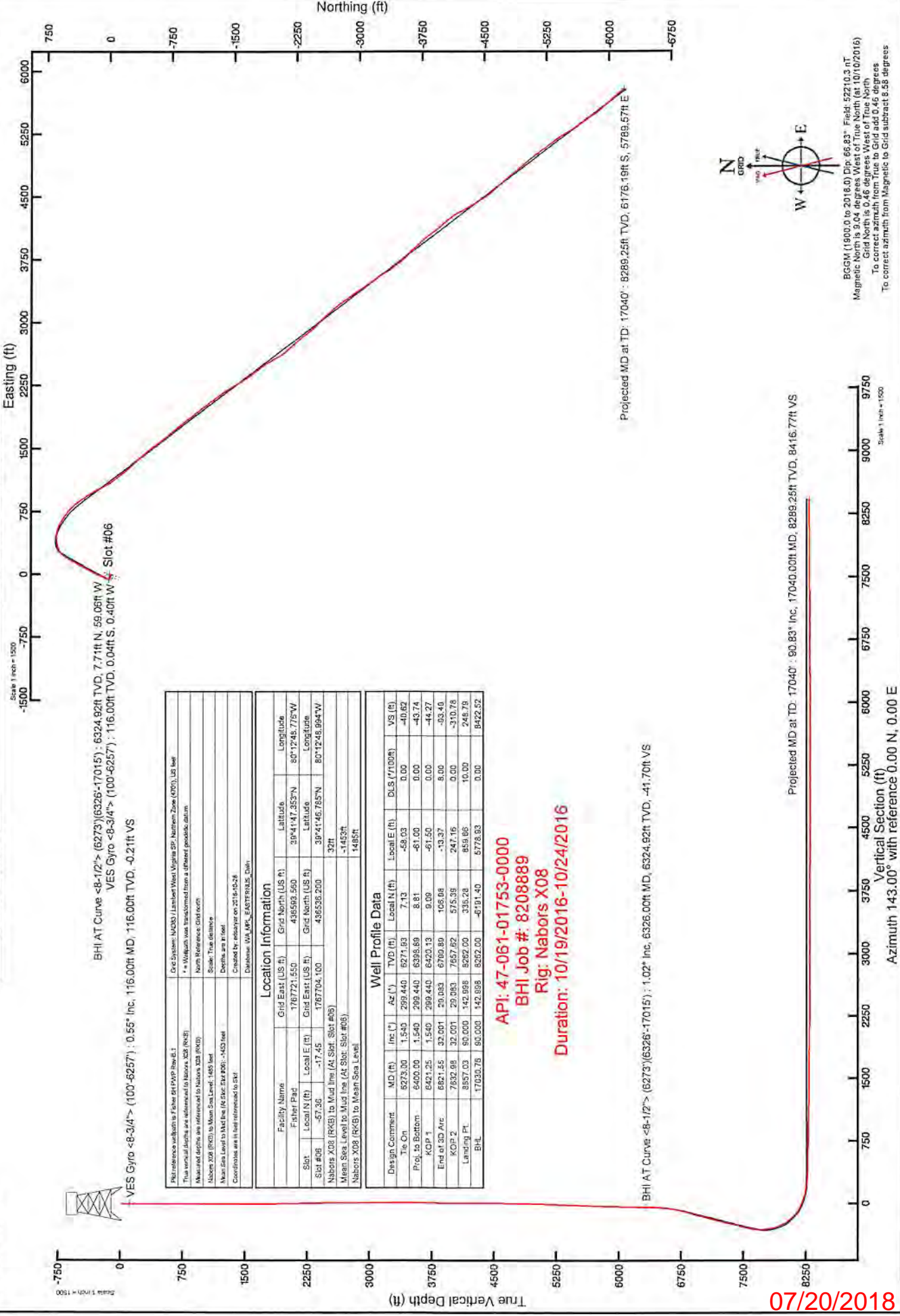




NORTHEAST NATURAL ENERGY, LLC

Location: Monongalia County, WV
 Field: Monongalia
 Facility: Fisher Pad
 Slot: Slot #06
 Well: Fisher 6H
 Wellbore: Fisher 6H PWB



Scale 1 inch = 1500

Scale 1 inch = 1500

Scale 1 inch = 1500

Scale 1 inch = 1500

Scale 1 inch = 1500

Scale 1 inch = 1500

Scale 1 inch = 1500

BHI AT Curve $\langle -8-1/2^\circ \rangle$ (6273)(6326-17015) : 6324.92ft TVD, 7.71ft N, 59.06ft W
 VES Gyro $\langle -8-3/4^\circ \rangle$ (100-6257) : 116.00ft TVD, 0.04ft S, 0.40ft W Slot #06
 VES Gyro $\langle -8-3/4^\circ \rangle$: 0.55° Inc, 116.00ft MD, 116.00ft TVD, -0.21ft VS

Reference wellbore is Fisher 6H PWB Rev 6.1		Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (700), US feet	
True vertical depths are referenced to Nabors X08 (RXB)			
** Wellbore was transformed from a different geoidetic datum			
Natural depths are referenced to Nabors X08 (RXB)			
Nabors X08 (RXB) to Mean Sea Level: 1465 feet			
Scale: True distance			
Depth is in feet			
Created by: eddytor on 2/18/15-2/28			
Coordinates are in feet referenced to SRTM			
Database: VA_MPL_EASTERMS_Data			
Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Fisher Pad	1767721.550	4365993.590	80°12'48.775"W
Slot	Local N (ft)	Local E (ft)	DLS (ft/100ft)
Slot #06	-57.36	-17.45	0.00
Nabors X08 (RXB) to Mud line (At Slot: Slot #06)	1767704.100	4365976.200	80°12'48.994"W
Mean Sea Level to Mud line (At Slot: Slot #06)		32ft	
Nabors X08 (RXB) to Mean Sea Level		1465ft	
Well Profile Data			
Design Comment	MD (ft)	Az (°)	VS (ft)
The On	6273.00	1.540	299.440
Proj. to Bottom	6400.00	1.540	299.440
KOP 1	6421.25	1.540	299.440
End at 3D Arc	6821.55	32.001	29.083
KOP 2	7832.98	32.001	29.083
Landing Pt.	8357.03	90.000	142.998
BHL	17039.76	90.000	142.998

API: 47-061-01753-0000
 BHI Job #: 8208889
 Rig: Nabors X08
 Duration: 10/19/2016-10/24/2016

BHI AT Curve $\langle -8-1/2^\circ \rangle$ (6273)(6326-17015) : 1.02° Inc, 6326.00ft MD, 6324.92ft TVD, -41.70ft VS

8/20/2016

Projected MD at TD: 17040° : 80.83° Inc, 17040.00ft MD, 8289.25ft TVD, 8416.77ft VS

Projected MD at TD: 17040° : 8289.25ft TVD, 6176.19ft S, 5789.57ft E



BGGM (1900.0 to 2018.0) Dir: 66.93° Fish: 5210.3 AT
 Magnetic North is 9.04 degrees West of True North (at 10/19/2016)
 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 8.58 degrees

Vertical Section (ft)
 Azimuth 143.00° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500



Actual Wellpath Report

Fisher 6H AWP Proj: 17040'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #06
Area	Monongalia County, WV	Well	Fisher 6H
Field	Monongalia	Wellbore	Fisher 6H AWB
Facility	Fisher Pad		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Edsaryar
Scale	0.999941	Report Generated	10/28/2016 at 2:26:35 PM
Convergence at slot	0.46° West	Database/Source file	WA_MPL_EASTERNUS_Defn/Fisher_6H_AWP_Proj_17040_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-57.36	-17.45	1767704.10	436536.20	39°41'46.785"N	80°12'48.994"W
Facility Reference Pt			1767721.55	436593.56	39°41'47.353"N	80°12'48.776"W
Field Reference Pt			1777685.71	440640.65	39°42'28.114"N	80°10'41.690"W

WELLPATH DATUM

Calculation method	Minimum curvature	Nabors X08 (RKB) to Facility Vertical Datum	1485.00ft
Horizontal Reference Pt	Slot	Nabors X08 (RKB) to Mean Sea Level	1485.00ft
Vertical Reference Pt	Nabors X08 (RKB)	Nabors X08 (RKB) to Mud Line at Slot (Slot #06)	32.00ft
MD Reference Pt	Nabors X08 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	143.00°



Actual Wellpath Report

Fisher 6H AWP Proj: 17040'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #06
Area	Monongalia County, WV	Well	Fisher 6H
Field	Monongalia	Wellbore	Fisher 6H AWB
Facility	Fisher Pad		

WELLPATH DATA (180 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	263.810	0.00	0.00	0.00	0.00	1767704.10	436536.20	39°41'46.785"N	80°12'48.994"W	0.00	0.000	0.00	0.00	0.00
32.00	0.000	263.810	32.00	0.00	0.00	0.00	1767704.10	436536.20	39°41'46.785"N	80°12'48.994"W	0.00	0.000	0.00	0.00	0.00
116.00	0.550	263.810	116.00	-0.21	-0.04	-0.40	1767703.70	436536.16	39°41'46.785"N	80°12'48.999"W	0.40	263.810	0.65	0.65	-114.51
216.00	0.580	273.870	215.99	-0.78	-0.06	-1.38	1767702.72	436536.14	39°41'46.784"N	80°12'49.011"W	1.38	267.472	0.10	0.03	10.06
316.00	0.470	293.900	315.99	-1.47	0.14	-2.26	1767701.84	436536.34	39°41'46.786"N	80°12'49.023"W	2.27	273.522	0.21	-0.11	20.03
416.00	0.370	252.460	415.99	-1.94	0.21	-2.95	1767701.15	436536.41	39°41'46.787"N	80°12'49.032"W	2.95	274.041	0.31	-0.10	-41.44
516.00	0.270	302.790	515.99	-2.27	0.24	-3.45	1767700.65	436536.44	39°41'46.787"N	80°12'49.038"W	3.46	273.951	0.29	-0.10	50.33
616.00	0.150	187.490	615.99	-2.40	0.24	-3.67	1767700.43	436536.44	39°41'46.787"N	80°12'49.041"W	3.67	273.686	0.36	-0.12	-115.30
716.00	0.370	240.960	715.98	-2.35	-0.05	-3.97	1767700.13	436536.15	39°41'46.784"N	80°12'49.045"W	3.97	269.274	0.31	0.22	53.47
816.00	0.310	260.940	815.98	-2.52	-0.25	-4.52	1767699.58	436535.95	39°41'46.782"N	80°12'49.052"W	4.52	266.836	0.13	-0.06	19.98
916.00	0.180	293.240	915.98	-2.78	-0.23	-4.93	1767699.17	436535.97	39°41'46.782"N	80°12'49.057"W	4.93	267.325	0.18	-0.13	32.30
1016.00	0.200	211.130	1015.98	-2.85	-0.32	-5.16	1767698.94	436535.88	39°41'46.781"N	80°12'49.060"W	5.17	266.478	0.25	0.02	-82.11
1116.00	0.390	228.090	1115.98	-2.76	-0.69	-5.51	1767698.60	436535.51	39°41'46.778"N	80°12'49.064"W	5.55	262.811	0.21	0.19	16.96
1216.00	0.300	217.330	1215.98	-2.66	-1.13	-5.92	1767698.18	436535.07	39°41'46.773"N	80°12'49.069"W	6.02	259.190	0.11	-0.09	-10.76
1316.00	0.230	178.520	1315.98	-2.42	-1.54	-6.07	1767698.03	436534.66	39°41'46.769"N	80°12'49.071"W	6.26	255.777	0.19	-0.07	-38.81
1416.00	0.330	176.960	1415.98	-2.02	-2.03	-6.05	1767698.05	436534.17	39°41'46.764"N	80°12'49.071"W	6.38	251.479	0.10	0.10	-1.56
1516.00	0.340	155.660	1515.97	-1.49	-2.58	-5.91	1767698.19	436533.62	39°41'46.759"N	80°12'49.069"W	6.45	246.387	0.12	0.01	-21.30
1616.00	0.130	159.740	1615.97	-1.10	-2.96	-5.75	1767698.35	436533.24	39°41'46.755"N	80°12'49.067"W	6.47	242.754	0.21	-0.21	4.08
1716.00	0.120	233.880	1715.97	-0.99	-3.13	-5.80	1767698.30	436533.07	39°41'46.754"N	80°12'49.068"W	6.59	241.634	0.15	-0.01	74.14
1816.00	0.770	161.200	1815.97	-0.35	-3.83	-5.66	1767698.44	436532.37	39°41'46.747"N	80°12'49.066"W	6.84	235.953	0.74	0.65	-72.68
1916.00	1.240	165.070	1915.95	1.29	-5.51	-5.17	1767698.93	436530.69	39°41'46.730"N	80°12'49.059"W	7.55	223.177	0.47	0.47	3.87
2016.00	1.170	157.870	2015.93	3.28	-7.50	-4.51	1767699.59	436528.70	39°41'46.710"N	80°12'49.051"W	8.75	210.996	0.17	-0.07	-7.20
2116.00	1.050	173.580	2115.91	5.05	-9.36	-4.02	1767700.08	436526.84	39°41'46.692"N	80°12'49.044"W	10.18	203.244	0.33	-0.12	15.71
2216.00	1.290	158.710	2215.89	6.93	-11.32	-3.51	1767700.59	436524.88	39°41'46.673"N	80°12'49.038"W	11.85	197.222	0.39	0.24	-14.87
2316.00	1.160	181.890	2315.87	8.80	-13.38	-3.13	1767700.97	436522.82	39°41'46.653"N	80°12'49.033"W	13.74	193.179	0.51	-0.13	23.18
2416.00	0.960	169.960	2415.85	10.33	-15.21	-3.02	1767701.08	436520.99	39°41'46.634"N	80°12'49.031"W	15.51	191.227	0.30	-0.20	-11.93
2516.00	1.140	182.840	2515.84	11.84	-17.03	-2.92	1767701.18	436519.17	39°41'46.616"N	80°12'49.029"W	17.28	189.738	0.30	0.18	12.88
2616.00	0.720	186.260	2615.82	13.06	-18.65	-3.04	1767701.06	436517.55	39°41'46.600"N	80°12'49.031"W	18.90	189.260	0.42	-0.42	3.42
2716.00	0.720	174.650	2715.82	14.06	-19.90	-3.05	1767701.05	436516.30	39°41'46.588"N	80°12'49.031"W	20.13	188.716	0.15	0.00	-11.61
2816.00	0.500	225.370	2815.81	14.65	-20.83	-3.30	1767700.80	436515.37	39°41'46.579"N	80°12'49.034"W	21.09	189.009	0.56	-0.22	50.72



Actual Wellpath Report

Fisher 6H AWP Proj: 17040'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #06
Area	Monongalia County, WV	Well	Fisher 6H
Field	Monongalia	Wellbore	Fisher 6H AWB
Facility	Fisher Pad		

WELLPATH DATA (180 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]
2916.00	0.360	219.740	2915.81	14.78	-21.38	-3.81	1767700.29	436514.82	39°41'46.573"N	80°12'49.040"W	21.72	190.115	0.15	-0.14	-5.63
3016.00	0.480	264.450	3015.81	14.63	-21.66	-4.43	1767699.67	436514.54	39°41'46.571"N	80°12'49.048"W	22.11	191.562	0.34	0.12	44.71
3116.00	0.560	230.670	3115.80	14.43	-22.01	-5.23	1767698.87	436514.19	39°41'46.567"N	80°12'49.058"W	22.62	193.357	0.31	0.08	-33.78
3216.00	0.260	252.030	3215.80	14.38	-22.39	-5.82	1767698.28	436513.81	39°41'46.563"N	80°12'49.066"W	23.14	194.571	0.33	-0.30	21.36
3316.00	0.260	261.190	3315.80	14.20	-22.50	-6.26	1767697.84	436513.70	39°41'46.562"N	80°12'49.072"W	23.35	195.551	0.04	0.00	9.16
3416.00	0.220	271.200	3415.80	13.97	-22.53	-6.68	1767697.42	436513.67	39°41'46.562"N	80°12'49.077"W	23.50	196.509	0.06	-0.04	10.01
3516.00	0.430	301.720	3515.80	13.50	-22.33	-7.19	1767696.91	436513.88	39°41'46.564"N	80°12'49.083"W	23.45	197.846	0.27	0.21	30.52
3616.00	0.500	320.280	3615.79	12.72	-21.79	-7.79	1767696.31	436514.41	39°41'46.569"N	80°12'49.091"W	23.14	199.660	0.17	0.07	18.56
3716.00	0.580	310.090	3715.79	11.79	-21.13	-8.45	1767695.65	436515.07	39°41'46.575"N	80°12'49.100"W	22.76	201.800	0.12	0.08	-10.19
3816.00	0.570	319.680	3815.78	10.80	-20.43	-9.16	1767694.94	436515.77	39°41'46.582"N	80°12'49.109"W	22.39	204.155	0.10	-0.01	9.59
3916.00	0.380	330.040	3915.78	9.97	-19.76	-9.65	1767694.45	436516.44	39°41'46.589"N	80°12'49.115"W	21.99	206.025	0.21	-0.19	10.36
4016.00	0.330	319.970	4015.78	9.36	-19.25	-10.00	1767694.10	436516.95	39°41'46.594"N	80°12'49.120"W	21.69	207.447	0.08	-0.05	-10.07
4116.00	0.200	311.500	4115.78	8.90	-18.92	-10.32	1767693.79	436517.29	39°41'46.597"N	80°12'49.124"W	21.55	208.604	0.14	-0.13	-8.47
4216.00	0.260	281.430	4215.78	8.56	-18.76	-10.67	1767693.43	436517.45	39°41'46.599"N	80°12'49.128"W	21.58	209.632	0.13	0.06	-30.07
4316.00	0.420	267.160	4315.77	8.18	-18.73	-11.26	1767692.84	436517.47	39°41'46.599"N	80°12'49.136"W	21.85	211.008	0.18	0.16	-14.27
4416.00	0.540	271.000	4415.77	7.69	-18.74	-12.09	1767692.01	436517.46	39°41'46.599"N	80°12'49.147"W	22.30	212.838	0.12	0.12	3.84
4516.00	0.750	274.990	4515.76	6.96	-18.67	-13.22	1767690.88	436517.53	39°41'46.599"N	80°12'49.161"W	22.88	215.291	0.21	0.21	3.99
4616.00	0.860	284.190	4615.75	5.94	-18.43	-14.60	1767689.50	436517.77	39°41'46.602"N	80°12'49.179"W	23.51	218.376	0.17	0.11	9.20
4716.00	1.030	301.310	4715.74	4.52	-17.78	-16.09	1767688.01	436518.42	39°41'46.608"N	80°12'49.198"W	23.98	222.145	0.33	0.17	17.12
4816.00	0.970	295.830	4815.73	2.93	-16.95	-17.62	1767686.48	436519.26	39°41'46.616"N	80°12'49.218"W	24.45	226.121	0.11	-0.06	-5.48
4916.00	1.340	289.560	4915.71	1.20	-16.19	-19.49	1767684.62	436520.02	39°41'46.623"N	80°12'49.241"W	25.33	230.286	0.39	0.37	-6.27
5016.00	1.710	297.490	5015.67	-1.12	-15.11	-21.91	1767682.19	436521.10	39°41'46.634"N	80°12'49.273"W	26.61	235.418	0.43	0.37	7.93
5116.00	2.130	299.250	5115.61	-4.17	-13.51	-24.86	1767679.25	436522.69	39°41'46.650"N	80°12'49.310"W	28.29	241.478	0.42	0.42	1.76
5216.00	2.320	297.500	5215.54	-7.70	-11.67	-28.27	1767675.83	436524.54	39°41'46.667"N	80°12'49.354"W	30.58	247.578	0.20	0.19	-1.75
5316.00	2.340	299.800	5315.46	-11.40	-9.72	-31.84	1767672.26	436526.48	39°41'46.686"N	80°12'49.400"W	33.29	253.029	0.10	0.02	2.30
5416.00	2.250	302.240	5415.37	-15.11	-7.65	-35.27	1767668.83	436528.55	39°41'46.707"N	80°12'49.444"W	36.09	257.755	0.13	-0.09	2.44
5516.00	2.250	305.680	5515.30	-18.82	-5.46	-38.53	1767665.58	436530.74	39°41'46.728"N	80°12'49.486"W	38.91	261.930	0.14	0.00	3.44
5616.00	2.020	305.930	5615.23	-22.38	-3.28	-41.55	1767662.55	436532.92	39°41'46.749"N	80°12'49.525"W	41.68	265.481	0.23	-0.23	0.25
5716.00	2.030	304.740	5715.17	-25.75	-1.24	-44.43	1767659.67	436534.96	39°41'46.769"N	80°12'49.562"W	44.45	268.401	0.04	0.01	-1.19
5816.00	1.780	305.080	5815.11	-28.91	0.66	-47.16	1767656.95	436536.86	39°41'46.788"N	80°12'49.597"W	47.16	270.804	0.25	-0.25	0.34



Actual Wellpath Report

Fisher 6H AWP Proj: 17040'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #06
Area	Monongalia County, WV	Well	Fisher 6H
Field	Monongalia	Wellbore	Fisher 6H AWB
Facility	Fisher Pad		

WELLPATH DATA (180 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]	
5916.00	1.580	302.730	5915.07	-31.68	2.30	-49.59	1767654.52	436538.50	39°41'46.804"N	80°12'49.628"W	49.64	272.655	0.21	-0.20	-2.35	
6016.00	1.590	300.270	6015.03	-34.25	3.74	-51.95	1767652.16	436539.94	39°41'46.818"N	80°12'49.659"W	52.08	274.123	0.07	0.01	-2.46	
6116.00	1.500	299.730	6114.99	-36.73	5.09	-54.28	1767649.82	436541.29	39°41'46.831"N	80°12'49.689"W	54.52	275.360	0.09	-0.09	-0.54	
6216.00	1.600	297.420	6214.96	-39.20	6.38	-56.66	1767647.45	436542.58	39°41'46.844"N	80°12'49.719"W	57.01	276.430	0.12	0.10	-2.31	
6273.00	1.540	299.440	6271.93	-40.62	7.13	-58.03	1767646.07	436543.33	39°41'46.851"N	80°12'49.737"W	58.47	277.003	0.14	-0.11	3.54	
6326.00	1.020	298.890	6324.92	-41.70	7.71	-59.06	1767645.04	436543.91	39°41'46.856"N	80°12'49.750"W	59.56	277.433	0.98	-0.98	-1.04	
6421.00	3.070	28.630	6419.87	-43.52	10.35	-58.58	1767645.52	436546.55	39°41'46.883"N	80°12'49.744"W	59.49	280.017	3.40	2.16	94.46	
6515.00	9.590	17.000	6513.25	-49.17	20.06	-55.08	1767649.02	436556.25	39°41'46.979"N	80°12'49.701"W	58.62	290.006	7.03	6.94	-12.37	
6610.00	15.580	30.020	6605.94	-58.81	38.69	-46.38	1767657.72	436574.89	39°41'47.164"N	80°12'49.591"W	60.40	309.836	6.94	6.31	13.71	
6704.00	21.560	24.540	6695.02	-71.98	65.36	-32.88	1767671.23	436601.55	39°41'47.428"N	80°12'49.421"W	73.16	333.296	6.62	6.36	-5.83	
6799.00	27.710	18.960	6781.34	-92.69	102.17	-18.43	1767685.67	436638.36	39°41'47.793"N	80°12'49.240"W	103.82	349.772	6.91	6.47	-5.87	
6894.00	30.800	20.070	6864.21	-118.28	145.91	-2.91	1767701.19	436682.10	39°41'48.227"N	80°12'49.046"W	145.94	358.858	3.30	3.25	1.17	
6988.00	31.850	31.530	6944.58	-140.46	189.70	18.34	1767722.44	436725.88	39°41'48.661"N	80°12'48.778"W	190.58	5.522	6.43	1.12	12.19	
7083.00	32.740	30.020	7024.89	-159.66	233.31	44.30	1767748.40	436769.49	39°41'49.094"N	80°12'48.451"W	237.47	10.752	1.26	0.94	-1.59	
7177.00	32.740	26.400	7103.96	-180.97	278.09	68.32	1767772.42	436814.27	39°41'49.539"N	80°12'48.148"W	286.36	13.804	2.08	0.00	-3.85	
7272.00	32.720	26.750	7183.88	-203.83	324.02	91.30	1767795.40	436860.21	39°41'49.994"N	80°12'47.859"W	336.64	15.736	0.20	-0.02	0.37	
7367.00	32.430	30.550	7263.94	-224.92	368.89	115.81	1767819.90	436905.07	39°41'50.440"N	80°12'47.550"W	386.65	17.429	2.17	-0.31	4.00	
7462.00	31.720	33.100	7344.44	-243.15	411.75	142.40	1767846.49	436947.93	39°41'50.865"N	80°12'47.214"W	435.68	19.077	1.61	-0.75	2.68	
7556.00	31.710	26.220	7424.43	-262.69	454.63	166.81	1767870.90	436990.80	39°41'51.291"N	80°12'46.906"W	484.27	20.149	3.85	-0.01	-7.32	
7651.00	31.970	26.200	7505.14	-285.28	499.60	188.95	1767893.04	437035.77	39°41'51.737"N	80°12'46.627"W	534.13	20.717	0.27	0.27	-0.02	
7746.00	31.900	34.040	7585.79	-304.79	542.98	214.11	1767918.20	437079.15	39°41'52.168"N	80°12'46.310"W	583.67	21.521	4.36	-0.07	8.25	
7840.00	29.320	45.920	7666.76	-315.71	579.61	244.58	1767948.67	437115.78	39°41'52.532"N	80°12'45.924"W	629.10	22.879	6.98	-2.74	12.64	
7935.00	27.770	63.710	7750.37	-314.46	605.65	281.20	1767985.29	437141.81	39°41'52.792"N	80°12'45.458"W	667.74	24.906	9.07	-1.63	18.73	
8029.00	32.460	70.290	7831.68	-302.88	623.87	324.62	1768028.70	437160.03	39°41'52.976"N	80°12'44.904"W	703.27	27.490	6.10	4.99	7.00	
8124.00	39.340	81.130	7908.66	-281.06	637.14	378.49	1768082.57	437173.30	39°41'53.111"N	80°12'44.216"W	741.08	30.712	9.84	7.24	11.41	
8218.00	43.060	88.220	7979.42	-248.47	642.73	440.06	1768144.13	437178.89	39°41'53.171"N	80°12'43.429"W	778.95	34.398	6.35	3.96	7.54	
8313.00	47.220	101.620	8046.57	-203.49	636.70	506.81	1768210.88	437172.86	39°41'53.117"N	80°12'42.575"W	813.78	38.519	10.90	4.38	14.11	
8407.00	49.890	113.460	8108.90	-146.21	615.40	573.72	1768277.78	437151.56	39°41'52.912"N	80°12'41.717"W	841.35	42.992	9.85	2.84	12.60	
8502.00	59.560	122.690	8163.78	-75.93	578.68	641.77	1768345.83	437114.84	39°41'52.554"N	80°12'40.842"W	864.14	47.959	12.89	10.18	9.72	
8597.00	70.750	127.850	8203.65	6.07	528.86	711.90	1768415.96	437065.02	39°41'52.067"N	80°12'39.940"W	886.85	53.392	12.76	11.78	5.43	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #06
Area	Monongalia County, WV	Well	Fisher 6H
Field	Monongalia	Wellbore	Fisher 6H AWB
Facility	Fisher Pad		

WELLPATH DATA (180 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]
8691.00	72.990	133.640	8232.93	93.33	470.56	779.53	1768483.58	437006.73	39°41'51.496"N	80°12'39.069"W	910.54	58.883	6.32	2.38	6.16
8786.00	81.130	140.760	8254.21	185.31	402.67	842.27	1768546.32	436938.84	39°41'50.830"N	80°12'38.260"W	933.57	64.449	11.25	8.57	7.49
8881.00	83.890	145.430	8266.60	279.46	327.37	898.80	1768602.84	436863.55	39°41'50.091"N	80°12'37.529"W	956.56	69.987	5.67	2.91	4.92
8975.00	89.080	148.100	8272.36	373.04	248.93	950.19	1768654.23	436785.11	39°41'49.319"N	80°12'36.863"W	982.26	75.320	6.21	5.52	2.84
9070.00	89.660	150.980	8273.40	467.40	167.05	998.34	1768702.38	436703.24	39°41'48.514"N	80°12'36.239"W	1012.22	80.501	3.09	0.61	3.03
9165.00	88.430	154.220	8274.99	561.05	82.73	1042.05	1768746.09	436618.93	39°41'47.684"N	80°12'35.672"W	1045.33	85.461	3.65	-1.29	3.41
9260.00	88.950	146.200	8277.16	655.19	0.38	1089.20	1768793.23	436536.58	39°41'46.874"N	80°12'35.060"W	1089.20	89.980	8.46	0.55	-8.44
9355.00	89.480	142.310	8278.46	750.14	-76.70	1144.68	1768848.71	436459.50	39°41'46.117"N	80°12'34.342"W	1147.25	93.834	4.13	0.56	-4.09
9449.00	89.200	142.200	8279.55	844.13	-151.03	1202.22	1768906.24	436385.18	39°41'45.386"N	80°12'33.599"W	1211.67	97.160	0.32	-0.30	-0.12
9544.00	88.920	138.610	8281.11	939.00	-224.21	1262.75	1768966.77	436312.00	39°41'44.668"N	80°12'32.817"W	1282.50	100.068	3.79	-0.29	-3.78
9638.00	88.280	136.640	8283.40	1032.56	-293.63	1326.08	1769030.10	436242.59	39°41'43.987"N	80°12'32.000"W	1358.20	102.485	2.20	-0.68	-2.10
9733.00	88.680	138.670	8285.92	1127.11	-363.82	1390.04	1769094.06	436172.41	39°41'43.298"N	80°12'31.175"W	1436.87	104.667	2.18	0.42	2.14
9827.00	88.920	139.890	8287.89	1220.89	-435.04	1451.35	1769155.36	436101.18	39°41'42.599"N	80°12'30.383"W	1515.15	106.686	1.32	0.26	1.30
9922.00	88.550	143.650	8289.99	1315.82	-509.64	1510.11	1769214.12	436026.59	39°41'41.867"N	80°12'29.624"W	1593.79	108.649	3.98	-0.39	3.96
10016.00	89.540	144.980	8291.56	1409.78	-585.95	1564.95	1769268.96	435950.27	39°41'41.117"N	80°12'28.915"W	1671.06	110.527	1.75	1.05	1.39
10110.00	89.750	141.850	8292.14	1503.77	-661.42	1620.98	1769324.98	435874.82	39°41'40.375"N	80°12'28.190"W	1750.73	112.197	3.32	0.22	-3.31
10205.00	90.030	139.880	8292.32	1598.70	-735.11	1680.94	1769384.94	435801.14	39°41'39.652"N	80°12'27.416"W	1834.65	113.621	2.09	0.29	-2.07
10299.00	89.820	140.450	8292.45	1692.58	-807.29	1741.15	1769445.15	435728.96	39°41'38.943"N	80°12'26.638"W	1919.20	114.875	0.65	-0.22	0.61
10393.00	90.400	141.370	8292.26	1786.52	-880.25	1800.42	1769504.41	435656.01	39°41'38.227"N	80°12'25.873"W	2004.08	116.055	1.16	0.62	0.98
10488.00	88.950	144.050	8292.80	1881.50	-955.82	1857.97	1769561.96	435580.44	39°41'37.484"N	80°12'25.129"W	2089.41	117.223	3.21	-1.53	2.82
10583.00	88.980	141.290	8294.52	1976.48	-1031.34	1915.56	1769619.55	435504.93	39°41'36.742"N	80°12'24.385"W	2175.55	118.298	2.90	0.03	-2.91
10678.00	88.890	142.910	8296.29	2071.44	-1106.28	1973.91	1769677.89	435429.98	39°41'36.006"N	80°12'23.631"W	2262.78	119.269	1.71	-0.09	1.71
10772.00	88.890	142.320	8298.11	2165.42	-1180.96	2030.97	1769734.95	435355.31	39°41'35.273"N	80°12'22.893"W	2349.36	120.177	0.63	0.00	-0.63
10867.00	89.320	143.820	8299.59	2260.41	-1256.89	2088.04	1769792.02	435279.39	39°41'34.527"N	80°12'22.156"W	2437.15	121.046	1.64	0.45	1.58
10962.00	89.450	144.290	8300.61	2355.39	-1333.79	2143.80	1769847.77	435202.49	39°41'33.771"N	80°12'21.435"W	2524.86	121.888	0.51	0.14	0.49
11057.00	89.750	147.900	8301.27	2450.23	-1412.62	2196.79	1769900.75	435123.66	39°41'32.996"N	80°12'20.749"W	2611.78	122.743	3.81	0.32	3.80
11151.00	89.690	149.720	8301.73	2543.74	-1493.03	2245.46	1769949.43	435043.26	39°41'32.205"N	80°12'20.118"W	2696.53	123.620	1.94	-0.06	1.94
11246.00	90.060	147.740	8301.94	2638.26	-1574.23	2294.77	1769998.74	434962.07	39°41'31.407"N	80°12'19.479"W	2782.84	124.450	2.12	0.39	-2.08
11341.00	90.520	145.740	8301.46	2733.06	-1653.66	2346.87	1770050.83	434882.64	39°41'30.626"N	80°12'18.805"W	2870.96	125.169	2.16	0.48	-2.11
11436.00	90.430	143.250	8300.67	2828.01	-1730.99	2402.04	1770105.99	434805.32	39°41'29.866"N	80°12'18.091"W	2960.76	125.778	2.62	-0.09	-2.62



Actual Wellpath Report

Fisher 6H AWP Proj: 17040'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #06
Area	Monongalia County, WV	Well	Fisher 6H
Field	Monongalia	Wellbore	Fisher 6H AWB
Facility	Fisher Pad		

WELLPATH DATA (180 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]
11530.00	90.120	142.910	8300.22	2922.01	-1806.14	2458.50	1770162.46	434730.17	39°41'29.128"N	80°12'17.361"W	3050.64	126.303	0.49	-0.33	-0.36
11624.00	90.060	148.180	8300.07	3015.88	-1883.62	2511.67	1770215.61	434652.69	39°41'28.366"N	80°12'16.674"W	3139.51	126.868	5.61	-0.06	5.61
11719.00	89.690	152.520	8300.28	3110.08	-1966.16	2558.65	1770262.60	434570.16	39°41'27.554"N	80°12'16.064"W	3226.84	127.540	4.58	-0.39	4.57
11814.00	89.660	146.110	8300.82	3204.45	-2047.82	2607.11	1770311.05	434488.51	39°41'26.751"N	80°12'15.436"W	3315.20	128.149	6.75	-0.03	-6.75
11908.00	90.310	139.240	8300.84	3298.40	-2122.52	2664.07	1770368.01	434413.81	39°41'26.017"N	80°12'14.700"W	3406.22	128.545	7.34	0.69	-7.31
12003.00	90.030	139.380	8300.56	3393.20	-2194.55	2726.00	1770429.94	434341.78	39°41'25.310"N	80°12'13.901"W	3499.59	128.836	0.33	-0.29	0.15
12098.00	90.090	137.800	8300.46	3487.91	-2265.80	2788.84	1770492.77	434270.54	39°41'24.610"N	80°12'13.090"W	3593.25	129.092	1.66	0.06	-1.66
12192.00	89.910	143.830	8300.46	3581.80	-2338.63	2848.20	1770552.13	434197.71	39°41'23.895"N	80°12'12.323"W	3685.30	129.389	6.42	-0.19	6.41
12287.00	89.970	141.200	8300.56	3676.79	-2414.00	2906.01	1770609.93	434122.34	39°41'23.155"N	80°12'11.576"W	3777.87	129.716	2.77	0.06	-2.77
12382.00	89.750	134.870	8300.79	3771.39	-2484.61	2969.50	1770673.42	434051.74	39°41'22.462"N	80°12'10.757"W	3871.85	129.919	6.67	-0.23	-6.66
12476.00	89.780	134.030	8301.18	3864.34	-2550.43	3036.60	1770740.52	433985.92	39°41'21.817"N	80°12'09.892"W	3965.56	130.027	0.89	0.03	-0.89
12571.00	89.690	138.080	8301.62	3958.62	-2618.82	3102.52	1770806.43	433917.54	39°41'21.146"N	80°12'09.042"W	4060.03	130.168	4.26	-0.09	4.26
12666.00	89.480	138.510	8302.31	4053.30	-2689.74	3165.72	1770869.63	433846.62	39°41'20.450"N	80°12'08.227"W	4154.09	130.353	0.50	-0.22	0.45
12760.00	89.230	144.560	8303.37	4147.22	-2763.30	3224.16	1770928.06	433773.07	39°41'19.728"N	80°12'07.472"W	4246.30	130.599	6.44	-0.27	6.44
12855.00	89.570	145.790	8304.36	4242.14	-2841.28	3278.41	1770982.31	433695.09	39°41'18.961"N	80°12'06.770"W	4338.30	130.914	1.34	0.36	1.29
12949.00	89.420	144.760	8305.19	4336.06	-2918.54	3331.95	1771035.85	433617.84	39°41'18.202"N	80°12'06.077"W	4429.42	131.216	1.11	-0.16	-1.10
13044.00	89.910	147.520	8305.75	4430.91	-2997.41	3384.87	1771088.77	433538.97	39°41'17.426"N	80°12'05.393"W	4521.27	131.526	2.95	0.52	2.91
13139.00	90.090	145.410	8305.75	4525.73	-3076.60	3437.35	1771141.25	433459.79	39°41'16.648"N	80°12'04.713"W	4613.12	131.830	2.23	0.19	-2.22
13233.00	90.280	143.660	8305.44	4619.69	-3153.15	3491.89	1771195.78	433383.24	39°41'15.896"N	80°12'04.008"W	4704.86	132.082	1.87	0.20	-1.86
13327.00	90.400	145.570	8304.88	4713.65	-3229.79	3546.32	1771250.20	433306.61	39°41'15.142"N	80°12'03.304"W	4796.65	132.325	2.04	0.13	2.03
13422.00	90.120	151.050	8304.45	4808.20	-3310.59	3596.20	1771300.09	433225.81	39°41'14.348"N	80°12'02.658"W	4888.02	132.632	5.78	-0.29	5.77
13517.00	89.880	143.400	8304.45	4902.88	-3390.41	3647.59	1771351.47	433146.00	39°41'13.563"N	80°12'01.993"W	4979.94	132.907	8.06	-0.25	-8.05
13611.00	89.850	139.960	8304.67	4996.84	-3464.14	3705.87	1771409.75	433072.27	39°41'12.839"N	80°12'01.240"W	5072.85	133.069	3.66	-0.03	-3.66
13706.00	89.850	139.220	8304.92	5091.67	-3536.48	3767.45	1771471.33	432999.94	39°41'12.129"N	80°12'00.445"W	5167.24	133.189	0.78	0.00	-0.78
13801.00	90.120	135.700	8304.95	5186.21	-3606.46	3831.67	1771535.54	432929.95	39°41'11.442"N	80°11'59.617"W	5261.97	133.266	3.72	0.28	-3.71
13896.00	89.970	136.610	8304.87	5280.53	-3674.98	3897.48	1771601.34	432861.44	39°41'10.770"N	80°11'58.768"W	5356.85	133.317	0.97	-0.16	0.96
13990.00	90.250	136.480	8304.69	5373.93	-3743.21	3962.13	1771665.99	432793.21	39°41'10.100"N	80°11'57.934"W	5450.70	133.373	0.33	0.30	-0.14
14085.00	90.860	141.280	8303.77	5468.66	-3814.76	4024.59	1771728.44	432721.67	39°41'09.398"N	80°11'57.128"W	5545.24	133.467	5.09	0.64	5.05
14180.00	90.220	143.780	8302.88	5563.64	-3890.15	4082.37	1771786.22	432646.29	39°41'08.658"N	80°11'56.382"W	5639.06	133.619	2.72	-0.67	2.63
14275.00	89.880	140.560	8302.79	5658.62	-3965.17	4140.63	1771844.48	432571.27	39°41'07.921"N	80°11'55.629"W	5733.01	133.760	3.41	-0.36	-3.39



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #06
Area	Monongalia County, WV	Well	Fisher 6H
Field	Monongalia	Wellbore	Fisher 6H AWB
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WELLPATH DATA (180 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]	
14369.00	89.450	138.200	8303.34	5752.42	-4036.51	4201.82	1771905.67	432499.93	39°41'07.220"N	80°11'54.839"W	5826.55	133.850	2.55	-0.46	-2.51	
14464.00	89.720	144.290	8304.03	5847.33	-4110.56	4261.26	1771965.10	432425.89	39°41'06.493"N	80°11'54.072"W	5920.73	133.969	6.42	0.28	6.41	
14559.00	89.540	152.480	8304.65	5941.83	-4191.39	4311.02	1772014.86	432345.06	39°41'05.698"N	80°11'53.427"W	6012.71	134.194	8.62	-0.19	8.62	
14653.00	90.060	151.130	8304.98	6034.72	-4274.23	4355.43	1772059.26	432262.22	39°41'04.883"N	80°11'52.851"W	6102.36	134.461	1.54	0.55	-1.44	
14748.00	90.580	149.150	8304.44	6128.97	-4356.62	4402.72	1772106.56	432179.85	39°41'04.072"N	80°11'52.238"W	6193.88	134.698	2.15	0.55	-2.08	
14843.00	90.490	148.020	8303.56	6223.52	-4437.69	4452.24	1772156.07	432098.78	39°41'03.275"N	80°11'51.597"W	6286.13	134.906	1.19	-0.09	-1.19	
14937.00	90.550	145.510	8302.70	6317.30	-4516.30	4503.75	1772207.58	432020.17	39°41'02.502"N	80°11'50.930"W	6378.15	135.080	2.67	0.06	-2.67	
15032.00	90.620	139.640	8301.73	6412.25	-4591.71	4561.46	1772265.28	431944.77	39°41'01.761"N	80°11'50.184"W	6472.30	135.189	6.18	0.07	-6.18	
15126.00	90.580	137.410	8300.75	6505.96	-4662.13	4623.70	1772327.52	431874.35	39°41'01.070"N	80°11'49.381"W	6566.13	135.237	2.37	-0.04	-2.37	
15221.00	90.620	139.140	8299.75	6600.63	-4733.03	4686.93	1772390.74	431803.46	39°41'00.374"N	80°11'48.565"W	6660.99	135.280	1.82	0.04	1.82	
15315.00	90.490	141.790	8298.84	6694.52	-4805.51	4746.75	1772450.57	431730.98	39°40'59.662"N	80°11'47.793"W	6754.60	135.352	2.82	-0.14	2.82	
15410.00	90.310	140.640	8298.18	6789.47	-4879.56	4806.26	1772510.07	431656.93	39°40'58.935"N	80°11'47.025"W	6849.11	135.434	1.23	-0.19	-1.21	
15504.00	90.030	138.280	8297.90	6883.28	-4950.99	4867.35	1772571.16	431585.51	39°40'58.234"N	80°11'46.236"W	6942.87	135.488	2.53	-0.30	-2.51	
15599.00	90.000	140.780	8297.88	6978.10	-5023.26	4929.01	1772632.81	431513.25	39°40'57.525"N	80°11'45.440"W	7037.63	135.543	2.63	-0.03	2.63	
15693.00	90.090	144.580	8297.80	7072.08	-5098.00	4985.99	1772689.78	431438.51	39°40'56.790"N	80°11'44.704"W	7130.89	135.636	4.04	0.10	4.04	
15788.00	90.000	143.610	8297.73	7167.06	-5174.95	5041.70	1772745.49	431361.57	39°40'56.034"N	80°11'43.984"W	7224.87	135.747	1.03	-0.09	-1.02	
15883.00	90.030	142.500	8297.70	7262.06	-5250.87	5098.80	1772802.59	431285.65	39°40'55.288"N	80°11'43.246"W	7319.11	135.842	1.17	0.03	-1.17	
15977.00	90.340	143.260	8297.40	7356.06	-5325.82	5155.52	1772859.31	431210.70	39°40'54.552"N	80°11'42.513"W	7412.41	135.931	0.87	0.33	0.81	
16071.00	90.520	145.780	8296.69	7450.02	-5402.36	5210.08	1772913.86	431134.17	39°40'53.800"N	80°11'41.808"W	7505.36	136.038	2.69	0.19	2.68	
16166.00	90.400	149.810	8295.93	7544.66	-5482.72	5260.69	1772964.48	431053.81	39°40'53.009"N	80°11'41.153"W	7598.37	136.184	4.24	-0.13	4.24	
16261.00	90.400	147.300	8295.27	7639.21	-5563.76	5310.25	1773014.03	430972.77	39°40'52.212"N	80°11'40.511"W	7691.18	136.336	2.64	0.00	-2.64	
16355.00	90.400	144.490	8294.61	7733.08	-5641.59	5362.95	1773066.72	430894.95	39°40'51.447"N	80°11'39.829"W	7783.88	136.450	2.99	0.00	-2.99	
16450.00	90.520	145.640	8293.85	7828.01	-5719.47	5417.35	1773121.12	430817.08	39°40'50.682"N	80°11'39.126"W	7877.81	136.554	1.22	0.13	1.21	
16545.00	90.150	145.530	8293.29	7922.91	-5797.84	5471.04	1773174.81	430738.72	39°40'49.911"N	80°11'38.431"W	7971.65	136.661	0.41	-0.39	-0.12	
16639.00	90.250	141.520	8292.96	8016.89	-5873.41	5526.91	1773230.67	430663.15	39°40'49.169"N	80°11'37.709"W	8064.96	136.741	4.27	0.11	-4.27	
16733.00	90.400	139.690	8292.43	8110.80	-5946.04	5586.56	1773290.32	430590.52	39°40'48.455"N	80°11'36.939"W	8158.75	136.785	1.95	0.16	-1.95	
16828.00	90.430	136.750	8291.74	8205.46	-6016.88	5649.85	1773353.61	430519.69	39°40'47.760"N	80°11'36.123"W	8253.70	136.802	3.09	0.03	-3.09	
16923.00	90.680	137.760	8290.82	8299.97	-6086.64	5714.33	1773418.08	430449.93	39°40'47.076"N	80°11'35.291"W	8348.69	136.807	1.10	0.26	1.06	
17015.00	90.830	141.390	8289.61	8391.79	-6156.66	5773.97	1773477.72	430379.92	39°40'46.388"N	80°11'34.521"W	8440.56	136.837	3.95	0.16	3.95	
17040.00	90.830	141.390	8289.25	8416.77	-6176.19	5789.57	1773493.32	430360.38	39°40'46.196"N	80°11'34.320"W	8465.48	136.851	0.00	0.00	0.00	

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Fisher 6H BHL Rev-2	8262.00	-6191.40	5778.93	1773482.68	430345.17	39°40'46.045"N	80°11'34.454"W	point
Fisher 6H LP Rev-2	8262.00	336.28	859.66	1768563.71	436872.46	39°41'50.176"N	80°12'38.030"W	point

WELLPATH COMPOSITION - Ref Wellbore: Fisher 6H AWB					Ref Wellpath: Fisher 6H AWP Proj: 17040'			
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore			
32.00	6273.00	VESSI GyroFlex v4	01_VES Gyro <8-3/4"> (100'-6257')		Fisher 6H AWB			
6273.00	17015.00	BHI AutoTrak Curve (Short)	02_BHI AT Curve <8-1/2"> (6273')(6326'-17015')		Fisher 6H AWB			
17015.00	17040.00	Blind Drilling (std)	Projection to bit		Fisher 6H AWB			



Actual Wellpath Report

Fisher 6H AWP Proj: 17040'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #06
Area	Monongalia County, WV	Well	Fisher 6H
Field	Monongalia	Wellbore	Fisher 6H AWB
Facility	Fisher Pad		

COMMENTS

Wellpath general comments

API: 47-061-01753-0000

BHI Job #: 8208889

Rig: Nabors X08

Duration: 10/19/2016-10/24/2016

VES Gyro <8-3/4"> (100'-6257')

BHI AT Curve <8-1/2"> (6273')(6326'-17015')

Projected MD at TD: 17040'