N	80°49'12.491"W	480.02	106.423	1.10	1.09	-0.36	
4920.00	20.180	106.610	4842.61	292.65	-143.98	488.76	1627087.17	337742.20	39°25'11.207"N	80°49'12.129"W	509.53	106.414	0.41	-0.31	0.79	
5001.00	20.180	106.610	4918.63	308.77	-151.97	515.54	1627113.95	337734.21	39°25'11.132"N	80°49'11.786"W	537.47	106.424	0.00	0.00	0.00	
5091.00	18.900	106.600	5003.45	326.14	-160.57	544.38	1627142.79	337725.61	39°25'11.051"N	80°49'11.417"W	567.57	106.434	1.42	-1.42	-0.01	



# Actual Wellpath Report

SHR-31C-HSM AWP Proj: 14861'

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REFERENCE WELLPATH IDENTIFICATION			
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Area	Tyler County, WV	Well	SHR-31C-HSM
Field	Tyler	Wellbore	SHR-31C-HSM AWB
Facility	SHR-31 Pad		

## WELLPATH DATA (166 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)
5176.00	18.720	106.530	5083.91	341.94	-168.38	570.65	1627169.06	337717.80	39°25'10.977"N	80°49'11.081"W	594.98	106.440	0.21	-0.21	-0.08
5262.00	18.910	106.070	5165.31	357.83	-176.17	597.27	1627195.68	337710.01	39°25'10.904"N	80°49'10.741"W	622.71	106.434	0.28	0.22	-0.53
5345.00	17.380	106.640	5244.19	372.65	-183.44	622.08	1627220.48	337702.74	39°25'10.836"N	80°49'10.423"W	648.56	106.430	1.86	-1.84	0.69
5429.00	16.780	106.500	5324.48	386.87	-190.48	645.72	1627244.13	337695.70	39°25'10.770"N	80°49'10.121"W	673.23	106.435	0.72	-0.71	-0.17
5512.00	17.400	108.580	5403.82	401.27	-197.83	668.97	1627267.38	337688.35	39°25'10.701"N	80°49'09.823"W	697.61	106.474	1.05	0.75	2.51
5598.00	17.400	107.390	5485.88	416.62	-205.77	693.43	1627291.84	337680.41	39°25'10.626"N	80°49'09.510"W	723.32	106.528	0.41	0.00	-1.38
5682.00	17.400	106.390	5566.04	431.21	-213.07	717.47	1627315.87	337673.11	39°25'10.557"N	80°49'09.202"W	748.44	106.540	0.36	0.00	-1.19
5766.00	17.430	107.650	5646.19	445.87	-220.43	741.51	1627339.91	337665.75	39°25'10.488"N	80°49'08.895"W	773.58	106.556	0.45	0.04	1.50
5851.00	19.730	106.100	5726.75	461.58	-228.27	767.43	1627365.82	337657.91	39°25'10.414"N	80°49'08.563"W	800.66	106.565	2.77	2.71	-1.82
5937.00	20.010	105.400	5807.63	478.09	-236.20	795.56	1627393.96	337649.98	39°25'10.340"N	80°49'08.203"W	829.88	106.536	0.43	0.33	-0.81
6023.00	19.580	107.780	5888.55	494.88	-244.51	823.47	1627421.86	337641.67	39°25'10.262"N	80°49'07.846"W	859.00	106.538	1.06	-0.50	2.77
6107.00	20.550	106.770	5967.45	511.78	-253.06	850.99	1627449.38	337633.12	39°25'10.181"N	80°49'07.494"W	887.82	106.561	1.23	1.15	-1.20
6194.00	23.010	103.530	6048.24	529.69	-261.45	882.14	1627480.54	337624.74	39°25'10.103"N	80°49'07.095"W	920.07	106.509	3.15	2.83	-3.72
6317.00	22.790	103.040	6161.54	555.00	-272.45	928.73	1627527.11	337613.74	39°25'10.001"N	80°49'06.500"W	967.86	106.349	0.24	-0.18	-0.40
6411.00	26.150	120.290	6247.20	580.21	-287.03	964.40	1627562.79	337599.16	39°25'09.862"N	80°49'06.042"W	1006.21	106.574	8.36	3.57	18.35
6505.00	30.760	134.060	6329.91	617.25	-314.23	999.62	1627598.01	337571.95	39°25'09.598"N	80°49'05.589"W	1047.85	107.451	8.50	4.90	14.65
6599.00	36.370	134.520	6408.20	663.52	-350.52	1036.80	1627635.18	337535.67	39°25'09.245"N	80°49'05.108"W	1094.45	108.679	5.97	5.97	0.49
6693.00	41.860	136.560	6481.11	716.90	-392.87	1078.27	1627676.65	337493.32	39°25'08.833"N	80°49'04.572"W	1147.61	110.019	6.00	5.84	2.17
6787.00	49.130	142.610	6546.99	779.14	-443.97	1121.49	1627719.87	337442.22	39°25'08.334"N	80°49'04.012"W	1206.18	111.598	8.99	7.73	6.44
6881.00	55.520	144.920	6604.42	850.03	-503.99	1165.39	1627763.77	337382.21	39°25'07.747"N	80°49'03.441"W	1269.70	113.387	7.07	6.80	2.46
6975.00	63.330	150.920	6652.23	928.67	-572.55	1208.17	1627806.54	337313.65	39°25'07.076"N	80°49'02.883"W	1336.97	115.356	9.96	8.31	6.38
7068.00	72.890	155.880	6686.88	1014.02	-649.65	1246.63	1627845.00	337236.56	39°25'06.319"N	80°49'02.379"W	1405.75	117.525	11.40	10.28	5.33
7162.00	81.360	159.370	6707.81	1105.36	-734.31	1281.43	1627879.80	337151.90	39°25'05.488"N	80°49'01.920"W	1476.92	119.814	9.71	9.01	3.71
7256.00	91.480	166.620	6713.68	1198.96	-823.86	1308.79	1627907.15	337062.36	39°25'04.607"N	80°49'01.554"W	1546.50	122.190	13.23	10.77	7.71
7350.00	89.820	163.830	6712.61	1292.73	-914.73	1332.75	1627931.12	336971.49	39°25'03.712"N	80°49'01.232"W	1616.47	124.464	3.45	-1.77	-2.97
7444.00	89.080	160.560	6713.52	1386.70	-1004.21	1361.49	1627959.86	336882.01	39°25'02.832"N	80°49'00.849"W	1691.77	126.412	3.57	-0.79	-3.48
7537.00	88.490	157.900	6715.49	1479.60	-1091.14	1394.46	1627992.82	336795.09	39°25'01.978"N	80°49'00.413"W	1770.62	128.043	2.93	-0.63	-2.86
7632.00	88.060	156.680	6718.35	1574.32	-1178.73	1431.12	1628029.48	336707.50	39°25'01.117"N	80°48'59.930"W	1854.05	129.476	1.36	-0.45	-1.28
7726.00	87.940	156.000	6721.63	1667.90	-1264.78	1468.82	1628067.18	336621.46	39°25'00.273"N	80°48'59.433"W	1938.32	130.731	0.73	-0.13	-0.72
7819.00	87.450	156.030	6725.37	1760.42	-1349.68	1506.59	1628104.95	336536.56	39°24'59.439"N	80°48'58.936"W	2022.73	131.856	0.53	-0.53	0.03



# Actual Wellpath Report

SHR-31C-HSM AWP Proj: 14861'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Tyler County, WV	Well	SHR-31C-HSM
Field	Tyler	Wellbore	SHR-31C-HSM AWB
Facility	SHR-31 Pad		

WELLPATH DATA (166 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]	Buidl Rate [°/100ft]	Turn Rate [°/100ft]
7913.00	87.100	158.350	6729.84	1854.06	-1436.22	1542.99	1628141.35	336450.02	39°24'58.589"N	80°48'58.456"W	2107.98	132.948	2.49	-0.37	2.47
8007.00	87.380	159.460	6734.37	1947.86	-1523.82	1576.78	1628175.14	336362.43	39°24'57.728"N	80°48'58.009"W	2192.78	134.021	1.22	0.30	1.18
8101.00	89.080	158.850	6737.27	2041.74	-1611.62	1610.21	1628208.57	336274.64	39°24'56.865"N	80°48'57.567"W	2278.18	135.025	1.92	1.81	-0.65
8195.00	89.540	162.660	6738.40	2135.71	-1700.35	1641.19	1628239.54	336185.92	39°24'55.993"N	80°48'57.156"W	2363.19	136.014	4.08	0.49	4.05
8289.00	90.980	166.240	6737.97	2229.56	-1790.89	1666.38	1628264.73	336095.38	39°24'55.102"N	80°48'56.818"W	2446.25	137.062	4.10	1.53	3.81
8383.00	92.120	164.040	6735.43	2323.31	-1881.70	1690.48	1628288.83	336004.57	39°24'54.208"N	80°48'56.494"W	2529.53	138.064	2.64	1.21	-2.34
8478.00	91.910	157.980	6732.09	2418.21	-1971.44	1721.36	1628319.71	335914.84	39°24'53.326"N	80°48'56.084"W	2617.18	138.874	6.38	-0.22	-6.38
8572.00	92.030	156.990	6728.86	2511.94	-2058.22	1757.33	1628355.68	335828.06	39°24'52.473"N	80°48'55.609"W	2706.38	139.509	1.06	0.13	-1.05
8666.00	91.940	156.240	6725.60	2605.56	-2144.45	1794.62	1628392.96	335741.84	39°24'51.626"N	80°48'55.118"W	2796.30	140.075	0.80	-0.10	-0.80
8760.00	91.170	157.940	6723.05	2699.26	-2231.00	1831.20	1628429.54	335655.30	39°24'50.776"N	80°48'54.636"W	2886.28	140.621	1.98	-0.82	1.81
8854.00	91.170	164.720	6721.13	2793.18	-2319.98	1861.26	1628459.60	335566.32	39°24'49.901"N	80°48'54.237"W	2974.32	141.261	7.21	0.00	7.21
8948.00	92.430	162.770	6718.18	2887.05	-2410.17	1887.56	1628485.90	335476.13	39°24'49.014"N	80°48'53.885"W	3061.34	141.933	2.47	1.34	-2.07
9042.00	92.220	160.910	6714.36	2980.96	-2499.41	1916.83	1628515.17	335386.90	39°24'48.136"N	80°48'53.495"W	3149.81	142.515	1.99	-0.22	-1.98
9136.00	92.190	161.970	6710.75	3074.89	-2588.45	1946.73	1628545.06	335297.86	39°24'47.261"N	80°48'53.098"W	3238.80	143.054	1.13	-0.03	1.13
9230.00	90.980	162.160	6708.15	3168.85	-2677.85	1975.66	1628574.00	335208.47	39°24'46.381"N	80°48'52.712"W	3327.78	143.581	1.30	-1.29	0.20
9324.00	90.340	165.210	6707.06	3262.75	-2768.05	2002.07	1628600.40	335118.27	39°24'45.494"N	80°48'52.359"W	3416.19	144.123	3.32	-0.68	3.24
9418.00	90.550	165.670	6706.33	3356.51	-2859.03	2025.70	1628624.03	335027.30	39°24'44.598"N	80°48'52.041"W	3503.92	144.681	0.54	0.22	0.49
9512.00	89.450	162.940	6706.33	3450.38	-2949.51	2051.12	1628649.45	334936.82	39°24'43.708"N	80°48'51.700"W	3592.59	145.185	3.13	-1.17	-2.90
9606.00	89.420	163.540	6707.26	3544.32	-3039.51	2078.23	1628676.55	334846.82	39°24'42.822"N	80°48'51.338"W	3682.07	145.638	0.64	-0.03	0.64
9700.00	89.450	165.560	6708.19	3638.17	-3130.11	2103.27	1628701.59	334756.23	39°24'41.930"N	80°48'51.003"W	3771.11	146.101	2.15	0.03	2.15
9794.00	89.510	165.420	6709.04	3731.92	-3221.11	2126.82	1628725.14	334665.24	39°24'41.034"N	80°48'50.686"W	3859.91	146.564	0.16	0.06	-0.15
9888.00	89.510	163.520	6709.84	3825.77	-3311.67	2151.98	1628750.30	334574.69	39°24'40.143"N	80°48'50.348"W	3949.45	146.983	2.02	0.00	-2.02
9982.00	89.480	160.380	6710.67	3919.75	-3401.03	2181.10	1628779.42	334485.33	39°24'39.264"N	80°48'49.960"W	4040.32	147.328	3.34	-0.03	-3.34
10076.00	88.830	157.180	6712.06	4013.63	-3488.63	2215.12	1628813.44	334397.73	39°24'38.403"N	80°48'49.511"W	4132.47	147.586	3.47	-0.69	-3.40
10170.00	89.010	158.600	6713.83	4107.44	-3575.70	2250.49	1628848.81	334310.67	39°24'37.548"N	80°48'49.044"W	4224.97	147.814	1.52	0.19	1.51
10264.00	88.890	159.960	6715.55	4201.36	-3663.60	2283.74	1628882.06	334222.77	39°24'36.684"N	80°48'48.604"W	4317.11	148.062	1.45	-0.13	1.45
10358.00	88.950	160.020	6717.32	4295.32	-3751.91	2315.90	1628914.21	334134.46	39°24'35.816"N	80°48'48.178"W	4409.11	148.315	0.09	0.06	0.06
10451.00	89.260	158.770	6718.78	4388.25	-3838.95	2348.63	1628946.94	334047.43	39°24'34.961"N	80°48'47.745"W	4500.40	148.542	1.38	0.33	-1.34
10545.00	89.320	159.280	6719.94	4482.17	-3926.72	2382.27	1628980.58	333959.67	39°24'34.098"N	80°48'47.300"W	4592.85	148.756	0.55	0.06	0.54
10640.00	89.820	156.970	6720.66	4577.01	-4014.87	2417.66	1629015.97	333871.52	39°24'33.232"N	80°48'46.833"W	4686.60	148.945	2.49	0.53	-2.43





# Actual Wellpath Report

SHR-31C-HSM AWP Proj: 14861'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Tyler County, WV	Well	SHR-31C-HSM
Field	Tyler	Wellbore	SHR-31C-HSM AWB
Facility	SHR-31 Pad		

## WELLPATH DATA (166 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]
13552.00	89.570	159.130	6719.28	7484.10	-6768.16	3350.70	1629948.96	331118.38	39°24'06.157"N	80°48'34.435"W	7552.17	153.661	0.82	-0.52	-0.63
13646.00	89.570	162.350	6719.98	7578.08	-6856.89	3381.71	1629979.96	331029.66	39°24'05.285"N	80°48'34.024"W	7645.45	153.748	3.43	0.00	3.43
13740.00	89.570	163.350	6720.69	7672.04	-6946.70	3409.42	1630007.68	330939.85	39°24'04.401"N	80°48'33.654"W	7738.27	153.858	1.06	0.00	1.06
13835.00	89.880	163.300	6721.14	7766.98	-7037.71	3436.68	1630034.93	330848.85	39°24'03.506"N	80°48'33.290"W	7831.99	153.973	0.33	0.33	-0.05
13929.00	90.580	164.290	6720.77	7860.90	-7127.97	3462.91	1630061.17	330758.59	39°24'02.618"N	80°48'32.939"W	7924.63	154.089	1.29	0.74	1.05
14023.00	90.460	169.170	6719.91	7954.45	-7219.43	3484.48	1630082.73	330667.14	39°24'01.717"N	80°48'32.648"W	8016.35	154.236	5.19	-0.13	5.19
14117.00	90.550	169.250	6719.08	8047.57	-7311.76	3502.08	1630100.33	330574.81	39°24'00.807"N	80°48'32.406"W	8107.19	154.407	0.13	0.10	0.09
14211.00	91.200	164.110	6717.65	8141.12	-7403.19	3523.73	1630121.97	330483.38	39°23'59.907"N	80°48'32.114"W	8199.02	154.547	5.51	0.69	-5.47
14305.00	91.450	157.690	6715.47	8235.04	-7491.95	3554.46	1630152.71	330394.63	39°23'59.034"N	80°48'31.706"W	8292.38	154.619	6.83	0.27	-6.83
14399.00	91.020	160.120	6713.45	8328.93	-7579.62	3588.28	1630186.53	330306.96	39°23'58.172"N	80°48'31.259"W	8386.09	154.667	2.62	-0.46	2.59
14493.00	91.110	158.220	6711.70	8422.84	-7667.46	3621.70	1630219.94	330219.13	39°23'57.309"N	80°48'30.817"W	8479.78	154.716	2.02	0.10	-2.02
14587.00	91.020	155.900	6709.95	8516.55	-7754.00	3658.33	1630256.57	330132.59	39°23'56.459"N	80°48'30.334"W	8573.68	154.742	2.47	-0.10	-2.47
14681.00	90.090	154.960	6709.04	8610.04	-7839.49	3697.41	1630295.65	330047.11	39°23'55.620"N	80°48'29.820"W	8667.67	154.750	1.41	-0.99	-1.00
14776.00	90.430	156.240	6708.61	8704.56	-7926.00	3736.66	1630334.89	329960.61	39°23'54.771"N	80°48'29.305"W	8762.65	154.759	1.39	0.36	1.35
14835.00	90.400	156.580	6708.18	8763.34	-7980.07	3760.27	1630358.50	329906.54	39°23'54.240"N	80°48'28.994"W	8821.63	154.770	0.58	-0.05	0.58
14861.00	90.400	156.580	6708.00	8789.25	-8003.92	3770.60	1630368.84	329882.68	39°23'54.006"N	80°48'28.858"W	8847.61	154.775	0.00	0.00	0.00





# Actual Wellpath Report

SHR-31C-HSM AWP Proj: 14861'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Tyler County, WV	Well	SHR-31C-HSM
Field	Tyler	Wellbore	SHR-31C-HSM AWB
Facility	SHR-31 Pad		

HOLE & CASING SECTIONS - Ref Wellbore: SHR-31C-HSM AWB Ref Wellpath: SHR-31C-HSM AWP Proj: 14861'									
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]
24in Open Hole	29.00	129.00	100.00	29.00	129.00	0.00	0.00	0.33	-0.42
20in Conductor	29.00	129.00	100.00	29.00	129.00	0.00	0.00	0.33	-0.42
17.5in Open Hole	129.00	697.00	568.00	129.00	696.99	0.33	-0.42	1.44	-1.59
13.375in Casing Surface	29.00	697.00	668.00	29.00	696.99	0.00	0.00	1.44	-1.59
12.25in Open Hole	697.00	2710.00	2013.00	696.99	2709.98	1.44	-1.59	4.67	1.15
9.625in Casing Intermediate	29.00	2710.00	2681.00	29.00	2709.98	0.00	0.00	4.67	1.15
8.75in Open Hole	2710.00	6275.00	3565.00	2709.98	6122.83	4.67	1.15	-268.75	912.86
8.5in Open Hole	6275.00	14861.00	8586.00	6122.83	6708.00	-268.75	912.86	-8003.92	3770.60
5.5in Casing Production	29.00	14861.00	14832.00	29.00	6708.00	0.00	0.00	-8003.92	3770.60

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SHR-31C-HSM BHL Rev-4	6709.00	-8011.12	3750.29	1630348.52	329875.49	39°23'53.932"N	80°48'29.115"W	point
SHR-31C-HSM LP Rev-4	6709.00	-801.28	1318.90	1627917.27	337084.93	39°25'04.831"N	80°49'01.430"W	point
SHR-31 Unleased Tract	6950.40	-17.06	-36.12	1626562.32	337869.11	39°25'12.385"N	80°49'18.840"W	polygon
SHR-31 Lease Line Rev-2	7000.40	-17.06	-36.12	1626562.32	337869.11	39°25'12.385"N	80°49'18.840"W	polygon



# Actual Wellpath Report

SHR-31C-HSM AWP Proj: 14861'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Tyler County, WV	Well	SHR-31C-HSM
Field	Tyler	Wellbore	SHR-31C-HSM AWB
Facility	SHR-31 Pad		

WELLPATH COMPOSITION - Ref Wellbore: SHR-31C-HSM AWB Ref Wellpath: SHR-31C-HSM AWP Proj: 14861'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
29.00	701.00	VESSI GyroFlex v4	01 VES Gyro <17-1/2"> (100'-684')	SHR-31C-HSM AWB
701.00	2748.00	OWSG MWD rev2 - Standard	02 QES MWD <12-1/4"> (684')(783'-2731')	SHR-31C-HSM AWB
2748.00	6194.00	OWSG MWD rev2 - Standard	03 QES MWD <8-3/4"> (2731')(2776'-6177')	SHR-31C-HSM AWB
6194.00	14835.00	BHI AutoTrak Curve (Short)	04 BH AT Curve <8-1/2"> (6194')(6317'-14835')	SHR-31C-HSM AWB
14835.00	14861.00	Blind Drilling (std)	Projection to bit	SHR-31C-HSM AWB



# Actual Wellpath Report

SHR-31C-HSM AWP Proj: 14861'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	CNX GAS COMPANY, LLC	Slot	Slot C
Area	Tyler County, WV	Well	SHR-31C-HSM
Field	Tyler	Wellbore	SHR-31C-HSM AWB
Facility	SHR-31 Pad		

## COMMENTS

**Wellpath general comments**  
 API: 47-095-02490-0000  
 BH Job #: 9204156  
 Rig: Patterson 278  
 Duration: 6/21/2018-6/26/2018  
 VES Gyro <17-1/2"> (100'-684')  
 QES MWD <12-1/4"> (684')(783'-2731')  
 QES MWD <8-3/4"> (2731')(2776'-6177')  
 BH AT Curve <8-1/2"> (6194')(6317'-14835')  
 Projected MD at TD: 14861'