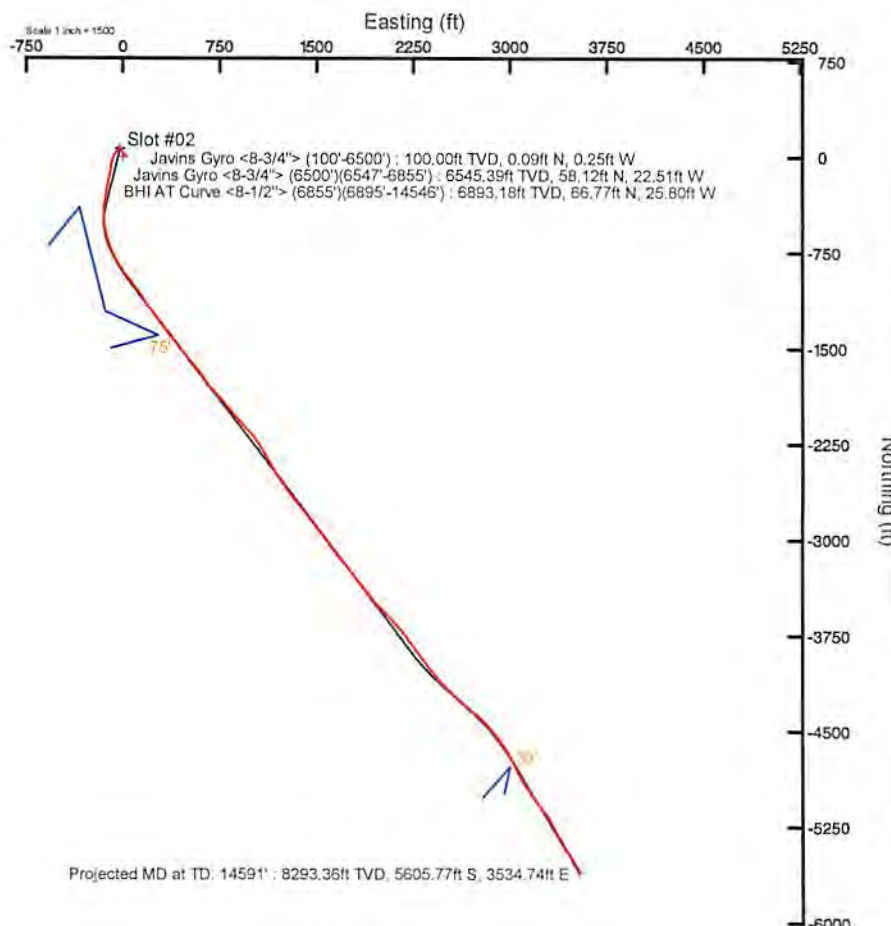
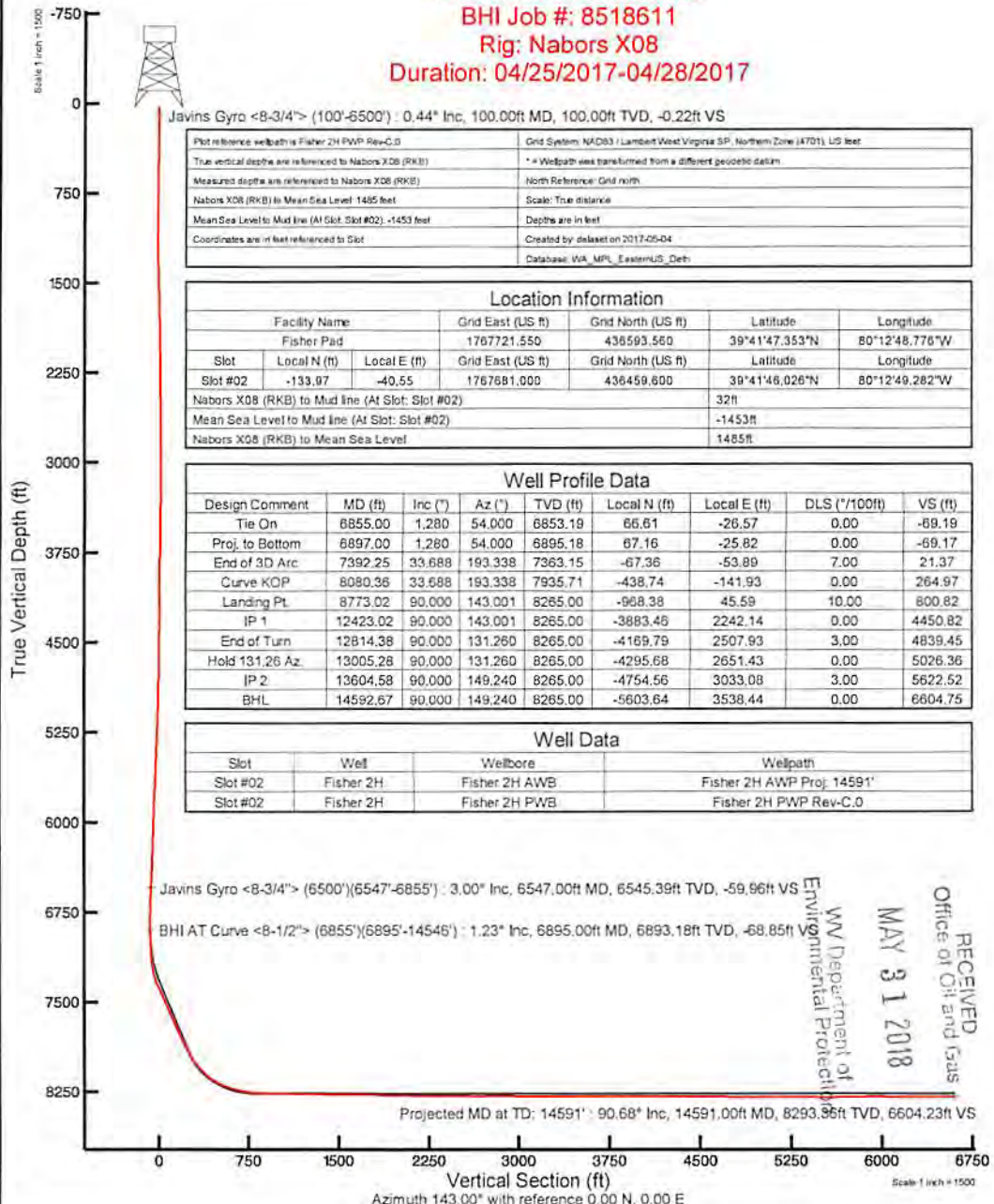


NORTHEAST NATURAL ENERGY, LLC

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

Slot: Slot #02
 Well: Fisher 2H
 Wellbore: Fisher 2H PWB

API: 47-061-01751-0000
 BHI Job #: 8518611
 Rig: Nabors X08
 Duration: 04/25/2017-04/28/2017



BGGM (1900.0 to 2018.0) Dip: 66.78° Field: 52156.7 nT
 Magnetic North is 9.05 degrees West of True North (at 20/Apr/2017)
 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 8.59 degrees

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Actual Wellpath Report

Fisher 2H AWP Proj: 14591'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #02
Area	Monongalia County, WV	Well	Fisher 2H
Field	Monongalia	Wellbore	Fisher 2H 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	Delaset
Scale	0.999941	Report Generated	04/May/2017 at 13:23
Convergence at slot	0.46° West	Database/Source file	WA_MPL_EasternUS_Defn/Fisher_2H_AWP_Proj_14591_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-133.97	-40.55	1767681.00	436459.60	39°41'46.026"N	80°12'49.282"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 #02)	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°

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #02
Area	Monongalia County, WV	Well	Fisher 2H
Field	Monongalia	Wellbore	Fisher 2H AWB
Facility	Fisher Pad		

WELLPATH DATA (157 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)	Comments
0.00†	0.00	289.800	0.00	0.00	0.00	0.00	1767681.00	436459.60	39°41'46.026"N	80°12'49.282"W	0.00	0.000	0.00	0.00	0.00	
32.00	0.00	289.800	32.00	0.00	0.00	0.00	1767681.00	436459.60	39°41'46.026"N	80°12'49.282"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.44	289.800	100.00	-0.22	0.09	-0.25	1767680.75	436459.69	39°41'46.027"N	80°12'49.285"W	0.26	289.800	0.65	0.65	-103.24	Javins Gyro <8-3/4"> (100'-6500')
200.00	0.43	310.800	200.00	-0.91	0.46	-0.89	1767680.11	436460.06	39°41'46.031"N	80°12'49.293"W	1.00	297.494	0.16	-0.01	21.00	
300.00	0.55	314.200	299.99	-1.75	1.04	-1.52	1767679.48	436460.64	39°41'46.036"N	80°12'49.301"W	1.84	304.485	0.12	0.12	3.40	
400.00	0.61	334.500	399.99	-2.74	1.86	-2.09	1767678.91	436461.46	39°41'46.044"N	80°12'49.309"W	2.80	311.613	0.21	0.06	20.30	
500.00	0.74	5.600	499.98	-3.74	2.98	-2.26	1767678.74	436462.58	39°41'46.055"N	80°12'49.311"W	3.74	322.857	0.38	0.13	31.10	
600.00	0.64	35.000	599.97	-4.39	4.08	-1.88	1767679.12	436463.68	39°41'46.066"N	80°12'49.306"W	4.49	335.326	0.36	-0.10	29.40	
700.00	0.50	54.400	699.97	-4.55	4.79	-1.20	1767679.80	436464.39	39°41'46.073"N	80°12'49.297"W	4.94	345.944	0.24	-0.14	19.40	
800.00	0.31	55.100	799.97	-4.53	5.20	-0.62	1767680.38	436464.80	39°41'46.077"N	80°12'49.290"W	5.24	353.166	0.19	-0.19	0.70	
900.00	0.31	339.100	899.97	-4.78	5.61	-0.50	1767680.50	436465.21	39°41'46.081"N	80°12'49.288"W	5.63	354.926	0.38	0.00	-76.00	
1000.00	0.30	340.300	999.96	-5.29	6.11	-0.68	1767680.32	436465.71	39°41'46.086"N	80°12'49.291"W	6.15	353.622	0.01	-0.01	1.20	
1100.00	0.54	54.700	1099.96	-5.53	6.63	-0.39	1767680.61	436466.23	39°41'46.092"N	80°12'49.287"W	6.64	356.663	0.54	0.24	74.40	
1200.00	0.94	66.400	1199.95	-5.32	7.23	0.75	1767681.75	436466.83	39°41'46.098"N	80°12'49.273"W	7.27	5.922	0.43	0.40	11.70	
1300.00	1.36	90.900	1299.93	-4.40	7.54	2.69	1767683.69	436467.14	39°41'46.101"N	80°12'49.248"W	8.00	19.626	0.64	0.42	24.50	
1400.00	1.33	116.100	1399.91	-2.64	7.01	4.92	1767685.92	436466.61	39°41'46.096"N	80°12'49.219"W	8.56	35.050	0.59	-0.03	25.20	
1500.00	1.57	116.000	1499.88	-0.36	5.90	7.19	1767688.19	436465.50	39°41'46.085"N	80°12'49.190"W	9.30	50.640	0.24	0.24	-0.10	
1600.00	1.33	112.200	1599.84	1.83	4.86	9.50	1767690.50	436464.46	39°41'46.075"N	80°12'49.161"W	10.67	62.903	0.26	-0.24	-3.80	
1700.00	1.59	109.900	1699.81	3.99	3.95	11.88	1767692.87	436463.55	39°41'46.066"N	80°12'49.130"W	12.51	71.610	0.27	0.26	-2.30	
1800.00	1.53	108.100	1799.77	6.25	3.06	14.45	1767695.45	436462.66	39°41'46.057"N	80°12'49.097"W	14.77	78.038	0.08	-0.06	-1.80	
1900.00	1.60	104.400	1899.74	8.44	2.30	17.07	1767698.07	436461.90	39°41'46.050"N	80°12'49.063"W	17.22	82.329	0.12	0.07	-3.70	
2000.00	0.85	106.800	1999.71	10.13	1.74	19.13	1767700.13	436461.34	39°41'46.045"N	80°12'49.037"W	19.21	84.811	0.75	-0.75	2.40	
2100.00	1.04	117.200	2099.70	11.54	1.11	20.65	1767701.65	436460.71	39°41'46.039"N	80°12'49.018"W	20.68	86.928	0.26	0.19	10.40	
2200.00	0.83	102.700	2199.69	12.91	0.53	22.16	1767703.16	436460.13	39°41'46.033"N	80°12'48.998"W	22.17	88.619	0.31	-0.21	-14.50	
2300.00	0.90	117.100	2299.67	14.17	0.02	23.57	1767704.57	436459.62	39°41'46.028"N	80°12'48.980"W	23.57	89.958	0.23	0.07	14.40	
2400.00	0.90	118.600	2399.66	15.59	-0.72	24.96	1767705.96	436458.88	39°41'46.021"N	80°12'48.962"W	24.97	91.644	0.02	0.00	1.50	
2500.00	0.96	107.700	2499.65	16.99	-1.35	26.45	1767707.44	436458.25	39°41'46.015"N	80°12'48.943"W	26.48	92.916	0.19	0.06	-10.90	
2600.00	0.60	109.400	2599.64	18.11	-1.78	27.74	1767708.74	436457.82	39°41'46.011"N	80°12'48.927"W	27.79	93.663	0.36	-0.36	1.70	
2700.00	0.45	128.700	2699.64	18.93	-2.20	28.54	1767709.54	436457.40	39°41'46.007"N	80°12'48.916"W	28.62	94.399	0.23	-0.15	19.30	
2800.00	0.39	98.500	2799.63	19.55	-2.49	29.18	1767710.18	436457.11	39°41'46.004"N	80°12'48.908"W	29.29	94.879	0.23	-0.08	+30.20	

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Fisher 2H AWP Proj: 14591'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #02
Area	Monongalia County, WV	Well	Fisher 2H
Field	Monongalia	Wellbore	Fisher 2H AWB
Facility	Fisher Pad		

WELLPATH DATA (157 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)	Comments
2900.00	0.130	270.500	2899.63	19.72	-2.54	29.40	1767710.40	436457.06	39°41'46.003"N	80°12'48.905"W	29.51	94.938	0.52	-0.26	172.00	
3000.00	0.370	323.300	2999.63	19.33	-2.28	29.10	1767710.10	436457.32	39°41'46.006"N	80°12'48.909"W	29.19	94.481	0.31	0.24	52.80	
3100.00	0.500	304.800	3099.63	18.59	-1.77	28.55	1767709.54	436457.83	39°41'46.011"N	80°12'48.916"W	28.60	93.553	0.19	0.13	-18.50	
3200.00	0.660	300.600	3199.62	17.65	-1.23	27.69	1767708.69	436458.37	39°41'46.016"N	80°12'48.927"W	27.72	92.544	0.17	0.16	-4.20	
3300.00	0.500	316.900	3299.62	16.68	-0.62	26.90	1767707.90	436458.98	39°41'46.022"N	80°12'48.937"W	26.91	91.317	0.23	-0.16	16.30	
3400.00	0.590	331.000	3399.61	15.74	0.15	26.35	1767707.35	436459.75	39°41'46.030"N	80°12'48.944"W	26.35	89.673	0.16	0.09	14.10	
3500.00	0.620	318.200	3499.61	14.69	1.00	25.74	1767706.74	436460.60	39°41'46.038"N	80°12'48.952"W	25.76	87.766	0.14	0.03	-12.80	
3600.00	0.790	333.100	3599.60	13.47	2.02	25.07	1767706.07	436461.62	39°41'46.048"N	80°12'48.961"W	25.15	85.388	0.25	0.17	14.90	
3700.00	0.600	299.500	3699.59	12.31	2.89	24.30	1767705.30	436462.49	39°41'46.057"N	80°12'48.971"W	24.47	83.207	0.44	-0.19	-33.60	
3800.00	0.840	304.300	3799.59	11.14	3.57	23.24	1767704.24	436463.17	39°41'46.063"N	80°12'48.985"W	23.51	81.277	0.25	0.24	4.80	
3900.00	0.380	337.300	3899.58	10.12	4.28	22.51	1767703.50	436463.88	39°41'46.070"N	80°12'48.994"W	22.91	79.221	0.56	-0.46	33.00	
4000.00	0.140	49.400	3999.58	9.79	4.67	22.47	1767703.47	436464.27	39°41'46.074"N	80°12'48.995"W	22.95	78.259	0.36	-0.24	72.10	
4100.00	0.630	339.100	4099.58	9.26	5.26	22.37	1767703.37	436464.86	39°41'46.080"N	80°12'48.996"W	22.98	76.758	0.60	0.49	-70.30	
4200.00	0.610	332.100	4199.57	8.20	6.25	21.92	1767702.92	436465.85	39°41'46.090"N	80°12'49.002"W	22.79	74.093	0.08	-0.02	-7.00	
4300.00	0.350	285.400	4299.57	7.44	6.80	21.38	1767702.38	436466.40	39°41'46.095"N	80°12'49.009"W	22.43	72.358	0.45	-0.26	-46.70	
4400.00	0.900	331.000	4399.56	6.42	7.57	20.70	1767701.70	436467.17	39°41'46.103"N	80°12'49.017"W	22.04	69.923	0.70	0.55	45.60	
4500.00	0.660	295.800	4499.55	5.13	8.50	19.80	1767700.80	436468.10	39°41'46.112"N	80°12'49.029"W	21.55	66.759	0.52	-0.24	-35.20	
4600.00	0.620	324.800	4599.55	4.07	9.20	18.97	1767699.97	436468.80	39°41'46.118"N	80°12'49.040"W	21.08	64.138	0.32	-0.04	29.00	
4700.00	0.810	318.900	4699.54	2.83	10.17	18.20	1767699.20	436469.77	39°41'46.128"N	80°12'49.050"W	20.85	60.795	0.20	0.19	-5.90	
4800.00	0.930	299.200	4799.53	1.38	11.10	17.02	1767698.02	436470.70	39°41'46.137"N	80°12'49.065"W	20.32	56.893	0.32	0.12	-19.70	
4900.00	1.120	319.400	4899.51	-0.34	12.24	15.68	1767696.68	436471.84	39°41'46.148"N	80°12'49.082"W	19.89	52.026	0.41	0.19	20.20	
5000.00	1.310	323.900	4999.49	-2.46	13.90	14.37	1767695.37	436473.50	39°41'46.165"N	80°12'49.099"W	19.99	45.943	0.21	0.19	4.50	
5100.00	1.830	321.300	5099.45	-5.20	16.07	12.70	1767693.70	436475.67	39°41'46.186"N	80°12'49.121"W	20.48	38.307	0.52	0.52	-2.60	
5200.00	1.870	315.600	5199.40	-8.41	18.49	10.56	1767691.56	436478.08	39°41'46.210"N	80°12'49.148"W	21.29	29.732	0.19	0.04	-5.70	
5300.00	2.000	318.300	5299.34	-11.77	20.95	8.26	1767689.25	436480.55	39°41'46.234"N	80°12'49.178"W	22.52	21.503	0.18	0.13	2.70	
5400.00	2.370	321.600	5399.27	-15.57	23.88	5.81	1767686.81	436483.48	39°41'46.263"N	80°12'49.210"W	24.57	13.676	0.39	0.37	3.30	
5500.00	2.360	320.700	5499.18	-19.70	27.09	3.22	1767684.22	436486.69	39°41'46.294"N	80°12'49.243"W	27.28	6.782	0.04	-0.01	-0.90	
5600.00	2.290	314.500	5599.10	-23.73	30.08	0.49	1767681.49	436489.68	39°41'46.323"N	80°12'49.278"W	30.09	0.938	0.26	-0.07	-6.20	
5700.00	2.820	322.600	5699.00	-28.17	33.44	-2.43	1767678.57	436493.04	39°41'46.356"N	80°12'49.316"W	33.53	355.850	0.64	0.53	8.10	
5800.00	2.310	323.500	5798.90	-32.64	37.01	-5.12	1767675.88	436496.81	39°41'46.391"N	80°12'49.351"W	37.37	352.125	0.51	-0.51	0.90	

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REFERENCE WELLPATH IDENTIFICATION					
Operator	NORTHEAST NATURAL ENERGY, LLC			Slot	Slot #02
Area	Monongalia County, WV			Well	Fisher 2H
Field	Monongalia			Wellbore	Fisher 2H AWB
Facility	Fisher Pad				

WELLPATH DATA (157 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 F/(100ft)	Build Rate F/(100ft)	Turn Rate F/(100ft)	Comments
5900.00	1.810	321.800	5898.84	-36.24	39.87	-7.29	1767673.71	436499.47	39°41'46.420"N	80°12'49.379"W	40.54	349.633	0.50	-0.50	-1.70	
6000.00	1.960	325.700	5998.78	-39.52	42.53	-9.24	1767671.77	436502.13	39°41'46.446"N	80°12'49.404"W	43.52	347.748	0.20	0.15	3.90	
6100.00	1.770	324.600	6098.73	-42.77	45.20	-11.09	1767669.91	436504.80	39°41'46.472"N	80°12'49.428"W	46.54	346.211	0.19	-0.19	-1.10	
6200.00	1.740	322.500	6198.68	-45.84	47.66	-12.91	1767668.09	436507.26	39°41'46.496"N	80°12'49.452"W	49.38	344.842	0.07	-0.03	-2.10	
6300.00	2.160	308.800	6298.63	-49.18	50.05	-15.31	1767665.70	436509.85	39°41'46.520"N	80°12'49.482"W	52.34	342.996	0.62	0.42	-13.70	
6400.00	2.470	318.000	6398.54	-53.16	52.83	-18.22	1767662.79	436512.43	39°41'46.547"N	80°12'49.520"W	55.88	340.976	0.48	0.31	9.20	
6500.00	2.680	324.300	6498.44	-57.64	56.33	-21.02	1767659.98	436515.93	39°41'46.581"N	80°12'49.556"W	60.13	339.535	0.35	0.21	6.30	
6547.00	3.000	316.700	6545.39	-59.96	58.12	-22.51	1767658.49	436517.71	39°41'46.599"N	80°12'49.575"W	62.32	338.831	1.05	0.68	-16.17	Javins Gyro <8-3/4"> (6500')(6547'-6855')
6576.00	2.630	332.520	6574.35	-61.37	59.26	-23.33	1767657.67	436518.86	39°41'46.610"N	80°12'49.586"W	63.69	338.508	2.95	-1.28	54.55	
6613.00	2.860	317.000	6611.31	-63.13	60.69	-24.36	1767656.65	436520.29	39°41'46.624"N	80°12'49.599"W	65.39	338.134	2.10	0.62	-41.95	
6667.00	2.120	318.900	6665.26	-65.46	62.43	-25.93	1767655.07	436522.02	39°41'46.641"N	80°12'49.620"W	67.80	337.443	1.38	-1.37	3.52	
6698.00	2.040	329.000	6696.24	-66.58	63.33	-26.59	1767654.41	436522.93	39°41'46.650"N	80°12'49.628"W	68.69	337.224	1.21	-0.26	32.58	
6760.00	1.260	350.900	6758.21	-68.28	64.95	-27.27	1767653.73	436524.55	39°41'46.666"N	80°12'49.637"W	70.44	337.226	1.60	-1.26	35.32	
6855.00	1.280	54.000	6853.19	-69.19	66.61	-26.57	1767654.43	436526.20	39°41'46.682"N	80°12'49.628"W	71.71	338.249	1.40	0.02	66.42	
6895.00	1.230	103.730	6893.18	-68.85	66.77	-25.80	1767655.21	436526.36	39°41'46.684"N	80°12'49.618"W	71.58	338.875	2.64	-0.13	124.32	BHI AT Curve <8-1/2"> (6855')(6895'-14546')
6990.00	6.660	211.340	6987.98	-66.02	61.81	-27.67	1767653.33	436521.41	39°41'46.635"N	80°12'49.642"W	67.73	335.882	7.50	5.72	113.27	
7084.00	14.000	223.600	7080.40	-62.15	48.90	-38.37	1767642.64	436508.50	39°41'46.506"N	80°12'49.777"W	62.16	321.886	8.11	7.81	13.04	
7179.00	19.720	215.360	7171.29	-55.41	27.49	-55.58	1767625.42	436487.09	39°41'46.293"N	80°12'49.995"W	62.01	296.317	6.51	6.02	-8.67	
7273.00	25.010	202.060	7258.24	-40.36	-3.90	-72.25	1767608.76	436455.70	39°41'45.982"N	80°12'50.205"W	72.35	266.910	7.76	5.63	-14.15	
7367.00	30.420	190.910	7341.49	-14.16	-45.74	-84.23	1767596.78	436413.86	39°41'45.567"N	80°12'50.354"W	85.85	241.494	7.95	5.76	-11.86	
7462.00	33.540	189.150	7422.06	20.15	-95.28	-92.96	1767588.05	436364.32	39°41'45.077"N	80°12'50.461"W	133.12	224.292	3.43	3.28	-1.85	
7557.00	33.790	190.770	7501.13	56.09	-147.15	-102.07	1767578.94	436312.46	39°41'44.564"N	80°12'50.572"W	179.08	214.747	0.98	0.26	1.71	
7651.00	33.990	190.610	7579.16	91.37	-198.65	-111.79	1767569.22	436260.96	39°41'44.054"N	80°12'50.691"W	227.95	209.368	0.23	0.21	-0.17	
7746.00	34.070	191.430	7657.89	126.93	-250.84	-121.95	1767559.06	436208.78	39°41'43.538"N	80°12'50.816"W	278.91	205.928	0.49	0.08	0.86	
7841.00	34.040	189.910	7736.60	162.75	-303.11	-131.80	1767549.21	436156.51	39°41'43.020"N	80°12'50.937"W	330.53	203.501	0.90	-0.03	-1.60	
7935.00	33.980	187.290	7814.52	199.53	-355.09	-139.66	1767541.35	436104.54	39°41'42.506"N	80°12'51.032"W	381.57	201.471	1.56	-0.06	-2.79	
8030.00	34.080	185.620	7893.26	238.12	-407.91	-145.64	1767535.37	436051.72	39°41'41.983"N	80°12'51.103"W	433.13	199.648	0.99	0.11	-1.76	
8125.00	37.580	180.350	7970.28	280.76	-463.40	-148.42	1767532.59	435996.23	39°41'41.435"N	80°12'51.133"W	486.59	197.760	4.91	3.68	-5.55	
8219.00	44.840	170.150	8041.03	333.17	-524.86	-142.92	1767538.09	435934.77	39°41'40.828"N	80°12'51.056"W	543.97	195.232	10.50	7.72	-10.85	
8314.00	51.620	166.860	8104.35	397.06	-594.16	-128.71	1767552.29	435865.47	39°41'40.144"N	80°12'50.868"W	607.95	192.223	7.49	7.03	-3.46	

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Actual Wellpath Report

Fisher 2H AWP Proj: 14591'
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REFERENCE WELLPATH IDENTIFICATION

Operator	Slot	Slot #02
NORTHEAST NATURAL ENERGY, LLC	Well	Fisher 2H
Area	Wellbore	Fisher 2H AWB
Field		
Facility		

WELLPATH DATA (157 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (°/100ft)	Comments
8498.00	59.410	163.150	8157.61	468.82	-668.85	-108.59	1767572.42	435780.79	39°41'39.408"N	80°12'50.603"W	677.61	189.221	9.00	8.39	-3.95	
8503.00	65.980	156.590	8201.21	549.54	-747.96	-79.44	1767601.57	435711.69	39°41'38.628"N	80°12'50.222"W	752.16	186.063	9.24	6.92	-6.91	
8597.00	74.240	150.140	8233.19	636.38	-826.79	-39.76	1767641.25	435632.86	39°41'37.852"N	80°12'49.706"W	827.75	182.753	10.90	8.79	-6.86	
8692.00	82.070	145.170	8252.69	728.95	-905.22	9.98	1767690.98	435554.43	39°41'37.081"N	80°12'49.062"W	905.28	179.368	9.70	8.24	-5.23	
8787.00	87.940	143.100	8260.85	823.52	-981.88	65.41	1767746.40	435477.78	39°41'36.328"N	80°12'48.345"W	984.05	176.189	6.55	6.18	-2.18	
8881.00	87.750	144.210	8264.49	917.45	-1057.53	121.08	1767802.07	435402.13	39°41'35.584"N	80°12'47.625"W	1064.44	173.469	1.20	-0.20	1.18	
8976.00	89.480	145.310	8266.79	1012.37	-1135.10	175.87	1767856.86	435324.59	39°41'34.822"N	80°12'46.916"W	1148.64	171.193	2.16	1.82	1.16	
9071.00	88.830	144.320	8268.19	1107.31	-1212.73	230.61	1767911.59	435246.94	39°41'34.059"N	80°12'46.208"W	1234.46	169.234	1.25	-0.68	-1.04	
9165.00	88.980	143.990	8269.98	1201.28	-1288.87	285.71	1767966.69	435170.81	39°41'33.311"N	80°12'45.496"W	1320.15	167.501	0.48	0.16	-0.46	
9260.00	88.950	142.810	8271.70	1296.26	-1364.97	342.54	1768023.52	435094.71	39°41'32.564"N	80°12'44.761"W	1407.30	165.913	1.35	-0.03	-1.35	
9354.00	89.420	143.110	8273.04	1390.25	-1439.90	399.29	1768080.26	435019.79	39°41'31.828"N	80°12'44.028"W	1494.23	164.501	0.73	0.50	0.53	
9449.00	89.660	141.650	8273.80	1485.24	-1515.14	457.27	1768138.25	434944.55	39°41'31.089"N	80°12'43.278"W	1582.84	163.206	1.56	0.25	-1.54	
9544.00	89.910	140.170	8274.15	1580.17	-1588.87	517.17	1768198.14	434870.82	39°41'30.365"N	80°12'42.504"W	1670.92	161.970	1.58	0.26	-1.56	
9638.00	88.800	142.260	8275.21	1674.11	-1662.14	576.05	1768257.01	434797.57	39°41'29.645"N	80°12'41.744"W	1759.13	160.885	2.52	-1.18	2.22	
9732.00	88.890	145.500	8277.11	1768.07	-1738.04	631.44	1768312.40	434721.66	39°41'28.899"N	80°12'41.028"W	1849.19	160.034	3.45	0.10	3.45	
9827.00	89.080	140.020	8278.79	1863.02	-1813.63	688.90	1768369.86	434646.08	39°41'28.157"N	80°12'40.285"W	1940.06	159.201	5.77	0.20	-5.77	
9921.00	88.520	139.650	8280.76	1956.85	-1885.45	749.51	1768430.47	434574.27	39°41'27.452"N	80°12'39.502"W	2028.96	158.321	0.71	-0.60	-0.39	
10016.00	89.380	140.180	8282.50	2051.70	-1958.12	810.67	1768491.62	434501.60	39°41'26.738"N	80°12'38.713"W	2119.30	157.510	1.06	0.91	0.56	
10111.00	89.380	140.900	8283.53	2146.61	-2031.46	871.05	1768551.99	434428.26	39°41'26.018"N	80°12'37.933"W	2210.33	156.791	0.76	0.00	0.76	
10205.00	90.090	137.920	8283.96	2240.41	-2102.88	932.20	1768613.14	434355.88	39°41'25.318"N	80°12'37.144"W	2300.20	156.092	3.25	0.76	-3.17	
10299.00	87.940	138.860	8285.58	2334.08	-2173.10	994.61	1768675.55	434286.63	39°41'24.628"N	80°12'36.338"W	2389.90	155.407	2.50	-2.29	1.00	
10394.00	89.750	148.720	8287.50	2428.93	-2249.64	1050.64	1768731.58	434210.10	39°41'23.876"N	80°12'35.614"W	2482.89	154.966	10.55	1.91	10.38	
10489.00	89.910	150.350	8287.78	2523.31	-2333.52	1098.81	1768779.74	434128.22	39°41'23.071"N	80°12'34.989"W	2577.47	154.766	1.72	0.17	1.72	
10583.00	89.690	149.720	8288.11	2616.60	-2412.95	1145.76	1768826.69	434046.79	39°41'22.270"N	80°12'34.380"W	2671.16	154.600	0.71	-0.23	-0.67	
10677.00	90.370	148.160	8288.06	2710.10	-2493.47	1194.25	1768875.18	433966.28	39°41'21.478"N	80°12'33.752"W	2764.72	154.408	1.81	0.72	-1.66	
10772.00	90.220	145.880	8287.57	2804.86	-2573.16	1245.96	1768926.89	433886.60	39°41'20.694"N	80°12'33.082"W	2858.95	154.163	2.41	-0.16	-2.40	
10866.00	89.690	143.010	8287.65	2898.82	-2649.63	1300.62	1768981.54	433810.13	39°41'19.943"N	80°12'32.376"W	2951.63	153.855	3.10	-0.56	-3.05	
10961.00	89.380	140.040	8288.42	2993.77	-2723.99	1359.71	1769040.63	433735.78	39°41'19.213"N	80°12'31.612"W	3044.49	153.473	3.14	-0.33	-3.13	
11056.00	89.230	141.090	8289.57	3088.68	-2797.36	1420.05	1769100.97	433662.41	39°41'18.492"N	80°12'30.833"W	3137.16	153.086	1.12	-0.16	1.11	
11149.00	88.450	142.480	8290.64	3181.65	-2870.42	1477.57	1769158.48	433589.35	39°41'17.775"N	80°12'30.090"W	3228.40	152.763	1.52	0.24	1.51	

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Fisher 2H AWP Proj: 14591'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	NORTHEAST NATURAL ENERGY, LLC		Slot	Slot #02
Area	Monongalia County, WV		Well	Fisher 2H
Field	Monongalia		Wellbore	Fisher 2H AWB
Facility	Fisher Pad			

WELLPATH DATA (157 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)	Comments
11244.00	89.570	144.240	8291.45	3276.64	-2946.65	1534.25	1769215.16	433513.13	39°41'17.026"N	80°12'29.357"W	3322.15	152.495	1.85	0.13	1.84	
11339.00	90.650	145.150	8291.27	3371.59	-3024.18	1589.16	1769270.06	433435.61	39°41'16.264"N	80°12'28.647"W	3416.29	152.279	1.49	1.14	0.96	
11433.00	90.120	143.040	8290.64	3465.57	-3100.31	1644.28	1769325.18	433359.48	39°41'15.516"N	80°12'27.934"W	3509.35	152.060	2.31	-0.56	-2.24	
11526.00	90.030	140.270	8290.52	3558.53	-3173.24	1701.97	1769382.87	433286.55	39°41'14.799"N	80°12'27.189"W	3600.86	151.793	2.98	-0.10	-2.98	
11620.00	90.920	141.900	8289.74	3652.47	-3246.38	1761.01	1769441.91	433213.42	39°41'14.081"N	80°12'26.426"W	3693.25	151.522	1.98	0.95	1.73	
11714.00	90.490	141.660	8288.58	3746.45	-3320.22	1819.16	1769500.05	433139.58	39°41'13.356"N	80°12'25.675"W	3785.92	151.281	0.52	-0.46	-0.26	
11808.00	89.820	143.030	8288.33	3840.44	-3394.64	1876.59	1769557.47	433065.17	39°41'12.625"N	80°12'24.933"W	3878.81	151.066	1.62	-0.71	1.46	
11903.00	89.570	140.190	8288.83	3935.40	-3469.09	1935.58	1769616.46	432990.72	39°41'11.894"N	80°12'24.171"W	3972.54	150.841	3.00	-0.26	-2.99	
11997.00	89.660	135.870	8289.46	4029.02	-3538.96	1998.42	1769679.30	432920.85	39°41'11.208"N	80°12'23.360"W	4064.23	150.547	4.60	0.10	-4.60	
12090.00	90.250	136.590	8289.54	4121.37	-3606.12	2062.75	1769743.63	432853.70	39°41'10.550"N	80°12'22.531"W	4154.40	150.230	1.00	0.63	0.77	
12185.00	89.600	137.540	8289.66	4215.86	-3675.67	2127.46	1769808.34	432784.15	39°41'09.867"N	80°12'21.696"W	4246.96	149.938	1.21	-0.68	1.00	
12279.00	89.720	144.960	8290.22	4309.75	-3748.92	2186.26	1769867.13	432710.90	39°41'09.148"N	80°12'20.937"W	4339.83	149.751	7.89	0.13	7.89	
12374.00	89.630	142.970	8290.76	4404.73	-3825.74	2242.14	1769923.01	432634.09	39°41'08.393"N	80°12'20.214"W	4434.35	149.627	2.10	-0.09	-2.09	
12468.00	89.570	144.050	8291.42	4498.72	-3901.31	2298.04	1769978.90	432558.53	39°41'07.651"N	80°12'19.491"W	4527.83	149.500	1.15	-0.06	1.15	
12562.00	89.510	143.630	8292.17	4592.71	-3977.15	2353.57	1770034.43	432482.69	39°41'06.905"N	80°12'18.774"W	4621.37	149.384	0.56	-0.06	-0.55	
12657.00	89.660	142.300	8292.86	4687.70	-4052.93	2410.85	1770091.70	432406.91	39°41'06.161"N	80°12'18.033"W	4715.77	149.254	1.30	0.16	-1.29	
12751.00	89.600	137.620	8293.47	4781.54	-4124.88	2471.30	1770152.16	432334.97	39°41'05.455"N	80°12'17.253"W	4808.53	149.073	4.98	-0.06	-4.98	
12846.00	89.660	134.100	8294.08	4875.79	-4193.04	2537.45	1770218.30	432266.81	39°41'04.786"N	80°12'16.400"W	4901.05	148.819	3.71	0.06	-3.71	
12941.00	89.420	131.430	8294.84	4969.27	-4257.54	2607.19	1770288.03	432202.32	39°41'04.154"N	80°12'15.502"W	4992.40	148.518	2.82	-0.25	-2.81	
13035.00	89.880	130.570	8295.42	5061.21	-4319.21	2678.13	1770358.97	432140.65	39°41'03.550"N	80°12'14.588"W	5082.12	148.199	1.04	0.49	-0.91	
13129.00	89.720	130.220	8295.74	5152.94	-4380.12	2749.72	1770430.55	432079.74	39°41'02.954"N	80°12'13.666"W	5171.69	147.881	0.41	-0.17	-0.37	
13223.00	89.690	136.880	8296.23	5245.61	-4444.85	2817.81	1770498.64	432015.02	39°41'02.319"N	80°12'12.789"W	5262.77	147.627	7.09	-0.03	7.09	
13318.00	89.510	141.500	8296.89	5340.38	-4516.73	2879.88	1770560.70	431943.14	39°41'01.614"N	80°12'11.988"W	5356.73	147.478	4.87	-0.19	4.66	
13412.00	89.450	144.860	8297.75	5434.36	-4591.97	2936.20	1770617.02	431867.91	39°41'00.875"N	80°12'11.260"W	5450.45	147.404	3.57	-0.06	3.57	
13507.00	89.850	151.110	8298.33	5528.95	-4672.48	2986.54	1770667.36	431787.40	39°41'00.083"N	80°12'10.608"W	5545.40	147.414	6.59	0.42	6.58	
13601.00	90.490	154.510	8298.05	5621.56	-4756.08	3029.48	1770710.30	431703.81	39°40'59.260"N	80°12'10.050"W	5638.98	147.504	3.68	0.68	3.62	
13696.00	91.350	151.600	8296.52	5715.08	-4840.74	3072.52	1770753.33	431619.15	39°40'58.427"N	80°12'09.491"W	5733.51	147.596	3.19	0.91	-3.06	
13790.00	91.450	148.580	8294.23	5808.32	-4922.19	3119.37	1770800.18	431537.71	39°40'57.625"N	80°12'08.884"W	5827.39	147.636	3.21	0.11	-3.21	
13884.00	90.400	145.650	8292.71	5902.06	-5001.11	3170.40	1770851.21	431458.79	39°40'56.849"N	80°12'08.223"W	5921.36	147.628	3.31	-1.12	-3.12	
13979.00	89.600	143.200	8292.71	5997.02	-5078.37	3225.66	1770906.47	431381.54	39°40'56.090"N	80°12'07.509"W	6016.21	147.577	2.71	-0.84	-2.68	

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #02
Area	Monongalia County, WV	Well	Fisher 2H
Field	Monongalia	Wellbore	Fisher 2H AWB
Facility	Fisher Pad		

WELLPATH DATA (157 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)	Comments
14074.00	89.320	145.330	8293.60	6091.99	-5155.48	3281.14	1770961.94	431304.44	39°40'55.332"N	80°12'06.792"W	6111.04	147.526	2.26	-0.29	2.24	
14168.00	89.820	151.950	8294.31	6185.48	-5235.70	3330.03	1771010.83	431224.22	39°40'54.543"N	80°12'06.158"W	6204.97	147.543	7.06	0.53	7.04	
14262.00	89.600	153.020	8294.79	6278.19	-5319.06	3373.45	1771054.25	431140.86	39°40'53.723"N	80°12'05.595"W	6298.62	147.616	1.16	-0.23	1.14	
14357.00	89.780	150.000	8295.30	6372.13	-5402.55	3418.76	1771099.56	431057.38	39°40'52.901"N	80°12'05.007"W	6393.39	147.674	3.18	0.19	-3.18	
14451.00	90.620	150.370	8294.97	6465.39	-5484.10	3465.50	1771146.29	430975.83	39°40'52.099"N	80°12'04.401"W	6487.30	147.711	0.98	0.89	0.39	
14546.00	90.680	150.350	8293.89	6559.60	-5566.67	3512.48	1771193.27	430893.27	39°40'51.287"N	80°12'03.792"W	6582.20	147.749	0.07	0.06	-0.02	
14591.00	90.680	150.350	8293.36	6604.23	-5605.77	3534.74	1771215.52	430854.17	39°40'50.902"N	80°12'03.503"W	6627.15	147.766	0.00	0.00	0.00	Projected MD at TD: 14591'

HOLE & CASING SECTIONS - Ref Wellbore: Fisher 2H AWB Ref Wellpath: Fisher 2H AWP Proj: 14591'										
String/Diameter	Start MD (ft)	End MD (ft)	Interval (ft)	Start TVD (ft)	End TVD (ft)	Start N/S (ft)	Start E/W (ft)	End N/S (ft)	End E/W (ft)	
24in Conductor	32.00	72.00	40.00	32.00	72.00	0.00	0.00	0.03	-0.09	
17.5in Open Hole	72.00	1490.12	1418.12	72.00	1490.00	0.03	-0.09	6.02	6.95	
13.375in Casing Surface	32.00	1460.11	1428.11	32.00	1460.00	0.00	0.00	6.36	6.24	
12.25in Open Hole	1490.12	2712.36	1222.24	1490.00	2712.00	6.02	6.95	-2.25	28.61	
9.625in Casing Intermediate	32.00	2682.36	2650.36	32.00	2682.00	0.00	0.00	-2.11	28.42	
8.75in Open Hole	2712.36	6897.00	4184.64	2712.00	6895.18	-2.25	28.61	66.75	-25.76	
8.5in Open Hole	6897.00	14591.00	7694.00	6895.18	8293.36	66.75	-25.76	-5605.77	3534.74	
5.5in Casing Production	32.00	14591.00	14559.00	32.00	8293.36	0.00	0.00	-5605.77	3534.74	

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Actual Wellpath Report

Fisher 2H AWP Proj: 14591'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #02
Area	Monongalia County, WV	Well	Fisher 2H
Field	Monongalia	Wellbore	Fisher 2H AWB
Facility	Fisher Pad		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Fisher 2H BHL Rev-2	8265.00	-5603.64	3538.44	1771219.22	430856.30	39°40'50.923"N	80°12'03.456"W	point
Fisher 2H IP1 Rev-3	8265.00	-3883.46	2242.14	1769923.01	432576.38	39°41'07.823"N	80°12'20.208"W	point
Fisher 2H IP2 Rev-2	8265.00	-4754.56	3033.08	1770713.90	431705.32	39°40'59.275"N	80°12'10.004"W	point
Fisher 2H LP Rev-3	8265.00	-968.38	45.59	1767726.58	435491.28	39°41'36.460"N	80°12'48.600"W	point

WELLPATH COMPOSITION - Ref Wellbore: Fisher 2H AWB Ref Wellpath: Fisher 2H AWP Proj: 14591'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	
32.00	6500.00	BHI Generic gyro - northseeking (Standard)	01 Javins Gyro <8-3/4">(100'-6500')	Fisher 2H AWB	
6500.00	6855.00	BHI Generic gyro - northseeking (Standard)	02 Javins Gyro <8-3/4">(6500')(6547'-6855')	Fisher 2H AWB	
6855.00	14546.00	BHI AutoTrak Curve (Short)	03 BHI AT Curve <8-1/2">(6855')(6895'-14546')	Fisher 2H AWB	
14546.00	14591.00	Blind Drilling (std)	Projection to bit	Fisher 2H AWB	

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Actual Wellpath Report

Fisher 2H AWP Proj: 14591'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #02
Area	Monongalia County, WV	Well	Fisher 2H
Field	Monongalia	Wellbore	Fisher 2H AWB
Facility	Fisher Pad		

COMMENTS
Wellpath general comments API: 47-061-01751-0000 BHI Job #: 8518611 Rig: Nabors X08 Duration: 04/25/2017-04/28/2017 Javins Gyro <8-3/4"> (100'-6500') Javins Gyro <8-3/4"> (6500')(6547'-6855') BHI AT Curve <8-1/2"> (6855')(6895'-14546') Projected MD at TD: 14591'

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