

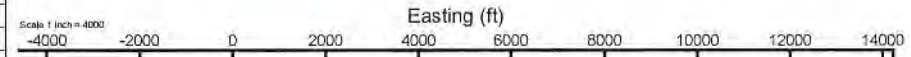
NORTHEAST NATURAL ENERGY, LLC

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

Slot: Slot 10
 Well: Phoenix 10H
 Wellbore: Phoenix 10H PWB

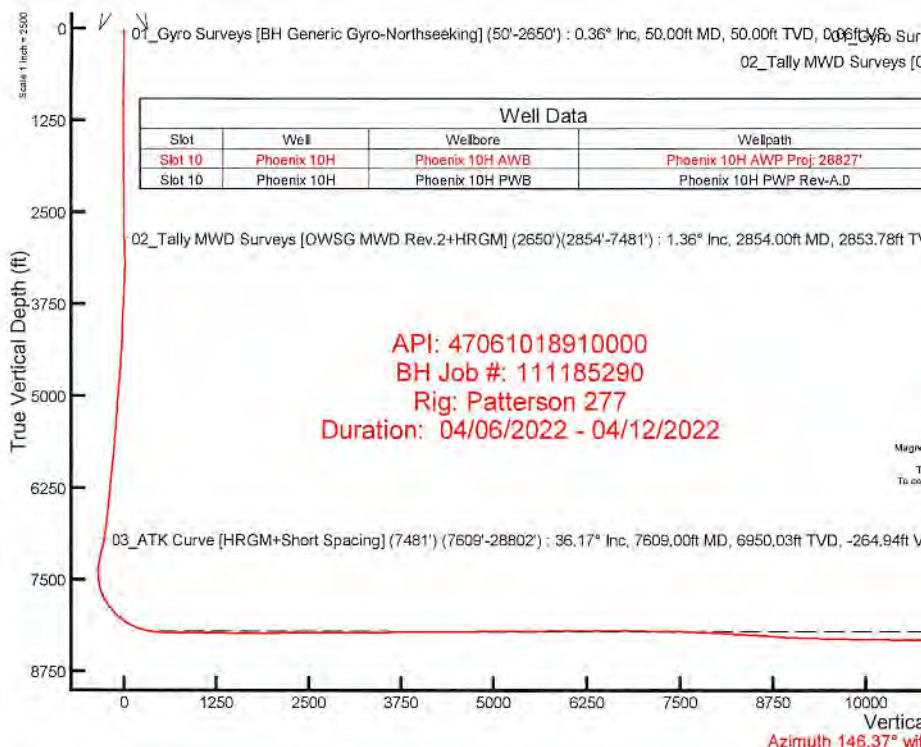
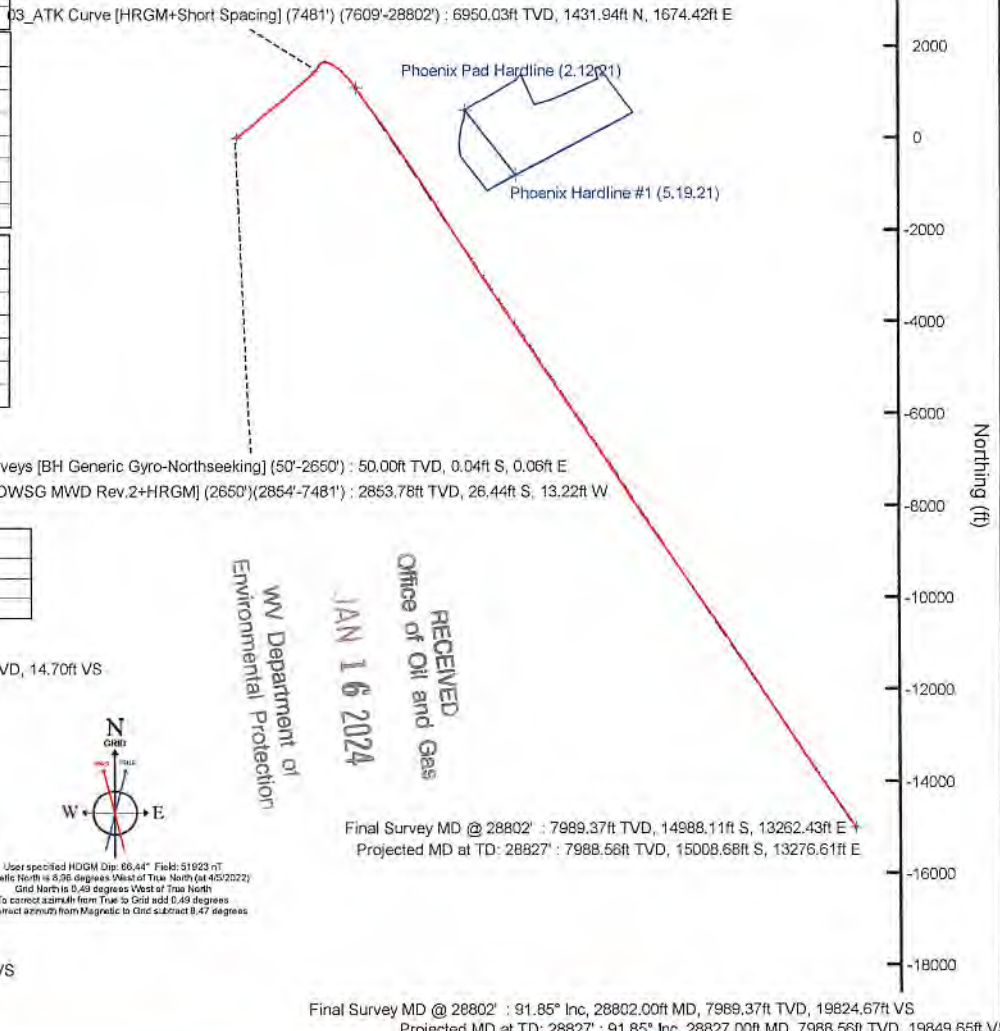


Plot reference wellpath is Phoenix 10H PWP Rev.A,D	Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet
True vertical depths are referenced to Patterson 277 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to Patterson 277 (RKB)	Scale: True distance
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 10) -1503 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by manajip on 2022-04-22; Database: WA_MPL_EASTERNUS_Datm



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 North (US ft)	Grid North (US ft)
Slot 10	0.68	71.58	1751123.560	416617.620
			39°38'28.5717"N	80°16'18.9265"W
Patterson 277 (RKB) to Ground level (At Slot: Slot 10)			28ft	
Mean Sea Level to Ground level (At Slot: Slot 10)			-1503ft	
Patterson 277 (RKB) to Mean Sea Level			1531ft	

Well Profile Data								
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	7481.00	36.340	46.910	6846.81	1379.99	1619.36	0.81	-252.17
Projection	7644.00	36.340	46.910	6978.11	1445.97	1689.90	0.00	-268.05
Curve	7900.55	26.269	19.929	7198.09	1552.06	1765.32	6.65	-314.61
Landing Pt.	9484.08	90.000	146.373	8210.00	1081.97	2560.47	6.65	517.18
BHL	28817.34	90.000	146.373	8210.00	-15016.14	13266.83	0.00	19850.44



Slot	Well	Wellbore	Wellpath
Slot 10	Phoenix 10H	Phoenix 10H AWB	Phoenix 10H AWP Proj: 28827'
Slot 10	Phoenix 10H	Phoenix 10H PWB	Phoenix 10H PWP Rev.A,D



User specified HDGM Dip: 60.44° Field: 51623 nt
 Magnetic North is 8.35 degrees West of True North (at 4/5/2022)
 Grid North is 0.69 degrees West of True North
 To correct azimuth from True to Grid add 0.69 degrees
 To correct azimuth from Magnetic to Grid subtract 8.47 degrees

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Phoenix 10H AWP Proj: 28827'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

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	4/22/2022 at 12:18:26 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	0.68	71.58	1751123.56	416617.62	39°38'28.5717"N	80°16'18.9265"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 10)	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°

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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	125.900	0.00	0.00	0.00	0.00	1751123.56	416617.62	39°38'28.5717"N	80°16'18.9265"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	125.900	28.00	0.00	0.00	0.00	1751123.56	416617.62	39°38'28.5717"N	80°16'18.9265"W	0.00	0.000	0.00	0.00	0.00
50.00	0.360	125.900	50.00	0.06	-0.04	0.06	1751123.62	416617.58	39°38'28.5713"N	80°16'18.9257"W	0.07	125.900	1.64	1.64	0.00
100.00	0.200	354.600	100.00	0.14	-0.05	0.18	1751123.74	416617.57	39°38'28.5713"N	80°16'18.9242"W	0.18	104.651	1.03	-0.32	-262.60
150.00	0.330	283.300	150.00	-0.05	0.07	0.03	1751123.59	416617.69	39°38'28.5724"N	80°16'18.9261"W	0.08	19.761	0.65	0.26	-142.60
200.00	0.370	239.600	200.00	-0.16	0.03	-0.25	1751123.31	416617.65	39°38'28.5719"N	80°16'18.9297"W	0.25	275.802	0.53	0.08	-87.40
250.00	0.360	158.900	250.00	-0.02	-0.20	-0.34	1751123.22	416617.42	39°38'28.5697"N	80°16'18.9307"W	0.39	238.870	0.95	-0.02	-161.40
300.00	0.400	251.900	300.00	0.09	-0.40	-0.44	1751123.12	416617.22	39°38'28.5677"N	80°16'18.9321"W	0.60	227.795	1.10	0.08	186.00
350.00	0.210	135.100	350.00	0.13	-0.52	-0.55	1751123.01	416617.10	39°38'28.5665"N	80°16'18.9334"W	0.76	226.260	1.06	-0.38	-233.60
400.00	0.380	179.000	400.00	0.36	-0.75	-0.48	1751123.08	416616.87	39°38'28.5642"N	80°16'18.9325"W	0.89	212.423	0.54	0.34	87.80
450.00	0.350	255.700	450.00	0.45	-0.96	-0.62	1751122.94	416616.66	39°38'28.5622"N	80°16'18.9343"W	1.14	213.094	0.91	-0.06	153.40
500.00	0.200	357.300	499.99	0.33	-0.91	-0.78	1751122.78	416616.71	39°38'28.5627"N	80°16'18.9363"W	1.19	220.527	0.87	-0.30	203.20
550.00	0.360	185.300	549.99	0.37	-0.98	-0.79	1751122.77	416616.64	39°38'28.5620"N	80°16'18.9365"W	1.26	219.123	1.12	0.32	-344.00
600.00	0.440	216.200	599.99	0.56	-1.29	-0.92	1751122.64	416616.33	39°38'28.5589"N	80°16'18.9381"W	1.58	215.604	0.45	0.16	61.80
650.00	0.400	252.900	649.99	0.58	-1.49	-1.20	1751122.36	416616.13	39°38'28.5568"N	80°16'18.9417"W	1.92	218.825	0.53	-0.08	73.40
700.00	0.330	281.500	699.99	0.43	-1.52	-1.51	1751122.05	416616.10	39°38'28.5566"N	80°16'18.9456"W	2.14	224.879	0.39	-0.14	57.20
750.00	0.400	183.500	749.99	0.46	-1.66	-1.66	1751121.90	416615.96	39°38'28.5551"N	80°16'18.9475"W	2.35	224.997	1.11	0.14	-196.00
800.00	0.100	289.800	799.99	0.57	-1.82	-1.71	1751121.85	416615.80	39°38'28.5536"N	80°16'18.9482"W	2.50	223.252	0.88	-0.60	212.60
850.00	0.240	277.200	849.99	0.46	-1.79	-1.86	1751121.70	416615.83	39°38'28.5538"N	80°16'18.9500"W	2.58	226.019	0.29	0.28	-25.20
900.00	0.330	238.100	899.99	0.39	-1.86	-2.08	1751121.48	416615.76	39°38'28.5532"N	80°16'18.9529"W	2.79	228.313	0.42	0.18	-78.20
950.00	0.540	223.800	949.99	0.44	-2.10	-2.37	1751121.19	416615.52	39°38'28.5507"N	80°16'18.9565"W	3.17	228.420	0.47	0.42	-28.60
1000.00	0.480	230.600	999.99	0.51	-2.41	-2.69	1751120.87	416615.21	39°38'28.5477"N	80°16'18.9606"W	3.61	228.246	0.17	-0.12	13.60
1050.00	0.560	225.200	1049.98	0.58	-2.71	-3.03	1751120.53	416614.91	39°38'28.5447"N	80°16'18.9649"W	4.07	228.184	0.19	0.16	-10.80
1100.00	0.530	227.100	1099.98	0.66	-3.04	-3.37	1751120.19	416614.58	39°38'28.5414"N	80°16'18.9692"W	4.54	227.968	0.07	-0.06	3.80
1150.00	0.500	229.200	1149.98	0.73	-3.34	-3.71	1751119.85	416614.28	39°38'28.5384"N	80°16'18.9735"W	4.99	227.982	0.07	-0.06	4.20
1200.00	0.740	213.900	1199.98	0.88	-3.75	-4.05	1751119.51	416613.87	39°38'28.5343"N	80°16'18.9779"W	5.52	227.215	0.58	0.48	-30.60
1250.00	0.830	205.300	1249.97	1.19	-4.35	-4.39	1751119.17	416613.27	39°38'28.5284"N	80°16'18.9821"W	6.18	225.271	0.30	0.18	-17.20
1300.00	0.680	189.700	1299.97	1.59	-4.97	-4.59	1751118.97	416612.65	39°38'28.5222"N	80°16'18.9846"W	6.76	222.760	0.51	-0.30	-31.20
1350.00	0.390	178.800	1349.97	1.95	-5.43	-4.64	1751118.92	416612.19	39°38'28.5177"N	80°16'18.9852"W	7.14	220.513	0.61	-0.58	-21.80
1400.00	0.470	210.400	1399.96	2.18	-5.78	-4.74	1751118.82	416611.84	39°38'28.5142"N	80°16'18.9864"W	7.47	219.369	0.49	0.16	63.20



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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	234.900	1449.96	2.28	-6.14	-5.11	1751118.45	416611.48	39°38'28.5106"N	80°16'18.9911"W	7.99	219.760	0.74	0.54	49.00	
1500.00	0.860	215.700	1499.96	2.42	-6.63	-5.59	1751117.97	416610.99	39°38'28.5057"N	80°16'18.9972"W	8.67	220.141	0.58	0.24	-38.40	
1550.00	0.990	202.600	1549.95	2.80	-7.33	-5.98	1751117.59	416610.29	39°38'28.4987"N	80°16'19.0020"W	9.46	219.177	0.49	0.26	-26.20	
1600.00	0.810	217.900	1599.94	3.15	-8.01	-6.36	1751117.20	416609.61	39°38'28.4920"N	80°16'19.0069"W	10.23	218.442	0.60	-0.36	30.60	
1650.00	0.830	210.100	1649.94	3.42	-8.60	-6.76	1751116.80	416609.02	39°38'28.4861"N	80°16'19.0119"W	10.94	218.149	0.23	0.04	-15.60	
1700.00	0.890	195.400	1699.93	3.84	-9.29	-7.04	1751116.52	416608.33	39°38'28.4793"N	80°16'19.0154"W	11.66	217.162	0.46	-0.12	-29.40	
1750.00	0.760	200.000	1749.93	4.29	-9.98	-7.26	1751116.30	416607.64	39°38'28.4725"N	80°16'19.0181"W	12.34	216.039	0.29	-0.26	9.20	
1800.00	0.890	205.200	1799.92	4.68	-10.64	-7.54	1751116.02	416606.98	39°38'28.4659"N	80°16'19.0216"W	13.04	215.315	0.30	0.26	10.40	
1850.00	0.850	205.700	1849.92	5.07	-11.32	-7.86	1751115.70	416606.30	39°38'28.4591"N	80°16'19.0257"W	13.79	214.774	0.08	-0.08	1.00	
1900.00	0.890	201.300	1899.91	5.49	-12.02	-8.16	1751115.40	416605.60	39°38'28.4522"N	80°16'19.0295"W	14.53	214.187	0.15	0.08	-8.80	
1950.00	1.080	203.100	1949.90	5.97	-12.82	-8.49	1751115.07	416604.81	39°38'28.4443"N	80°16'19.0336"W	15.37	213.526	0.38	0.38	3.60	
2000.00	0.900	202.900	1999.90	6.44	-13.61	-8.83	1751114.73	416604.01	39°38'28.4365"N	80°16'19.0378"W	16.22	212.970	0.36	-0.36	-0.40	
2050.00	1.190	196.500	2049.89	6.99	-14.47	-9.13	1751114.43	416603.15	39°38'28.4279"N	80°16'19.0416"W	17.11	212.247	0.62	0.58	-12.80	
2100.00	1.200	202.500	2099.88	7.62	-15.45	-9.48	1751114.08	416602.17	39°38'28.4182"N	80°16'19.0459"W	18.13	211.521	0.25	0.02	12.00	
2150.00	1.210	201.900	2149.87	8.21	-16.43	-9.87	1751113.69	416601.20	39°38'28.4085"N	80°16'19.0509"W	19.16	211.012	0.03	0.02	-1.20	
2200.00	1.130	201.000	2199.86	8.79	-17.38	-10.25	1751113.31	416600.25	39°38'28.3991"N	80°16'19.0555"W	20.17	210.531	0.16	-0.16	-1.80	
2250.00	1.050	200.500	2249.85	9.35	-18.26	-10.58	1751112.98	416599.36	39°38'28.3903"N	80°16'19.0598"W	21.11	210.093	0.16	-0.16	-1.00	
2300.00	1.020	195.500	2299.84	9.91	-19.12	-10.86	1751112.70	416598.50	39°38'28.3818"N	80°16'19.0632"W	21.99	209.602	0.19	-0.06	-10.00	
2350.00	0.900	201.600	2349.83	10.42	-19.92	-11.13	1751112.43	416597.70	39°38'28.3739"N	80°16'19.0665"W	22.81	209.192	0.31	-0.24	12.20	
2400.00	0.500	181.300	2399.83	10.82	-20.50	-11.28	1751112.28	416597.12	39°38'28.3682"N	80°16'19.0684"W	23.40	208.815	0.93	-0.80	-40.60	
2450.00	0.810	209.700	2449.82	11.16	-21.02	-11.46	1751112.10	416596.60	39°38'28.3630"N	80°16'19.0706"W	23.94	208.587	0.88	0.62	56.80	
2500.00	0.750	212.500	2499.82	11.45	-21.61	-11.81	1751111.75	416596.01	39°38'28.3572"N	80°16'19.0750"W	24.62	208.655	0.14	-0.12	5.60	
2550.00	0.920	202.400	2549.81	11.81	-22.26	-12.14	1751111.42	416595.37	39°38'28.3507"N	80°16'19.0792"W	25.35	208.606	0.45	0.34	-20.20	
2600.00	0.760	208.500	2599.81	12.19	-22.92	-12.45	1751111.11	416594.70	39°38'28.3442"N	80°16'19.0831"W	26.08	208.509	0.37	-0.32	12.20	
2650.00	0.530	225.400	2649.81	12.39	-23.37	-12.77	1751110.79	416594.25	39°38'28.3397"N	80°16'19.0871"W	26.63	208.654	0.59	-0.46	33.80	
2854.00	1.360	174.620	2853.78	14.70	-26.44	-13.22	1751110.35	416591.18	39°38'28.3093"N	80°16'19.0925"W	29.56	206.554	0.54	0.41	-24.89	
2917.00	2.630	170.350	2916.74	16.68	-28.61	-12.90	1751110.66	416589.01	39°38'28.2878"N	80°16'19.0883"W	31.39	204.273	2.03	2.02	-6.78	
3010.00	2.580	115.900	3009.66	20.43	-31.63	-10.66	1751112.90	416585.99	39°38'28.2582"N	80°16'19.0593"W	33.38	198.628	2.56	-0.05	-58.55	
3108.00	4.240	73.470	3107.49	23.40	-31.56	-5.20	1751118.36	416586.06	39°38'28.2593"N	80°16'18.9895"W	31.99	189.362	2.97	1.69	-43.30	
3203.00	5.640	55.400	3202.14	24.36	-27.91	2.01	1751125.57	416589.71	39°38'28.2960"N	80°16'18.8977"W	27.99	175.889	2.19	1.47	-19.02	



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Phoenix 10H AWP Proj: 28827'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
3298.00	7.740	44.200	3296.50	22.93	-20.68	10.31	1751133.87	416596.95	39°38'28.3683"N	80°16'18.7924"W	23.10	153.497	2.59	2.21	-11.79
3392.00	10.210	41.110	3389.34	19.40	-9.86	20.20	1751143.76	416607.76	39°38'28.4760"N	80°16'18.6671"W	22.48	116.014	2.68	2.63	-3.29
3487.00	12.050	44.070	3482.55	15.07	3.61	32.64	1751156.19	416621.23	39°38'28.6102"N	80°16'18.5097"W	32.84	83.687	2.03	1.94	3.12
3582.00	14.480	44.360	3575.01	10.48	19.23	47.84	1751171.40	416636.85	39°38'28.7658"N	80°16'18.3171"W	51.56	68.102	2.56	2.56	0.31
3675.00	17.290	43.670	3665.41	4.97	37.74	65.71	1751189.26	416655.36	39°38'28.9503"N	80°16'18.0907"W	75.77	60.128	3.00	2.99	-0.73
3771.00	16.600	49.730	3756.29	0.29	56.72	85.81	1751209.36	416674.34	39°38'29.1396"N	80°16'17.8358"W	102.86	56.533	1.99	-0.73	6.38
3866.00	19.120	49.340	3846.71	-3.18	75.64	107.97	1751231.52	416693.25	39°38'29.3284"N	80°16'17.5546"W	131.83	54.988	2.66	2.65	-0.41
3961.00	21.860	47.540	3935.89	-7.80	97.72	132.83	1751256.38	416715.33	39°38'29.5487"N	80°16'17.2393"W	164.90	53.659	2.96	2.88	-1.89
4059.00	23.090	52.500	4026.25	-11.90	121.74	161.53	1751285.08	416739.35	39°38'29.7885"N	80°16'16.8750"W	202.27	52.998	2.31	1.26	5.06
4153.00	24.960	54.860	4112.11	-13.67	144.37	192.38	1751315.93	416761.99	39°38'30.0148"N	80°16'16.4832"W	240.53	53.113	2.24	1.99	2.51
4248.00	26.580	52.090	4197.66	-15.78	168.97	225.54	1751349.09	416786.58	39°38'30.2607"N	80°16'16.0620"W	281.82	53.160	2.12	1.71	-2.92
4343.00	27.940	49.890	4282.11	-19.88	196.37	259.34	1751382.88	416813.98	39°38'30.5344"N	80°16'15.6330"W	325.30	52.867	1.78	1.43	-2.32
4438.00	27.650	46.570	4366.15	-26.14	225.87	292.37	1751415.91	416843.47	39°38'30.8287"N	80°16'15.2140"W	369.45	52.312	1.66	-0.31	-3.49
4533.00	28.540	49.250	4449.96	-32.71	255.84	325.57	1751449.11	416873.44	39°38'31.1277"N	80°16'14.7929"W	414.06	51.839	1.63	0.94	2.82
4627.00	30.110	52.090	4531.92	-37.25	284.96	361.19	1751484.73	416902.59	39°38'31.4187"N	80°16'14.3408"W	460.08	51.726	2.23	1.67	3.02
4723.00	32.950	50.810	4613.74	-41.58	316.26	400.43	1751523.97	416933.88	39°38'31.7314"N	80°16'13.8426"W	510.27	51.696	3.04	2.96	-1.33
4816.00	36.000	49.390	4690.39	-47.35	350.06	440.79	1751564.32	416967.66	39°38'32.0686"N	80°16'13.3304"W	562.89	51.544	3.39	3.28	-1.53
4910.00	36.160	48.890	4766.36	-54.32	386.26	482.66	1751606.19	417003.88	39°38'32.4301"N	80°16'12.7992"W	618.20	51.329	0.36	0.17	-0.53
5009.00	35.450	50.320	4846.66	-61.15	423.82	526.76	1751650.29	417041.41	39°38'32.8048"N	80°16'12.2395"W	676.09	51.181	1.11	-0.72	1.44
5104.00	35.070	48.260	4924.23	-67.90	459.58	568.33	1751691.86	417077.17	39°38'33.1617"N	80°16'11.7121"W	730.90	51.039	1.31	-0.40	-2.17
5198.00	35.880	50.090	5000.78	-74.72	495.23	609.61	1751733.14	417112.82	39°38'33.5176"N	80°16'11.1883"W	785.42	50.911	1.42	0.86	1.95
5294.00	36.360	51.800	5078.33	-80.07	530.88	653.56	1751777.08	417148.47	39°38'33.8736"N	80°16'10.6305"W	842.00	50.913	1.16	0.50	1.78
5388.00	35.920	49.920	5154.25	-85.39	565.87	696.55	1751820.07	417183.45	39°38'34.2230"N	80°16'10.0847"W	897.44	50.910	1.27	-0.47	-2.00
5483.00	36.280	50.600	5231.00	-91.34	601.65	739.59	1751863.11	417219.23	39°38'34.5802"N	80°16'9.5384"W	953.40	50.872	0.57	0.38	0.72
5578.00	36.700	50.970	5307.38	-96.84	637.37	783.37	1751906.88	417254.95	39°38'34.9369"N	80°16'8.9828"W	1009.90	50.867	0.50	0.44	0.39
5673.00	35.890	48.860	5383.95	-103.15	673.56	826.39	1751949.90	417291.14	39°38'35.2983"N	80°16'8.4368"W	1066.12	50.818	1.57	-0.85	-2.22
5768.00	35.690	49.430	5461.01	-110.14	709.91	868.41	1751991.92	417327.48	39°38'35.6610"N	80°16'7.9036"W	1121.65	50.735	0.41	-0.21	0.60
5863.00	35.670	50.430	5538.18	-116.35	745.57	910.81	1752034.32	417363.15	39°38'36.0171"N	80°16'7.3655"W	1177.06	50.697	0.61	-0.02	1.05
5962.00	36.060	48.820	5618.41	-123.17	783.15	954.99	1752078.50	417400.72	39°38'36.3921"N	80°16'6.8049"W	1235.04	50.646	1.03	0.39	-1.63
6057.00	35.960	48.640	5695.26	-130.60	819.99	996.97	1752120.47	417437.56	39°38'36.7598"N	80°16'6.2723"W	1290.67	50.563	0.15	-0.11	-0.18



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Operator	NORTHEAST NATURAL ENERGY, LLC		Well	Phoenix 10H
Field	Monongalia		API/Legal	
Facility	Phoenix Pad		Wellbore	Phoenix 10H AWB
Slot	Slot 10			

WELLPATH DATA (331 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]
6151.00	37.280	47.690	5770.70	-138.61	857.39	1038.74	1752162.24	417474.96	39°38'37.1329"N	80°16'5.7424"W	1346.89	50.463	1.53	1.40	-1.01
6246.00	37.360	48.200	5846.25	-147.04	895.97	1081.51	1752205.00	417513.53	39°38'37.5178"N	80°16'5.2000"W	1404.43	50.360	0.34	0.08	0.54
6340.00	36.820	45.780	5921.24	-156.27	934.63	1122.96	1752246.45	417552.19	39°38'37.9033"N	80°16'4.6743"W	1461.01	50.230	1.66	-0.57	-2.57
6436.00	36.990	47.740	5998.01	-165.89	974.11	1164.95	1752288.44	417591.87	39°38'38.2971"N	80°16'4.1419"W	1518.55	50.098	1.24	0.18	2.04
6531.00	38.980	48.780	6073.89	-173.98	1012.16	1207.60	1752331.08	417629.72	39°38'38.6767"N	80°16'3.6009"W	1575.88	50.032	0.66	-0.01	1.09
6626.00	36.530	50.100	6150.01	-180.82	1049.13	1250.78	1752374.26	417666.68	39°38'39.0457"N	80°16'3.0529"W	1632.52	50.011	0.96	-0.47	1.39
6720.00	35.930	48.710	6225.83	-187.55	1085.27	1292.97	1752416.45	417702.82	39°38'39.4064"N	80°16'2.5176"W	1688.07	49.991	1.08	-0.64	-1.48
6818.00	34.710	50.310	6305.80	-194.33	1122.07	1336.04	1752459.52	417739.62	39°38'39.7737"N	80°16'1.9709"W	1744.72	49.975	1.56	-1.24	1.63
6913.00	34.650	49.040	6383.92	-200.63	1157.04	1377.25	1752500.73	417774.59	39°38'40.1229"N	80°16'1.4480"W	1798.77	49.966	0.76	-0.06	-1.34
7008.00	35.350	47.350	6461.74	-208.58	1193.37	1417.86	1752541.33	417810.91	39°38'40.4853"N	80°16'0.9328"W	1853.23	49.914	1.26	-0.74	-1.78
7102.00	35.420	47.960	6538.38	-216.63	1230.03	1458.09	1752581.56	417847.58	39°38'40.8510"N	80°16'0.4226"W	1907.62	49.849	0.38	0.07	0.65
7198.00	35.260	48.500	6616.69	-224.50	1267.02	1499.51	1752622.97	417884.57	39°38'41.2200"N	80°15'59.8972"W	1963.13	49.804	0.37	-0.17	0.56
7293.00	35.180	46.400	6694.30	-232.99	1304.07	1539.86	1752663.33	417921.61	39°38'41.5895"N	80°15'59.3853"W	2017.86	49.740	1.28	-0.08	-2.21
7387.00	35.810	45.980	6770.83	-242.64	1341.85	1579.25	1752702.71	417959.39	39°38'41.9663"N	80°15'58.8860"W	2072.34	49.646	0.72	0.67	-0.45
7481.00	36.340	46.910	6846.81	-252.17	1379.99	1619.36	1752742.82	417997.52	39°38'42.3465"N	80°15'58.3774"W	2127.60	49.563	0.81	0.56	0.99
7509.00	36.170	46.410	6950.03	-264.94	1431.94	1674.42	1752797.87	418049.47	39°38'42.8646"N	80°15'57.6793"W	2203.21	49.463	0.27	-0.13	-0.39
7700.00	33.340	37.710	7024.83	-277.60	1470.27	1709.19	1752832.65	418087.80	39°38'43.2463"N	80°15'57.2389"W	2254.56	49.297	6.27	-3.11	-9.56
7795.00	28.810	29.960	7106.21	-296.15	1510.79	1736.62	1752860.07	418128.32	39°38'43.6491"N	80°15'56.8927"W	2301.81	48.978	6.35	-4.77	-8.16
7889.00	26.130	31.740	7189.60	-314.85	1548.03	1758.82	1752882.27	418165.55	39°38'44.0189"N	80°15'56.6129"W	2343.04	48.647	2.98	-2.85	1.89
7984.00	23.070	31.890	7275.97	-331.29	1581.63	1779.66	1752903.11	418199.15	39°38'44.3528"N	80°15'56.3502"W	2380.91	48.372	3.22	-3.22	0.16
8078.00	21.230	50.090	7363.13	-340.79	1608.22	1802.48	1752925.93	418225.74	39°38'44.6175"N	80°15'56.0614"W	2415.64	48.260	7.53	-1.96	19.36
8172.00	22.080	65.180	7450.57	-339.95	1626.57	1831.59	1752955.04	418244.09	39°38'44.8013"N	80°15'55.6913"W	2449.58	48.393	5.98	0.90	16.05
8267.00	24.550	77.980	7537.86	-329.94	1638.18	1867.13	1752990.57	418256.70	39°38'44.9191"N	80°15'55.2382"W	2483.91	48.737	5.92	2.60	13.47
8361.00	26.990	92.050	7622.58	-310.28	1641.49	1907.59	1753031.03	418259.01	39°38'44.9551"N	80°15'54.7214"W	2516.62	49.288	6.99	2.60	14.97
8456.00	30.380	101.590	7705.08	-280.94	1635.95	1952.23	1753075.67	418253.47	39°38'44.9041"N	80°15'54.1501"W	2547.06	50.037	6.05	3.61	10.15
8550.00	34.530	110.200	7785.27	-242.12	1621.81	2001.08	1753124.51	418239.33	39°38'44.7685"N	80°15'53.5241"W	2575.77	50.976	6.53	4.37	9.06
8644.00	39.450	116.650	7860.35	-194.63	1599.19	2052.82	1753176.26	418216.72	39°38'44.5494"N	80°15'52.8602"W	2602.21	52.081	6.66	5.23	8.86
8739.00	44.240	122.980	7931.14	-137.94	1567.58	2107.65	1753231.08	418185.11	39°38'44.2416"N	80°15'52.1558"W	2626.69	53.360	6.72	5.04	6.66
8834.00	49.960	127.860	7995.80	-72.97	1527.18	2164.23	1753287.66	418144.71	39°38'43.8470"N	80°15'51.4282"W	2648.80	54.791	7.10	6.02	5.14
8929.00	57.040	130.630	8062.28	-0.02	1478.84	2223.27	1753346.69	418096.37	39°38'43.3743"N	80°15'50.6682"W	2670.19	56.370	7.81	7.46	2.92



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Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
9024.00	62.970	133.820	8099.76	79.73	1423.53	2284.11	1753407.53	418041.07	39°38'42.8328"N	80°15'49.8845"W	2691.39	58.067	6.89	6.24	3.36
9119.00	68.300	136.860	8138.94	164.63	1361.98	2344.87	1753468.29	417979.51	39°38'42.2296"N	80°15'49.1010"W	2711.72	59.851	6.32	5.61	3.20
9214.00	72.880	140.220	8170.52	253.36	1294.83	2404.14	1753527.56	417912.37	39°38'41.5710"N	80°15'48.3361"W	2730.66	61.694	5.86	4.82	3.54
9309.00	78.380	144.280	8194.09	345.10	1222.09	2460.42	1753583.83	417839.63	39°38'40.8568"N	80°15'47.6088"W	2747.21	63.586	7.12	5.79	4.27
9404.00	84.390	145.820	8208.32	438.96	1145.13	2514.19	1753637.60	417762.68	39°38'40.1008"N	80°15'46.9131"W	2762.69	65.512	6.53	6.33	1.62
9497.00	87.600	145.160	8214.81	531.71	1068.69	2566.75	1753690.15	417686.25	39°38'39.3498"N	80°15'46.2330"W	2780.34	67.395	3.52	3.45	-0.71
9593.00	89.510	145.460	8217.23	627.65	989.79	2621.36	1753744.76	417607.35	39°38'38.5746"N	80°15'45.5262"W	2802.00	69.314	2.01	1.99	0.31
9687.00	89.720	145.480	8217.86	721.64	912.35	2674.64	1753798.04	417529.91	39°38'37.8138"N	80°15'44.8367"W	2825.97	71.165	0.22	0.22	0.02
9781.00	89.380	145.610	8218.60	815.63	834.84	2727.82	1753851.22	417452.41	39°38'37.0523"N	80°15'44.1485"W	2852.71	72.983	0.39	-0.36	0.14
9876.00	90.220	145.500	8218.93	910.62	756.50	2781.56	1753904.95	417374.07	39°38'36.2826"N	80°15'43.4532"W	2882.59	74.735	0.89	0.88	-0.12
9971.00	90.150	145.200	8218.63	1005.60	678.35	2835.57	1753958.96	417295.93	39°38'35.5148"N	80°15'42.7542"W	2915.58	76.546	0.32	-0.07	-0.32
10064.00	89.850	145.370	8218.63	1098.58	601.90	2888.53	1754011.91	417219.49	39°38'34.7637"N	80°15'42.0689"W	2950.58	78.229	0.37	-0.32	0.18
10158.00	89.450	143.960	8219.20	1192.54	525.22	2942.89	1754066.27	417142.81	39°38'34.0105"N	80°15'41.3657"W	2989.40	79.881	1.56	-0.43	-1.50
10254.00	89.540	142.730	8220.05	1288.40	448.21	3000.20	1754123.58	417065.81	39°38'33.2542"N	80°15'40.6248"W	3033.50	81.503	1.28	0.09	-1.28
10348.00	89.630	142.190	8220.73	1382.18	373.68	3057.48	1754180.85	416991.28	39°38'32.5224"N	80°15'39.8846"W	3080.23	83.032	0.58	0.10	-0.57
10444.00	89.540	145.070	8221.42	1478.05	296.39	3114.40	1754237.77	416913.99	39°38'31.7634"N	80°15'39.1487"W	3128.47	84.564	3.00	-0.09	3.00
10538.00	89.260	146.210	8222.41	1572.04	218.80	3167.45	1754290.81	416836.41	39°38'31.0010"N	80°15'38.4621"W	3174.99	86.048	1.25	-0.30	1.21
10633.00	89.570	146.990	8223.38	1667.03	139.49	3219.74	1754343.10	416757.10	39°38'30.2217"N	80°15'37.7851"W	3222.76	87.519	0.88	0.33	0.82
10728.00	90.150	146.040	8223.61	1762.03	60.26	3272.15	1754395.51	416677.88	39°38'29.4430"N	80°15'37.1066"W	3272.71	88.945	1.17	0.61	-1.00
10822.00	90.250	147.070	8223.28	1856.03	-18.17	3323.96	1754447.31	416599.45	39°38'28.6722"N	80°15'36.4359"W	3324.01	90.313	1.10	0.11	1.10
10917.00	90.370	146.640	8222.77	1951.02	-97.71	3375.90	1754499.25	416519.91	39°38'27.8905"N	80°15'35.7633"W	3377.31	91.658	0.47	0.13	-0.45
11011.00	90.490	146.400	8222.06	2045.02	-176.11	3427.75	1754551.10	416441.52	39°38'27.1200"N	80°15'35.0921"W	3432.27	92.941	0.29	0.13	-0.26
11106.00	91.020	146.910	8220.81	2140.01	-255.47	3479.97	1754603.31	416362.17	39°38'26.3402"N	80°15'34.4161"W	3489.33	94.199	0.77	0.56	0.54
11201.00	90.920	146.460	8219.20	2235.00	-334.84	3532.14	1754655.48	416282.80	39°38'25.5601"N	80°15'33.7406"W	3547.97	95.415	0.49	-0.11	-0.47
11296.00	90.280	145.930	8218.21	2329.99	-413.78	3584.99	1754708.33	416203.87	39°38'24.7844"N	80°15'33.0565"W	3608.79	96.584	0.87	-0.67	-0.56
11391.00	90.090	146.020	8217.90	2424.99	-492.51	3638.15	1754761.48	416125.14	39°38'24.0108"N	80°15'32.3685"W	3671.33	97.710	0.22	-0.20	0.09
11486.00	90.650	146.380	8217.29	2519.98	-571.45	3690.99	1754814.33	416046.20	39°38'23.2350"N	80°15'31.6845"W	3734.97	98.801	0.70	0.59	0.38
11581.00	89.780	145.500	8216.93	2614.98	-650.15	3744.20	1754867.53	415967.51	39°38'22.4617"N	80°15'30.9959"W	3800.22	99.851	1.30	-0.92	-0.93
11676.00	90.120	146.370	8217.01	2709.97	-728.85	3797.41	1754920.74	415888.81	39°38'21.6884"N	80°15'30.3073"W	3866.72	100.865	0.98	0.36	0.92
11770.00	89.910	146.260	8216.99	2803.97	-807.07	3849.54	1754972.87	415810.60	39°38'20.9198"N	80°15'29.6324"W	3933.24	101.841	0.25	-0.22	-0.12



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Environment

Actual Wellpath Report

Phoenix 10H AWP Proj: 28827'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
11865.00	89.690	146.400	8217.32	2898.97	-886.13	3902.21	1755025.53	415731.54	39°38'20.1428"N	80°15'28.9507"W	4001.56	102.794	0.27	-0.23	0.15
11959.00	90.370	146.270	8217.27	2992.97	-964.37	3954.32	1755077.64	415653.31	39°38'19.3740"N	80°15'28.2762"W	4070.21	103.706	0.74	0.72	-0.14
12053.00	90.250	146.240	8216.76	3086.97	-1042.53	4006.53	1755129.85	415575.16	39°38'18.6059"N	80°15'27.6004"W	4139.95	104.585	0.13	-0.13	-0.03
12147.00	89.970	147.410	8216.58	3180.97	-1121.21	4057.97	1755181.28	415496.48	39°38'17.8327"N	80°15'26.9344"W	4210.01	105.445	1.28	-0.30	1.24
12241.00	90.550	147.730	8216.16	3274.94	-1200.54	4108.38	1755231.69	415417.15	39°38'17.0528"N	80°15'26.2816"W	4280.20	106.289	0.70	0.62	0.34
12336.00	90.680	147.180	8215.14	3369.92	-1280.52	4159.48	1755282.79	415337.08	39°38'16.2657"N	80°15'25.6197"W	4352.16	107.113	0.59	0.14	-0.58
12431.00	90.520	147.600	8214.14	3464.90	-1360.64	4210.68	1755333.98	415257.06	39°38'15.4792"N	80°15'24.9568"W	4425.06	107.908	0.47	-0.17	0.44
12525.00	90.800	147.830	8213.06	3558.87	-1440.10	4260.88	1755384.18	415177.60	39°38'14.6980"N	80°15'24.3065"W	4497.67	108.674	0.39	0.30	0.24
12620.00	90.800	147.520	8211.73	3653.83	-1520.37	4311.67	1755434.97	415097.34	39°38'13.9090"N	80°15'23.6486"W	4571.88	109.424	0.33	0.00	-0.33
12715.00	90.620	147.870	8210.56	3748.80	-1600.66	4362.44	1755485.73	415017.06	39°38'13.1198"N	80°15'22.9911"W	4646.83	110.149	0.41	-0.19	0.37
12810.00	90.550	147.150	8209.59	3843.78	-1680.79	4413.47	1755536.76	414936.93	39°38'12.3321"N	80°15'22.3303"W	4722.68	110.848	0.76	-0.07	-0.76
12904.00	90.490	147.700	8208.73	3937.76	-1760.00	4464.08	1755587.36	414857.73	39°38'11.5536"N	80°15'21.6749"W	4798.50	111.517	0.59	-0.06	0.59
12999.00	89.630	146.650	8208.63	4032.75	-1839.83	4515.57	1755638.85	414777.91	39°38'10.7689"N	80°15'21.0081"W	4876.00	112.168	1.43	-0.91	-1.11
13094.00	90.520	147.670	8208.51	4127.73	-1919.64	4567.09	1755690.37	414698.09	39°38'9.9844"N	80°15'20.3411"W	4954.12	112.798	1.42	0.94	1.07
13189.00	90.710	148.130	8207.49	4222.69	-2000.11	4617.57	1755740.85	414617.63	39°38'9.1933"N	80°15'19.6872"W	5032.14	113.420	0.52	0.20	0.48
13284.00	90.340	147.560	8206.62	4317.66	-2080.54	4668.13	1755791.40	414537.21	39°38'8.4027"N	80°15'19.0323"W	5110.78	114.022	0.72	-0.39	-0.60
13379.00	90.710	147.430	8205.75	4412.64	-2160.65	4719.17	1755842.44	414457.10	39°38'7.6153"N	80°15'18.3713"W	5190.28	114.600	0.41	0.39	-0.14
13474.00	89.690	145.780	8205.42	4507.63	-2239.96	4771.46	1755894.73	414377.79	39°38'6.8358"N	80°15'17.6945"W	5271.08	115.148	2.04	-1.07	-1.74
13569.00	90.490	147.230	8205.27	4602.63	-2319.18	4823.88	1755947.15	414298.58	39°38'6.0572"N	80°15'17.0159"W	5352.43	115.677	1.74	0.84	1.53
13663.00	90.250	146.890	8204.66	4696.62	-2398.07	4875.00	1755998.26	414219.70	39°38'5.2819"N	80°15'16.3541"W	5432.89	116.193	0.44	-0.26	-0.36
13757.00	90.460	147.020	8204.08	4790.61	-2476.86	4926.25	1756049.51	414140.91	39°38'4.5075"N	80°15'15.6905"W	5513.88	116.693	0.26	0.22	0.14
13852.00	90.580	148.720	8203.22	4885.57	-2557.31	4976.78	1756100.03	414060.47	39°38'3.7166"N	80°15'15.0362"W	5595.37	117.196	1.79	0.13	1.79
13947.00	90.430	147.950	8202.38	4980.51	-2638.16	5026.64	1756149.90	413979.62	39°38'2.9217"N	80°15'14.3901"W	5676.89	117.692	0.83	-0.16	-0.81
14041.00	90.740	146.550	8201.42	5074.49	-2717.21	5077.49	1756200.74	413900.57	39°38'2.1447"N	80°15'13.7318"W	5758.83	118.153	1.53	0.33	-1.49
14135.00	90.950	147.360	8200.03	5168.48	-2796.00	5128.74	1756251.99	413821.79	39°38'1.3704"N	80°15'13.0682"W	5841.37	118.598	0.89	0.22	0.86
14234.00	90.310	146.650	8198.94	5267.46	-2879.03	5182.65	1756305.89	413738.77	39°38'0.5543"N	80°15'12.3703"W	5928.63	119.053	0.97	-0.65	-0.72
14329.00	90.520	146.730	8198.26	5362.46	-2958.42	5234.82	1756358.06	413659.38	39°37'59.7741"N	80°15'11.6950"W	6012.95	119.473	0.24	0.22	0.08
14424.00	90.120	145.600	8197.73	5457.46	-3037.33	5287.72	1756410.95	413580.48	39°37'58.9986"N	80°15'11.0105"W	6097.97	119.874	1.26	-0.42	-1.19
14520.00	90.710	146.780	8197.03	5553.45	-3117.09	5341.13	1756464.36	413500.72	39°37'58.2148"N	80°15'10.3193"W	6184.17	120.268	1.37	0.61	1.23
14615.00	90.060	145.930	8196.39	5648.45	-3196.17	5393.76	1756516.99	413421.65	39°37'57.4376"N	80°15'9.6281"W	6269.62	120.650	1.13	-0.68	-0.89



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Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
14710.00	91.350	147.880	8195.22	5743.43	-3275.75	5445.63	1756568.86	413342.07	39°37'56.6555"N	80°15'8.9667"W	6354.95	121.028	2.46	1.36	2.05
14805.00	90.090	146.360	8194.03	5838.41	-3355.52	5497.20	1756620.42	413262.31	39°37'55.8714"N	80°15'8.2991"W	6440.39	121.400	2.08	-1.33	-1.60
14900.00	90.370	146.110	8193.65	5933.41	-3434.49	5550.00	1756673.22	413183.34	39°37'55.0953"N	80°15'7.6158"W	6526.73	121.750	0.40	0.29	-0.26
14995.00	90.430	146.120	8192.98	6028.40	-3513.36	5602.96	1756726.18	413104.48	39°37'54.3203"N	80°15'6.9305"W	6613.38	122.090	0.06	0.06	0.01
15091.00	90.770	146.800	8191.98	6124.40	-3593.37	5656.00	1756779.21	413024.47	39°37'53.6340"N	80°15'6.2440"W	6700.94	122.429	0.79	0.35	0.71
15186.00	90.370	146.250	8191.03	6219.39	-3672.60	5708.39	1756831.60	412945.24	39°37'52.7552"N	80°15'5.5659"W	6787.77	122.756	0.72	-0.42	-0.58
15281.00	90.680	146.640	8190.16	6314.39	-3751.77	5760.90	1756884.11	412866.08	39°37'51.9772"N	80°15'4.8863"W	6874.86	123.074	0.52	0.33	0.41
15376.00	89.480	145.660	8190.03	6409.38	-3830.66	5813.82	1756937.02	412787.19	39°37'51.2019"N	80°15'4.2016"W	6962.36	123.380	1.63	-1.26	-1.03
15471.00	89.690	144.910	8190.72	6504.36	-3908.75	5867.92	1756991.12	412709.11	39°37'50.4347"N	80°15'3.5018"W	7050.59	123.668	0.82	0.22	-0.79
15566.00	89.320	146.130	8191.54	6599.35	-3987.06	5921.70	1757044.89	412630.81	39°37'49.6652"N	80°15'2.8062"W	7138.84	123.952	1.34	-0.39	1.28
15661.00	89.510	146.630	8192.51	6694.34	-4066.16	5974.29	1757097.49	412551.71	39°37'48.8878"N	80°15'2.1255"W	7226.75	124.240	0.56	0.20	0.53
15756.00	89.380	146.630	8193.43	6789.34	-4145.50	6026.54	1757149.74	412472.38	39°37'48.1081"N	80°15'1.4492"W	7314.67	124.523	0.14	-0.14	0.00
15852.00	89.510	146.860	8194.36	6885.33	-4225.77	6079.18	1757202.37	412392.11	39°37'47.3191"N	80°15'0.7679"W	7403.62	124.804	0.28	0.14	0.24
15947.00	89.480	146.580	8195.20	6980.32	-4305.19	6131.31	1757254.50	412312.69	39°37'46.5386"N	80°15'0.0932"W	7491.84	125.075	0.30	-0.03	-0.29
16042.00	89.540	146.690	8196.01	7075.32	-4384.53	6183.56	1757306.74	412233.36	39°37'45.7588"N	80°14'59.4170"W	7580.27	125.339	0.13	0.06	0.12
16137.00	89.380	146.600	8196.90	7170.31	-4463.88	6235.79	1757358.97	412154.02	39°37'44.9789"N	80°14'58.7410"W	7668.85	125.597	0.19	-0.17	-0.09
16233.00	89.480	146.490	8197.86	7265.31	-4543.97	6288.71	1757411.88	412073.93	39°37'44.1918"N	80°14'58.0661"W	7758.58	125.850	0.15	0.10	-0.11
16328.00	88.920	145.690	8199.19	7361.30	-4622.80	6341.70	1757464.87	411995.10	39°37'43.4171"N	80°14'57.3705"W	7847.77	126.090	1.03	-0.59	-0.84
16423.00	88.460	146.660	8201.36	7456.27	-4701.70	6394.57	1757517.74	411916.21	39°37'42.6417"N	80°14'56.6864"W	7937.03	126.326	1.13	-0.48	1.02
16518.00	88.030	146.260	8204.27	7551.23	-4780.84	6447.03	1757570.20	411837.07	39°37'41.8639"N	80°14'56.0075"W	8026.25	126.559	0.62	-0.45	-0.42
16614.00	87.010	146.110	8208.42	7647.13	-4860.53	6500.41	1757623.57	411757.39	39°37'41.0808"N	80°14'55.3168"W	8116.65	126.786	1.07	-1.06	-0.16
16709.00	87.780	147.010	8212.74	7742.03	-4939.72	6552.71	1757675.86	411678.20	39°37'40.3025"N	80°14'54.6401"W	8206.02	127.011	1.25	0.81	0.95
16804.00	87.170	146.010	8216.92	7836.94	-5018.87	6605.07	1757728.23	411599.06	39°37'39.5246"N	80°14'53.9624"W	8295.54	127.229	1.23	-0.64	-1.05
16900.00	87.630	146.750	8221.28	7932.84	-5098.73	6658.17	1757781.32	411519.20	39°37'38.7397"N	80°14'53.2753"W	8386.20	127.444	0.91	0.48	0.77
16995.00	86.890	145.880	8225.82	8027.73	-5177.69	6710.80	1757833.95	411440.25	39°37'37.9638"N	80°14'52.5943"W	8476.04	127.652	1.20	-0.78	-0.92
17090.00	86.830	146.600	8231.02	8122.59	-5256.55	6763.51	1757886.66	411361.39	39°37'37.1887"N	80°14'51.9122"W	8566.00	127.854	0.76	-0.06	0.76
17185.00	86.610	146.500	8236.46	8217.43	-5335.68	6815.79	1757938.93	411282.26	39°37'36.4110"N	80°14'51.2357"W	8655.90	128.055	0.25	-0.23	-0.11
17280.00	86.670	146.340	8242.03	8312.27	-5414.69	6868.25	1757991.39	411203.26	39°37'35.6345"N	80°14'50.5569"W	8745.95	128.251	0.18	0.06	-0.17
17375.00	87.440	147.320	8246.91	8407.14	-5494.11	6920.15	1758043.29	411123.85	39°37'34.8539"N	80°14'49.8851"W	8835.93	128.447	1.31	0.81	1.03
17471.00	87.320	145.730	8251.30	8503.03	-5574.10	6973.05	1758096.18	411043.87	39°37'34.0678"N	80°14'49.2006"W	8927.15	128.638	1.66	-0.13	-1.66



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Slot	Slot 10		

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17566.00	86.710	147.800	8256.25	8597.90	-5653.44	7025.04	1758148.17	410964.52	39°37'33.2879"N	80°14'48.5277"W	9017.35	128.826	2.27	-0.64	-2.18	
17661.00	85.780	146.430	8262.47	8892.68	-5733.05	7076.51	1758199.64	410884.92	39°37'32.5054"N	80°14'47.8615"W	9107.40	129.013	1.74	-0.98	-1.44	
17757.00	85.840	145.600	8269.48	8788.42	-5812.44	7130.03	1758253.15	410805.54	39°37'31.7252"N	80°14'47.1692"W	9199.00	129.187	0.86	0.06	-0.86	
17852.00	86.180	146.250	8276.09	8883.19	-5890.93	7183.12	1758306.24	410727.05	39°37'30.9538"N	80°14'46.4823"W	9289.80	129.355	0.77	0.36	0.68	
17947.00	86.210	145.970	8282.40	8977.98	-5969.62	7235.98	1758359.10	410648.37	39°37'30.1805"N	80°14'45.7985"W	9380.60	129.522	0.30	0.03	-0.29	
18042.00	88.090	147.090	8287.12	9072.85	-6048.76	7288.30	1758411.42	410569.23	39°37'29.4027"N	80°14'45.1214"W	9471.37	129.690	2.30	1.98	1.18	
18138.00	88.180	146.300	8290.24	9168.80	-6128.95	7340.99	1758464.10	410489.04	39°37'28.6145"N	80°14'44.4396"W	9563.17	129.858	0.83	0.09	-0.82	
18233.00	88.770	146.740	8292.77	9263.77	-6208.16	7393.37	1758516.48	410409.84	39°37'27.8360"N	80°14'43.7617"W	9654.18	130.020	0.77	0.62	0.46	
18328.00	88.430	146.730	8295.09	9358.74	-6287.57	7445.47	1758568.57	410330.43	39°37'27.0555"N	80°14'43.0876"W	9745.18	130.181	0.36	-0.36	-0.01	
18424.00	88.950	146.770	8297.29	9454.71	-6367.83	7498.09	1758621.19	410250.18	39°37'26.2666"N	80°14'42.4066"W	9837.21	130.340	0.54	0.54	0.04	
18519.00	88.890	146.100	8299.08	9549.69	-6446.98	7550.60	1758673.70	410171.04	39°37'25.4888"N	80°14'41.7271"W	9928.50	130.492	0.71	-0.06	-0.71	
18614.00	88.650	144.790	8301.12	9644.65	-6525.20	7604.47	1758727.57	410092.82	39°37'24.7202"N	80°14'41.0304"W	10020.29	130.632	1.40	-0.25	-1.38	
18709.00	88.550	145.320	8303.44	9739.60	-6603.05	7658.87	1758781.96	410014.98	39°37'23.9553"N	80°14'40.3270"W	10112.30	130.766	0.57	-0.11	0.56	
18804.00	88.920	146.720	8305.54	9834.57	-6681.80	7711.95	1758835.04	409936.22	39°37'23.1813"N	80°14'39.6403"W	10203.96	130.906	1.52	0.39	1.47	
18899.00	88.580	145.720	8307.61	9929.55	-6760.75	7764.78	1758887.85	409857.29	39°37'22.4056"N	80°14'38.9571"W	10295.59	131.046	1.11	-0.36	-1.05	
18994.00	89.350	146.950	8309.32	10024.53	-6839.80	7817.41	1758940.49	409778.24	39°37'21.6285"N	80°14'38.2759"W	10387.24	131.184	1.53	0.81	1.29	
19090.00	89.380	146.780	8310.39	10120.52	-6920.18	7869.88	1758992.96	409697.86	39°37'20.8384"N	80°14'37.5968"W	10479.70	131.326	0.18	0.03	-0.18	
19185.00	89.380	147.060	8311.42	10215.51	-6999.78	7921.73	1759044.81	409618.27	39°37'20.0560"N	80°14'36.9258"W	10571.22	131.464	0.29	0.00	0.29	
19280.00	89.570	147.180	8312.29	10310.50	-7079.56	7973.31	1759096.38	409538.50	39°37'19.2718"N	80°14'36.2584"W	10662.73	131.602	0.24	0.20	0.13	
19375.00	88.950	146.500	8313.51	10405.49	-7159.08	8025.26	1759148.33	409458.98	39°37'18.4902"N	80°14'35.5860"W	10754.41	131.735	0.97	-0.66	-0.72	
19470.00	89.110	146.500	8315.12	10500.47	-7238.29	8077.69	1759200.76	409379.78	39°37'17.7117"N	80°14'34.9076"W	10846.28	131.863	0.17	0.17	0.00	
19566.00	89.380	146.560	8316.39	10596.46	-7318.36	8130.63	1759253.69	409299.71	39°37'16.9247"N	80°14'34.2227"W	10939.17	131.990	0.29	0.28	0.06	
19661.00	89.260	146.360	8317.51	10691.46	-7397.54	8183.11	1759306.17	409220.53	39°37'16.1465"N	80°14'33.5436"W	11031.18	132.114	0.25	-0.13	-0.21	
19756.00	89.720	146.590	8318.36	10786.45	-7476.73	8235.58	1759358.64	409141.35	39°37'15.3682"N	80°14'32.8648"W	11123.23	132.235	0.54	0.48	0.24	
19851.00	89.380	146.440	8319.11	10881.45	-7555.96	8287.99	1759411.05	409062.12	39°37'14.5894"N	80°14'32.1867"W	11215.32	132.355	0.39	-0.36	-0.16	
19946.00	88.950	146.750	8320.49	10976.44	-7635.26	8340.29	1759463.34	408982.83	39°37'13.8100"N	80°14'31.5100"W	11307.41	132.473	0.56	-0.45	0.33	
20041.00	90.030	146.370	8321.34	11071.43	-7714.53	8392.64	1759515.68	408903.56	39°37'13.0309"N	80°14'30.8327"W	11399.57	132.589	1.21	1.14	-0.40	
20137.00	90.680	147.290	8320.74	11167.43	-7794.88	8445.16	1759568.20	408823.22	39°37'12.2411"N	80°14'30.1530"W	11492.65	132.707	1.17	0.68	0.96	
20232.00	92.400	146.830	8318.19	11262.38	-7874.58	8496.80	1759619.84	408743.52	39°37'11.4577"N	80°14'29.4848"W	11584.67	132.823	1.87	1.81	-0.48	
20327.00	92.430	146.510	8314.19	11357.30	-7953.88	8548.95	1759671.99	408664.23	39°37'10.6782"N	80°14'28.8100"W	11676.85	132.935	0.34	0.03	-0.34	



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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
20422.00	92.060	146.430	8310.46	11452.22	-8033.01	8601.38	1759724.42	408585.10	39°37'9.9005"N	80°14'28.1316"W	11769.16	133.043	0.40	-0.39	-0.08
20517.00	91.290	146.720	8307.69	11547.18	-8112.27	8653.69	1759776.72	408505.85	39°37'9.1215"N	80°14'27.4548"W	11861.50	133.150	0.87	-0.81	0.31
20612.00	90.830	145.380	8305.93	11642.16	-8191.06	8706.74	1759829.76	408427.07	39°37'8.3472"N	80°14'26.7687"W	11954.10	133.252	1.49	-0.48	-1.41
20707.00	90.920	145.620	8304.48	11737.14	-8269.34	8760.54	1759883.56	408348.79	39°37'7.5779"N	80°14'26.0730"W	12046.95	133.348	0.27	0.09	0.25
20802.00	92.620	147.050	8301.54	11832.09	-8348.36	8813.17	1759936.19	408269.77	39°37'6.8012"N	80°14'25.3921"W	12139.49	133.449	2.34	1.79	1.51
20897.00	91.910	145.570	8297.79	11927.01	-8427.34	8865.83	1759988.84	408190.79	39°37'6.0250"N	80°14'24.7109"W	12232.05	133.548	1.73	-0.75	-1.56
20993.00	93.480	145.610	8293.28	12022.89	-8506.45	8920.01	1760043.03	408111.69	39°37'5.2476"N	80°14'24.0101"W	12325.84	133.641	1.64	1.64	0.04
21088.00	93.170	145.710	8287.77	12117.72	-8584.76	8973.51	1760096.52	408033.38	39°37'4.4780"N	80°14'23.3183"W	12418.62	133.732	0.34	-0.33	0.11
21183.00	92.550	145.890	8283.03	12212.60	-8663.24	9026.84	1760149.85	407954.91	39°37'3.7068"N	80°14'22.6285"W	12511.42	133.822	0.68	-0.65	0.19
21278.00	92.150	145.120	8279.16	12307.51	-8741.47	9080.60	1760203.60	407876.69	39°37'2.9381"N	80°14'21.9334"W	12604.39	133.910	0.91	-0.42	-0.81
21373.00	92.620	145.740	8275.18	12402.41	-8819.63	9134.46	1760257.46	407798.53	39°37'2.1701"N	80°14'21.2370"W	12697.41	133.995	0.82	0.49	0.65
21468.00	91.810	144.590	8271.51	12497.32	-8897.54	9188.68	1760311.68	407720.62	39°37'1.4045"N	80°14'20.5359"W	12790.55	134.078	1.48	-0.85	-1.21
21564.00	92.710	146.180	8267.72	12593.23	-8976.48	9243.17	1760366.17	407641.69	39°37'0.6287"N	80°14'19.8313"W	12884.62	134.161	1.90	0.94	1.66
21659.00	91.600	145.580	8264.15	12688.15	-9055.07	9296.42	1760419.41	407563.10	39°36'59.8564"N	80°14'19.1427"W	12977.59	134.247	1.33	-1.17	-0.63
21754.00	91.630	146.010	8261.47	12783.11	-9133.61	9349.80	1760472.79	407484.57	39°36'59.0846"N	80°14'18.4523"W	13070.64	134.330	0.45	0.03	0.45
21849.00	92.280	146.530	8258.23	12878.05	-9212.57	9402.52	1760525.51	407405.61	39°36'58.3085"N	80°14'17.7703"W	13163.55	134.415	0.88	0.68	0.55
21944.00	93.020	145.260	8253.84	12972.95	-9291.15	9455.73	1760578.71	407327.04	39°36'57.5363"N	80°14'17.0822"W	13256.56	134.497	1.55	0.78	-1.34
22039.00	93.140	146.380	8248.73	13067.80	-9369.62	9509.03	1760632.00	407248.57	39°36'56.7651"N	80°14'16.3930"W	13349.58	134.577	1.18	0.13	1.18
22135.00	94.740	146.030	8242.14	13163.57	-9449.21	9562.29	1760685.27	407168.99	39°36'55.9829"N	80°14'15.7040"W	13443.40	134.659	1.71	1.67	-0.36
22230.00	94.590	144.570	8234.41	13258.24	-9527.05	9616.20	1760739.17	407091.15	39°36'55.2179"N	80°14'15.0071"W	13536.47	134.733	1.54	-0.16	-1.54
22325.00	93.290	145.690	8227.88	13352.99	-9604.81	9670.38	1760793.35	407013.40	39°36'54.4539"N	80°14'14.3066"W	13629.69	134.805	1.80	-1.37	1.18
22420.00	92.890	145.380	8222.76	13447.84	-9683.02	9724.06	1760847.03	406935.19	39°36'53.6853"N	80°14'13.6124"W	13722.91	134.879	0.53	-0.42	-0.33
22515.00	93.910	145.350	8217.13	13542.66	-9761.05	9777.96	1760900.92	406857.17	39°36'52.9186"N	80°14'12.9156"W	13816.17	134.950	1.07	1.07	-0.03
22611.00	93.110	145.360	8211.25	13638.46	-9839.88	9832.43	1760955.39	406778.35	39°36'52.1440"N	80°14'12.2113"W	13910.42	135.022	0.83	-0.83	0.01
22706.00	93.110	146.550	8206.10	13733.32	-9918.48	9885.54	1761008.49	406699.75	39°36'51.3715"N	80°14'11.5245"W	14003.57	135.095	1.25	0.00	1.25
22801.00	92.560	145.750	8201.40	13828.20	-9997.28	9938.39	1761061.34	406620.96	39°36'50.5970"N	80°14'10.8409"W	14096.70	135.169	1.02	-0.58	-0.84
22895.00	92.250	145.390	8197.45	13922.11	-10074.74	9991.49	1761114.44	406543.50	39°36'49.8358"N	80°14'10.1543"W	14189.09	135.238	0.51	-0.33	-0.38
22989.00	92.280	145.470	8193.74	14016.02	-10152.08	10044.78	1761167.73	406466.16	39°36'49.0757"N	80°14'9.4652"W	14281.54	135.304	0.09	0.03	0.09
23085.00	91.940	145.820	8190.20	14111.95	-10231.28	10098.92	1761221.86	406386.96	39°36'48.2974"N	80°14'8.7652"W	14375.93	135.373	0.51	-0.35	0.36
23180.00	92.250	146.010	8186.73	14206.88	-10309.91	10152.13	1761275.06	406308.34	39°36'47.5247"N	80°14'8.0771"W	14469.27	135.442	0.38	0.33	0.20



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REFERENCE WELLPATH IDENTIFICATION				
Operator	NORTHEAST NATURAL ENERGY, LLC		Well	Phoenix 10H
Field	Monongalia		API/Legal	
Facility	Phoenix Pad		Wellbore	Phoenix 10H AWB
Slot	Slot 10			

WELLPATH DATA (331 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]
23275.00	89.320	143.440	8185.43	14301.81	-10387.44	10206.97	1761329.91	406230.81	39°36'46.7629"N	80°14'7.3682"W	14563.01	135.502	4.10	-3.08	-2.71
23371.00	90.280	144.970	8185.76	14397.74	-10465.31	10263.12	1761386.05	406152.95	39°36'45.9979"N	80°14'6.6427"W	14657.91	135.559	1.88	1.00	1.59
23466.00	91.290	146.710	8184.46	14492.72	-10543.90	10316.45	1761439.38	406074.36	39°36'45.2255"N	80°14'5.9530"W	14751.38	135.625	2.12	1.06	1.83
23560.00	90.710	146.360	8182.82	14586.71	-10622.31	10368.28	1761491.21	405995.96	39°36'44.4548"N	80°14'5.2826"W	14843.68	135.693	0.72	-0.62	-0.37
23654.00	91.540	147.180	8180.98	14680.69	-10700.91	10419.80	1761542.72	405917.36	39°36'43.6822"N	80°14'4.6162"W	14935.92	135.763	1.23	0.88	0.85
23750.00	91.820	146.900	8178.16	14776.64	-10781.42	10472.02	1761594.94	405836.86	39°36'42.8908"N	80°14'3.9405"W	15030.04	135.834	0.40	0.29	-0.27
23845.00	92.550	146.660	8174.54	14871.57	-10860.83	10524.02	1761646.94	405757.45	39°36'42.1102"N	80°14'3.2677"W	15123.25	135.902	0.81	0.77	-0.25
23940.00	92.550	146.570	8170.31	14966.47	-10940.08	10576.25	1761699.16	405678.21	39°36'41.3312"N	80°14'2.5922"W	15216.52	135.969	0.09	0.00	-0.09
24035.00	91.810	146.650	8166.70	15061.40	-11019.34	10628.49	1761751.40	405598.95	39°36'40.5521"N	80°14'1.9164"W	15309.82	136.034	0.78	-0.78	0.08
24131.00	92.460	146.980	8163.12	15157.33	-11099.83	10681.00	1761803.91	405518.67	39°36'39.7629"N	80°14'1.2371"W	15404.07	136.101	0.76	0.68	0.34
24226.00	92.060	146.810	8159.38	15252.25	-11179.14	10732.85	1761855.75	405439.16	39°36'38.9813"N	80°14'0.5664"W	15497.33	136.167	0.46	-0.42	-0.18
24321.00	92.520	146.670	8155.58	15347.17	-11258.52	10784.91	1761907.81	405359.79	39°36'38.2010"N	80°13'59.8929"W	15590.65	136.231	0.51	0.48	-0.15
24417.00	92.000	147.070	8151.79	15443.10	-11338.85	10837.33	1761960.23	405279.46	39°36'37.4114"N	80°13'59.2147"W	15684.94	136.296	0.68	-0.54	0.42
24512.00	92.000	147.030	8148.48	15538.03	-11418.52	10888.97	1762011.87	405199.80	39°36'36.6282"N	80°13'58.5466"W	15778.22	136.360	0.04	0.00	-0.04
24607.00	91.420	147.110	8145.64	15632.98	-11498.22	10940.59	1762063.48	405120.10	39°36'35.8447"N	80°13'57.8787"W	15871.54	136.424	0.62	-0.61	0.08
24701.00	91.510	146.940	8143.24	15726.94	-11577.05	10991.74	1762114.62	405041.28	39°36'35.0697"N	80°13'57.2171"W	15963.91	136.486	0.20	0.10	-0.18
24795.00	91.170	146.350	8141.04	15820.92	-11655.55	11043.41	1762166.29	404962.79	39°36'34.2982"N	80°13'56.5487"W	16056.42	136.545	0.72	-0.36	-0.63
24891.00	93.050	147.350	8137.51	15916.84	-11735.86	11095.86	1762218.74	404882.48	39°36'33.5087"N	80°13'55.8701"W	16150.81	136.606	2.22	1.96	1.04
24986.00	91.690	145.950	8133.58	16011.76	-11815.15	11148.04	1762270.92	404803.20	39°36'32.7293"N	80°13'55.1952"W	16244.28	136.664	2.05	-1.43	-1.47
25081.00	94.340	148.770	8128.58	16106.69	-11895.02	11199.20	1762322.08	404723.38	39°36'31.9441"N	80°13'54.5332"W	16337.49	136.726	4.07	2.79	2.97
25177.00	92.370	146.620	8122.96	16202.39	-11976.01	11250.42	1762373.29	404642.34	39°36'31.1478"N	80°13'53.8704"W	16431.58	136.789	3.03	-2.05	-2.24
25272.00	92.550	146.350	8118.89	16297.30	-12055.14	11302.82	1762425.69	404563.22	39°36'30.3700"N	80°13'53.1926"W	16525.14	136.845	0.34	0.19	-0.28
25366.00	92.370	146.350	8114.85	16391.22	-12133.32	11354.86	1762477.73	404485.05	39°36'29.6016"N	80°13'52.5196"W	16617.77	136.898	0.19	-0.19	0.00
25462.00	92.030	145.920	8111.17	16487.15	-12212.97	11408.32	1762531.18	404405.40	39°36'28.8187"N	80°13'51.8284"W	16712.46	136.951	0.57	-0.35	-0.45
25557.00	92.370	146.800	8107.62	16582.00	-12292.00	11460.91	1762583.76	404326.37	39°36'28.0419"N	80°13'51.1483"W	16805.12	137.004	0.99	0.36	0.93
25652.00	92.740	147.480	8103.28	16676.97	-12371.72	11512.40	1762635.26	404246.65	39°36'27.2582"N	80°13'50.4821"W	16899.55	137.061	0.81	0.39	0.72
25747.00	92.280	146.630	8099.12	16771.87	-12451.37	11564.01	1762686.87	404167.01	39°36'26.4752"N	80°13'49.8144"W	16993.03	137.116	1.02	-0.48	-0.89
25843.00	92.180	146.660	8095.39	16867.80	-12531.50	11616.76	1762739.61	404086.89	39°36'25.6876"N	80°13'49.1322"W	17087.64	137.169	0.11	-0.10	0.03
25938.00	91.660	146.460	8092.21	16962.74	-12610.73	11669.08	1762791.92	404007.67	39°36'24.9088"N	80°13'48.4555"W	17181.32	137.221	0.58	-0.55	-0.21
26033.00	92.090	147.320	8089.10	17057.69	-12690.26	11720.94	1762843.79	403928.14	39°36'24.1270"N	80°13'47.7846"W	17274.93	137.274	1.01	0.45	0.91

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
26127.00	92.060	147.160	8085.89	17151.61	-12769.25	11771.78	1762894.62	403849.15	39°36'23.3504"N	80°13'47.1269"W	17367.46	137.328	0.17	-0.03	-0.17
26221.00	91.910	146.460	8082.44	17245.56	-12847.87	11823.20	1762946.04	403770.54	39°36'22.5776"N	80°13'46.4617"W	17460.12	137.378	0.76	-0.16	-0.74
26320.00	91.970	146.760	8079.09	17344.50	-12930.48	11877.65	1763000.49	403687.93	39°36'21.7655"N	80°13'45.7575"W	17557.79	137.430	0.31	0.06	0.30
26415.00	91.880	146.550	8075.89	17439.44	-13009.80	11929.84	1763052.67	403608.62	39°36'20.9858"N	80°13'45.0825"W	17651.52	137.480	0.24	-0.09	-0.22
26511.00	92.460	147.060	8072.26	17535.37	-13090.07	11982.37	1763105.19	403528.35	39°36'20.1967"N	80°13'44.4032"W	17746.19	137.530	0.80	0.60	0.58
26606.00	91.820	146.910	8068.71	17630.30	-13169.68	12034.09	1763156.91	403448.75	39°36'19.4142"N	80°13'43.7341"W	17839.84	137.580	0.69	-0.67	-0.16
26702.00	92.090	146.690	8065.44	17726.24	-13249.96	12086.63	1763209.45	403368.47	39°36'18.6250"N	80°13'43.0545"W	17934.55	137.629	0.36	0.28	-0.23
26797.00	92.220	147.230	8061.87	17821.17	-13329.54	12138.39	1763261.20	403288.90	39°36'17.8426"N	80°13'42.3850"W	18028.23	137.678	0.58	0.14	0.57
26892.00	92.000	147.240	8058.37	17916.09	-13409.37	12189.76	1763312.58	403209.07	39°36'17.0578"N	80°13'41.7204"W	18121.85	137.728	0.23	-0.23	0.01
26987.00	91.790	145.480	8055.23	18011.04	-13488.42	12242.36	1763365.17	403130.03	39°36'16.2809"N	80°13'41.0402"W	18215.73	137.772	1.86	-0.22	-1.85
27083.00	93.750	146.900	8050.59	18106.92	-13568.08	12295.71	1763418.52	403050.37	39°36'15.4978"N	80°13'40.3503"W	18310.58	137.816	2.52	2.04	1.48
27178.00	91.970	146.040	8045.85	18201.79	-13647.17	12348.12	1763470.93	402971.28	39°36'14.7204"N	80°13'39.6726"W	18404.38	137.861	2.08	-1.87	-0.91
27273.00	92.000	145.750	8042.56	18296.73	-13725.78	12401.36	1763524.16	402892.68	39°36'13.9477"N	80°13'38.9843"W	18498.40	137.902	0.31	0.03	-0.31
27369.00	91.660	145.820	8039.49	18392.68	-13805.13	12455.31	1763578.11	402813.34	39°36'13.1679"N	80°13'38.2868"W	18593.45	137.942	0.36	-0.35	0.07
27464.00	91.880	144.800	8036.56	18487.62	-13883.20	12509.35	1763632.15	402735.27	39°36'12.4007"N	80°13'37.5884"W	18687.62	137.980	1.10	0.23	-1.07
27560.00	91.880	145.850	8033.41	18583.55	-13962.11	12563.94	1763686.73	402656.36	39°36'11.6252"N	80°13'36.8828"W	18782.79	138.017	1.09	0.00	1.09
27655.00	91.750	146.260	8030.40	18678.50	-14040.88	12616.96	1763739.75	402577.60	39°36'10.8510"N	80°13'36.1973"W	18876.81	138.058	0.45	-0.14	0.43
27750.00	91.970	145.620	8027.31	18773.44	-14119.54	12670.14	1763792.92	402498.94	39°36'10.0779"N	80°13'35.5098"W	18970.87	138.097	0.71	0.23	-0.67
27845.00	92.060	145.510	8023.97	18868.38	-14197.85	12723.82	1763846.60	402420.64	39°36'9.3083"N	80°13'34.8159"W	19065.01	138.134	0.15	0.09	-0.12
27941.00	91.630	145.210	8020.88	18964.31	-14276.79	12778.36	1763901.14	402341.71	39°36'8.5325"N	80°13'34.1109"W	19160.20	138.170	0.55	-0.45	-0.31
28036.00	92.400	146.130	8017.54	19059.24	-14355.19	12831.90	1763954.68	402263.31	39°36'7.7620"N	80°13'33.4188"W	19254.33	138.207	1.26	0.81	0.97
28130.00	91.690	146.120	8014.19	19153.18	-14433.18	12884.26	1764007.04	402185.32	39°36'6.9954"N	80°13'32.7418"W	19347.38	138.245	0.76	-0.76	-0.01
28224.00	92.620	145.650	8010.65	19247.11	-14510.95	12936.95	1764059.71	402107.56	39°36'6.2310"N	80°13'32.0608"W	19440.48	138.282	1.11	0.99	-0.50
28319.00	92.710	145.540	8006.24	19342.00	-14589.25	12990.57	1764113.33	402029.27	39°36'5.4615"N	80°13'31.3677"W	19534.61	138.317	0.15	0.09	-0.12
28415.00	91.780	145.790	8002.48	19437.92	-14668.46	13044.67	1764167.43	401950.06	39°36'4.6830"N	80°13'30.6683"W	19629.75	138.353	1.00	-0.97	0.26
28510.00	91.880	145.850	7999.44	19532.86	-14747.01	13098.02	1764220.77	401871.51	39°36'3.9110"N	80°13'29.9787"W	19723.90	138.389	0.12	0.11	0.06
28605.00	91.970	145.710	7996.25	19627.81	-14825.52	13151.41	1764274.17	401793.01	39°36'3.1394"N	80°13'29.2885"W	19818.06	138.424	0.18	0.09	-0.15
28700.00	92.090	145.640	7992.89	19722.74	-14903.92	13204.95	1764327.70	401714.61	39°36'2.3688"N	80°13'28.5965"W	19912.25	138.459	0.15	0.13	-0.07
28795.00	91.880	145.720	7989.59	19817.67	-14982.34	13258.48	1764381.22	401636.20	39°36'1.5981"N	80°13'27.9046"W	20006.44	138.493	0.24	-0.22	0.08
28802.00	91.850	145.430	7989.37	19824.67	-14988.11	13262.43	1764385.18	401630.43	39°36'1.5414"N	80°13'27.8635"W	20013.38	138.496	4.16	-0.43	-4.14



Actual Wellpath Report

Phoenix 10H AWP Proj: 28827'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
28827.00†	91.850	145.430	7988.56	19849.65	-15008.68	13276.61	1764399.36	401609.85	39°36'1.3392"N	80°13'27.6702"W	20038.19	138.504	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Phoenix 10H AWB Ref Wellpath: Phoenix 10H AWP Proj: 28827'

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	1528.00	1500.00	28.00	1527.95	0.00	0.00	-7.00	-5.82
13.375in Casing Surface	28.00	1498.00	1470.00	28.00	1497.96	0.00	0.00	-6.60	-5.57
12.25in Open Hole	1528.00	2758.00	1230.00	1527.95	2757.80	-7.00	-5.82	-24.56	-13.23
9.625in Casing Intermediate	28.00	2728.00	2700.00	28.00	2727.80	0.00	0.00	-24.13	-13.15
8.75in Open Hole	2758.00	7644.00	4886.00	2757.80	6978.49	-24.56	-13.23	1446.38	1688.77
8.5in Open Hole	7644.00	28827.00	21183.00	6978.49	7988.56	1446.38	1688.77	-15008.68	13276.61
5.5in Casing Production	28.00	28797.00	28769.00	28.00	7989.53	0.00	0.00	-14983.99	13259.60

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Phoenix 10H AWP Proj: 28827'

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Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Phoenix 10H BHL Rev-8	8210.00	-15016.14	13266.83	1764389.57	401602.40	39°36'1.2647"N	80°13'27.7944"W	point
Phoenix 10H LP Rev-6	8210.00	1081.97	2560.47	1753683.87	417699.52	39°38'39.4805"N	80°15'46.3146"W	point
Phoenix Hardline #1 (5.19.21)	8528.00	-813.30	5993.68	1757116.87	415804.37	39°38'21.0362"N	80°15'2.2251"W	polygon
2D Polygon: dimensions not calculated								
Phoenix Pad Hardline (2.12.21)	8528.00	597.48	4904.73	1756027.99	417215.07	39°38'34.8882"N	80°15'16.2957"W	polygon
2D Polygon: dimensions not calculated								

WELLPATH COMPOSITION - Ref Wellbore: Phoenix 10H AWB Ref Wellpath: Phoenix 10H AWP Proj: 28827'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	2650.00	BH Generic gyro - northseeking (Standard)	01_Gyro Surveys [BH Generic Gyro-Northseeking] (50'-2650')	Phoenix 10H AWB	4/5/2022
2650.00	7481.00	OWSG MWD rev2 + HRGM	02_Tally MWD Surveys [OWSG MWD Rev.2+HRGM] (2650')(2854'-7481')	Phoenix 10H AWB	4/5/2022
7481.00	28827.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	03_ATK Curve [HRGM+Short Spacing] (7481') (7609'-28802')	Phoenix 10H AWB	4/5/2022

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Actual Wellpath Report

Phoenix 10H AWP Proj: 28827'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

COMMENTS
<p>Wellpath general comments API: 47061018910000 BH Job #: 111185290 Rig: Patterson 277 Duration: 04/06/2022 - 04/12/2022</p> <p>01_Gyro Surveys [BH Generic Gyro-Northseeking] (50'-2650') 02_Tally MWD Surveys [OWSG MWD Rev.2+HRGM] (2650')(2854'-7481') 03_ATK Curve [HRGM+Short Spacing] (7481') (7609'-28802') Final Survey MD @ 28802' Projected MD at TD: 28827'</p>

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