

NORTHEAST NATURAL ENERGY, LLC

Location: Monongalia County, WV
 Field: Monongalia
 Facility: Phoenix Pad

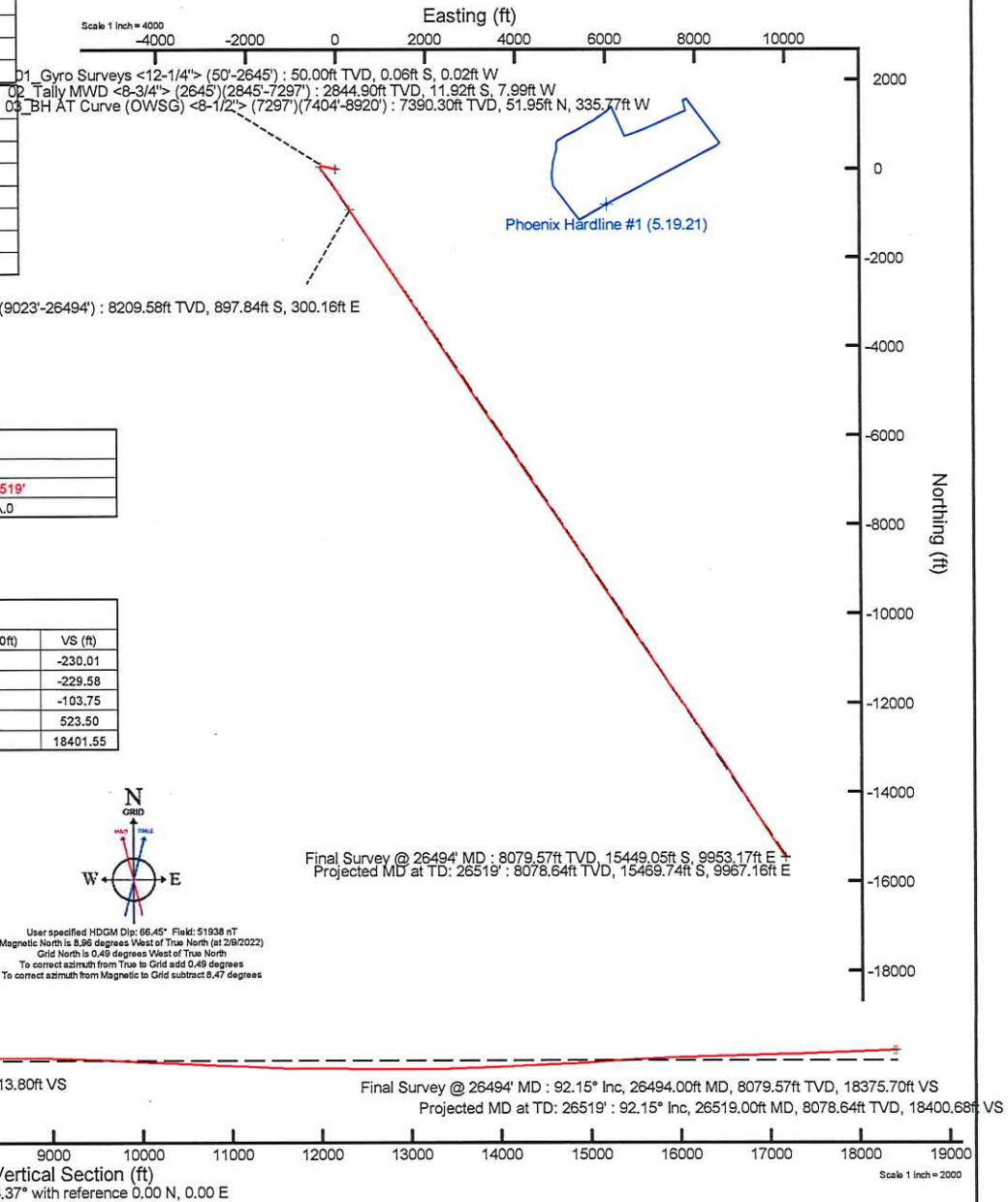
Slot: Slot 02
 Well: Phoenix 2H
 Wellbore: Phoenix 2H PWB



Plot reference wellpath is Phoenix 2H PWP Rev-A.0	Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet
True vertical depths are referenced to Patterson 277 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to Patterson 277 (RKB)	Scale: True distance
Patterson 277 (RKB) to Mean Sea Level: 1531 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot 02): -1503 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: manajh on 2022-02-22; Database: WA_MPL_EASTERNUS_Defn

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
Phoenix Pad	1751051.980	416616.940	39°38'28.5589"N	80°16'19.8414"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot 02	-18.57	30.91	1751082.890	416598.370	39°38'28.3780"N	80°16'19.4442"W
Patterson 277 (RKB) to Ground level (At Slot: Slot 02)			28ft			
Mean Sea Level to Ground level (At Slot: Slot 02)			-1503ft			
Patterson 277 (RKB) to Mean Sea Level			1531ft			



Slot	Well	Wellbore	Wellpath
Slot 02	Phoenix 2H	Phoenix 2H AWB	Phoenix 2H AWP Proj: 26519'
Slot 02	Phoenix 2H	Phoenix 2H PWB	Phoenix 2H PWP Rev-A.0

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	7297.00	6.890	249.470	7284.32	60.64	-324.14	3.14	-230.01
Projection	7392.00	8.940	222.900	7378.44	53.23	-334.50	4.36	-229.58
Curve	7866.56	29.019	140.644	7830.06	-65.34	-285.56	6.13	-103.75
Landing Pt.	8630.81	90.000	146.373	8200.00	-576.28	78.85	8.00	523.50
BHL	26508.86	90.000	146.373	8200.00	-15462.68	9979.35	0.00	18401.55



Actual Wellpath Report

Phoenix 2H AWP Proj: 26519'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 2H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 2H AWB
Slot	Slot 02		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Manajohj
Scale	0.999941	Report Generated	2/22/2022 at 10:56:51 PM
Convergence at slot	0.49° West	Database	WA_MPL_EASTERNUS_Defn

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-18.57	30.91	1751082.89	416598.37	39°38'28.3780"N	80°16'19.4442"W
Facility Reference Pt			1751051.98	416616.94	39°38'28.5589"N	80°16'19.8414"W
Field Reference Pt			1777685.71	440640.65	39°42'28.1140"N	80°10'41.6900"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Patterson 277 (RKB) to Facility Vertical Datum	1531.00ft
Horizontal Reference Pt	Slot	Patterson 277 (RKB) to Mean Sea Level	1531.00ft
Vertical Reference Pt	Patterson 277 (RKB)	Patterson 277 (RKB) to Ground Level at Slot (Slot 02)	28.00ft
MD Reference Pt	Patterson 277 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	146.37°

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 2H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 2H AWB
Slot	Slot 02		

WELLPATH DATA (306 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	198.100	0.00	0.00	0.00	0.00	1751082.89	416598.37	39°38'28.3780"N	80°16'19.4442"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	198.100	28.00	0.00	0.00	0.00	1751082.89	416598.37	39°38'28.3780"N	80°16'19.4442"W	0.00	0.000	0.00	0.00	0.00
50.00	0.330	198.100	50.00	0.04	-0.06	-0.02	1751082.87	416598.31	39°38'28.3774"N	80°16'19.4445"W	0.06	198.100	1.50	1.50	0.00
100.00	0.260	287.600	100.00	0.04	-0.16	-0.17	1751082.72	416598.21	39°38'28.3764"N	80°16'19.4464"W	0.24	226.669	0.84	-0.14	179.00
150.00	0.150	321.800	150.00	-0.11	-0.08	-0.32	1751082.57	416598.29	39°38'28.3772"N	80°16'19.4483"W	0.33	256.510	0.32	-0.22	68.40
200.00	0.120	54.700	200.00	-0.18	0.00	-0.32	1751082.57	416598.37	39°38'28.3780"N	80°16'19.4483"W	0.32	270.835	0.39	-0.06	185.80
250.00	0.500	180.300	250.00	0.00	-0.18	-0.28	1751082.61	416598.19	39°38'28.3762"N	80°16'19.4478"W	0.33	236.542	1.16	0.76	251.20
300.00	0.050	77.500	300.00	0.19	-0.40	-0.26	1751082.63	416597.97	39°38'28.3741"N	80°16'19.4475"W	0.47	212.953	1.03	-0.90	-205.60
350.00	0.450	229.600	350.00	0.22	-0.52	-0.39	1751082.50	416597.85	39°38'28.3728"N	80°16'19.4491"W	0.65	216.583	0.99	0.80	304.20
400.00	0.530	227.400	400.00	0.28	-0.80	-0.71	1751082.18	416597.57	39°38'28.3700"N	80°16'19.4532"W	1.07	221.286	0.16	0.16	-4.40
450.00	0.560	209.100	449.99	0.43	-1.17	-0.99	1751081.90	416597.20	39°38'28.3663"N	80°16'19.4568"W	1.54	220.282	0.35	0.06	-36.60
500.00	0.520	167.300	499.99	0.75	-1.61	-1.06	1751081.83	416596.76	39°38'28.3620"N	80°16'19.4577"W	1.93	213.473	0.77	-0.08	-83.60
550.00	0.440	160.200	549.99	1.15	-2.01	-0.95	1751081.94	416596.36	39°38'28.3581"N	80°16'19.4561"W	2.22	205.257	0.20	-0.16	-14.20
600.00	0.490	222.400	599.99	1.39	-2.35	-1.03	1751081.86	416596.02	39°38'28.3547"N	80°16'19.4571"W	2.56	203.628	0.96	0.10	124.40
650.00	0.570	211.600	649.99	1.54	-2.72	-1.30	1751081.59	416595.65	39°38'28.3510"N	80°16'19.4606"W	3.01	205.592	0.26	0.16	-21.60
700.00	0.210	138.900	699.98	1.74	-3.00	-1.37	1751081.52	416595.37	39°38'28.3483"N	80°16'19.4614"W	3.30	204.583	1.09	-0.72	-145.40
750.00	0.480	239.200	749.98	1.82	-3.18	-1.49	1751081.40	416595.19	39°38'28.3465"N	80°16'19.4630"W	3.51	205.162	1.11	0.54	200.60
800.00	0.540	188.200	799.98	1.98	-3.52	-1.71	1751081.19	416594.85	39°38'28.3431"N	80°16'19.4657"W	3.91	205.873	0.88	0.12	-102.00
850.00	0.540	241.800	849.98	2.14	-3.86	-1.95	1751080.94	416594.51	39°38'28.3397"N	80°16'19.4687"W	4.32	206.757	0.97	0.00	107.20
900.00	0.390	246.100	899.98	2.09	-4.04	-2.31	1751080.58	416594.33	39°38'28.3379"N	80°16'19.4733"W	4.65	209.752	0.31	-0.30	8.60
950.00	0.110	104.600	949.98	2.09	-4.12	-2.42	1751080.47	416594.25	39°38'28.3371"N	80°16'19.4747"W	4.78	210.406	0.96	-0.56	-283.00
1000.00	0.190	149.500	999.98	2.21	-4.21	-2.33	1751080.56	416594.17	39°38'28.3362"N	80°16'19.4736"W	4.81	208.992	0.27	0.16	89.80
1050.00	0.480	173.900	1049.98	2.48	-4.48	-2.27	1751080.62	416593.89	39°38'28.3335"N	80°16'19.4727"W	5.02	206.804	0.63	0.58	48.80
1100.00	0.510	209.600	1099.98	2.77	-4.89	-2.35	1751080.54	416593.48	39°38'28.3295"N	80°16'19.4738"W	5.42	205.717	0.61	0.06	71.40
1150.00	0.590	190.700	1149.97	3.05	-5.33	-2.51	1751080.38	416593.04	39°38'28.3251"N	80°16'19.4758"W	5.89	205.215	0.39	0.16	-37.80
1200.00	0.670	184.200	1199.97	3.46	-5.88	-2.58	1751080.31	416592.49	39°38'28.3197"N	80°16'19.4766"W	6.42	203.703	0.21	0.16	-13.00
1250.00	1.080	196.600	1249.96	4.00	-6.62	-2.74	1751080.15	416591.75	39°38'28.3123"N	80°16'19.4785"W	7.16	202.457	0.90	0.82	24.80
1300.00	1.080	205.900	1299.96	4.54	-7.50	-3.08	1751079.81	416590.87	39°38'28.3037"N	80°16'19.4827"W	8.10	202.317	0.35	0.00	18.60
1350.00	1.090	216.800	1349.95	4.94	-8.30	-3.57	1751079.32	416590.07	39°38'28.2957"N	80°16'19.4889"W	9.03	203.258	0.41	0.02	21.80
1400.00	1.070	220.700	1399.94	5.22	-9.04	-4.16	1751078.73	416589.34	39°38'28.2884"N	80°16'19.4964"W	9.95	204.706	0.15	-0.04	7.80

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 2H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 2H AWB
Slot	Slot 02		

WELLPATH DATA (306 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]
1450.00	0.740	249.200	1449.93	5.28	-9.50	-4.76	1751078.13	416588.87	39°38'28.2837"N	80°16'19.5041"W	10.63	206.619	1.10	-0.66	57.00
1500.00	0.930	256.900	1499.93	5.06	-9.71	-5.46	1751077.43	416588.66	39°38'28.2816"N	80°16'19.5130"W	11.14	209.349	0.44	0.38	15.40
1550.00	0.810	246.600	1549.92	4.86	-9.94	-6.18	1751076.71	416588.43	39°38'28.2792"N	80°16'19.5221"W	11.71	211.862	0.39	-0.24	-20.60
1600.00	0.500	288.500	1599.92	4.62	-10.01	-6.71	1751076.18	416588.36	39°38'28.2785"N	80°16'19.5289"W	12.05	213.828	1.10	-0.62	83.80
1650.00	0.640	248.300	1649.92	4.39	-10.05	-7.18	1751075.71	416588.32	39°38'28.2781"N	80°16'19.5349"W	12.35	215.538	0.83	0.28	-80.40
1700.00	0.620	241.000	1699.91	4.31	-10.28	-7.67	1751075.22	416588.09	39°38'28.2757"N	80°16'19.5412"W	12.83	216.732	0.17	-0.04	-14.60
1750.00	0.480	223.300	1749.91	4.34	-10.57	-8.05	1751074.84	416587.80	39°38'28.2729"N	80°16'19.5460"W	13.29	217.315	0.44	-0.28	-35.40
1800.00	0.460	284.200	1799.91	4.24	-10.67	-8.39	1751074.50	416587.70	39°38'28.2719"N	80°16'19.5503"W	13.57	218.187	0.95	-0.04	121.80
1850.00	0.490	237.200	1849.91	4.08	-10.74	-8.77	1751074.12	416587.63	39°38'28.2712"N	80°16'19.5551"W	13.86	219.233	0.76	0.06	-94.00
1900.00	0.230	154.300	1899.91	4.18	-10.94	-8.90	1751073.99	416587.43	39°38'28.2691"N	80°16'19.5568"W	14.11	219.131	1.03	-0.52	-165.80
1950.00	0.140	152.100	1949.91	4.34	-11.09	-8.83	1751074.06	416587.28	39°38'28.2677"N	80°16'19.5559"W	14.17	218.537	0.18	-0.18	-4.40
2000.00	0.120	166.500	1999.91	4.45	-11.19	-8.79	1751074.10	416587.18	39°38'28.2667"N	80°16'19.5554"W	14.23	218.145	0.08	-0.04	28.80
2050.00	0.550	270.200	2049.91	4.37	-11.24	-9.02	1751073.87	416587.13	39°38'28.2661"N	80°16'19.5583"W	14.41	218.734	1.18	0.86	207.40
2100.00	0.200	171.000	2099.90	4.31	-11.33	-9.24	1751073.65	416587.04	39°38'28.2653"N	80°16'19.5612"W	14.62	219.217	1.23	-0.70	-198.40
2150.00	0.360	183.900	2149.90	4.52	-11.57	-9.24	1751073.65	416586.80	39°38'28.2629"N	80°16'19.5611"W	14.81	218.614	0.34	0.32	25.80
2200.00	0.230	138.000	2199.90	4.74	-11.80	-9.18	1751073.71	416586.57	39°38'28.2606"N	80°16'19.5603"W	14.95	217.892	0.52	-0.26	-91.80
2250.00	0.230	116.600	2249.90	4.93	-11.92	-9.03	1751073.86	416586.45	39°38'28.2594"N	80°16'19.5583"W	14.95	217.136	0.17	0.00	-42.80
2300.00	0.200	122.300	2299.90	5.09	-12.01	-8.86	1751074.03	416586.36	39°38'28.2585"N	80°16'19.5562"W	14.93	216.423	0.07	-0.06	11.40
2350.00	0.160	57.800	2349.90	5.17	-12.02	-8.73	1751074.16	416586.35	39°38'28.2585"N	80°16'19.5545"W	14.86	215.990	0.39	-0.08	-129.00
2400.00	0.400	172.700	2399.90	5.33	-12.16	-8.65	1751074.24	416586.21	39°38'28.2571"N	80°16'19.5535"W	14.92	215.430	0.98	0.48	229.80
2450.00	0.270	143.100	2449.90	5.61	-12.42	-8.56	1751074.33	416585.95	39°38'28.2545"N	80°16'19.5523"W	15.09	214.554	0.42	-0.26	-59.20
2500.00	0.240	111.100	2499.90	5.81	-12.56	-8.39	1751074.50	416585.81	39°38'28.2532"N	80°16'19.5501"W	15.10	213.744	0.29	-0.06	-64.00
2550.00	0.260	74.300	2549.90	5.93	-12.56	-8.18	1751074.71	416585.81	39°38'28.2531"N	80°16'19.5474"W	14.99	213.072	0.32	0.04	-73.60
2600.00	0.180	88.800	2599.90	6.01	-12.53	-7.99	1751074.90	416585.84	39°38'28.2535"N	80°16'19.5450"W	14.86	212.533	0.19	-0.16	29.00
2645.00	0.240	333.300	2644.90	5.95	-12.45	-7.97	1751074.93	416585.92	39°38'28.2543"N	80°16'19.5447"W	14.78	212.619	0.79	0.13	-256.67
2845.00	0.130	46.900	2844.90	5.50	-11.92	-7.99	1751074.90	416586.45	39°38'28.2596"N	80°16'19.5450"W	14.35	213.835	0.12	-0.05	36.80
2924.00	1.530	306.350	2923.89	4.49	-11.23	-8.77	1751074.12	416587.14	39°38'28.2663"N	80°16'19.5551"W	14.25	217.994	1.97	1.77	-127.28
3019.00	5.020	300.560	3018.72	-0.44	-8.36	-13.37	1751069.52	416590.01	39°38'28.2942"N	80°16'19.6143"W	15.77	237.978	3.69	3.67	-6.09
3118.00	6.260	298.610	3117.24	-9.12	-3.58	-21.84	1751061.05	416594.79	39°38'28.3408"N	80°16'19.7231"W	22.13	260.699	1.27	1.25	-1.97
3213.00	6.040	292.370	3211.69	-17.85	0.81	-31.01	1751051.88	416599.18	39°38'28.3833"N	80°16'19.8407"W	31.02	271.487	0.74	-0.23	-6.57

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Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 2H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 2H AWB
Slot	Slot 02		

WELLPATH DATA (306 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]
3306.00	4.860	278.640	3304.28	-24.55	3.26	-39.43	1751043.46	416601.63	39°38'28.4069"N	80°16'19.9486"W	39.57	274.725	1.88	-1.27	-14.76
3402.00	5.080	274.530	3399.91	-29.91	4.21	-47.69	1751035.20	416602.58	39°38'28.4155"N	80°16'20.0543"W	47.87	275.040	0.44	0.23	-4.28
3496.00	5.360	274.410	3493.52	-35.19	4.87	-56.22	1751026.68	416603.24	39°38'28.4214"N	80°16'20.1633"W	56.43	274.954	0.30	0.30	-0.13
3590.00	4.110	278.870	3587.20	-40.17	5.73	-63.92	1751018.97	416604.10	39°38'28.4292"N	80°16'20.2619"W	64.18	275.122	1.39	-1.33	4.74
3685.00	4.530	291.010	3681.93	-45.53	7.60	-70.79	1751012.11	416605.97	39°38'28.4471"N	80°16'20.3499"W	71.19	276.127	1.06	0.44	12.78
3780.00	4.460	293.290	3776.64	-51.69	10.40	-77.68	1751005.21	416608.77	39°38'28.4742"N	80°16'20.4384"W	78.38	277.629	0.20	-0.07	2.40
3877.00	4.600	288.050	3873.34	-57.90	13.10	-84.84	1750998.05	416611.47	39°38'28.5003"N	80°16'20.5302"W	85.85	278.778	0.45	0.14	-5.40
3971.00	4.460	289.260	3967.05	-63.77	15.47	-91.88	1750991.02	416613.84	39°38'28.5231"N	80°16'20.6204"W	93.17	279.560	0.18	-0.15	1.29
4066.00	4.410	284.480	4061.76	-69.43	17.61	-98.90	1750983.99	416615.98	39°38'28.5436"N	80°16'20.7104"W	100.46	280.094	0.39	-0.05	-5.03
4161.00	4.360	286.600	4156.48	-74.93	19.55	-105.90	1750977.00	416617.92	39°38'28.5622"N	80°16'20.8001"W	107.69	280.460	0.18	-0.05	2.23
4256.00	4.510	289.520	4251.20	-80.69	21.83	-112.88	1750970.02	416620.20	39°38'28.5842"N	80°16'20.8895"W	114.97	280.946	0.29	0.16	3.07
4351.00	4.470	274.510	4345.91	-85.97	23.37	-120.09	1750962.81	416621.74	39°38'28.5988"N	80°16'20.9819"W	122.34	281.012	1.23	-0.04	-15.80
4446.00	2.860	281.360	4440.71	-89.93	24.13	-126.11	1750956.79	416622.50	39°38'28.6057"N	80°16'21.0588"W	128.39	280.832	1.75	-1.69	7.21
4541.00	2.660	273.840	4535.60	-92.95	24.74	-130.63	1750952.27	416623.11	39°38'28.6114"N	80°16'21.1167"W	132.95	280.725	0.43	-0.21	-7.92
4635.00	3.500	280.630	4629.47	-96.28	25.42	-135.63	1750947.27	416623.79	39°38'28.6177"N	80°16'21.1807"W	137.99	280.615	0.97	0.89	7.22
4733.00	3.630	278.480	4727.28	-100.45	26.43	-141.63	1750941.26	416624.80	39°38'28.6271"N	80°16'21.2576"W	144.08	280.569	0.19	0.13	-2.19
4828.00	3.090	276.840	4822.11	-104.12	27.18	-147.15	1750935.75	416625.54	39°38'28.6341"N	80°16'21.3282"W	149.64	280.463	0.58	-0.57	-1.73
4922.00	2.840	267.560	4915.99	-106.97	27.38	-151.99	1750930.91	416625.75	39°38'28.6357"N	80°16'21.3901"W	154.44	280.211	0.57	-0.27	-9.87
5017.00	3.790	279.370	5010.83	-110.33	27.79	-157.44	1750925.46	416626.16	39°38'28.6393"N	80°16'21.4598"W	159.88	280.010	1.23	1.00	12.43
5112.00	4.870	283.230	5105.56	-115.42	29.22	-164.47	1750918.43	416627.59	39°38'28.6528"N	80°16'21.5497"W	167.04	280.076	1.18	1.14	4.06
5207.00	4.740	281.970	5200.22	-121.17	30.96	-172.23	1750910.67	416629.33	39°38'28.6693"N	80°16'21.6492"W	174.99	280.191	0.18	-0.14	-1.33
5303.00	4.290	283.780	5295.93	-126.64	32.64	-179.60	1750903.30	416631.01	39°38'28.6853"N	80°16'21.7436"W	182.54	280.300	0.49	-0.47	1.89
5398.00	3.670	280.760	5390.70	-131.39	34.05	-186.04	1750896.86	416632.42	39°38'28.6987"N	80°16'21.8260"W	189.13	280.373	0.69	-0.65	-3.18
5493.00	4.030	285.210	5485.48	-136.03	35.50	-192.25	1750890.66	416633.86	39°38'28.7125"N	80°16'21.9055"W	195.49	280.461	0.49	0.38	4.68
5587.00	4.150	285.450	5579.24	-141.08	37.27	-198.71	1750884.19	416635.64	39°38'28.7294"N	80°16'21.9884"W	202.18	280.622	0.13	0.13	0.26
5681.00	4.610	286.000	5672.97	-146.53	39.22	-205.62	1750877.28	416637.58	39°38'28.7481"N	80°16'22.0769"W	209.33	280.798	0.49	0.49	0.59
5780.00	4.650	282.810	5771.64	-152.47	41.20	-213.36	1750869.55	416639.57	39°38'28.7671"N	80°16'22.1760"W	217.30	280.930	0.26	0.04	-3.22
5875.00	4.140	281.990	5866.37	-157.71	42.77	-220.47	1750862.44	416641.14	39°38'28.7819"N	80°16'22.2671"W	224.58	280.978	0.54	-0.54	-0.86
5970.00	3.460	279.730	5961.16	-162.13	43.97	-226.65	1750856.26	416642.33	39°38'28.7932"N	80°16'22.3462"W	230.87	280.978	0.73	-0.72	-2.38
6065.00	4.150	279.920	6055.95	-166.47	45.04	-232.86	1750850.05	416643.41	39°38'28.8033"N	80°16'22.4257"W	237.18	280.948	0.73	0.73	0.20



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 2H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 2H AWB
Slot	Slot 02		

WELLPATH DATA (306 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]
6160.00	4.780	284.940	6150.66	-171.80	46.65	-240.07	1750842.84	416645.02	39°38'28.8187"N	80°16'22.5181"W	244.56	280.998	0.78	0.66	5.28
6251.00	4.520	281.800	6241.36	-177.20	48.37	-247.24	1750835.66	416646.73	39°38'28.8350"N	80°16'22.6099"W	251.93	281.068	0.40	-0.29	-3.45
6346.00	3.710	282.790	6336.11	-182.09	49.81	-253.90	1750829.00	416648.18	39°38'28.8487"N	80°16'22.6953"W	258.74	281.099	0.86	-0.85	1.04
6440.00	3.650	279.570	6429.92	-186.35	50.98	-259.82	1750823.09	416649.35	39°38'28.8598"N	80°16'22.7710"W	264.78	281.102	0.23	-0.06	-3.43
6535.00	4.120	284.530	6524.70	-190.96	52.34	-266.11	1750816.80	416650.71	39°38'28.8727"N	80°16'22.8515"W	271.20	281.128	0.61	0.49	5.22
6633.00	4.450	280.730	6622.43	-196.24	53.93	-273.25	1750809.66	416652.30	39°38'28.8878"N	80°16'22.9430"W	278.52	281.165	0.44	0.34	-3.88
6727.00	4.120	271.570	6716.16	-200.73	54.70	-280.21	1750802.70	416653.07	39°38'28.8948"N	80°16'23.0320"W	285.50	281.047	0.81	-0.35	-9.74
6822.00	3.830	281.640	6810.94	-204.96	55.44	-286.73	1750796.18	416653.80	39°38'28.9015"N	80°16'23.1154"W	292.04	280.943	0.79	-0.31	10.60
6917.00	4.620	279.760	6905.68	-209.84	56.73	-293.61	1750789.30	416655.09	39°38'28.9136"N	80°16'23.2035"W	299.03	280.935	0.84	0.83	-1.98
7012.00	3.670	293.130	7000.43	-215.01	58.57	-300.17	1750782.74	416656.94	39°38'28.9313"N	80°16'23.2876"W	305.83	281.041	1.42	-1.00	14.07
7107.00	4.380	288.120	7095.20	-220.40	60.89	-306.42	1750776.49	416659.26	39°38'28.9537"N	80°16'23.3677"W	312.41	281.239	0.83	0.75	-5.27
7202.00	5.410	273.970	7189.85	-225.98	62.33	-314.33	1750768.58	416660.70	39°38'28.9673"N	80°16'23.4690"W	320.45	281.216	1.66	1.08	-14.89
7297.00	6.890	249.470	7284.32	-230.01	60.64	-324.14	1750758.77	416659.01	39°38'28.9497"N	80°16'23.5942"W	329.76	280.597	3.14	1.56	-25.79
7404.00	9.180	221.100	7390.30	-229.21	51.95	-335.77	1750747.15	416650.32	39°38'28.8629"N	80°16'23.7419"W	339.76	278.796	4.22	2.14	-26.51
7499.00	9.860	179.830	7484.10	-220.42	38.09	-340.73	1750742.18	416636.46	39°38'28.7255"N	80°16'23.8038"W	342.85	276.379	7.07	0.72	-43.44
7594.00	13.360	156.940	7577.19	-202.83	19.85	-336.40	1750746.51	416618.21	39°38'28.5455"N	80°16'23.7465"W	336.99	273.376	6.02	3.68	-24.09
7688.00	19.210	149.280	7667.39	-176.69	-3.46	-324.24	1750758.67	416594.91	39°38'28.3162"N	80°16'23.5884"W	324.25	269.388	6.62	6.22	-8.15
7783.00	23.910	142.820	7755.73	-141.84	-32.26	-304.60	1750778.30	416566.11	39°38'28.0333"N	80°16'23.3343"W	306.31	263.955	5.54	4.95	-6.80
7879.00	29.780	141.880	7841.35	-98.62	-66.54	-278.11	1750804.80	416531.83	39°38'27.6967"N	80°16'22.9918"W	285.96	256.543	6.13	6.11	-0.98
7972.00	38.090	142.950	7918.44	-46.87	-107.68	-246.51	1750836.39	416490.70	39°38'27.2929"N	80°16'22.5834"W	269.00	246.403	8.96	8.94	1.15
8067.00	45.070	142.090	7989.46	16.00	-157.66	-208.15	1750874.76	416440.72	39°38'26.8022"N	80°16'22.0875"W	261.12	232.858	7.37	7.35	-0.91
8162.00	52.910	141.830	8051.75	87.42	-214.07	-164.00	1750918.90	416384.31	39°38'26.2485"N	80°16'21.5170"W	269.67	217.456	8.26	8.25	-0.27
8257.00	60.960	146.120	8103.55	166.87	-278.46	-117.34	1750965.56	416319.92	39°38'25.6161"N	80°16'20.9135"W	302.18	202.850	9.28	8.47	4.52
8352.00	65.800	145.660	8146.11	251.77	-348.76	-69.72	1751013.17	416249.63	39°38'24.9255"N	80°16'20.2971"W	355.66	191.305	5.11	5.09	-0.48
8447.00	73.940	146.210	8178.78	340.89	-422.59	-19.81	1751063.08	416175.80	39°38'24.2000"N	80°16'19.6510"W	423.06	182.684	8.59	8.57	0.58
8542.00	80.470	146.190	8199.80	433.48	-499.53	31.70	1751114.59	416098.87	39°38'23.4440"N	80°16'18.9842"W	500.54	176.369	6.87	6.87	-0.02
8637.00	87.230	146.090	8209.97	527.88	-577.92	84.29	1751167.18	416020.48	39°38'22.6738"N	80°16'18.3033"W	584.04	171.702	7.12	7.12	-0.11
8731.00	90.460	145.030	8211.87	621.84	-655.42	137.44	1751220.32	415942.99	39°38'21.9125"N	80°16'17.6155"W	669.67	168.157	3.62	3.44	-1.13
8825.00	90.490	145.610	8211.09	715.82	-732.71	190.92	1751273.80	415865.70	39°38'21.1531"N	80°16'16.9234"W	757.18	165.396	0.62	0.03	0.62
8920.00	90.460	146.530	8210.30	810.81	-811.53	243.94	1751326.82	415786.88	39°38'20.3787"N	80°16'16.2370"W	847.41	163.269	0.97	-0.03	0.97



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 2H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 2H AWB
Slot	Slot 02		

WELLPATH DATA (306 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]
9023.00	90.340	147.310	8209.58	913.80	-897.84	300.16	1751383.03	415700.59	39°38'19.5305"N	80°16'15.5089"W	946.68	161.514	0.77	-0.12	0.76
9118.00	90.250	146.920	8209.09	1008.79	-977.61	351.74	1751434.61	415620.82	39°38'18.7465"N	80°16'14.8409"W	1038.96	160.212	0.42	-0.09	-0.41
9212.00	89.850	146.740	8209.01	1102.79	-1056.30	403.17	1751486.04	415542.14	39°38'17.9733"N	80°16'14.1749"W	1130.62	159.109	0.47	-0.43	-0.19
9306.00	89.820	146.470	8209.28	1196.79	-1134.78	454.91	1751537.77	415463.66	39°38'17.2021"N	80°16'13.5050"W	1222.56	158.155	0.29	-0.03	-0.29
9401.00	89.450	146.830	8209.89	1291.79	-1214.13	507.13	1751589.99	415384.31	39°38'16.4223"N	80°16'12.8287"W	1315.79	157.330	0.54	-0.39	0.38
9496.00	89.820	146.460	8210.49	1386.78	-1293.48	559.37	1751642.22	415304.97	39°38'15.6425"N	80°16'12.1524"W	1409.25	156.614	0.55	0.39	-0.39
9590.00	88.550	146.670	8211.83	1480.77	-1371.91	611.15	1751694.00	415226.54	39°38'14.8718"N	80°16'11.4819"W	1501.88	155.988	1.37	-1.35	0.22
9685.00	89.630	146.180	8213.34	1575.76	-1451.05	663.68	1751746.53	415147.41	39°38'14.0942"N	80°16'10.8018"W	1595.63	155.422	1.25	1.14	-0.52
9780.00	89.820	147.000	8213.79	1670.75	-1530.35	715.99	1751798.84	415068.11	39°38'13.3149"N	80°16'10.1245"W	1689.56	154.927	0.89	0.20	0.86
9874.00	88.980	146.330	8214.78	1764.75	-1608.88	767.64	1751850.49	414989.59	39°38'12.5432"N	80°16'9.4557"W	1782.63	154.493	1.14	-0.89	-0.71
9969.00	89.480	146.250	8216.06	1859.74	-1687.90	820.36	1751903.20	414910.57	39°38'11.7667"N	80°16'8.7732"W	1876.70	154.079	0.53	0.53	-0.08
10064.00	89.660	146.660	8216.77	1954.74	-1767.08	872.86	1751955.69	414831.40	39°38'10.9887"N	80°16'8.0936"W	1970.90	153.713	0.47	0.19	0.43
10159.00	89.260	146.320	8217.66	2049.73	-1846.28	925.30	1752008.14	414752.20	39°38'10.2104"N	80°16'7.4146"W	2065.17	153.381	0.55	-0.42	-0.36
10254.00	89.290	146.250	8218.87	2144.72	-1925.30	978.03	1752060.86	414673.19	39°38'9.4340"N	80°16'6.7320"W	2159.47	153.070	0.08	0.03	-0.07
10349.00	89.230	146.510	8220.09	2239.71	-2004.40	1030.62	1752113.45	414594.09	39°38'8.6567"N	80°16'6.0511"W	2253.84	152.789	0.28	-0.06	0.27
10444.00	89.720	146.870	8220.96	2334.71	-2083.79	1082.79	1752165.62	414514.71	39°38'7.8765"N	80°16'5.3757"W	2348.32	152.542	0.64	0.52	0.38
10539.00	89.690	146.860	8221.45	2429.70	-2163.34	1134.72	1752217.54	414435.16	39°38'7.0948"N	80°16'4.7033"W	2442.87	152.322	0.03	-0.03	-0.01
10633.00	89.660	146.800	8221.99	2523.70	-2242.02	1186.15	1752268.97	414356.49	39°38'6.3215"N	80°16'4.0373"W	2536.46	152.119	0.07	-0.03	-0.06
10727.00	89.970	146.990	8222.29	2617.69	-2320.76	1237.49	1752320.30	414277.75	39°38'5.5477"N	80°16'3.3725"W	2630.08	151.932	0.39	0.33	0.20
10822.00	90.060	146.850	8222.26	2712.69	-2400.36	1289.34	1752372.15	414198.15	39°38'4.7654"N	80°16'2.7011"W	2724.73	151.758	0.18	0.09	-0.15
10920.00	90.180	146.830	8222.06	2810.69	-2482.40	1342.95	1752425.75	414116.12	39°38'3.9592"N	80°16'2.0070"W	2822.38	151.587	0.12	0.12	-0.02
11014.00	90.860	147.020	8221.21	2904.68	-2561.17	1394.24	1752477.05	414037.36	39°38'3.1851"N	80°16'1.3428"W	2916.07	151.437	0.75	0.72	0.20
11110.00	90.650	146.900	8219.94	3000.66	-2641.64	1446.58	1752529.38	413956.90	39°38'2.3943"N	80°16'0.6651"W	3011.78	151.295	0.25	-0.22	-0.13
11205.00	90.580	146.730	8218.92	3095.66	-2721.14	1498.57	1752581.37	413877.40	39°38'1.6130"N	80°15'59.9918"W	3106.50	151.158	0.19	-0.07	-0.18
11300.00	90.580	146.850	8217.96	3190.65	-2800.62	1550.60	1752633.40	413797.92	39°38'0.8319"N	80°15'59.3182"W	3201.22	151.028	0.13	0.00	0.13
11395.00	89.910	145.620	8217.55	3285.65	-2879.59	1603.40	1752686.19	413718.96	39°38'0.0559"N	80°15'58.6348"W	3295.90	150.890	1.47	-0.71	-1.29
11489.00	90.280	146.350	8217.40	3379.64	-2957.51	1655.99	1752738.77	413641.05	39°37'59.2903"N	80°15'57.9542"W	3389.56	150.754	0.87	0.39	0.78
11584.00	90.370	146.620	8216.86	3474.64	-3036.71	1708.44	1752791.22	413561.85	39°37'58.5120"N	80°15'57.2751"W	3484.30	150.638	0.30	0.09	0.28
11679.00	90.310	146.560	8216.30	3569.64	-3116.01	1760.75	1752843.53	413482.55	39°37'57.7327"N	80°15'56.5979"W	3579.07	150.531	0.09	-0.06	-0.06
11774.00	90.060	146.210	8215.99	3664.64	-3195.12	1813.34	1752896.12	413403.44	39°37'56.9553"N	80°15'55.9171"W	3673.83	150.424	0.45	-0.26	-0.37



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REFERENCE WELLPATH IDENTIFICATION				
Operator	NORTHEAST NATURAL ENERGY, LLC		Well	Phoenix 2H
Field	Monongalia		API/Legal	
Facility	Phoenix Pad		Wellbore	Phoenix 2H AWB
Slot	Slot 02			

WELLPATH DATA (306 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]
11869.00	90.280	146.450	8215.71	3759.64	-3274.19	1866.01	1752948.78	413324.39	39°37'56.1784"N	80°15'55.2354"W	3768.59	150.321	0.34	0.23	0.25
11964.00	90.430	146.430	8215.12	3854.63	-3353.35	1918.53	1753001.30	413245.23	39°37'55.4005"N	80°15'54.5556"W	3863.38	150.225	0.16	0.16	-0.02
12059.00	90.090	146.420	8214.69	3949.63	-3432.50	1971.06	1753053.83	413166.08	39°37'54.6227"N	80°15'53.8755"W	3958.17	150.134	0.36	-0.36	-0.01
12154.00	90.220	146.880	8214.43	4044.63	-3511.85	2023.29	1753106.05	413086.73	39°37'53.8429"N	80°15'53.1994"W	4053.00	150.052	0.50	0.14	0.48
12250.00	90.220	146.720	8214.06	4140.63	-3592.18	2075.85	1753158.62	413006.41	39°37'53.0534"N	80°15'52.5188"W	4148.85	149.977	0.17	0.00	-0.17
12345.00	90.710	146.830	8213.29	4235.62	-3671.65	2127.91	1753210.66	412926.95	39°37'52.2725"N	80°15'51.8449"W	4243.70	149.906	0.53	0.52	0.12
12440.00	90.650	147.090	8212.16	4330.61	-3751.28	2179.70	1753262.45	412847.32	39°37'51.4899"N	80°15'51.1743"W	4338.57	149.841	0.28	-0.06	0.27
12535.00	90.860	146.930	8210.91	4425.60	-3830.96	2231.42	1753314.17	412767.65	39°37'50.7068"N	80°15'50.5046"W	4433.45	149.780	0.28	0.22	-0.17
12630.00	90.830	147.140	8209.51	4520.58	-3910.65	2283.11	1753365.86	412687.96	39°37'49.9235"N	80°15'49.8353"W	4528.33	149.723	0.22	-0.03	0.22
12725.00	90.550	146.310	8208.37	4615.57	-3990.07	2335.22	1753417.97	412608.54	39°37'49.1431"N	80°15'49.1606"W	4623.20	149.661	0.92	-0.29	-0.87
12820.00	90.310	146.130	8207.65	4710.57	-4069.03	2388.04	1753470.79	412529.59	39°37'48.3672"N	80°15'48.4770"W	4718.03	149.592	0.32	-0.25	-0.19
12915.00	90.620	146.050	8206.88	4805.56	-4147.87	2441.04	1753523.78	412450.75	39°37'47.5925"N	80°15'47.7911"W	4812.85	149.523	0.34	0.33	-0.08
13010.00	90.890	146.610	8205.63	4900.55	-4226.93	2493.71	1753576.44	412371.70	39°37'46.8156"N	80°15'47.1094"W	4907.69	149.461	0.65	0.28	0.59
13105.00	90.430	146.130	8204.54	4995.55	-4306.02	2546.32	1753629.05	412292.61	39°37'46.0384"N	80°15'46.4285"W	5002.55	149.403	0.70	-0.48	-0.51
13200.00	90.460	146.650	8203.80	5090.54	-4385.14	2598.90	1753681.63	412213.50	39°37'45.2609"N	80°15'45.7478"W	5097.42	149.346	0.55	0.03	0.55
13293.00	90.520	146.890	8203.00	5183.54	-4462.93	2649.86	1753732.59	412135.72	39°37'44.4964"N	80°15'45.0881"W	5190.32	149.300	0.27	0.06	0.26
13388.00	90.460	146.600	8202.19	5278.53	-4542.36	2701.95	1753784.68	412056.28	39°37'43.7157"N	80°15'44.4137"W	5285.23	149.254	0.31	-0.06	-0.31
13484.00	90.800	146.830	8201.13	5374.52	-4622.61	2754.64	1753837.36	411976.04	39°37'42.9271"N	80°15'43.7317"W	5381.13	149.209	0.43	0.35	0.24
13579.00	91.050	147.110	8199.60	5469.51	-4702.25	2806.41	1753889.13	411896.41	39°37'42.1444"N	80°15'43.0614"W	5476.05	149.170	0.40	0.26	0.29
13674.00	90.710	146.160	8198.14	5564.49	-4781.58	2858.65	1753941.37	411817.08	39°37'41.3648"N	80°15'42.3852"W	5570.94	149.127	1.06	-0.36	-1.00
13769.00	90.950	147.390	8196.77	5659.48	-4861.04	2910.70	1753993.41	411737.63	39°37'40.5839"N	80°15'41.7114"W	5665.85	149.088	1.32	0.25	1.29
13865.00	91.170	146.450	8194.99	5755.46	-4941.46	2963.09	1754045.80	411657.21	39°37'39.7935"N	80°15'41.0331"W	5761.77	149.052	1.01	0.23	-0.98
13960.00	90.710	146.030	8193.43	5850.44	-5020.43	3015.87	1754098.58	411578.24	39°37'39.0175"N	80°15'40.3500"W	5856.64	149.006	0.66	-0.48	-0.44
14055.00	91.110	146.140	8191.92	5945.43	-5099.26	3068.87	1754151.57	411499.42	39°37'38.2429"N	80°15'39.6641"W	5951.51	148.959	0.44	0.42	0.12
14151.00	90.770	146.360	8190.35	6041.42	-5179.07	3122.20	1754204.90	411419.62	39°37'37.4586"N	80°15'38.9740"W	6047.39	148.916	0.42	-0.35	0.23
14245.00	90.830	146.310	8189.04	6135.41	-5257.30	3174.30	1754257.00	411341.39	39°37'36.6899"N	80°15'38.2996"W	6141.29	148.877	0.08	0.06	-0.05
14341.00	90.650	146.050	8187.80	6231.40	-5337.05	3227.73	1754310.42	411261.65	39°37'35.9062"N	80°15'37.6082"W	6237.17	148.835	0.33	-0.19	-0.27
14436.00	90.740	146.490	8186.64	6326.39	-5416.05	3280.48	1754363.17	411182.65	39°37'35.1299"N	80°15'36.9256"W	6332.07	148.797	0.47	0.09	0.46
14531.00	90.830	146.190	8185.34	6421.38	-5495.11	3333.13	1754415.81	411103.59	39°37'34.3529"N	80°15'36.2441"W	6426.98	148.761	0.33	0.09	-0.32
14627.00	90.830	146.380	8183.95	6517.37	-5574.96	3386.41	1754469.09	411023.75	39°37'33.5683"N	80°15'35.5546"W	6522.88	148.724	0.20	0.00	0.20



Actual Wellpath Report

Phoenix 2H AWP Proj: 26519'
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REFERENCE WELLPATH IDENTIFICATION				
Operator	NORTHEAST NATURAL ENERGY, LLC		Well	Phoenix 2H
Field	Monongalia		API/Legal	
Facility	Phoenix Pad		Wellbore	Phoenix 2H AWB
Slot	Slot 02			

WELLPATH DATA (306 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]
14722.00	90.650	146.280	8182.72	6612.36	-5654.02	3439.07	1754521.75	410944.70	39°37'32.7914"N	80°15'34.8730"W	6617.79	148.690	0.22	-0.19	-0.11
14818.00	90.770	146.260	8181.53	6708.36	-5733.85	3492.38	1754575.05	410864.87	39°37'32.0069"N	80°15'34.1832"W	6713.70	148.655	0.13	0.12	-0.02
14913.00	90.830	146.170	8180.21	6803.35	-5812.80	3545.20	1754627.87	410785.93	39°37'31.2311"N	80°15'33.4996"W	6808.60	148.621	0.11	0.06	-0.09
15009.00	90.980	146.470	8178.69	6899.34	-5892.68	3598.43	1754681.10	410706.06	39°37'30.4462"N	80°15'32.8107"W	6904.51	148.589	0.35	0.16	0.31
15104.00	90.680	146.070	8177.32	6994.32	-5971.68	3651.17	1754733.84	410627.06	39°37'29.6699"N	80°15'32.1281"W	6999.43	148.558	0.53	-0.32	-0.42
15199.00	91.080	146.790	8175.86	7089.31	-6050.82	3703.70	1754786.36	410547.92	39°37'28.8921"N	80°15'31.4484"W	7094.35	148.529	0.87	0.42	0.76
15294.00	90.770	146.770	8174.32	7184.30	-6130.28	3755.74	1754838.40	410468.46	39°37'28.1111"N	80°15'30.7748"W	7189.29	148.506	0.33	-0.33	-0.02
15390.00	90.800	146.570	8173.01	7280.29	-6210.49	3808.48	1754891.14	410388.26	39°37'27.3229"N	80°15'30.0921"W	7285.24	148.482	0.21	0.03	-0.21
15485.00	90.770	146.160	8171.71	7375.28	-6289.57	3861.10	1754943.75	410309.18	39°37'26.5457"N	80°15'29.4111"W	7380.16	148.455	0.43	-0.03	-0.43
15580.00	90.650	146.410	8170.53	7470.27	-6368.59	3913.82	1754996.47	410230.17	39°37'25.7692"N	80°15'28.7288"W	7475.09	148.427	0.29	-0.13	0.26
15675.00	90.770	146.500	8169.35	7565.26	-6447.76	3966.32	1755048.96	410151.00	39°37'24.9912"N	80°15'28.0495"W	7570.03	148.402	0.16	0.13	0.09
15771.00	90.890	146.260	8167.96	7661.25	-6527.70	4019.46	1755102.11	410071.07	39°37'24.2056"N	80°15'27.3617"W	7665.96	148.377	0.28	0.12	-0.25
15866.00	90.680	146.250	8166.66	7756.24	-6606.68	4072.23	1755154.87	409992.09	39°37'23.4294"N	80°15'26.6788"W	7760.88	148.351	0.22	-0.22	-0.01
15961.00	90.650	146.280	8165.56	7851.24	-6685.68	4124.99	1755207.62	409913.10	39°37'22.6531"N	80°15'25.9961"W	7855.81	148.326	0.04	-0.03	0.03
16056.00	90.770	146.630	8164.38	7946.23	-6764.85	4177.48	1755260.11	409833.93	39°37'21.8751"N	80°15'25.3168"W	7950.76	148.304	0.39	0.13	0.37
16151.00	89.850	145.850	8163.87	8041.23	-6843.83	4230.27	1755312.90	409754.96	39°37'21.0990"N	80°15'24.6337"W	8045.69	148.279	1.27	-0.97	-0.82
16247.00	90.430	146.480	8163.63	8137.22	-6923.57	4283.72	1755366.35	409675.22	39°37'20.3154"N	80°15'23.9420"W	8141.63	148.254	0.89	0.60	0.66
16341.00	90.520	146.670	8162.85	8231.22	-7002.02	4335.50	1755418.12	409596.78	39°37'19.5444"N	80°15'23.2719"W	8235.58	148.235	0.22	0.10	0.20
16436.00	89.780	146.300	8162.60	8326.22	-7081.23	4387.95	1755470.57	409517.58	39°37'18.7660"N	80°15'22.5931"W	8330.54	148.215	0.87	-0.78	-0.39
16530.00	89.910	146.450	8162.86	8420.22	-7159.50	4440.01	1755522.62	409439.31	39°37'17.9968"N	80°15'21.9195"W	8424.49	148.195	0.21	0.14	0.16
16626.00	90.030	146.440	8162.91	8516.22	-7239.50	4493.07	1755575.68	409359.31	39°37'17.2106"N	80°15'21.2328"W	8520.45	148.175	0.13	0.12	-0.01
16722.00	89.970	145.980	8162.91	8612.22	-7319.28	4546.46	1755629.07	409279.54	39°37'16.4266"N	80°15'20.5420"W	8616.39	148.153	0.48	-0.06	-0.48
16817.00	89.750	145.990	8163.14	8707.22	-7398.03	4599.60	1755682.21	409200.80	39°37'15.6528"N	80°15'19.8544"W	8711.32	148.129	0.23	-0.23	0.01
16912.00	89.940	146.800	8163.40	8802.21	-7477.15	4652.18	1755734.79	409121.68	39°37'14.8752"N	80°15'19.1740"W	8806.28	148.111	0.88	0.20	0.85
17007.00	88.620	146.190	8164.59	8897.20	-7556.36	4704.62	1755787.22	409042.48	39°37'14.0968"N	80°15'18.4954"W	8901.23	148.093	1.53	-1.39	-0.64
17102.00	88.120	144.390	8167.29	8992.15	-7634.41	4758.69	1755841.29	408964.42	39°37'13.3299"N	80°15'17.7961"W	8996.08	148.064	1.97	-0.53	-1.89
17198.00	88.430	146.220	8170.18	9088.08	-7713.31	4813.30	1755895.90	408885.54	39°37'12.5547"N	80°15'17.0897"W	9091.92	148.035	1.93	0.32	1.91
17293.00	88.490	146.580	8172.74	9183.05	-7792.40	4865.86	1755948.45	408806.44	39°37'11.7774"N	80°15'16.4096"W	9186.85	148.018	0.38	0.06	0.38
17388.00	87.380	146.300	8176.16	9277.98	-7871.52	4918.34	1756000.93	408727.34	39°37'10.9999"N	80°15'15.7305"W	9281.75	148.002	1.20	-1.17	-0.29
17484.00	87.260	146.070	8180.65	9373.88	-7951.19	4971.71	1756054.29	408647.67	39°37'10.2170"N	80°15'15.0400"W	9377.59	147.983	0.27	-0.13	-0.24

REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 2H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 2H AWB
Slot	Slot 02		

WELLPATH DATA (306 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]
17578.00	87.880	146.880	8184.63	9467.79	-8029.48	5023.57	1756106.16	408569.38	39°37'9.4476"N	80°15'14.3688"W	9471.48	147.968	1.08	0.66	0.86
17673.00	87.810	146.130	8188.21	9562.72	-8108.65	5075.96	1756158.54	408490.22	39°37'8.6695"N	80°15'13.6908"W	9566.38	147.954	0.79	-0.07	-0.79
17769.00	87.100	145.180	8192.47	9658.62	-8187.83	5130.07	1756212.65	408411.04	39°37'7.8915"N	80°15'12.9910"W	9662.20	147.931	1.23	-0.74	-0.99
17864.00	86.430	146.290	8197.83	9753.46	-8266.22	5183.47	1756266.04	408332.66	39°37'7.1212"N	80°15'12.3002"W	9756.98	147.910	1.36	-0.71	1.17
17959.00	87.320	146.620	8203.01	9848.32	-8345.28	5235.89	1756318.46	408253.61	39°37'6.3443"N	80°15'11.6219"W	9851.81	147.896	1.00	0.94	0.35
18053.00	86.740	146.390	8207.88	9942.19	-8423.56	5287.69	1756370.26	408175.33	39°37'5.5749"N	80°15'10.9515"W	9945.66	147.882	0.66	-0.62	-0.24
18148.00	87.200	146.790	8212.90	10037.06	-8502.75	5339.93	1756422.49	408096.14	39°37'4.7966"N	80°15'10.2756"W	10040.50	147.870	0.64	0.48	0.42
18243.00	87.850	147.170	8217.00	10131.96	-8582.33	5391.65	1756474.21	408016.56	39°37'4.0144"N	80°15'9.6061"W	10135.40	147.862	0.79	0.68	0.40
18339.00	87.940	146.720	8220.53	10227.89	-8662.74	5443.98	1756526.53	407936.16	39°37'3.2241"N	80°15'8.9289"W	10231.32	147.853	0.48	0.09	-0.47
18434.00	87.380	145.870	8224.41	10322.81	-8741.70	5496.65	1756579.20	407857.20	39°37'2.4481"N	80°15'8.2474"W	10326.21	147.839	1.07	-0.59	-0.89
18529.00	88.370	146.460	8227.93	10417.74	-8820.56	5549.51	1756632.06	407778.35	39°37'1.6732"N	80°15'7.5635"W	10421.10	147.824	1.21	1.04	0.62
18624.00	86.950	146.770	8231.81	10512.66	-8899.81	5601.74	1756684.28	407699.10	39°37'0.8943"N	80°15'6.8876"W	10516.00	147.813	1.53	-1.49	0.33
18720.00	87.320	146.990	8236.61	10608.54	-8980.12	5654.13	1756736.67	407618.80	39°37'0.1050"N	80°15'6.2096"W	10611.86	147.804	0.45	0.39	0.23
18815.00	86.640	146.140	8241.61	10703.40	-9059.28	5706.40	1756788.94	407539.64	39°36'59.3269"N	80°15'5.5333"W	10706.71	147.793	1.14	-0.72	-0.89
18910.00	87.570	147.380	8246.41	10798.28	-9138.64	5758.40	1756840.94	407460.29	39°36'58.5470"N	80°15'4.8602"W	10801.57	147.784	1.63	0.98	1.31
19005.00	88.120	146.410	8249.98	10893.20	-9218.16	5810.25	1756892.79	407380.78	39°36'57.7654"N	80°15'4.1892"W	10896.49	147.777	1.17	0.58	-1.02
19100.00	88.030	146.380	8253.17	10988.15	-9297.24	5862.80	1756945.33	407301.70	39°36'56.9883"N	80°15'3.5093"W	10991.41	147.765	0.10	-0.09	-0.03
19196.00	87.940	146.170	8256.55	11084.09	-9377.03	5916.07	1756998.60	407221.91	39°36'56.2041"N	80°15'2.8201"W	11087.32	147.752	0.24	-0.09	-0.22
19291.00	86.740	146.180	8260.96	11178.99	-9455.86	5968.89	1757051.42	407143.08	39°36'55.4294"N	80°15'2.1367"W	11182.18	147.738	1.26	-1.26	0.01
19386.00	87.010	147.090	8266.14	11273.84	-9535.09	6021.06	1757103.58	407063.87	39°36'54.6507"N	80°15'1.4617"W	11277.02	147.729	1.00	0.28	0.96
19482.00	87.040	146.780	8271.12	11369.71	-9615.43	6073.37	1757155.89	406983.53	39°36'53.8610"N	80°15'0.7848"W	11372.88	147.722	0.32	0.03	-0.32
19577.00	86.550	146.570	8276.43	11464.56	-9694.69	6125.48	1757207.99	406904.28	39°36'53.0821"N	80°15'0.1105"W	11467.71	147.714	0.56	-0.52	-0.22
19672.00	88.310	146.870	8280.69	11559.46	-9774.02	6177.55	1757260.06	406824.94	39°36'52.3023"N	80°14'59.4366"W	11562.60	147.706	1.88	1.85	0.32
19767.00	88.520	146.870	8283.32	11654.42	-9853.55	6229.45	1757311.96	406745.42	39°36'51.5207"N	80°14'58.7649"W	11657.55	147.699	0.22	0.22	0.00
19862.00	89.020	146.880	8285.36	11749.39	-9933.09	6281.36	1757363.86	406665.89	39°36'50.7389"N	80°14'58.0933"W	11752.52	147.692	0.53	0.53	0.01
19957.00	90.000	146.730	8286.17	11844.38	-10012.59	6333.36	1757415.87	406586.40	39°36'49.9576"N	80°14'57.4203"W	11847.50	147.685	1.04	1.03	-0.16
20053.00	90.620	147.230	8285.65	11940.38	-10093.08	6385.68	1757468.18	406505.91	39°36'49.1664"N	80°14'56.7433"W	11943.50	147.679	0.83	0.65	0.52
20148.00	90.370	146.840	8284.83	12035.37	-10172.78	6437.37	1757519.86	406426.21	39°36'48.3830"N	80°14'56.0743"W	12038.49	147.674	0.49	-0.26	-0.41
20243.00	90.060	145.890	8284.47	12130.36	-10251.87	6489.99	1757572.48	406347.12	39°36'47.6057"N	80°14'55.3935"W	12133.46	147.664	1.05	-0.33	-1.00
20339.00	88.430	144.170	8285.74	12226.32	-10330.53	6545.00	1757627.49	406268.47	39°36'46.8329"N	80°14'54.6822"W	12229.34	147.643	2.47	-1.70	-1.79



Actual Wellpath Report

Phoenix 2H AWP Proj: 26519'
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REFERENCE WELLPATH IDENTIFICATION				
Operator	NORTHEAST NATURAL ENERGY, LLC		Well	Phoenix 2H
Field	Monongalia		API/Legal	
Facility	Phoenix Pad		Wellbore	Phoenix 2H AWB
Slot	Slot 02			

WELLPATH DATA (306 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]
20434.00	88.920	144.530	8287.94	12321.24	-10407.70	6600.35	1757682.84	406191.30	39°36'46.0747"N	80°14'53.9667"W	12324.16	147.618	0.64	0.52	0.38
20530.00	89.720	146.580	8289.08	12417.22	-10486.86	6654.65	1757737.13	406112.15	39°36'45.2969"N	80°14'53.2646"W	12420.09	147.602	2.29	0.83	2.14
20625.00	89.570	145.730	8289.66	12512.21	-10565.76	6707.55	1757790.03	406033.26	39°36'44.5215"N	80°14'52.5802"W	12515.05	147.591	0.91	-0.16	-0.89
20720.00	89.850	146.170	8290.14	12607.21	-10644.47	6760.74	1757843.22	405954.55	39°36'43.7480"N	80°14'51.8922"W	12610.01	147.579	0.55	0.29	0.46
20816.00	89.320	145.650	8290.84	12703.20	-10723.97	6814.55	1757897.02	405875.05	39°36'42.9668"N	80°14'51.1963"W	12705.97	147.566	0.77	-0.55	-0.54
20911.00	89.970	146.080	8291.43	12798.20	-10802.60	6867.86	1757950.33	405796.43	39°36'42.1941"N	80°14'50.5068"W	12800.93	147.553	0.82	0.68	0.45
21006.00	89.540	146.010	8291.83	12893.19	-10881.40	6920.92	1758003.38	405717.63	39°36'41.4197"N	80°14'49.8204"W	12895.89	147.542	0.46	-0.45	-0.07
21101.00	89.720	146.610	8292.45	12988.19	-10960.45	6973.61	1758056.08	405638.59	39°36'40.6429"N	80°14'49.1388"W	12990.87	147.533	0.66	0.19	0.63
21197.00	89.380	145.200	8293.20	13084.18	-11039.94	7027.42	1758109.88	405559.11	39°36'39.8617"N	80°14'48.4428"W	13086.82	147.521	1.51	-0.35	-1.47
21292.00	90.770	145.140	8293.08	13179.16	-11117.92	7081.68	1758164.14	405481.13	39°36'39.0955"N	80°14'47.7412"W	13181.74	147.504	1.46	1.46	-0.06
21387.00	91.320	146.320	8291.35	13274.14	-11196.41	7135.17	1758217.62	405402.64	39°36'38.3242"N	80°14'47.0495"W	13276.68	147.492	1.37	0.58	1.24
21483.00	91.660	145.720	8288.85	13370.10	-11275.99	7188.80	1758271.25	405323.07	39°36'37.5422"N	80°14'46.3558"W	13372.62	147.481	0.72	0.35	-0.63
21578.00	91.970	145.870	8285.84	13465.05	-11354.52	7242.18	1758324.63	405244.55	39°36'36.7705"N	80°14'45.6655"W	13467.53	147.469	0.36	0.33	0.16
21673.00	92.030	146.060	8282.52	13559.99	-11433.20	7295.32	1758377.76	405165.87	39°36'35.9973"N	80°14'44.9782"W	13562.44	147.459	0.21	0.06	0.20
21768.00	92.060	146.710	8279.13	13654.93	-11512.26	7347.88	1758430.32	405086.81	39°36'35.2202"N	80°14'44.2982"W	13657.36	147.451	0.68	0.03	0.68
21864.00	91.910	146.080	8275.81	13750.87	-11592.17	7400.98	1758483.42	405006.91	39°36'34.4349"N	80°14'43.6113"W	13753.28	147.444	0.67	-0.16	-0.66
21959.00	91.910	145.810	8272.64	13845.81	-11670.83	7454.15	1758536.58	404928.25	39°36'33.6618"N	80°14'42.9237"W	13848.20	147.434	0.28	0.00	-0.28
22054.00	92.000	145.510	8269.40	13940.75	-11749.23	7507.71	1758590.14	404849.86	39°36'32.8915"N	80°14'42.2310"W	13943.10	147.422	0.33	0.09	-0.32
22149.00	92.650	145.490	8265.55	14035.66	-11827.45	7561.47	1758643.90	404771.64	39°36'32.1228"N	80°14'41.5358"W	14037.97	147.409	0.68	0.68	-0.02
22245.00	93.350	145.140	8260.52	14131.51	-11906.29	7616.03	1758698.45	404692.81	39°36'31.3482"N	80°14'40.8305"W	14133.77	147.394	0.82	0.73	-0.36
22340.00	93.110	145.160	8255.17	14226.34	-11984.12	7670.22	1758752.65	404614.98	39°36'30.5834"N	80°14'40.1297"W	14228.55	147.379	0.25	-0.25	0.02
22435.00	92.650	145.000	8250.40	14321.20	-12061.92	7724.54	1758806.95	404537.19	39°36'29.8190"N	80°14'39.4276"W	14323.35	147.364	0.51	-0.48	-0.17
22530.00	93.170	145.960	8245.58	14416.06	-12140.09	7778.30	1758860.72	404459.02	39°36'29.0509"N	80°14'38.7324"W	14418.18	147.352	1.15	0.55	1.01
22625.00	93.020	145.900	8240.45	14510.92	-12218.67	7831.44	1758913.86	404380.45	39°36'28.2786"N	80°14'38.0451"W	14513.01	147.343	0.17	-0.16	-0.06
22721.00	92.220	145.890	8236.06	14606.81	-12298.08	7885.22	1758967.62	404301.05	39°36'27.4983"N	80°14'37.3497"W	14608.88	147.333	0.83	-0.83	-0.01
22816.00	91.510	145.190	8232.97	14701.75	-12376.36	7938.94	1759021.35	404222.77	39°36'26.7290"N	80°14'36.6550"W	14703.78	147.321	1.05	-0.75	-0.74
22911.00	92.280	145.810	8229.82	14796.69	-12454.61	7992.72	1759075.12	404144.52	39°36'25.9601"N	80°14'35.9596"W	14798.68	147.310	1.04	0.81	0.65
23007.00	92.860	145.830	8225.52	14892.59	-12533.95	8046.60	1759129.00	404065.19	39°36'25.1805"N	80°14'35.2629"W	14894.55	147.300	0.60	0.60	0.02
23102.00	94.340	145.800	8219.56	14987.39	-12612.38	8099.87	1759182.26	403986.76	39°36'24.4097"N	80°14'34.5740"W	14989.33	147.291	1.56	1.56	-0.03
23197.00	94.250	145.770	8212.44	15082.12	-12690.72	8153.14	1759235.53	403908.43	39°36'23.6399"N	80°14'33.8852"W	15084.03	147.281	0.10	-0.09	-0.03



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION				
Operator	NORTHEAST NATURAL ENERGY, LLC		Well	Phoenix 2H
Field	Monongalia		API/Legal	
Facility	Phoenix Pad		Wellbore	Phoenix 2H AWB
Slot	Slot 02			

WELLPATH DATA (306 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]
23292.00	94.340	145.570	8205.33	15176.85	-12768.95	8206.56	1759288.95	403830.20	39°36'22.8711"N	80°14'33.1943"W	15178.72	147.271	0.23	0.09	-0.21
23387.00	93.940	145.530	8198.47	15271.59	-12847.08	8260.16	1759342.55	403752.07	39°36'22.1033"N	80°14'32.5013"W	15273.43	147.261	0.42	-0.42	-0.04
23483.00	92.650	145.730	8192.95	15367.42	-12926.19	8314.27	1759396.65	403672.97	39°36'21.3260"N	80°14'31.8017"W	15369.23	147.250	1.36	-1.34	0.21
23578.00	93.450	145.900	8187.89	15462.28	-13004.66	8367.57	1759449.95	403594.50	39°36'20.5548"N	80°14'31.1124"W	15464.07	147.242	0.86	0.84	0.18
23673.00	93.510	145.750	8182.13	15557.10	-13083.11	8420.83	1759503.21	403516.06	39°36'19.7838"N	80°14'30.4236"W	15558.87	147.233	0.17	0.06	-0.16
23769.00	93.600	146.060	8176.18	15652.91	-13162.46	8474.54	1759556.92	403436.72	39°36'19.0041"N	80°14'29.7290"W	15654.66	147.225	0.34	0.09	0.32
23864.00	92.890	144.910	8170.80	15747.75	-13240.61	8528.29	1759610.65	403358.57	39°36'18.2361"N	80°14'29.0342"W	15749.46	147.214	1.42	-0.75	-1.21
23959.00	92.460	146.370	8166.36	15842.63	-13318.95	8581.84	1759664.21	403280.24	39°36'17.4663"N	80°14'28.3417"W	15844.32	147.205	1.60	-0.45	1.54
24054.00	92.520	146.020	8162.24	15937.54	-13397.81	8634.65	1759717.01	403201.38	39°36'16.6912"N	80°14'27.6588"W	15939.21	147.199	0.37	0.06	-0.37
24149.00	91.660	147.300	8158.77	16032.48	-13477.12	8686.82	1759769.18	403122.08	39°36'15.9117"N	80°14'26.9838"W	16034.14	147.196	1.62	-0.91	1.35
24245.00	91.790	147.640	8155.88	16128.41	-13558.02	8738.42	1759820.78	403041.18	39°36'15.1164"N	80°14'26.3161"W	16130.10	147.197	0.38	0.14	0.35
24340.00	91.750	147.600	8152.95	16223.35	-13638.21	8789.27	1759871.63	402960.99	39°36'14.3280"N	80°14'25.6580"W	16225.05	147.200	0.06	-0.04	-0.04
24435.00	91.940	147.670	8149.89	16318.27	-13718.41	8840.10	1759922.45	402880.80	39°36'13.5395"N	80°14'25.0002"W	16320.00	147.202	0.21	0.20	0.07
24530.00	91.910	147.980	8146.70	16413.19	-13798.78	8890.66	1759973.01	402800.44	39°36'12.7494"N	80°14'24.3458"W	16414.94	147.206	0.33	-0.03	0.33
24625.00	91.380	147.640	8143.97	16508.12	-13879.14	8941.25	1760023.59	402720.08	39°36'11.9594"N	80°14'23.6910"W	16509.89	147.209	0.66	-0.56	-0.36
24720.00	91.850	147.830	8141.29	16603.05	-13959.44	8991.94	1760074.28	402639.78	39°36'11.1699"N	80°14'23.0349"W	16604.85	147.212	0.53	0.49	0.20
24816.00	91.510	147.060	8138.48	16699.00	-14040.32	9043.58	1760125.92	402558.91	39°36'10.3748"N	80°14'22.3667"W	16700.81	147.214	0.88	-0.35	-0.80
24911.00	91.600	146.950	8135.90	16793.95	-14119.97	9095.30	1760177.63	402479.27	39°36'9.5919"N	80°14'21.6977"W	16795.77	147.213	0.15	0.09	-0.12
25006.00	91.750	147.700	8133.12	16888.90	-14199.90	9146.56	1760228.89	402399.34	39°36'8.8061"N	80°14'21.0343"W	16890.73	147.213	0.80	0.16	0.79
25101.00	91.510	147.170	8130.42	16983.85	-14279.93	9197.67	1760280.00	402319.31	39°36'8.0193"N	80°14'20.3729"W	16985.69	147.214	0.61	-0.25	-0.56
25196.00	91.720	147.370	8127.74	17078.80	-14359.82	9249.02	1760331.34	402239.43	39°36'7.2340"N	80°14'19.7086"W	17080.65	147.215	0.31	0.22	0.21
25292.00	91.630	147.640	8124.94	17174.74	-14440.75	9300.57	1760382.89	402158.50	39°36'6.4384"N	80°14'19.0415"W	17176.61	147.216	0.30	-0.09	0.28
25387.00	91.170	147.620	8122.62	17269.68	-14520.97	9351.42	1760433.73	402078.29	39°36'5.6498"N	80°14'18.3835"W	17271.58	147.219	0.48	-0.48	-0.02
25482.00	91.540	147.910	8120.37	17364.63	-14601.30	9402.07	1760484.39	401997.96	39°36'4.8600"N	80°14'17.7279"W	17366.55	147.222	0.49	0.39	0.31
25577.00	92.520	147.860	8117.01	17459.54	-14681.71	9452.55	1760534.86	401917.56	39°36'4.0694"N	80°14'17.0747"W	17461.48	147.225	1.03	1.03	-0.05
25673.00	92.340	147.500	8112.94	17555.42	-14762.77	9503.83	1760586.13	401836.51	39°36'3.2725"N	80°14'16.4111"W	17557.39	147.228	0.42	-0.19	-0.38
25768.00	91.970	147.110	8109.36	17650.34	-14842.66	9555.11	1760637.41	401756.62	39°36'2.4871"N	80°14'15.7476"W	17652.32	147.228	0.57	-0.39	-0.41
25863.00	92.120	147.300	8105.97	17745.27	-14922.47	9606.53	1760688.83	401676.82	39°36'1.7026"N	80°14'15.0823"W	17747.26	147.228	0.25	0.16	0.20
25958.00	92.310	146.710	8102.30	17840.20	-15002.08	9658.22	1760740.52	401597.21	39°36'0.9200"N	80°14'14.4135"W	17842.19	147.227	0.65	0.20	-0.62
26054.00	92.370	146.310	8098.38	17936.11	-15082.08	9711.15	1760793.45	401517.21	39°36'0.1337"N	80°14'13.7290"W	17938.10	147.223	0.42	0.06	-0.42



Actual Wellpath Report

Phoenix 2H AWP Proj: 26519'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 2H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 2H AWB
Slot	Slot 02		

WELLPATH DATA (306 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]
26149.00	92.340	146.130	8094.48	18031.03	-15160.97	9763.93	1760846.22	401438.32	39°35'59.3583"N	80°14'13.0465"W	18033.01	147.218	0.19	-0.03	-0.19
26244.00	92.550	146.580	8090.43	18125.95	-15239.99	9816.51	1760898.80	401359.32	39°35'58.5817"N	80°14'12.3664"W	18127.91	147.213	0.52	0.22	0.47
26339.00	92.430	146.840	8086.30	18220.86	-15319.32	9868.61	1760950.89	401279.98	39°35'57.8018"N	80°14'11.6926"W	18222.82	147.211	0.30	-0.13	0.27
26435.00	92.650	147.310	8082.04	18316.75	-15399.82	9920.74	1761003.02	401199.49	39°35'57.0105"N	80°14'11.0183"W	18318.72	147.210	0.54	0.23	0.49
26494.00	92.150	145.930	8079.57	18375.70	-15449.05	9953.17	1761035.45	401150.27	39°35'56.5267"N	80°14'10.5988"W	18377.67	147.208	2.49	-0.85	-2.34
26519.00‡	92.150	145.930	8078.64	18400.68	-15469.74	9967.16	1761049.44	401129.58	39°35'56.3233"N	80°14'10.4179"W	18402.64	147.206	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Phoenix 2H AWB Ref Wellpath: Phoenix 2H AWP Proj: 26519'

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]
17.5in Open Hole	28.00	1528.08	1500.08	28.00	1528.00	0.00	0.00	-9.83	-5.88
13.375in Casing Surface	28.00	1498.07	1470.07	28.00	1498.00	0.00	0.00	-9.70	-5.43
12.375in Open Hole	1528.08	2846.00	1317.92	1528.00	2845.90	-9.83	-5.88	-11.91	-7.99
9.625in Casing Intermediate	28.00	2816.00	2788.00	28.00	2815.90	0.00	0.00	-11.97	-8.03
8.5in Open Hole	2846.00	26519.00	23673.00	2845.90	8078.64	-11.91	-7.99	-15469.74	9967.16
5.5in Casing Production	28.00	26489.00	26461.00	28.00	8079.76	0.00	0.00	-15444.91	9950.37



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Phoenix 2H AWP Proj: 26519'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 2H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 2H AWB
Slot	Slot 02		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Phoenix 2H BHL Rev-7	8200.00	-15462.68	9979.35	1761061.63	401136.63	39°35'56.3940"N	80°14'10.2630"W	point
Phoenix 2H LP Rev-6	8200.00	-576.28	78.85	1751161.74	416022.13	39°38'22.6896"N	80°16'18.3730"W	point
Phoenix Hardline #1 (5.19.21)	8528.00	-794.05	6034.35	1757116.87	415804.37	39°38'21.0362"N	80°15'2.2251"W	polygon
2D Polygon: dimensions not calculated								

WELLPATH COMPOSITION - Ref Wellbore: Phoenix 2H AWB Ref Wellpath: Phoenix 2H AWP Proj: 26519'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	2645.00	BH Generic gyro - northseeking (Standard)	01 Gyro Surveys <12-1/4"> (50'-2645')	Phoenix 2H AWB	2/9/2022
2645.00	7297.00	OWSG MWD rev2 + HRGM	02 Tally MWD <8-3/4"> (2645')(2845'-7297')	Phoenix 2H AWB	2/9/2022
7297.00	8920.00	OWSG MWD rev2 + HRGM + Axial Correction	03 BH AT Curve (OWSG) <8-1/2"> (7297')(7404'-8920')	Phoenix 2H AWB	2/9/2022
8920.00	26519.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	04 BH AT Curve (Short) <8-1/2"> (8920')(9023'-26494')	Phoenix 2H AWB	2/14/2022



Actual Wellpath Report

Phoenix 2H AWP Proj: 26519'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 2H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 2H AWB
Slot	Slot 02		

COMMENTS
<p>Wellpath general comments API: 47-061-01874-0000 BH Job #: 111185257 Rig: Patterson 277 Duration: 02/09/2022 - 02/15/2022</p> <p>01_Gyro Surveys <12-1/4"> (50'-2645') 02_Tally MWD <8-3/4"> (2645')(2845'-7297') 03_BH AT Curve (OWSG) <8-1/2"> (7297')(7404'-8920') 04_BH AT Curve (Short) <8-1/2"> (8920')(9023'-26494') Final Survey @ 26494' MD Projected MD at TD: 26519'</p>