

# NORTHEAST NATURAL ENERGY, LLC

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

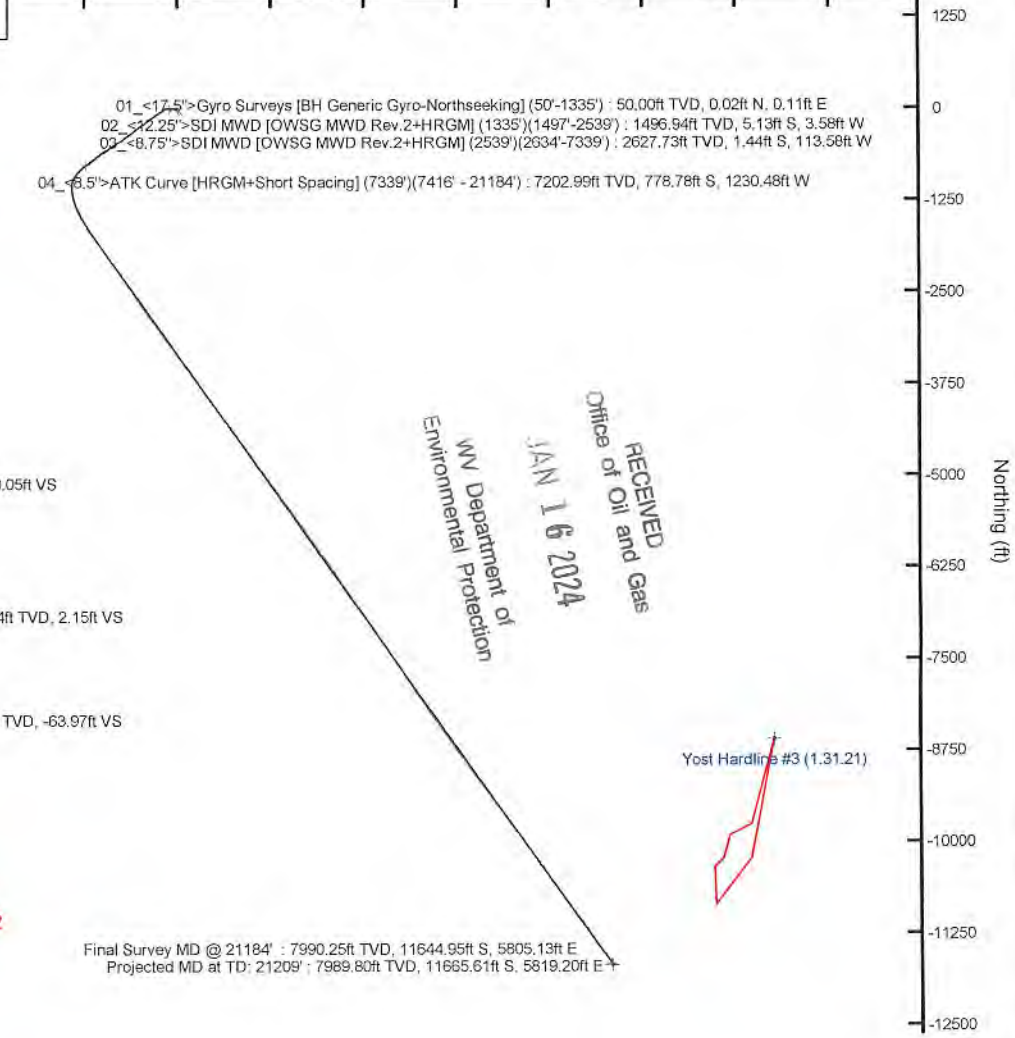
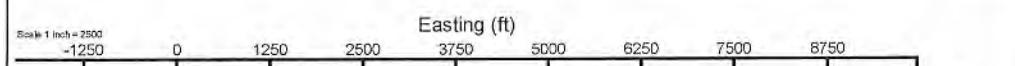
Slot: Slot 04  
 Well: Yost 4H  
 Wellbore: Yost 4H PWB

File Name: 0404_21184_111309737.dwg	File Path: \\server\projects\0404_21184_111309737\0404_21184_111309737.dwg
File Name: 0404_21184_111309737.dwg	File Path: \\server\projects\0404_21184_111309737\0404_21184_111309737.dwg
File Name: 0404_21184_111309737.dwg	File Path: \\server\projects\0404_21184_111309737\0404_21184_111309737.dwg
File Name: 0404_21184_111309737.dwg	File Path: \\server\projects\0404_21184_111309737\0404_21184_111309737.dwg

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Yost Pad	176294.700	416694.199	39 38'52.273"N	80 12'5.120"W	
SHA	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude
Slot 04	52.26	-38.86	176049.840	416716.999	39 38'30.767"N
					80 13'15.628"W

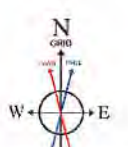
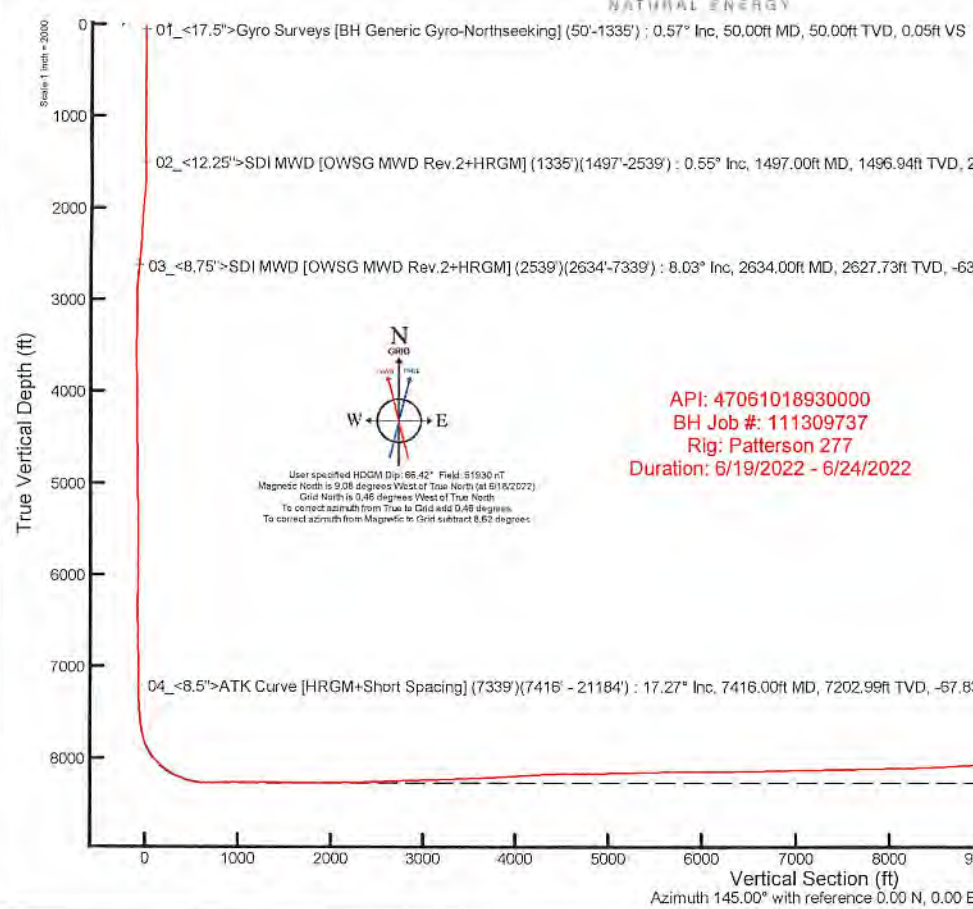
Well Profile Data					
Design Comment	MD (ft)	Inc (°)	AS (°)	TVD (ft)	Local N (ft)
Tie On	7299.00	17.320	234.210	7186.78	-775.66
Projection	7476.00	17.320	234.210	7280.27	-789.26
Build-Turn	7967.99	27.281	217.637	7715.32	-821.84
Landing Pt.	8954.72	90.000	145.000	8270.00	-1659.00
BHL	21212.14	90.000	145.000	8270.00	-11667.52

Well Data			
Slot	Well	Wellbore	Wellbore
Slot 04	Yost 4H	Yost 4H AWP	Yost 4H AWP Proj 21209'
Slot 04	Yost 4H	Yost 4H PWB	Yost 4H PWB Rev A-D



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Yost Hardline #3 (1.31.21)



User specified HDGM Dip: 66.42° Field: 51930 nT  
 Magnetic North is 9.08 degrees West of True North (at 6/19/2022)  
 Grid North is 0.46 degrees West of True North  
 To correct azimuth from True to Grid add 0.46 degrees  
 To correct azimuth from Magnetic to Grid subtract 8.62 degrees

API: 47061018930000  
 BH Job #: 111309737  
 Rig: Patterson 277  
 Duration: 6/19/2022 - 6/24/2022

Final Survey MD @ 21184' : 7990.25ft TVD, 11644.95ft S, 5805.13ft E  
 Projected MD at TD: 21209' : 7989.80ft TVD, 11665.61ft S, 5819.20ft E

Final Survey MD @ 21184' : 91.02° Inc, 21184.00ft MD, 7990.25ft TVD, 12868.67ft VS  
 Projected MD at TD: 21209' : 91.02° Inc, 21209.00ft MD, 7989.80ft TVD, 12893.67ft VS

Vertical Section (ft)  
 Azimuth 145.00° with reference 0.00 N, 0.00 E

Scale 1 inch = 200'



# Actual Wellpath Report

Yost 4H AWP Proj: 21209'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 4H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 4H AWB
Slot	Slot 04		

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	6/27/2022 at 5:01:50 PM
Convergence at slot	0.46° 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	52.29	-38.86	1766245.84	416716.39	39°38'30.7874"N	80°13'5.6228"W
Facility Reference Pt			1766284.70	416664.10	39°38'30.2737"N	80°13'5.1207"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	1520.00ft
Horizontal Reference Pt	Slot	Patterson 277 (RKB) to Mean Sea Level	1520.00ft
Vertical Reference Pt	Patterson 277 (RKB)	Patterson 277 (RKB) to Ground Level at Slot (Slot 04)	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	145.00°

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# Actual Wellpath Report

Yost 4H AWP Proj: 21209'

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Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 4H AWB
Slot	Slot 04		

WELLPATH DATA (240 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	81.000	0.00	0.00	0.00	0.00	1766245.84	416716.39	39°38'30.7874"N	80°13'5.6228"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	81.000	28.00	0.00	0.00	0.00	1766245.84	416716.39	39°38'30.7874"N	80°13'5.6228"W	0.00	0.000	0.00	0.00	0.00
50.00	0.570	81.000	50.00	0.05	0.02	0.11	1766245.95	416716.41	39°38'30.7876"N	80°13'5.6215"W	0.11	81.000	2.59	2.59	0.00
100.00	0.510	1.400	100.00	-0.02	0.28	0.36	1766246.20	416716.67	39°38'30.7902"N	80°13'5.6183"W	0.45	52.211	1.39	-0.12	-159.20
150.00	0.300	335.300	150.00	-0.33	0.62	0.31	1766246.15	416717.01	39°38'30.7936"N	80°13'5.6189"W	0.69	26.563	0.55	-0.42	-52.20
200.00	0.280	280.800	200.00	-0.55	0.76	0.14	1766245.98	416717.15	39°38'30.7950"N	80°13'5.6212"W	0.77	10.065	0.53	-0.04	-109.00
250.00	0.400	287.100	250.00	-0.77	0.84	-0.15	1766245.69	416717.23	39°38'30.7957"N	80°13'5.6249"W	0.85	349.719	0.25	0.24	12.60
300.00	0.420	234.800	299.99	-0.91	0.78	-0.47	1766245.37	416717.17	39°38'30.7951"N	80°13'5.6289"W	0.91	329.077	0.72	0.04	-104.60
350.00	0.490	247.200	349.99	-0.95	0.59	-0.82	1766245.03	416716.98	39°38'30.7932"N	80°13'5.6333"W	1.01	306.043	0.24	0.14	24.80
400.00	0.490	223.600	399.99	-0.96	0.36	-1.16	1766244.68	416716.75	39°38'30.7909"N	80°13'5.6377"W	1.21	287.041	0.40	0.00	-47.20
450.00	0.570	223.100	449.99	-0.86	0.02	-1.48	1766244.36	416716.41	39°38'30.7875"N	80°13'5.6417"W	1.48	270.737	0.16	0.16	-1.00
500.00	0.630	173.700	499.99	-0.57	-0.44	-1.62	1766244.22	416715.95	39°38'30.7830"N	80°13'5.6435"W	1.67	254.913	1.01	0.12	-98.80
550.00	0.790	192.400	549.98	-0.10	-1.05	-1.66	1766244.18	416715.34	39°38'30.7770"N	80°13'5.6440"W	1.96	237.800	0.56	0.32	37.40
600.00	0.790	183.500	599.98	0.41	-1.73	-1.76	1766244.08	416714.66	39°38'30.7702"N	80°13'5.6451"W	2.46	225.481	0.25	0.00	-17.80
650.00	0.740	196.800	649.97	0.88	-2.38	-1.87	1766243.97	416714.01	39°38'30.7638"N	80°13'5.6465"W	3.03	218.162	0.37	-0.10	26.60
700.00	0.730	172.200	699.97	1.36	-3.00	-1.92	1766243.92	416713.39	39°38'30.7576"N	80°13'5.6471"W	3.57	212.584	0.63	-0.02	-49.20
750.00	0.690	133.400	749.97	1.94	-3.53	-1.66	1766244.18	416712.86	39°38'30.7525"N	80°13'5.6437"W	3.90	205.181	0.95	-0.08	-77.60
800.00	0.400	97.500	799.96	2.35	-3.76	-1.27	1766244.57	416712.63	39°38'30.7502"N	80°13'5.6386"W	3.96	198.630	0.87	-0.58	-71.80
850.00	0.300	89.800	849.96	2.54	-3.78	-0.96	1766244.88	416712.61	39°38'30.7500"N	80°13'5.6348"W	3.90	194.289	0.22	-0.20	-15.40
900.00	0.200	345.600	899.96	2.54	-3.69	-0.85	1766244.99	416712.70	39°38'30.7509"N	80°13'5.6334"W	3.79	193.007	0.80	-0.20	-208.40
950.00	0.290	290.500	949.96	2.35	-3.56	-0.99	1766244.85	416712.83	39°38'30.7521"N	80°13'5.6352"W	3.70	195.572	0.48	0.18	-110.20
1000.00	0.280	338.200	999.96	2.13	-3.41	-1.16	1766244.68	416712.98	39°38'30.7537"N	80°13'5.6373"W	3.60	198.762	0.46	-0.02	95.40
1050.00	0.250	276.300	1049.96	1.94	-3.28	-1.31	1766244.53	416713.11	39°38'30.7549"N	80°13'5.6393"W	3.53	201.778	0.55	-0.06	-123.80
1100.00	0.170	349.100	1099.96	1.80	-3.20	-1.43	1766244.41	416713.19	39°38'30.7557"N	80°13'5.6408"W	3.50	204.153	0.51	-0.16	145.60
1150.00	0.310	284.100	1149.96	1.63	-3.09	-1.58	1766244.26	416713.30	39°38'30.7568"N	80°13'5.6427"W	3.47	207.056	0.57	0.28	-130.00
1200.00	0.700	226.000	1199.96	1.57	-3.27	-1.93	1766243.91	416713.12	39°38'30.7550"N	80°13'5.6472"W	3.80	210.544	1.19	0.78	-116.20
1250.00	0.780	231.400	1249.95	1.64	-3.69	-2.41	1766243.43	416712.70	39°38'30.7508"N	80°13'5.6533"W	4.41	213.138	0.18	0.12	10.80
1300.00	0.850	223.400	1299.95	1.74	-4.17	-2.92	1766242.92	416712.22	39°38'30.7460"N	80°13'5.6598"W	5.09	215.053	0.29	0.18	-16.00
1335.00	0.400	267.500	1334.95	1.72	-4.36	-3.22	1766242.62	416712.03	39°38'30.7441"N	80°13'5.6636"W	5.42	216.475	1.79	-1.29	126.00
1497.00	0.550	164.130	1496.94	2.15	-5.13	-3.58	1766242.26	416711.26	39°38'30.7364"N	80°13'5.6680"W	6.25	214.863	0.46	0.09	-63.81



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# Actual Wellpath Report

Yost 4H AWP Proj: 21209'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 4H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 4H AWB
Slot	Slot 04		

WELLPATH DATA (240 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]	
1591.00	1.010	277.540	1590.94	2.02	-5.46	-4.27	1766241.57	416710.93	39°38'30.7332"N	80°13'5.6769"W	6.93	218.061	1.41	0.49	120.65	
1686.00	3.640	277.230	1685.85	-0.57	-4.97	-8.10	1766237.74	416711.42	39°38'30.7377"N	80°13'5.7258"W	9.50	238.464	2.77	2.77	-0.33	
1781.00	6.240	280.120	1780.49	-6.26	-3.68	-16.17	1766229.67	416712.71	39°38'30.7498"N	80°13'5.8292"W	16.58	257.176	2.75	2.74	3.04	
1876.00	7.850	278.400	1874.77	-14.38	-1.83	-27.67	1766218.17	416714.56	39°38'30.7672"N	80°13'5.9764"W	27.73	266.225	1.71	1.69	-1.81	
1970.00	7.470	276.210	1967.93	-22.81	-0.23	-40.10	1766205.74	416716.16	39°38'30.7820"N	80°13'6.1354"W	40.10	269.675	0.51	-0.40	-2.33	
2065.00	5.820	270.430	2062.29	-29.67	0.48	-51.05	1766194.79	416716.87	39°38'30.7881"N	80°13'6.2755"W	51.06	270.535	1.87	-1.74	-6.08	
2160.00	5.500	261.830	2156.83	-34.52	-0.13	-60.38	1766185.47	416716.26	39°38'30.7813"N	80°13'6.3946"W	60.38	269.873	0.95	-0.34	-9.05	
2254.00	6.680	256.260	2250.30	-38.54	-2.07	-70.15	1766175.70	416714.32	39°38'30.7614"N	80°13'6.5193"W	70.18	268.308	1.40	1.26	-5.93	
2349.00	6.490	260.270	2344.67	-42.83	-4.29	-80.81	1766165.04	416712.10	39°38'30.7386"N	80°13'6.6553"W	80.92	266.959	0.52	-0.20	4.22	
2444.00	5.980	274.850	2439.12	-48.30	-4.78	-91.03	1766154.82	416711.61	39°38'30.7330"N	80°13'6.7860"W	91.16	266.993	1.75	-0.54	-15.35	
2539.00	6.790	280.670	2533.53	-55.48	-3.32	-101.48	1766144.37	416713.07	39°38'30.7466"N	80°13'6.9197"W	101.53	268.124	1.09	0.85	6.13	
2634.00	8.030	277.290	2627.73	-63.97	-1.44	-113.58	1766132.27	416714.95	39°38'30.7642"N	80°13'7.0746"W	113.59	269.273	1.38	1.31	-3.56	
2743.00	9.190	272.720	2735.50	-74.42	-0.06	-129.83	1766116.02	416716.33	39°38'30.7766"N	80°13'7.2824"W	129.83	269.973	1.23	1.06	-4.19	
2837.00	9.000	262.610	2828.33	-82.42	-0.65	-144.62	1766101.23	416715.74	39°38'30.7696"N	80°13'7.4714"W	144.62	269.742	1.71	-0.20	-10.76	
2931.00	9.160	251.400	2921.16	-87.94	-3.98	-159.00	1766086.85	416712.41	39°38'30.7355"N	80°13'7.6549"W	159.05	268.565	1.89	0.17	-11.93	
3026.00	9.620	236.270	3014.90	-90.25	-10.80	-172.77	1766073.08	416705.59	39°38'30.6670"N	80°13'7.8302"W	173.11	266.421	2.64	0.48	-15.93	
3121.00	10.140	230.820	3108.49	-89.81	-20.50	-185.86	1766059.99	416695.90	39°38'30.5702"N	80°13'7.9965"W	186.98	263.707	1.13	0.55	-5.74	
3215.00	11.410	231.980	3200.83	-88.72	-31.45	-199.60	1766046.26	416684.94	39°38'30.4608"N	80°13'8.1710"W	202.06	261.045	1.37	1.35	1.23	
3309.00	12.990	236.380	3292.71	-88.49	-43.03	-215.72	1766030.13	416673.36	39°38'30.3452"N	80°13'8.3759"W	219.97	258.720	1.95	1.68	4.68	
3407.00	15.640	240.040	3387.66	-89.91	-55.73	-236.34	1766009.51	416660.67	39°38'30.2180"N	80°13'8.6382"W	242.82	256.733	2.86	2.70	3.73	
3502.00	17.120	237.360	3478.80	-91.61	-69.66	-259.21	1765986.64	416646.73	39°38'30.0785"N	80°13'8.9291"W	268.41	254.957	1.75	1.56	-2.82	
3597.00	18.390	236.520	3569.28	-92.59	-85.47	-283.49	1765962.37	416630.92	39°38'29.9203"N	80°13'9.2378"W	296.09	253.222	1.36	1.34	-0.88	
3692.00	19.040	232.860	3659.26	-92.40	-103.10	-308.34	1765937.52	416613.30	39°38'29.7442"N	80°13'9.5537"W	325.12	251.512	1.41	0.68	-3.85	
3786.00	18.280	232.780	3748.31	-91.26	-121.27	-332.30	1765913.56	416595.13	39°38'29.5627"N	80°13'9.8581"W	353.74	249.951	0.81	-0.81	-0.09	
3881.00	18.230	230.690	3838.53	-89.57	-139.70	-355.66	1765890.20	416576.70	39°38'29.3787"N	80°13'10.1549"W	382.11	248.556	0.69	-0.05	-2.20	
3976.00	18.040	233.080	3928.82	-87.96	-157.95	-378.92	1765866.94	416558.45	39°38'29.1965"N	80°13'10.4503"W	410.52	247.372	0.81	-0.20	2.52	
4071.00	18.110	233.490	4019.13	-87.08	-175.57	-402.55	1765843.32	416540.83	39°38'29.0205"N	80°13'10.7505"W	439.17	246.436	0.15	0.07	0.43	
4166.00	18.490	233.470	4109.32	-86.28	-193.32	-426.52	1765819.35	416523.08	39°38'28.8432"N	80°13'11.0551"W	468.29	245.618	0.40	0.40	-0.02	
4260.00	18.570	233.660	4198.45	-85.54	-211.06	-450.55	1765795.31	416505.34	39°38'28.6660"N	80°13'11.3605"W	497.54	244.899	0.11	0.09	0.20	
4359.00	18.060	233.970	4292.43	-84.89	-229.43	-475.66	1765770.21	416486.97	39°38'28.4824"N	80°13'11.6796"W	528.10	244.260	0.52	-0.52	0.31	



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Yost 4H AWP Proj: 21209'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 4H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 4H AWB
Slot	Slot 04		

WELLPATH DATA (240 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]	
4453.00	17.960	234.120	4381.83	-84.41	-246.49	-499.19	1765746.68	416469.91	39°38'28.3119"N	80°13'11.9786"W	556.73	243.720	0.12	-0.11	0.16	
4548.00	18.260	235.450	4472.12	-84.30	-263.52	-523.31	1765722.56	416452.89	39°38'28.1418"N	80°13'12.2852"W	585.92	243.272	0.54	0.32	1.40	
4642.00	17.720	233.250	4561.53	-83.98	-280.43	-546.91	1765698.97	416435.98	39°38'27.9728"N	80°13'12.5850"W	614.61	242.853	0.92	-0.57	-2.34	
4736.00	16.970	232.430	4651.25	-82.93	-297.35	-569.24	1765676.63	416419.05	39°38'27.8038"N	80°13'12.8688"W	642.23	242.419	0.84	-0.80	-0.87	
4831.00	16.990	229.180	4742.11	-80.90	-314.88	-590.73	1765655.14	416401.53	39°38'27.6289"N	80°13'13.1418"W	669.42	241.941	1.00	0.02	-3.42	
4926.00	16.850	233.200	4833.00	-79.06	-332.20	-612.26	1765633.61	416384.21	39°38'27.4560"N	80°13'13.4152"W	696.58	241.517	1.24	-0.15	4.23	
5025.00	16.810	235.240	4927.76	-78.67	-348.96	-635.51	1765610.36	416367.45	39°38'27.2885"N	80°13'13.7107"W	725.02	241.229	0.60	-0.04	2.06	
5120.00	17.500	234.190	5018.54	-78.52	-365.15	-658.38	1765587.50	416351.26	39°38'27.1267"N	80°13'14.0013"W	752.86	240.987	0.80	0.73	-1.11	
5215.00	17.840	232.900	5109.06	-77.79	-382.28	-681.57	1765564.31	416334.13	39°38'26.9555"N	80°13'14.2960"W	781.46	240.713	0.55	0.36	-1.36	
5309.00	17.880	233.330	5198.53	-76.84	-399.59	-704.63	1765541.25	416316.83	39°38'26.7827"N	80°13'14.5890"W	810.05	240.443	0.15	0.04	0.46	
5404.00	17.690	231.000	5288.99	-75.41	-417.38	-727.55	1765518.34	416299.04	39°38'26.6050"N	80°13'14.8800"W	838.77	240.168	0.78	-0.20	-2.45	
5499.00	17.310	232.550	5379.59	-73.80	-435.06	-749.98	1765495.90	416281.36	39°38'26.4286"N	80°13'15.1650"W	867.04	239.882	0.63	-0.40	1.63	
5594.00	17.510	236.510	5470.24	-73.57	-451.54	-773.12	1765472.76	416264.88	39°38'26.2639"N	80°13'15.4591"W	895.33	239.713	1.26	0.21	4.17	
5688.00	17.590	237.120	5559.87	-74.47	-467.05	-796.85	1765449.04	416249.37	39°38'26.1087"N	80°13'15.7608"W	923.63	239.624	0.21	0.09	0.65	
5787.00	18.870	237.400	5653.90	-75.69	-483.80	-822.90	1765422.99	416232.62	39°38'25.9411"N	80°13'16.0920"W	954.58	239.548	1.30	1.29	0.28	
5881.00	19.500	233.780	5742.68	-75.99	-501.26	-848.36	1765397.53	416215.16	39°38'25.7665"N	80°13'16.4157"W	985.38	239.423	1.43	0.67	-3.85	
5976.00	18.930	231.970	5832.39	-74.84	-520.12	-873.29	1765372.60	416196.30	39°38'25.5781"N	80°13'16.7325"W	1016.45	239.222	0.87	-0.60	-1.91	
6070.00	18.510	234.730	5921.41	-73.96	-538.13	-897.48	1765348.41	416178.29	39°38'25.3982"N	80°13'17.0399"W	1046.45	239.053	1.04	-0.45	2.94	
6165.00	18.720	236.160	6011.44	-74.20	-555.33	-922.46	1765323.44	416161.09	39°38'25.2263"N	80°13'17.3573"W	1076.72	238.952	0.53	0.22	1.51	
6260.00	18.410	237.020	6101.50	-75.04	-571.99	-947.70	1765298.19	416144.44	39°38'25.0597"N	80°13'17.6783"W	1106.94	238.887	0.44	-0.33	0.91	
6364.00	18.190	238.430	6190.75	-76.44	-587.75	-972.66	1765273.24	416128.68	39°38'24.9019"N	80°13'17.9957"W	1136.45	238.857	0.53	-0.23	1.50	
6449.00	18.180	237.460	6281.00	-77.96	-603.48	-997.78	1765248.12	416112.95	39°38'24.7444"N	80°13'18.3152"W	1166.09	238.834	0.32	-0.01	-1.02	
6544.00	18.480	235.930	6371.18	-78.84	-619.89	-1022.75	1765223.15	416096.54	39°38'24.5803"N	80°13'18.6327"W	1195.94	238.780	0.60	0.32	-1.61	
6642.00	18.390	231.410	6464.16	-78.13	-638.23	-1047.70	1765198.20	416078.20	39°38'24.3970"N	80°13'18.9497"W	1226.79	238.651	1.46	-0.09	-4.61	
6737.00	17.330	231.180	6554.58	-76.25	-656.45	-1070.44	1765175.47	416059.98	39°38'24.2152"N	80°13'19.2385"W	1255.69	238.481	1.12	-1.12	-0.24	
6832.00	17.480	232.790	6645.23	-74.75	-673.95	-1092.82	1765153.08	416042.48	39°38'24.0405"N	80°13'19.5228"W	1283.93	238.338	0.53	0.16	1.69	
6926.00	17.470	229.720	6734.89	-72.91	-691.61	-1114.83	1765131.08	416024.83	39°38'23.8642"N	80°13'19.8023"W	1311.93	238.186	0.98	-0.01	-3.27	
7021.00	17.450	231.800	6825.52	-70.80	-709.63	-1136.91	1765109.00	416006.80	39°38'23.6843"N	80°13'20.0826"W	1340.20	238.028	0.66	-0.02	2.19	
7115.00	17.090	234.060	6915.28	-69.79	-726.46	-1159.16	1765086.75	415989.98	39°38'23.5163"N	80°13'20.3654"W	1367.99	237.924	0.81	-0.38	2.40	
7210.00	16.790	233.250	7006.16	-69.14	-742.86	-1181.46	1765064.45	415973.57	39°38'23.3524"N	80°13'20.6487"W	1396.60	237.840	0.40	-0.32	-0.85	



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# Actual Wellpath Report

Yost 4H AWP Proj: 21209'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 4H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 4H AWB
Slot	Slot 04		

WELLPATH DATA (240 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]
7305.00	17.240	233.640	7097.00	-68.39	-759.42	-1203.79	1765042.12	415957.02	39°38'23.1870"N	80°13'20.9325"W	1423.32	237.754	0.49	0.47	0.41
7399.00	17.320	234.210	7186.76	-67.87	-775.86	-1226.36	1765019.56	415940.58	39°38'23.0227"N	80°13'21.2192"W	1451.18	237.680	0.20	0.09	0.61
7416.00	17.270	235.020	7202.99	-67.83	-778.78	-1230.48	1765015.44	415937.65	39°38'22.9935"N	80°13'21.2716"W	1456.22	237.670	1.45	-0.29	4.76
7511.00	18.170	230.780	7293.48	-66.75	-796.24	-1253.51	1764992.41	415920.20	39°38'22.8192"N	80°13'21.5642"W	1485.02	237.576	1.66	0.95	-4.46
7606.00	20.350	227.770	7383.16	-63.58	-816.71	-1277.22	1764968.70	415899.73	39°38'22.6150"N	80°13'21.8652"W	1516.01	237.404	2.52	2.29	-3.17
7701.00	22.500	225.800	7471.60	-58.59	-840.48	-1302.49	1764943.43	415875.96	39°38'22.3780"N	80°13'22.1857"W	1550.12	237.166	2.39	2.26	-2.07
7795.00	24.250	222.730	7557.88	-51.61	-867.21	-1328.48	1764917.44	415849.24	39°38'22.1119"N	80°13'22.5152"W	1586.48	236.864	2.27	1.86	-3.27
7890.00	26.110	218.330	7643.86	-41.47	-897.94	-1354.69	1764891.23	415818.50	39°38'21.8060"N	80°13'22.8470"W	1625.26	236.462	2.78	1.96	-4.63
7985.00	27.780	214.020	7728.55	-27.54	-932.70	-1380.04	1764865.88	415783.75	39°38'21.4606"N	80°13'23.1676"W	1665.67	235.947	2.70	1.76	-4.54
8080.00	30.870	199.200	7811.48	-5.32	-974.13	-1400.48	1764845.45	415742.32	39°38'21.0495"N	80°13'23.4245"W	1705.95	235.179	8.28	3.25	-15.60
8175.00	35.490	188.400	7891.04	29.02	-1024.49	-1412.54	1764833.39	415691.96	39°38'20.5508"N	80°13'23.5735"W	1744.95	234.047	7.88	4.86	-11.37
8269.00	40.580	179.510	7965.11	74.10	-1082.14	-1416.27	1764829.66	415634.31	39°38'19.9807"N	80°13'23.6152"W	1782.37	232.617	7.94	5.41	-9.46
8363.00	46.790	172.690	8033.09	129.71	-1146.79	-1411.64	1764834.29	415569.67	39°38'19.3422"N	80°13'23.5494"W	1818.75	230.910	8.28	6.61	-7.26
8458.00	52.400	165.220	8094.69	195.79	-1217.63	-1397.61	1764848.31	415498.83	39°38'18.6432"N	80°13'23.3628"W	1853.63	228.937	8.40	5.91	-7.86
8562.00	57.940	162.050	8148.37	268.88	-1291.60	-1375.82	1764870.11	415424.87	39°38'17.9139"N	80°13'23.0766"W	1887.09	226.808	6.51	5.89	-3.37
8647.00	65.000	156.500	8193.74	349.71	-1369.52	-1346.19	1764899.73	415346.95	39°38'17.1462"N	80°13'22.6899"W	1920.37	224.508	9.03	7.43	-5.84
8742.00	72.110	152.640	8228.46	436.83	-1449.28	-1308.19	1764937.73	415267.20	39°38'16.3611"N	80°13'22.1959"W	1952.37	222.071	8.38	7.48	-4.06
8836.00	78.660	149.570	8252.17	527.22	-1528.84	-1264.23	1764981.68	415187.64	39°38'15.5783"N	80°13'21.6259"W	1983.85	219.588	7.65	6.97	-3.27
8931.00	85.440	148.130	8265.30	621.04	-1609.31	-1215.59	1765030.33	415107.18	39°38'14.7869"N	80°13'20.9959"W	2016.81	217.065	7.29	7.14	-1.52
9025.00	90.950	146.050	8268.26	714.89	-1688.15	-1164.56	1765081.35	415028.34	39°38'14.0118"N	80°13'20.3355"W	2050.86	214.600	6.26	5.86	-2.21
9121.00	92.310	145.550	8265.53	810.84	-1767.51	-1110.62	1765135.29	414948.98	39°38'13.2318"N	80°13'19.6380"W	2087.48	212.143	1.51	1.42	-0.52
9215.00	90.710	146.250	8263.05	904.79	-1845.32	-1057.94	1765187.96	414871.18	39°38'12.4670"N	80°13'18.9566"W	2127.08	209.826	1.86	-1.70	0.74
9310.00	90.250	145.530	8262.26	999.77	-1923.98	-1004.67	1765241.23	414792.53	39°38'11.6939"N	80°13'18.2677"W	2170.49	207.573	0.90	-0.48	-0.76
9404.00	89.940	145.580	8262.10	1093.77	-2001.49	-951.50	1765294.39	414715.02	39°38'10.9321"N	80°13'17.5801"W	2216.15	205.426	0.33	-0.33	0.05
9498.00	90.430	145.600	8261.80	1187.76	-2079.04	-898.38	1765347.51	414637.47	39°38'10.1699"N	80°13'16.8932"W	2264.84	203.370	0.52	0.52	0.02
9592.00	89.380	145.600	8261.96	1281.76	-2156.60	-845.28	1765400.61	414559.92	39°38'9.4076"N	80°13'16.2065"W	2316.34	201.403	1.12	-1.12	0.00
9687.00	89.080	145.760	8263.23	1376.74	-2235.06	-791.72	1765454.17	414481.47	39°38'8.6365"N	80°13'15.5139"W	2371.14	199.506	0.36	-0.32	0.17
9782.00	88.980	145.720	8264.84	1471.72	-2313.56	-738.25	1765507.64	414402.97	39°38'7.8649"N	80°13'14.8224"W	2428.49	197.698	0.11	-0.11	-0.04
9877.00	89.450	145.930	8266.14	1566.70	-2392.15	-684.89	1765560.99	414324.38	39°38'7.0925"N	80°13'14.1323"W	2488.26	195.977	0.54	0.49	0.22
9971.00	89.420	145.630	8267.07	1660.69	-2469.87	-632.03	1765613.85	414246.67	39°38'6.3286"N	80°13'13.4487"W	2549.46	194.354	0.32	-0.03	-0.32



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# Actual Wellpath Report

Yost 4H AWP Proj: 21209'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 4H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 4H AWB
Slot	Slot 04		

WELLPATH DATA (240 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]
10065.00	90.710	145.400	8266.96	1754.68	-2547.35	-578.81	1765667.07	414169.19	39°38'5.5671"N	80°13'12.7605"W	2612.29	192.801	1.39	1.37	-0.24
10159.00	90.580	146.160	8265.90	1848.67	-2625.08	-525.95	1765719.92	414091.47	39°38'4.8032"N	80°13'12.0769"W	2677.25	191.330	0.82	-0.14	0.81
10253.00	91.050	146.000	8264.57	1942.64	-2703.07	-473.50	1765772.37	414013.48	39°38'4.0365"N	80°13'11.3986"W	2744.23	189.936	0.53	0.50	-0.17
10347.00	91.110	144.780	8262.80	2036.62	-2780.42	-420.12	1765825.75	413936.14	39°38'3.2764"N	80°13'10.7084"W	2811.98	188.592	1.30	0.06	-1.30
10442.00	90.920	144.960	8261.11	2131.60	-2858.10	-365.46	1765880.40	413858.46	39°38'2.5130"N	80°13'10.0018"W	2881.38	187.287	0.28	-0.20	0.19
10537.00	90.550	143.930	8259.89	2226.59	-2935.39	-310.23	1765935.63	413781.18	39°38'1.7536"N	80°13'9.2879"W	2951.73	186.033	1.15	-0.39	-1.08
10631.00	90.800	145.540	8258.79	2320.58	-3012.13	-255.96	1765989.90	413704.45	39°38'0.9995"N	80°13'8.5865"W	3022.98	184.857	1.73	0.27	1.71
10724.00	90.890	144.500	8257.41	2413.57	-3088.32	-202.65	1766043.20	413628.26	39°38'0.2507"N	80°13'7.8974"W	3094.96	183.754	1.12	0.10	-1.12
10820.00	92.460	144.550	8254.61	2509.52	-3166.46	-146.96	1766098.89	413550.12	39°37'59.4829"N	80°13'7.1776"W	3169.87	182.657	1.64	1.64	0.05
10914.00	92.550	144.620	8250.50	2603.43	-3243.00	-92.54	1766153.30	413473.59	39°37'58.7308"N	80°13'6.4742"W	3244.32	181.635	0.12	0.10	0.07
11009.00	92.060	144.370	8246.68	2698.35	-3320.27	-37.41	1766208.43	413396.32	39°37'57.9715"N	80°13'5.7617"W	3320.48	180.646	0.58	-0.52	-0.26
11103.00	91.480	144.280	8243.78	2792.29	-3396.59	17.38	1766263.22	413320.01	39°37'57.2216"N	80°13'5.0536"W	3396.64	179.707	0.62	-0.62	-0.10
11198.00	91.970	144.870	8240.92	2887.25	-3473.97	72.42	1766318.26	413242.63	39°37'56.4612"N	80°13'4.3423"W	3474.72	178.806	0.81	0.52	0.62
11293.00	91.600	144.280	8237.96	2982.20	-3551.34	127.46	1766373.29	413165.26	39°37'55.7009"N	80°13'3.6309"W	3553.63	177.945	0.73	-0.39	-0.62
11388.00	92.090	144.910	8234.90	3077.15	-3628.74	182.47	1766428.30	413087.88	39°37'54.9404"N	80°13'2.9199"W	3633.32	177.121	0.84	0.52	0.66
11483.00	91.780	144.490	8231.69	3172.09	-3706.22	237.33	1766483.16	413010.39	39°37'54.1789"N	80°13'2.2108"W	3713.82	176.336	0.55	-0.33	-0.44
11578.00	92.460	144.800	8228.18	3267.02	-3783.65	292.27	1766538.09	412932.97	39°37'53.4181"N	80°13'1.5008"W	3794.92	175.583	0.79	0.72	0.33
11674.00	92.250	144.720	8224.23	3362.94	-3861.99	347.61	1766593.43	412854.63	39°37'52.6482"N	80°13'0.7855"W	3877.61	174.857	0.23	-0.22	-0.08
11769.00	92.340	144.710	8220.43	3457.86	-3939.48	402.44	1766648.26	412777.15	39°37'51.8868"N	80°13'0.0768"W	3959.98	174.167	0.10	0.09	-0.01
11864.00	92.430	143.980	8216.47	3552.77	-4016.60	457.77	1766703.58	412700.03	39°37'51.1290"N	80°12'59.3618"W	4042.60	173.498	0.77	0.09	-0.77
11960.00	92.680	144.660	8212.19	3648.67	-4094.50	513.71	1766759.52	412622.14	39°37'50.3635"N	80°12'58.6389"W	4126.60	172.849	0.75	0.26	0.71
12055.00	92.740	144.710	8207.70	3743.56	-4171.94	568.56	1766814.37	412544.71	39°37'49.6026"N	80°12'57.9300"W	4210.50	172.239	0.08	0.06	0.05
12150.00	93.140	144.640	8202.83	3838.44	-4249.34	623.42	1766869.22	412467.31	39°37'48.8419"N	80°12'57.2210"W	4294.83	171.654	0.43	0.42	-0.07
12245.00	93.020	144.340	8197.73	3933.30	-4326.56	678.52	1766924.32	412390.09	39°37'48.0831"N	80°12'56.5089"W	4379.44	171.087	0.34	-0.13	-0.32
12340.00	93.510	144.490	8192.32	4028.14	-4403.70	733.71	1766979.51	412312.96	39°37'47.3252"N	80°12'55.7957"W	4464.40	170.541	0.54	0.52	0.16
12435.00	93.170	144.740	8186.78	4122.97	-4481.02	788.63	1767034.42	412235.65	39°37'46.5654"N	80°12'55.0859"W	4549.88	170.019	0.44	-0.36	0.26
12530.00	93.020	143.970	8181.65	4217.83	-4558.10	843.91	1767089.70	412158.57	39°37'45.8079"N	80°12'54.3716"W	4635.57	169.511	0.82	-0.16	-0.81
12625.00	93.080	144.580	8176.60	4312.69	-4635.12	899.30	1767145.09	412081.56	39°37'45.0512"N	80°12'53.6558"W	4721.55	169.020	0.64	0.06	0.64
12719.00	92.060	144.460	8172.38	4406.59	-4711.58	953.81	1767199.59	412005.09	39°37'44.2998"N	80°12'52.9515"W	4807.16	168.556	1.09	-1.09	-0.13
12814.00	91.260	145.010	8169.63	4501.54	-4789.12	1008.63	1767254.41	411927.57	39°37'43.5378"N	80°12'52.2429"W	4894.18	168.107	1.02	-0.84	0.58



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# Actual Wellpath Report

Yost 4H AWP Proj: 21209'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 4H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 4H AWB
Slot	Slot 04		

WELLPATH DATA (240 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]	
12909.00	90.120	144.780	8168.49	4596.54	-4866.83	1063.26	1767309.04	411849.86	39°37'42.7741"N	80°12'51.5368"W	4981.62	167.676	1.22	-1.20	-0.24	
13004.00	90.120	144.320	8168.29	4691.53	-4944.22	1118.36	1767364.13	411772.47	39°37'42.0137"N	80°12'50.8248"W	5069.13	167.254	0.48	0.00	-0.48	
13098.00	90.890	144.780	8167.46	4785.52	-5020.79	1172.88	1767418.64	411695.91	39°37'41.2612"N	80°12'50.1203"W	5155.96	166.851	0.95	0.82	0.49	
13194.00	90.650	144.730	8166.17	4881.51	-5099.19	1228.27	1767474.03	411617.52	39°37'40.4908"N	80°12'49.4044"W	5245.03	166.457	0.26	-0.25	-0.05	
13288.00	90.830	144.880	8164.95	4975.51	-5176.00	1282.44	1767528.20	411540.71	39°37'39.7360"N	80°12'48.7042"W	5332.50	166.084	0.25	0.19	0.16	
13382.00	91.230	144.900	8163.26	5069.49	-5252.88	1336.50	1767582.26	411463.83	39°37'38.9804"N	80°12'48.0056"W	5420.24	165.725	0.43	0.43	0.02	
13477.00	91.450	144.600	8161.04	5164.46	-5330.44	1391.31	1767637.07	411386.28	39°37'38.2182"N	80°12'47.2972"W	5509.02	165.371	0.39	0.23	-0.32	
13572.00	91.570	144.660	8158.54	5259.43	-5407.88	1446.28	1767692.04	411308.84	39°37'37.4572"N	80°12'46.5868"W	5597.94	165.027	0.14	0.13	0.06	
13677.00	91.880	144.390	8155.38	5364.38	-5493.35	1507.19	1767752.94	411223.38	39°37'36.6173"N	80°12'45.7997"W	5696.36	164.657	0.39	0.30	-0.26	
13762.00	91.020	144.540	8153.23	5449.35	-5562.49	1556.58	1767802.32	411154.24	39°37'35.9378"N	80°12'45.1618"W	5776.18	164.367	1.03	-1.01	0.18	
13857.00	91.050	144.660	8151.51	5544.33	-5639.92	1611.60	1767857.34	411076.82	39°37'35.1770"N	80°12'44.4505"W	5865.66	164.053	0.13	0.03	0.13	
13951.00	89.970	144.420	8150.67	5638.32	-5716.48	1666.13	1767911.87	411000.26	39°37'34.4246"N	80°12'43.7459"W	5954.34	163.751	1.18	-1.15	-0.26	
14045.00	90.030	144.310	8150.67	5732.31	-5792.88	1720.90	1767966.63	410923.87	39°37'33.6739"N	80°12'43.0383"W	6043.09	163.455	0.13	0.06	-0.12	
14141.00	90.250	144.550	8150.44	5828.31	-5870.96	1776.74	1768022.47	410845.79	39°37'32.9066"N	80°12'42.3167"W	6133.92	163.163	0.34	0.23	0.25	
14235.00	90.460	144.820	8149.86	5922.31	-5947.67	1831.08	1768076.81	410769.09	39°37'32.1528"N	80°12'41.6145"W	6223.15	162.888	0.36	0.22	0.29	
14329.00	90.150	145.110	8149.36	6016.30	-6024.63	1885.04	1768130.76	410692.13	39°37'31.3964"N	80°12'40.9171"W	6312.65	162.626	0.45	-0.33	0.31	
14424.00	90.340	145.430	8148.95	6111.30	-6102.71	1939.16	1768184.88	410614.06	39°37'30.6291"N	80°12'40.2176"W	6403.39	162.372	0.39	0.20	0.34	
14518.00	90.860	145.490	8147.97	6205.29	-6180.13	1992.45	1768238.17	410536.64	39°37'29.8681"N	80°12'39.5287"W	6493.37	162.131	0.56	0.55	0.06	
14612.00	91.260	145.320	8146.23	6299.27	-6257.50	2045.82	1768291.53	410459.27	39°37'29.1077"N	80°12'38.8389"W	6583.44	161.895	0.46	0.43	-0.18	
14706.00	91.260	145.310	8144.16	6393.25	-6334.78	2099.30	1768345.01	410382.00	39°37'28.3481"N	80°12'38.1476"W	6673.56	161.665	0.01	0.00	-0.01	
14800.00	91.290	145.360	8142.07	6487.23	-6412.07	2152.75	1768398.46	410304.71	39°37'27.5884"N	80°12'37.4567"W	6763.80	161.441	0.06	0.03	0.05	
14894.00	90.980	145.700	8140.21	6581.20	-6489.55	2205.94	1768451.64	410227.24	39°37'26.8269"N	80°12'36.7692"W	6854.23	161.226	0.49	-0.33	0.36	
14989.00	91.630	145.590	8138.04	6676.17	-6567.96	2259.53	1768505.24	410148.83	39°37'26.0562"N	80°12'36.0763"W	6945.76	161.016	0.69	0.68	-0.12	
15084.00	91.230	145.550	8135.67	6771.14	-6646.29	2313.23	1768558.93	410070.51	39°37'25.2863"N	80°12'35.3822"W	7037.34	160.810	0.42	-0.42	-0.04	
15179.00	91.510	145.740	8133.40	6866.10	-6724.70	2366.83	1768612.52	409992.11	39°37'24.5156"N	80°12'34.6894"W	7129.05	160.610	0.36	0.29	0.20	
15274.00	91.170	145.470	8131.18	6961.07	-6803.06	2420.48	1768666.17	409913.74	39°37'23.7453"N	80°12'33.9959"W	7220.83	160.415	0.46	-0.36	-0.28	
15369.00	91.290	145.860	8129.14	7056.04	-6881.49	2474.05	1768719.73	409835.32	39°37'22.9744"N	80°12'33.3034"W	7312.72	160.225	0.43	0.13	0.41	
15463.00	91.020	146.410	8127.25	7150.01	-6959.53	2526.42	1768772.10	409757.29	39°37'22.2073"N	80°12'32.6262"W	7403.91	160.048	0.65	-0.29	0.59	
15558.00	91.020	145.410	8125.56	7244.98	-7038.19	2579.65	1768825.34	409678.63	39°37'21.4340"N	80°12'31.9380"W	7496.05	159.871	1.05	0.00	-1.05	
15653.00	90.950	145.160	8123.92	7339.96	-7116.27	2633.75	1768879.43	409600.56	39°37'20.6666"N	80°12'31.2388"W	7588.01	159.690	0.27	-0.07	-0.26	





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# Actual Wellpath Report

Yost 4H AWP Proj: 21209'

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Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 4H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 4H AWB
Slot	Slot 04		

WELLPATH DATA (240 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)
15747.00	90.950	145.660	8122.36	7433.95	-7193.64	2687.10	1768932.78	409523.19	39°37'19.9061"N	80°12'30.5492"W	7679.13	159.517	0.53	0.00	0.53
15842.00	90.890	145.700	8120.84	7528.93	-7272.09	2740.66	1768986.33	409444.74	39°37'19.1350"N	80°12'29.8569"W	7771.39	159.350	0.08	-0.06	0.04
15937.00	91.260	145.670	8119.06	7623.90	-7350.54	2794.20	1769039.87	409366.30	39°37'18.3639"N	80°12'29.1647"W	7863.72	159.186	0.39	0.39	-0.03
16031.00	91.260	145.370	8116.99	7717.88	-7428.01	2847.41	1769093.07	409288.83	39°37'17.6024"N	80°12'28.4770"W	7955.07	159.026	0.32	0.00	-0.32
16126.00	91.570	145.540	8114.64	7812.85	-7506.24	2901.26	1769146.92	409210.61	39°37'16.8335"N	80°12'27.7810"W	8047.42	158.868	0.37	0.33	0.18
16221.00	91.170	145.890	8112.37	7907.81	-7584.71	2954.76	1769200.42	409132.15	39°37'16.0622"N	80°12'27.0894"W	8139.93	158.716	0.56	-0.42	0.37
16315.00	91.230	145.800	8110.40	8001.78	-7662.48	3007.52	1769253.18	409054.38	39°37'15.2977"N	80°12'26.4073"W	8231.57	158.570	0.12	0.06	-0.10
16410.00	91.110	145.620	8108.46	8096.75	-7740.95	3061.03	1769306.69	408975.91	39°37'14.5264"N	80°12'25.7156"W	8324.20	158.424	0.23	-0.13	-0.19
16504.00	90.890	145.770	8106.82	8190.73	-7818.59	3114.00	1769359.65	408898.28	39°37'13.7632"N	80°12'25.0309"W	8415.90	158.283	0.28	-0.23	0.16
16598.00	91.350	145.780	8104.99	8284.70	-7896.30	3166.86	1769412.51	408820.58	39°37'12.9994"N	80°12'24.3477"W	8507.67	158.146	0.49	0.49	0.01
16693.00	91.970	145.760	8102.23	8379.66	-7974.81	3220.28	1769465.92	408742.07	39°37'12.2277"N	80°12'23.6572"W	8600.45	158.011	0.65	0.65	-0.02
16787.00	92.650	145.280	8098.44	8473.57	-8052.23	3273.45	1769519.09	408664.65	39°37'11.4666"N	80°12'22.9699"W	8692.17	157.877	0.89	0.72	-0.51
16882.00	92.520	146.360	8094.16	8568.47	-8130.74	3326.77	1769572.40	408586.15	39°37'10.6949"N	80°12'22.2807"W	8785.00	157.748	1.14	-0.14	1.14
16977.00	93.230	146.140	8089.39	8663.32	-8209.63	3379.48	1769625.11	408507.26	39°37'9.9193"N	80°12'21.5992"W	8878.00	157.626	0.78	0.75	-0.23
17070.00	93.140	145.500	8084.23	8756.17	-8286.45	3431.64	1769677.27	408430.45	39°37'9.1642"N	80°12'20.9249"W	8968.91	157.504	0.69	-0.10	-0.69
17165.00	92.520	145.690	8079.54	8851.05	-8364.73	3485.26	1769730.88	408352.17	39°37'8.3947"N	80°12'20.2320"W	9061.77	157.380	0.68	-0.65	0.20
17260.00	91.420	144.270	8076.27	8945.99	-8442.48	3539.74	1769785.36	408274.42	39°37'7.6306"N	80°12'19.5279"W	9154.52	157.253	1.89	-1.16	-1.49
17355.00	91.570	145.480	8073.79	9040.95	-8520.16	3594.38	1769840.00	408196.76	39°37'6.8672"N	80°12'18.8219"W	9247.30	157.127	1.28	0.16	1.27
17451.00	90.950	144.580	8071.68	9136.93	-8598.80	3649.39	1769895.00	408118.11	39°37'6.0942"N	80°12'18.1111"W	9341.17	157.003	1.14	-0.65	-0.94
17546.00	91.720	144.880	8069.47	9231.90	-8676.34	3704.23	1769949.84	408040.58	39°37'5.3322"N	80°12'17.4026"W	9433.99	156.881	0.87	0.81	0.32
17641.00	91.140	144.480	8067.10	9326.87	-8753.83	3759.13	1770004.74	407963.09	39°37'4.5706"N	80°12'16.6932"W	9526.84	156.760	0.74	-0.61	-0.42
17736.00	91.170	144.580	8065.18	9421.85	-8831.19	3814.25	1770059.86	407885.74	39°37'3.8104"N	80°12'15.9812"W	9619.69	156.640	0.11	0.03	0.11
17830.00	91.660	144.920	8062.86	9515.82	-8907.93	3868.48	1770114.09	407809.01	39°37'3.0562"N	80°12'15.2805"W	9711.66	156.526	0.63	0.52	0.36
17926.00	91.600	144.430	8060.13	9611.78	-8986.22	3923.97	1770169.57	407730.72	39°37'2.2868"N	80°12'14.5636"W	9805.59	156.411	0.51	-0.06	-0.51
18020.00	91.970	144.500	8057.20	9705.73	-9062.68	3978.58	1770224.17	407654.27	39°37'1.5354"N	80°12'13.8582"W	9897.53	156.298	0.40	0.39	0.07
18114.00	92.000	144.300	8053.95	9799.67	-9139.06	4033.26	1770278.86	407577.89	39°37'0.7848"N	80°12'13.1518"W	9989.48	156.187	0.22	0.03	-0.21
18208.00	91.970	144.320	8050.69	9893.60	-9215.36	4088.07	1770333.66	407501.59	39°37'0.0350"N	80°12'12.4438"W	10081.43	156.077	0.04	-0.03	0.02
18302.00	91.850	144.040	8047.56	9987.54	-9291.54	4143.05	1770388.64	407425.42	39°36'59.2864"N	80°12'11.7336"W	10173.38	155.968	0.32	-0.13	-0.30
18396.00	91.850	144.130	8044.52	10081.48	-9367.63	4198.16	1770443.74	407349.33	39°36'58.5387"N	80°12'11.0218"W	10265.33	155.860	0.10	0.00	0.10
18491.00	92.220	144.660	8041.15	10176.41	-9444.82	4253.43	1770499.01	407272.16	39°36'57.7801"N	80°12'10.3078"W	10358.39	155.756	0.68	0.39	0.56



<b>HOLE &amp; CASING SECTIONS - Ref Wellbore: Yost 4H AWB Ref Wellpath: Yost 4H AWP Proj: 21209'</b>									
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	1490.00	1462.00	28.00	1489.94	0.00	0.00	-5.07	-3.59
13.375in Casing Surface	28.00	1460.00	1432.00	28.00	1459.95	0.00	0.00	-4.83	-3.63
12.25in Open Hole	1490.00	2660.00	1170.00	1489.94	2653.47	-5.07	-3.59	-1.01	-117.25
9.625in Casing Intermediate	28.00	2630.00	2602.00	28.00	2623.77	0.00	0.00	-1.51	-113.03
8.75in Open Hole	2660.00	7476.00	4816.00	2653.47	7260.20	-1.01	-117.25	-789.51	-1245.04

<b>TARGETS</b>								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Yost 4H BHL Rev-4	8270.00	-11667.52	5817.25	1772062.73	405049.58	39°36'35.9342"N	80°11'50.1050"W	point
Yost 4H LP Rev-1	8270.00	-1659.60	-1190.38	1765055.54	415056.89	39°38'14.2919"N	80°13'20.6685"W	point
Yost Hardline #3 (1.31.21)	9028.00	-8601.44	8000.19	1774245.54	408115.48	39°37'6.4019"N	80°11'22.5146"W	polygon
2D Polygon: dimensions not calculated								

<b>WELLPATH COMPOSITION - Ref Wellbore: Yost 4H AWB Ref Wellpath: Yost 4H AWP Proj: 21209'</b>					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	1335.00	BH Generic gyro - northseeking (Standard)	01 <17.5">Gyro Surveys [BH Generic Gyro-Northseeking] (50'-1335')	Yost 4H AWB	6/18/2022
1335.00	2539.00	OWSG MWD rev2 + HRGM	02 <12.25">SDI MWD [OWSG MWD Rev.2+HRGM] (1335')(1497'-2539')	Yost 4H AWB	6/18/2022
2539.00	7399.00	OWSG MWD rev2 + HRGM	03 <8.75">SDI MWD [OWSG MWD Rev.2+HRGM] (2539')(2634'-7339')	Yost 4H AWB	6/18/2022
7399.00	21209.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	04 <8.5">ATK Curve [HRGM+Short Spacing] (7339')(7416' - 21184')	Yost 4H AWB	6/18/2022

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Yost 4H AWP Proj: 21209'

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## REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Yost 4H
Field	Monongalia	API/Legal	
Facility	Yost Pad	Wellbore	Yost 4H AWB
Slot	Slot 04		

## COMMENTS

### Wellpath general comments

API: 47061018930000

BH Job #: 111309737

Rig: Patterson 277

Duration: 6/19/2022 - 6/24/2022

01\_<17.5">Gyro Surveys [BH Generic Gyro-Northseeking] (50'-1335')

02\_<12.25">SDI MWD [OWSG MWD Rev.2+HRGM] (1335')(1497'-2539')

03\_<8.75">SDI MWD [OWSG MWD Rev.2+HRGM] (2539')(2634'-7339')

04\_<8.5">ATK Curve [HRGM+Short Spacing] (7339')(7416' - 21184')

Final Survey MD @ 21184'

Projected MD at TD: 21209'

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