



# CNX GAS COMPANY, LLC

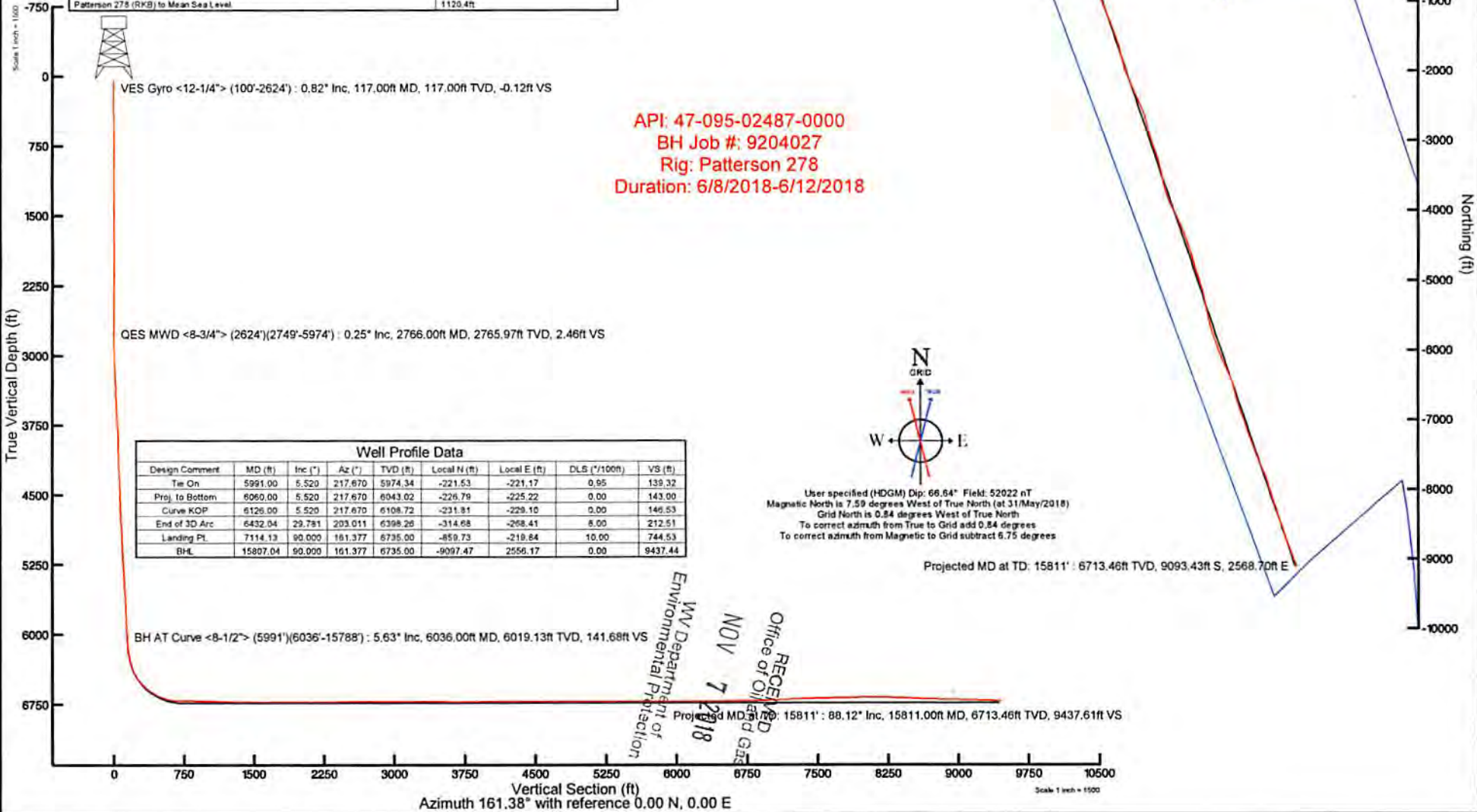
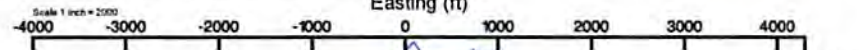


Location: Tyler County, WV  
Field: Tyler  
Facility: SHR-31 Pad

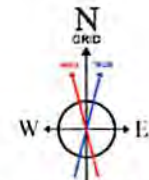
Slot: Slot A  
Well: SHR-31A-HSM  
Wellbore: SHR-31A-HSM PWB

Plot reference wellbore & SHR-31A-HSM PWB Rev-A1	GM System: NAD27 / Lambert West Virginia SP, Northern Zone (470), US feet
True vertical depths are referenced to Patterson 278 (RKB)	North Reference: GM 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 A): -1091.4 feet	Created by: adharaj on 2018-06-19
Coordinates are in feet referenced to Slot A	Database: WA_MPL_EASTERNUS_02m

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)	Latitude
Slot A	18.22	5.42	1626562.300	337868.570	39°25'12.378"N
Patterson 278 (RKB) to Ground level (At Slot: Slot A)			29ft		
Mean Sea Level to Ground level (At Slot: Slot A)			-1091.4ft		
Patterson 278 (RKB) to Mean Sea Level			1120.4ft		



Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	5991.00	5.520	217.670	5974.34	-221.53	-221.17	0.95	139.32
Proj. to Bottom	6060.00	5.520	217.670	6043.02	-226.79	-225.22	0.00	143.00
Curve KOP	6126.00	5.520	217.670	6108.72	-231.81	-229.10	0.00	146.53
End of 3D Arc	6432.04	29.781	203.011	6398.26	-314.68	-268.41	8.00	212.51
Landing Pt.	7114.13	90.000	161.377	6735.00	-859.73	-219.84	10.00	744.53
BH	15807.04	90.000	161.377	6735.00	-9097.47	2556.17	0.00	9437.44



User specified (HDGM) Dip: 66.64° Field: 52022 nT  
Magnetic North is 7.59 degrees West of True North (at 31/May/2018)  
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

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# Actual Wellpath Report

SHR-31A-HSM AWP Proj: 15811'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	CNX GAS COMPANY, LLC	Slot	Slot A
Area	Tyler County, WV	Well	SHR-31A-HSM
Field	Tyler	Wellbore	SHR-31A-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	19/Jun/2018 at 12:16
Convergence at slot	0.84° West	Database/Source file	WA_MPL_EASTERNUS_Defn/SHR-31A-HSM_AWP_Proj_15811_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	18.22	5.42	1626562.30	337868.57	39°25'12.379"N	80°49'18.840"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 A)	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	161.38°

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SHR-31A-HSM AWP Proj: 15811'

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

**WELLPATH DATA (174 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	60.680	0.00	0.00	0.00	0.00	1626562.30	337868.57	39°25'12.379"N	80°49'18.840"W	0.00	0.000	0.00	0.00	0.00
29.00	0.000	60.680	29.00	0.00	0.00	0.00	1626562.30	337868.57	39°25'12.379"N	80°49'18.840"W	0.00	0.000	0.00	0.00	0.00
117.00	0.820	60.680	117.00	-0.12	0.31	0.55	1626562.85	337868.88	39°25'12.382"N	80°49'18.834"W	0.63	60.680	0.93	0.93	68.95
217.00	0.570	79.390	216.99	-0.18	0.75	1.66	1626563.96	337869.32	39°25'12.387"N	80°49'18.819"W	1.82	65.700	0.33	-0.25	18.71
317.00	0.430	94.630	316.99	0.04	0.81	2.52	1626564.82	337869.38	39°25'12.388"N	80°49'18.808"W	2.65	72.179	0.19	-0.14	15.24
417.00	0.360	81.330	416.98	0.24	0.83	3.21	1626565.51	337869.40	39°25'12.388"N	80°49'18.800"W	3.31	75.522	0.11	-0.07	-13.30
517.00	0.330	87.570	516.98	0.37	0.89	3.81	1626566.11	337869.46	39°25'12.389"N	80°49'18.792"W	3.91	76.868	0.05	-0.03	6.24
617.00	0.570	85.810	616.98	0.58	0.94	4.59	1626566.89	337869.51	39°25'12.389"N	80°49'18.782"W	4.69	78.468	0.24	0.24	-1.76
717.00	0.440	106.640	716.97	0.92	0.86	5.46	1626567.76	337869.43	39°25'12.389"N	80°49'18.771"W	5.52	81.009	0.22	-0.13	20.83
817.00	0.120	123.400	816.97	1.23	0.70	5.91	1626568.21	337869.27	39°25'12.387"N	80°49'18.765"W	5.95	83.288	0.33	-0.32	16.76
917.00	0.190	75.030	916.97	1.32	0.68	6.16	1626568.46	337869.25	39°25'12.387"N	80°49'18.762"W	6.20	83.692	0.14	0.07	-48.37
1017.00	0.060	172.980	1016.97	1.38	0.67	6.32	1626568.62	337869.24	39°25'12.387"N	80°49'18.760"W	6.36	83.938	0.21	-0.13	97.95
1117.00	0.160	45.910	1116.97	1.37	0.72	6.43	1626568.73	337869.29	39°25'12.387"N	80°49'18.759"W	6.47	83.640	0.20	0.10	-127.07
1217.00	0.180	49.830	1216.97	1.26	0.92	6.65	1626568.95	337869.49	39°25'12.389"N	80°49'18.756"W	6.71	82.165	0.02	0.02	3.92
1317.00	0.240	103.440	1316.97	1.31	0.97	6.98	1626569.28	337869.54	39°25'12.390"N	80°49'18.752"W	7.04	82.100	0.20	0.06	53.61
1417.00	0.150	70.810	1416.97	1.42	0.96	7.30	1626569.60	337869.53	39°25'12.390"N	80°49'18.748"W	7.37	82.493	0.14	-0.09	-32.63
1517.00	0.120	131.330	1516.97	1.51	0.94	7.51	1626569.80	337869.51	39°25'12.390"N	80°49'18.745"W	7.56	82.890	0.14	-0.03	60.52
1617.00	0.170	102.880	1616.97	1.68	0.83	7.73	1626570.03	337869.40	39°25'12.389"N	80°49'18.742"W	7.77	83.841	0.09	0.05	-28.45
1717.00	0.140	154.630	1716.97	1.88	0.69	7.93	1626570.23	337869.26	39°25'12.387"N	80°49'18.740"W	7.96	85.021	0.14	-0.03	51.75
1817.00	0.200	114.160	1816.97	2.12	0.51	8.14	1626570.44	337869.08	39°25'12.386"N	80°49'18.737"W	8.15	86.423	0.13	0.06	-40.47
1917.00	0.110	59.450	1916.97	2.21	0.49	8.38	1626570.68	337869.06	39°25'12.385"N	80°49'18.734"W	8.39	86.680	0.16	-0.09	-54.71
2017.00	0.170	107.110	2016.97	2.28	0.49	8.60	1626570.90	337869.06	39°25'12.385"N	80°49'18.731"W	8.62	86.732	0.13	0.06	47.66
2117.00	0.100	85.130	2116.97	2.39	0.45	8.83	1626571.13	337869.02	39°25'12.385"N	80°49'18.728"W	8.84	87.051	0.09	-0.07	-21.98
2217.00	0.040	200.930	2216.97	2.44	0.43	8.91	1626571.21	337869.00	39°25'12.385"N	80°49'18.727"W	8.92	87.238	0.12	-0.06	115.80
2317.00	0.120	58.320	2316.97	2.44	0.45	8.98	1626571.28	337869.02	39°25'12.385"N	80°49'18.726"W	8.99	87.119	0.15	0.08	-142.61
2417.00	0.080	26.370	2416.97	2.37	0.57	9.10	1626571.40	337869.14	39°25'12.386"N	80°49'18.725"W	9.12	86.419	0.07	-0.04	-31.95
2517.00	0.050	256.000	2516.97	2.31	0.62	9.09	1626571.39	337869.19	39°25'12.387"N	80°49'18.725"W	9.11	86.088	0.12	-0.03	-130.37
2617.00	0.110	71.460	2616.97	2.31	0.64	9.14	1626571.44	337869.21	39°25'12.387"N	80°49'18.724"W	9.16	85.985	0.16	0.06	175.46
2641.00	0.270	83.890	2640.97	2.32	0.65	9.22	1626571.52	337869.22	39°25'12.387"N	80°49'18.723"W	9.24	85.936	0.68	0.67	51.79
2766.00	0.250	236.590	2765.97	2.46	0.54	9.28	1626571.58	337869.11	39°25'12.386"N	80°49'18.722"W	9.30	86.695	0.40	-0.02	122.16

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SHR-31A-HSM AWP Proj: 15811'

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

WELLPATH DATA (174 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)	
2851.00	2.040	219.570	2850.95	3.30	-0.73	8.17	1626570.46	337867.84	39°25'12.373"N	80°49'18.736"W	8.20	95.124	2.12	2.11	-20.02	
2937.00	3.890	232.290	2936.83	5.06	-3.70	4.88	1626567.18	337864.87	39°25'12.343"N	80°49'18.778"W	6.12	127.133	2.27	2.15	14.79	
3022.00	5.310	229.160	3021.55	7.49	-8.03	-0.37	1626561.93	337860.54	39°25'12.300"N	80°49'18.844"W	8.04	182.670	1.70	1.67	-3.68	
3106.00	5.970	226.270	3105.15	10.82	-13.59	-6.47	1626555.83	337854.98	39°25'12.244"N	80°49'18.920"W	15.06	205.458	0.86	0.79	-3.44	
3192.00	5.510	222.010	3190.72	14.74	-19.75	-12.47	1626549.83	337848.82	39°25'12.182"N	80°49'18.996"W	23.36	212.257	0.73	-0.53	-4.95	
3277.00	5.830	229.980	3275.30	18.32	-25.56	-18.50	1626543.80	337843.01	39°25'12.124"N	80°49'19.071"W	31.56	215.901	1.00	0.38	9.38	
3361.00	5.250	227.640	3358.91	21.42	-30.89	-24.61	1626537.69	337837.68	39°25'12.070"N	80°49'19.148"W	39.50	218.541	0.74	-0.69	-2.79	
3446.00	5.770	226.020	3443.52	24.82	-36.48	-30.56	1626531.74	337832.09	39°25'12.014"N	80°49'19.223"W	47.59	219.951	0.64	0.61	-1.91	
3531.00	5.520	225.770	3528.10	28.41	-42.30	-36.56	1626525.74	337826.27	39°25'11.956"N	80°49'19.298"W	55.91	220.839	0.30	-0.29	-0.29	
3617.00	6.490	223.330	3613.63	32.49	-48.72	-42.86	1626519.44	337819.85	39°25'11.892"N	80°49'19.377"W	64.89	221.339	1.17	1.13	-2.84	
3700.00	6.260	225.920	3696.12	36.64	-55.28	-49.33	1626512.97	337813.29	39°25'11.826"N	80°49'19.459"W	74.09	221.745	0.44	-0.28	3.12	
3784.00	5.480	216.810	3779.68	40.88	-61.68	-55.03	1626507.28	337806.89	39°25'11.762"N	80°49'19.530"W	82.66	221.737	1.44	-0.93	-10.85	
3869.00	5.220	219.600	3864.31	45.22	-67.91	-59.92	1626502.38	337800.67	39°25'11.699"N	80°49'19.591"W	90.57	221.425	0.43	-0.31	3.28	
3954.00	5.060	241.600	3948.97	47.89	-72.67	-65.68	1626496.62	337795.90	39°25'11.652"N	80°49'19.664"W	97.96	222.109	2.31	-0.19	25.88	
4038.00	5.680	238.070	4032.61	49.48	-76.63	-72.47	1626489.83	337791.94	39°25'11.611"N	80°49'19.749"W	105.47	223.402	0.84	0.74	-4.20	
4125.00	6.910	234.430	4119.08	52.00	-81.95	-80.38	1626481.92	337786.62	39°25'11.558"N	80°49'19.849"W	114.79	224.446	1.49	1.41	-4.18	
4251.00	6.280	229.730	4244.25	56.75	-90.82	-91.81	1626470.50	337777.76	39°25'11.468"N	80°49'19.993"W	129.14	225.310	0.66	-0.50	-3.73	
4335.00	5.690	223.560	4327.79	60.39	-96.80	-98.18	1626464.12	337771.77	39°25'11.408"N	80°49'20.073"W	137.88	225.405	1.04	-0.70	-7.35	
4420.00	5.020	218.540	4412.42	64.37	-102.77	-103.40	1626458.90	337765.81	39°25'11.349"N	80°49'20.139"W	145.78	225.177	0.96	-0.79	-5.91	
4507.00	4.490	224.980	4499.12	67.95	-108.15	-108.18	1626454.13	337760.42	39°25'11.295"N	80°49'20.198"W	152.97	225.008	0.86	-0.61	7.40	
4593.00	5.650	230.880	4584.78	70.93	-113.20	-113.84	1626448.46	337755.37	39°25'11.244"N	80°49'20.270"W	160.55	225.162	1.48	1.35	6.86	
4679.00	6.860	230.360	4670.27	74.25	-119.15	-121.08	1626441.22	337749.42	39°25'11.184"N	80°49'20.361"W	169.88	225.461	1.41	1.41	-0.60	
4763.00	6.540	229.010	4753.69	77.87	-125.49	-128.56	1626433.75	337743.09	39°25'11.120"N	80°49'20.455"W	179.65	225.692	0.42	-0.38	-1.61	
4848.00	5.990	224.870	4838.19	81.70	-131.81	-135.34	1626426.97	337736.77	39°25'11.057"N	80°49'20.540"W	188.92	225.758	0.84	-0.65	-4.87	
4934.00	6.700	228.780	4923.66	85.63	-138.30	-142.28	1626420.03	337730.28	39°25'10.992"N	80°49'20.627"W	198.42	225.814	0.97	0.83	4.55	
5019.00	6.490	226.890	5008.10	89.52	-144.85	-149.52	1626412.79	337723.73	39°25'10.926"N	80°49'20.718"W	208.17	225.909	0.36	-0.25	-2.22	
5104.00	6.020	226.020	5092.59	93.42	-151.22	-156.23	1626406.08	337717.35	39°25'10.862"N	80°49'20.803"W	217.43	225.933	0.56	-0.55	-1.02	
5190.00	7.230	226.130	5178.02	97.66	-158.11	-163.38	1626398.93	337710.47	39°25'10.793"N	80°49'20.892"W	227.35	225.940	1.41	1.41	0.13	
5274.00	7.270	225.480	5261.34	102.24	-165.50	-170.98	1626391.33	337703.08	39°25'10.719"N	80°49'20.988"W	237.95	225.934	0.11	0.05	-0.77	
5360.00	6.800	224.780	5346.70	106.90	-172.92	-178.44	1626383.86	337695.65	39°25'10.644"N	80°49'21.082"W	248.49	225.900	0.56	-0.55	-0.81	

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## REFERENCE WELLPATH IDENTIFICATION

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

## WELLPATH DATA (174 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude (°)	Longitude (°)	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)
5445.00	6.380	222.210	5431.13	-179.99	-185.16	1626377.15	337688.58	39.2510,574°N	80°49'21.166"W	258.23	225.811	0.60	-0.49	-3.02	
5527.00	5.990	219.630	5512.66	-186.66	-190.95	1626371.36	337681.92	39.2510,507°N	80°49'21.238"W	267.03	225.651	0.58	-0.48	-3.15	
5611.00	5.710	215.970	5596.22	-193.42	-196.20	1626366.11	337675.16	39.2510,439°N	80°49'21.304"W	275.51	225.409	0.56	-0.33	-4.36	
5694.00	5.160	215.730	5678.85	-199.79	-200.81	1626361.50	337668.79	39.2510,376°N	80°49'21.361"W	283.27	225.145	0.66	-0.66	-0.29	
5781.00	6.090	227.390	5765.43	-206.09	-206.49	1626355.82	337662.49	39.2510,313°N	80°49'21.433"W	291.74	225.055	1.69	-0.24	13.40	
5867.00	5.880	224.510	5850.96	-212.32	-212.93	1626349.88	337656.26	39.2510,250°N	80°49'21.514"W	300.70	225.082	0.43	-0.24	-3.35	
5951.00	5.680	221.200	5934.53	-218.52	-218.69	1626343.62	337650.06	39.2510,188°N	80°49'21.588"W	309.15	225.022	0.46	-0.24	-3.94	
5991.00	5.520	217.670	5974.34	-221.53	-221.17	1626341.14	337647.05	39.2510,158°N	80°49'21.617"W	313.04	224.953	0.95	-0.40	-8.83	
6036.00	5.630	219.600	6019.13	-224.95	-223.90	1626338.41	337643.64	39.2510,124°N	80°49'21.651"W	317.38	224.866	0.48	0.24	4.29	
6130.00	7.190	219.470	6112.54	-233.04	-230.58	1626331.74	337635.54	39.2510,043°N	80°49'21.734"W	327.83	224.695	1.66	-0.14	-0.14	
6224.00	14.590	215.180	6204.78	-247.28	-241.15	1626321.16	337621.30	39.2509,900°N	80°49'21.867"W	345.40	224.281	7.91	7.87	-4.56	
6318.00	19.660	207.870	6294.60	-270.95	-255.38	1626306.94	337597.63	39.2509,664°N	80°49'22.043"W	372.33	223.305	5.85	5.39	-7.78	
6412.00	28.470	199.660	6380.36	-308.07	-270.45	1626291.86	337562.52	39.2509,315°N	80°49'22.229"W	408.44	221.465	9.96	9.37	-8.41	
6507.00	36.450	185.800	6460.57	-355.58	-281.06	1626281.25	337513.01	39.2508,824°N	80°49'22.355"W	453.25	218.324	11.55	8.40	-14.91	
6600.00	44.940	178.470	6531.06	-416.04	-282.98	1626279.33	337452.55	39.2508,227°N	80°49'22.368"W	503.16	214.223	10.46	9.13	-7.88	
6694.00	53.170	173.990	6592.63	-486.79	-278.15	1626284.17	337381.81	39.2507,528°N	80°49'22.293"W	560.65	209.744	9.46	8.76	-4.77	
6788.00	61.560	172.000	6643.28	-565.27	-268.44	1626293.88	337303.33	39.2506,754°N	80°49'22.155"W	625.77	205.402	9.10	8.93	-2.12	
6882.00	71.140	170.260	6680.95	-650.24	-255.13	1626307.18	337218.37	39.2505,916°N	80°49'21.969"W	698.50	201.423	10.33	10.19	-1.85	
6976.00	81.910	169.820	6702.82	-740.14	-239.34	1626322.98	337128.47	39.2505,030°N	80°49'21.751"W	777.87	197.920	11.47	11.46	-0.47	
7070.00	89.480	168.640	6709.87	-832.15	-221.83	1626340.48	337036.47	39.2504,123°N	80°49'21.511"W	861.21	194.926	8.15	8.05	-1.26	
7164.00	89.660	165.650	6710.57	-923.78	-200.92	1626361.39	336944.84	39.2503,221°N	80°49'21.227"W	945.38	192.270	3.19	0.19	-3.18	
7258.00	89.260	163.850	6711.46	-1014.46	-176.20	1626386.11	336854.16	39.2502,328°N	80°49'20.895"W	1029.65	189.853	1.96	-0.43	-1.91	
7351.00	89.050	160.330	6712.83	-1102.93	-147.60	1626414.70	336765.70	39.2501,458°N	80°49'20.514"W	1112.77	187.623	3.79	-0.23	-3.78	
7445.00	88.460	156.580	6714.88	-1190.33	-113.10	1626449.21	336678.31	39.2500,600°N	80°49'20.058"W	1195.69	185.428	4.04	-0.63	-3.99	
7539.00	87.840	156.160	6717.91	-1185.50	-1276.40	1626486.86	336592.24	39.2459,754°N	80°49'19.562"W	1278.63	183.382	0.80	-0.66	-0.45	
7633.00	87.880	159.040	6721.42	-1279.22	-1363.24	1626522.65	336505.41	39.2458,901°N	80°49'19.090"W	1363.82	181.666	3.06	0.04	3.06	
7727.00	89.230	160.800	6723.79	-1451.49	-7.39	1626554.91	336417.16	39.2458,034°N	80°49'18.662"W	1451.51	180.292	2.36	1.44	1.87	
7821.00	89.290	160.610	6725.01	-1540.20	23.67	1626585.97	336328.45	39.2457,162°N	80°49'18.250"W	1540.39	179.120	0.21	0.06	-0.20	
7915.00	99.770	162.060	6724.96	-1629.26	53.75	1626616.05	336239.40	39.2456,286°N	80°49'17.850"W	1630.14	178.110	2.20	1.57	1.54	
8009.00	89.510	166.330	6724.73	-1719.68	79.35	1626641.64	336148.99	39.2455,396°N	80°49'17.507"W	1721.51	177.358	4.74	-1.34	4.54	

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

MD	Inclination	Azimuth	TVD	Vent Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)	(N)	(E)	(ft)	(°)	(ft/100ft)	(ft/100ft)	(ft/100ft)
8103.00	90.770	168.790	6724.50	1748.44	-1811.46	99.59	1626661.89	336057.21	39°24'54.492"N	80°49'17.232"W	1814.20	176.853	2.94	1.34	2.62
8197.00	90.310	164.720	6723.61	1842.01	-1902.94	121.13	1626683.42	335965.74	39°24'53.591"N	80°49'16.941"W	1906.79	176.358	4.36	-0.49	-4.33
8291.00	89.970	160.730	6723.38	1935.96	-1992.68	149.03	1626711.33	335876.00	39°24'52.708"N	80°49'16.568"W	1998.25	175.723	4.26	-0.36	-4.24
8385.00	90.370	158.490	6723.10	2029.91	-2080.78	181.78	1626744.07	335787.90	39°24'51.843"N	80°49'16.135"W	2088.71	175.007	2.42	0.43	-2.38
8479.00	90.280	156.570	6722.57	2123.69	-2167.64	217.71	1626779.99	335701.05	39°24'50.989"N	80°49'15.661"W	2178.55	174.265	2.04	-0.10	-2.04
8573.00	90.220	156.270	6722.16	2217.34	-2253.79	255.31	1626817.59	335614.90	39°24'50.143"N	80°49'15.165"W	2268.21	173.537	0.33	-0.06	-0.32
8667.00	90.340	155.740	6721.70	2310.92	-2339.67	293.53	1626855.82	335529.03	39°24'49.300"N	80°49'14.662"W	2358.01	172.849	0.58	0.13	-0.56
8761.00	90.400	153.670	6721.09	2404.28	-2424.65	333.70	1626895.98	335444.05	39°24'48.466"N	80°49'14.135"W	2447.50	172.164	2.20	0.06	-2.20
8855.00	90.220	156.890	6720.58	2497.73	-2510.02	373.00	1626935.28	335358.69	39°24'47.628"N	80°49'13.618"W	2537.58	171.547	3.43	-0.19	3.43
8949.00	90.710	159.150	6719.82	2591.56	-2597.18	408.18	1626970.46	335271.53	39°24'46.772"N	80°49'13.154"W	2629.06	171.068	2.46	0.52	2.40
9043.00	90.150	161.690	6719.11	2685.54	-2685.73	439.68	1627001.95	335182.98	39°24'45.902"N	80°49'12.736"W	2721.49	170.703	2.77	-0.60	2.70
9137.00	90.000	167.020	6718.99	2779.38	-2776.22	465.02	1627027.29	335092.50	39°24'45.011"N	80°49'12.396"W	2814.90	170.491	5.67	-0.16	5.67
9232.00	90.060	166.220	6718.94	2873.98	-2868.64	487.00	1627049.27	335000.09	39°24'44.101"N	80°49'12.099"W	2909.68	170.365	0.84	0.06	-0.84
9326.00	90.060	164.120	6718.84	2967.77	-2959.50	511.06	1627073.33	334909.23	39°24'43.206"N	80°49'11.775"W	3003.31	170.203	2.23	0.00	-2.23
9420.00	90.340	161.190	6718.52	3061.74	-3049.22	539.08	1627101.35	334819.52	39°24'42.324"N	80°49'11.401"W	3096.50	169.974	3.13	0.30	-3.12
9514.00	89.600	167.850	6718.56	3155.70	-3137.53	571.27	1627133.54	334731.22	39°24'41.456"N	80°49'10.975"W	3189.11	169.681	2.71	-0.79	-2.60
9608.00	89.570	160.910	6719.25	3249.66	-3225.75	603.68	1627165.95	334642.99	39°24'40.589"N	80°49'10.545"W	3281.76	169.400	2.30	-0.03	2.30
9702.00	89.450	165.630	6720.05	3343.58	-3315.75	630.73	1627193.00	334553.01	39°24'39.703"N	80°49'10.184"W	3375.20	169.230	5.02	-0.13	5.02
9796.00	89.970	166.950	6720.53	3437.23	-3407.06	653.01	1627215.27	334461.69	39°24'38.804"N	80°49'09.883"W	3469.08	169.150	1.51	0.55	1.40
9889.00	89.720	168.980	6720.78	3529.61	-3498.01	672.40	1627234.66	334370.75	39°24'37.908"N	80°49'09.619"W	3562.05	169.119	2.20	-0.27	2.18
9983.00	89.720	168.910	6721.24	3622.79	-3590.27	690.42	1627252.69	334278.50	39°24'36.999"N	80°49'09.372"W	3656.05	169.115	0.07	0.00	-0.07
10077.00	89.720	166.140	6721.70	3716.24	-3682.04	710.73	1627272.99	334186.73	39°24'36.095"N	80°49'09.096"W	3750.01	169.075	2.95	0.00	-2.95
10171.00	90.340	162.080	6721.65	3810.11	-3772.43	736.46	1627298.72	334096.35	39°24'35.205"N	80°49'08.752"W	3843.64	168.954	4.37	0.66	-4.32
10265.00	90.220	157.820	6721.19	3904.06	-3860.71	768.68	1627330.93	334008.07	39°24'34.338"N	80°49'08.325"W	3936.49	168.740	4.53	-0.13	-4.53
10359.00	90.220	151.840	6720.83	3997.40	-3945.75	808.64	1627370.89	333923.04	39°24'33.503"N	80°49'07.800"W	4027.75	168.418	6.36	0.00	-6.36
10453.00	90.280	153.440	6720.42	4090.31	-4029.23	851.84	1627414.09	333839.56	39°24'32.684"N	80°49'07.234"W	4118.29	168.063	1.70	0.06	1.70
10547.00	90.400	158.250	6719.86	4183.84	-4114.97	890.29	1627452.54	333753.83	39°24'31.843"N	80°49'06.728"W	4210.18	167.792	5.12	0.13	5.12
10641.00	90.830	156.600	6718.85	4277.61	-4201.76	926.37	1627488.62	333667.04	39°24'30.990"N	80°49'06.252"W	4302.67	167.567	1.81	0.46	-1.76
10735.00	90.120	156.560	6718.07	4371.27	-4288.01	963.73	1627525.98	333580.79	39°24'30.143"N	80°49'05.760"W	4394.98	167.333	0.76	-0.76	-0.04
10829.00	89.940	160.050	6718.02	4465.12	-4375.34	998.48	1627560.72	333493.47	39°24'29.285"N	80°49'05.301"W	4487.82	167.145	3.72	-0.19	3.71

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# Actual Wellpath Report

SHR-31A-HSM AWP Proj: 15811'  
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Operator	CNX GAS COMPANY, LLC
Area	Tyler County, WV
Field	Tyler
Facility	SHR-31 Pad
Slot	Slot A
Well	SHR-31A-HSM
Wellbore	SHR-31A-HSM AWB

WELLPATH DATA (174 stations)													
MD	Inclination	Azimuth	TVD	Vent Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)	(ft)	(ft)	(ft)	(°)	
											DLS	Build Rate	
											(%/100ft)	(%/100ft)	
Turn Rate													
(%/100ft)													
10923.00	90.030	160.940	6718.04	4559.11	-4463.94	1029.86	1627592.10	333404.87	39°24'28.414"N	80°49'04.885"W	4581.20	167.009	0.95
11017.00	89.940	161.620	6718.07	4653.11	-4552.97	1060.03	1627622.27	333315.85	39°24'27.539"N	80°49'04.484"W	4674.74	166.894	0.73
11111.00	89.940	162.590	6718.17	4747.10	-4642.42	1088.91	1627651.15	333226.40	39°24'26.659"N	80°49'04.099"W	4768.42	166.800	1.03
11205.00	89.910	164.280	6718.29	4841.04	-4732.52	1115.71	1627677.95	333136.31	39°24'25.772"N	80°49'03.741"W	4862.26	166.735	1.80
11299.00	89.940	163.660	6718.41	4934.94	-4822.86	1141.67	1627703.91	333045.97	39°24'24.883"N	80°49'03.393"W	4956.15	166.682	0.66
11393.00	89.970	160.190	6718.49	5028.92	-4912.21	1170.83	1627733.06	332956.63	39°24'24.005"N	80°49'03.005"W	5049.82	166.594	3.69
11487.00	90.030	161.700	6718.49	5122.92	-5001.06	1201.52	1627763.75	332867.79	39°24'23.131"N	80°49'02.598"W	5143.37	166.491	1.61
11581.00	89.940	162.890	6718.51	5216.90	-5090.60	1230.10	1627792.34	332778.25	39°24'22.250"N	80°49'02.217"W	5237.12	166.415	1.27
11675.00	89.780	165.660	6718.74	5310.78	-5181.08	1255.58	1627917.81	332687.78	39°24'21.360"N	80°49'01.875"W	5331.04	166.378	2.95
11769.00	89.970	168.260	6718.95	5404.32	-5272.64	1276.78	1627839.01	332596.22	39°24'20.458"N	80°49'01.588"W	5425.03	166.388	2.77
11863.00	89.970	168.120	6719.00	5497.66	-5364.65	1296.02	1627858.25	332504.21	39°24'19.552"N	80°49'01.326"W	5518.98	166.418	0.15
11957.00	89.940	168.710	6719.07	5590.95	-5456.74	1314.90	1627877.13	332412.13	39°24'18.644"N	80°49'01.068"W	5612.93	166.452	0.63
12051.00	90.090	167.230	6719.05	5684.33	-5548.67	1334.49	1627896.72	332320.20	39°24'17.739"N	80°49'00.802"W	5706.89	166.477	1.58
12145.00	90.030	165.080	6718.95	5777.99	-5639.93	1356.98	1627919.21	332228.94	39°24'16.840"N	80°49'00.498"W	5800.88	166.472	2.29
12239.00	90.250	163.520	6718.72	5871.87	-5730.42	1382.42	1627944.64	332138.46	39°24'15.949"N	80°49'00.157"W	5894.82	166.437	1.68
12333.00	90.220	160.940	6718.33	5965.85	-5819.93	1411.10	1627973.33	332048.96	39°24'15.069"N	80°48'59.775"W	5988.56	166.371	2.74
12427.00	90.090	162.310	6718.08	6059.85	-5909.14	1440.74	1628002.96	331959.76	39°24'14.192"N	80°48'59.381"W	6082.24	166.298	1.46
12521.00	90.220	160.170	6717.82	6153.84	-5998.14	1470.96	1628033.18	331870.76	39°24'13.317"N	80°48'58.979"W	6175.87	166.221	2.28
12615.00	90.370	158.100	6717.34	6247.76	-6085.97	1504.44	1628066.66	331782.94	39°24'12.453"N	80°48'58.536"W	6269.16	166.115	2.21
12709.00	90.340	154.570	6716.76	6341.38	-6172.05	1542.17	1628104.38	331696.86	39°24'11.608"N	80°48'58.040"W	6361.80	165.971	3.76
12803.00	90.120	153.780	6716.38	6434.64	-6256.66	1583.11	1628145.33	331612.26	39°24'10.778"N	80°48'57.503"W	6453.84	165.801	0.87
12896.00	90.220	156.460	6716.10	6527.07	-6341.02	1622.24	1628184.45	331527.90	39°24'09.950"N	80°48'56.988"W	6545.24	165.650	2.88
12990.00	90.060	158.310	6715.87	6620.84	-6427.79	1658.38	1628220.59	331441.14	39°24'09.098"N	80°48'56.512"W	6638.27	165.533	1.98
13084.00	91.320	166.750	6714.74	6714.73	-6517.36	1686.57	1628248.78	331351.57	39°24'08.217"N	80°48'56.136"W	6732.05	165.491	9.08
13178.00	91.320	167.860	6712.57	6808.20	-6609.04	1707.23	1628269.43	331259.90	39°24'07.314"N	80°48'55.856"W	6825.98	165.516	1.18
13272.00	92.460	166.670	6709.47	6901.65	-6700.67	1727.93	1628290.14	331168.27	39°24'06.411"N	80°48'55.575"W	6919.88	165.540	1.75
13366.00	92.490	160.660	6705.41	6995.45	-6790.75	1754.34	1628316.54	331078.19	39°24'05.525"N	80°48'55.222"W	7013.70	165.515	6.39
13460.00	92.400	158.970	6701.40	7089.32	-6878.90	1786.74	1628348.94	330990.05	39°24'04.658"N	80°48'54.793"W	7107.15	165.440	1.80
13554.00	92.530	160.600	6697.36	7183.20	-6967.02	1819.19	1628381.39	330901.93	39°24'03.792"N	80°48'54.363"W	7200.61	165.366	1.74
13648.00	92.590	161.890	6693.16	7277.10	-7055.94	1849.38	1628411.58	330813.02	39°24'02.918"N	80°48'53.962"W	7294.28	165.313	1.37

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# Actual Wellpath Report

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

WELLPATH DATA (174 stations)															
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)	(ft)	(ft)	(ft)	(°)	(ft/100ft)	(ft/100ft)	(ft/100ft)
13742.00	91.970	161.960	6689.42	7371.02	-7145.23	1878.52	1628440.72	330723.73	39°24'02.03"N	80°48'53.57"W	7388.04	165.270	0.66	-0.66	0.07
13836.00	91.910	158.550	6686.24	7464.93	-7233.64	1910.26	1628472.45	330635.33	39°24'01.17"N	80°48'53.15"W	7481.62	165.207	3.63	-0.06	-3.63
13930.00	91.480	159.300	6683.46	7558.81	-7321.31	1944.04	1628506.24	330547.66	39°24'00.30"N	80°48'52.70"W	7575.02	165.129	0.92	-0.46	0.80
14024.00	91.450	160.300	6681.05	7652.74	-7409.50	1976.49	1628538.68	330459.48	39°23'59.44"N	80°48'52.27"W	7668.59	165.064	1.06	-0.03	1.06
14118.00	90.950	159.900	6679.08	7746.69	-7497.87	2008.48	1628570.67	330371.11	39°23'58.57"N	80°48'51.85"W	7762.22	165.004	0.88	-0.53	-0.43
14212.00	90.860	157.950	6677.60	7840.59	-7585.66	2042.27	1628604.46	330283.42	39°23'57.71"N	80°48'51.406"W	7855.68	164.931	2.08	-0.10	-2.07
14306.00	90.860	155.800	6676.19	7934.28	-7672.00	2079.19	1628641.37	330196.99	39°23'56.86"N	80°48'50.920"W	7948.74	164.837	2.29	0.00	-2.29
14400.00	90.770	156.670	6674.85	8027.90	-7758.02	2117.06	1628679.25	330110.98	39°23'56.018"N	80°48'50.422"W	8041.69	164.736	0.93	-0.10	0.93
14494.00	89.450	160.880	6674.67	8121.77	-7845.62	2151.08	1628713.27	330023.38	39°23'55.157"N	80°48'49.972"W	8135.16	164.668	4.69	-1.40	4.48
14588.00	89.480	164.910	6675.55	8216.72	-7935.44	2178.73	1628740.91	329933.57	39°23'54.274"N	80°48'49.603"W	8229.10	164.647	4.29	0.03	4.29
14683.00	88.520	162.360	6677.21	8310.62	-8026.57	2205.49	1628767.66	329842.44	39°23'53.377"N	80°48'49.245"W	8324.06	164.636	2.87	-1.01	-2.68
14777.00	86.980	161.040	6680.90	8404.54	-8115.74	2234.98	1628797.15	329753.28	39°23'52.500"N	80°48'48.853"W	8417.86	164.603	2.16	-1.64	-1.40
14871.00	86.800	161.340	6686.00	8498.40	-8204.59	2265.24	1628827.42	329664.43	39°23'51.626"N	80°48'48.451"W	8511.66	164.565	0.37	-0.19	0.32
14966.00	87.070	164.010	6691.08	8593.23	-8295.14	2293.49	1628855.66	329573.89	39°23'50.735"N	80°48'48.074"W	8606.36	164.545	2.82	0.28	2.81
15059.00	88.950	163.800	6694.31	8686.08	-8384.44	2319.25	1628881.43	329484.59	39°23'49.857"N	80°48'47.730"W	8699.29	164.538	2.03	-0.23	-0.23
15153.00	88.980	160.150	6696.00	8780.05	-8473.79	2348.33	1628910.50	329395.24	39°23'48.978"N	80°48'47.343"W	8793.17	164.510	3.88	0.03	-3.88
15247.00	88.950	161.330	6697.70	8874.03	-8562.52	2379.33	1628941.50	329306.52	39°23'48.106"N	80°48'46.931"W	8886.95	164.471	1.26	-0.03	1.26
15341.00	88.580	162.550	6699.73	8968.00	-8651.86	2408.46	1628970.63	329217.18	39°23'47.227"N	80°48'46.544"W	8980.84	164.444	1.36	-0.39	1.30
15435.00	88.520	159.900	6702.11	9061.96	-8740.82	2438.71	1629000.87	329128.23	39°23'46.352"N	80°48'46.142"W	9074.65	164.411	2.82	-0.06	-2.82
15529.00	88.370	158.460	6704.66	9155.85	-8828.65	2472.10	1629034.27	329040.40	39°23'45.489"N	80°48'45.700"W	9168.23	164.357	1.54	-0.16	-1.53
15623.00	88.430	160.870	9249.77	-8916.75	2504.75	1629066.92	328952.31	39°23'44.623"N	80°48'45.268"W	9261.87	164.310	2.56	0.06	2.56	
15717.00	87.940	159.510	6710.26	9343.70	-9005.14	2536.59	1629098.75	328863.92	39°23'43.754"N	80°48'44.846"W	9355.58	164.268	1.54	-0.52	-1.45
15788.00	88.120	160.320	6712.70	9414.63	-9071.78	2560.96	1629123.12	328775.64	39°23'43.099"N	80°48'44.523"W	9426.34	164.236	1.17	0.25	1.14
15811.00	88.120	160.320	6713.46	9437.61	-9093.43	2568.70	1629130.86	328775.64	39°23'42.886"N	80°48'44.421"W	9449.27	164.226	0.00	0.00	0.00

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# Actual Wellpath Report

SHR-31A-HSM AWP Proj: 15811'

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

HOLE & CASING SECTIONS - Ref Wellbore: SHR-31A-HSM AWB Ref Wellpath: SHR-31A-HSM AWP Proj: 15811'									
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	0.39	0.70
20in Conductor	29.00	129.00	100.00	29.00	129.00	0.00	0.00	0.39	0.70
17.5in Open Hole	129.00	702.00	573.00	129.00	701.98	0.39	0.70	0.89	5.34
13.375in Casing Surface	29.00	702.00	673.00	29.00	701.98	0.00	0.00	0.89	5.34
12.25in Open Hole	702.00	2713.00	2011.00	701.98	2712.97	0.89	5.34	0.63	9.38
9.625in Casing Intermediate	29.00	2713.00	2684.00	29.00	2712.97	0.00	0.00	0.63	9.38
8.75in Open Hole	2713.00	6060.00	3347.00	2712.97	6043.01	0.63	9.38	-226.83	-225.45
8.5in Open Hole	6060.00	15811.00	9751.00	6043.01	6713.46	-226.83	-225.45	-9093.43	2568.70
5.5in Casing Production	29.00	15811.00	15782.00	29.00	6713.46	0.00	0.00	-9093.43	2568.70

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SHR-31A-HSM BHL Rev-3	6735.40	-9096.93	2556.19	1629118.35	328772.14	39°23'42.850"N	80°48'44.579"W	point
SHR-31A-HSM LP Rev-3	6735.40	-859.19	-219.82	1626342.49	337009.43	39°25'03.856"N	80°49'21.480"W	point
SHR-31 Unleased Tract	6950.40	0.54	0.02	1626562.32	337869.11	39°25'12.385"N	80°49'18.840"W	polygon
SHR-31 Lease Line Rev-2	7000.40	0.54	0.02	1626562.32	337869.11	39°25'12.385"N	80°49'18.840"W	polygon

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# Actual Wellpath Report

SHR-31A-HSM AWP Proj: 15811'

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

WELLPATH COMPOSITION - Ref Wellbore: SHR-31A-HSM AWB Ref Wellpath: SHR-31A-HSM AWP Proj: 15811'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
29.00	2641.00	VESSI GyroFlex v4	01 VES Gyro <12-1/4"> (100'-2624')	SHR-31A-HSM AWB
2641.00	5991.00	OWSG MWD rev2 - Standard	02 QES MWD <8-3/4"> (2624')(2749'-5974')	SHR-31A-HSM AWB
5991.00	15788.00	BHI AutoTrak Curve (Short)	03 BH AT Curve <8-1/2"> (5991')(6036'-15788')	SHR-31A-HSM AWB
15788.00	15811.00	Blind Drilling (std)	Projection to bit	SHR-31A-HSM AWB

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# Actual Wellpath Report

SHR-31A-HSM AWP Proj: 15811'

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## REFERENCE WELLPATH IDENTIFICATION

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

## COMMENTS

### Wellpath general comments

API: 47-095-02487-0000

BH Job #: 9204027

Rig: Patterson 278

Duration: 6/8/2018-6/12/2018

VES Gyro <12-1/4"> (100'-2624')

QES MWD <8-3/4"> (2624')(2749'-5974')

BH AT Curve <8-1/2"> (5991')(6036'-15788')

Projected MD at TD: 15811'

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