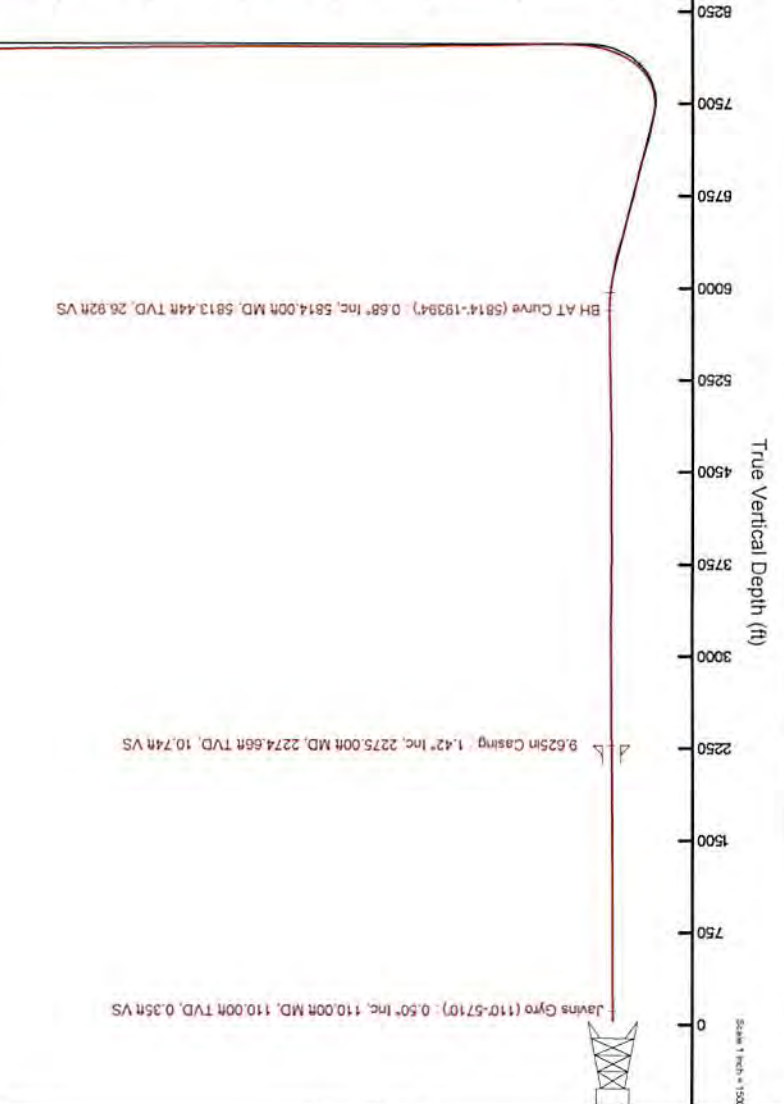
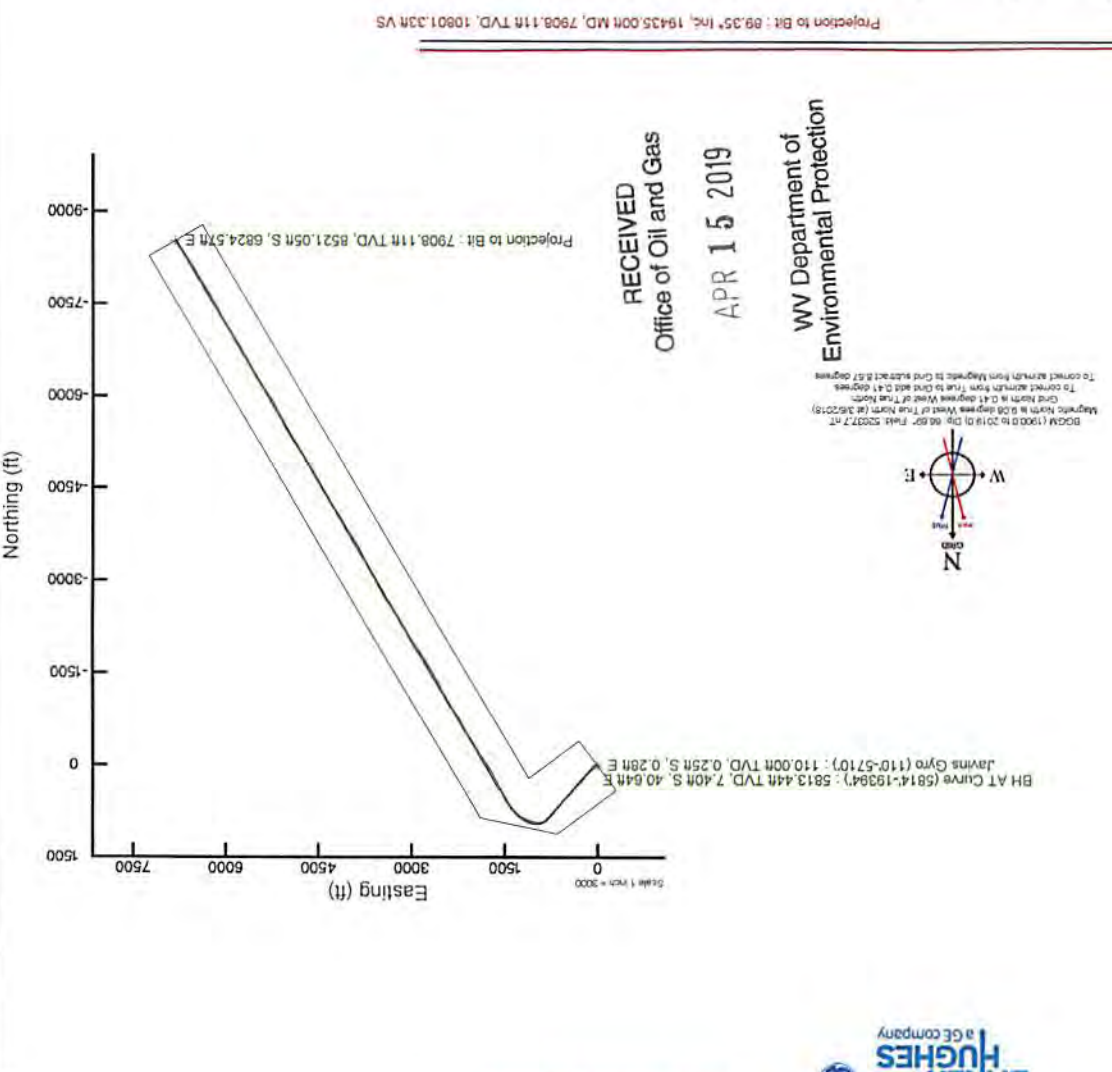


NORTHEAST NATURAL ENERGY, LLC Location: Monongalia County, WV Field: Monongalia Facility: Jenkins Pad Well: Jenkins 14H Slot: Slot #14 Wellbore: Jenkins 14H PWB	
This reference wellbore is shown in section 14H PWB Block D Coal system: MACTS / Lambert West Virginia ST, Northern Zone (4071), US bit	* * * * * * = Wellbore was transferred from a different geologic datum * * * * * North Reference: Grid north Scale: True distance Patterson 334 (RXB) to Mean Sea Level: 1130 feet Patterson 334 (RXB) to Mean Sea Level (14 Slot Slot #14): 1114 feet Mean Sea Level to Ground level (At Slot Slot #14): 1114 feet Coordinates are in feet referenced to Slot Created by: Tommaso on 2018-04-03 Database: WA_Pennsylvania



Location Information Facility Name Grid East (US Ft) Grid North (US Ft) Latitude Longitude Jenkins Pad 441066.186 39°42'33.300"N 80°08'23.600"W Slot Local N (ft) Local E (ft) Grid East (US Ft) Grid North (US Ft) Latitude Longitude Comment: Jenkins 14H Slot #14 130.14 1768610.810 441033.170 39°42'33.785"N 80°08'21.830"W	
Patterson 334 (RXB) to Ground level (At Slot Slot #14) 26ft Patterson 334 (RXB) to Mean Sea Level -114ft Patterson 334 (RXB) to Mean Sea Level -113ft	Comments API: 47-061-01768-0000 Job #: 8047081 Rig: Patterson 334 Duration: 03/12/2018 -03/21/2018



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APR 15 2019
WV Department of Environmental Protection



Vertical Section (ft)
 Azimuth 149.66° with reference 0.00 N, 0.00 E
 Projection to Bit: 89.35° Inc, 19435.00H MD, 7908.11H TVD, 10801.33H VS
 Scale 1 inch = 1500



Actual Wellpath Report

Jenkins 14H AWP Proj: 19435'MD

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #14
Area	Monongalia County, WV	Well	Jenkins 14H
Field	Monongalia	Wellbore	Jenkins 14H AWB
Facility	Jenkins 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	Thomsuzc
Scale	0.999942	Report Generated	4/3/2018 at 2:51:29 PM
Convergence at slot	0.41° West	Database/Source file	WA_Pennsylvania/Jenkins_14H_AWP_Proj_19435_MD.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-53.02	130.14	1788610.91	441033.17	39°42'32.785"N	80°08'21.930"W
Facility Reference Pt			1788480.78	441086.19	39°42'33.300"N	80°08'23.600"W
Field Reference Pt			1777685.71	440640.65	39°42'28.114"N	80°10'41.690"W

WELLPATH DATUM

Calculation method	Minimum curvature	Patterson 334 (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Patterson 334 (RKB) to Mean Sea Level	1139.00ft
Vertical Reference Pt	Patterson 334 (RKB)	Patterson 334 (RKB) to Ground Level at Slot (Slot #14)	25.00ft
MD Reference Pt	Patterson 334 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	149.66°



Actual Wellpath Report

Jenkins 14H AWP Proj: 19435'MD

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #14
Area	Monongalia County, WV	Well	Jenkins 14H
Field	Monongalia	Wellbore	Jenkins 14H AWB
Facility	Jenkins Pad		

WELLPATH DATA (204 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	132.010	0.00	0.00	0.00	0.00	1788610.91	441033.17	39°42'32.785"N	80°08'21.930"W	0.00	0.000	0.00	0.00	0.00
25.00	0.000	132.010	25.00	0.00	0.00	0.00	1788610.91	441033.17	39°42'32.785"N	80°08'21.930"W	0.00	0.000	0.00	0.00	0.00
110.00	0.500	132.010	110.00	0.35	-0.25	0.28	1788611.19	441032.92	39°42'32.783"N	80°08'21.926"W	0.37	132.010	0.59	0.59	155.31
210.00	0.240	144.310	210.00	0.98	-0.71	0.72	1788611.63	441032.46	39°42'32.778"N	80°08'21.921"W	1.01	134.535	0.27	-0.26	12.30
310.00	0.560	174.610	309.99	1.63	-1.37	0.89	1788611.80	441031.80	39°42'32.772"N	80°08'21.918"W	1.63	146.931	0.37	0.32	30.30
410.00	0.510	178.610	409.99	2.46	-2.30	0.95	1788611.86	441030.87	39°42'32.763"N	80°08'21.918"W	2.49	157.612	0.06	-0.05	4.00
510.00	0.440	165.210	509.99	3.22	-3.11	1.06	1788611.97	441030.06	39°42'32.754"N	80°08'21.916"W	3.29	161.278	0.13	-0.07	-13.40
610.00	0.120	56.410	609.99	3.59	-3.43	1.24	1788612.15	441029.74	39°42'32.751"N	80°08'21.914"W	3.65	160.101	0.49	-0.32	-108.80
710.00	0.330	42.110	709.98	3.49	-3.16	1.52	1788612.43	441030.01	39°42'32.754"N	80°08'21.910"W	3.50	154.269	0.22	0.21	-14.30
810.00	0.390	41.810	809.98	3.30	-2.69	1.94	1788612.85	441030.48	39°42'32.759"N	80°08'21.905"W	3.32	144.175	0.06	0.06	-0.30
910.00	0.610	61.310	909.98	3.21	-2.18	2.64	1788613.54	441030.99	39°42'32.764"N	80°08'21.896"W	3.42	129.599	0.28	0.22	19.50
1010.00	0.650	59.410	1009.97	3.23	-1.64	3.59	1788614.50	441031.53	39°42'32.769"N	80°08'21.884"W	3.95	114.492	0.05	0.04	-1.90
1110.00	0.300	63.010	1109.97	3.24	-1.23	4.31	1788615.22	441031.94	39°42'32.773"N	80°08'21.875"W	4.48	105.898	0.35	-0.35	3.60
1210.00	0.350	87.410	1209.97	3.40	-1.10	4.85	1788615.76	441032.07	39°42'32.775"N	80°08'21.868"W	4.97	102.728	0.15	0.05	24.40
1310.00	0.730	62.610	1309.96	3.57	-0.79	5.72	1788616.63	441032.38	39°42'32.778"N	80°08'21.857"W	5.78	97.849	0.44	0.38	-24.80
1410.00	1.040	66.110	1409.95	3.71	-0.13	7.12	1788618.03	441033.04	39°42'32.784"N	80°08'21.839"W	7.12	91.031	0.31	0.31	3.50
1510.00	1.400	76.110	1509.93	4.15	0.53	9.13	1788620.04	441033.70	39°42'32.791"N	80°08'21.813"W	9.15	86.661	0.42	0.36	10.00
1610.00	1.620	83.410	1609.89	5.07	0.99	11.72	1788622.63	441034.16	39°42'32.796"N	80°08'21.780"W	11.76	85.181	0.29	0.22	7.30
1710.00	1.200	83.810	1709.86	6.07	1.26	14.17	1788625.08	441034.43	39°42'32.799"N	80°08'21.749"W	14.22	84.904	0.42	-0.42	0.40
1810.00	1.630	81.710	1809.83	7.03	1.58	16.62	1788627.52	441034.75	39°42'32.802"N	80°08'21.718"W	16.69	84.563	0.43	0.43	-2.10
1910.00	1.420	63.010	1909.80	7.63	2.35	19.13	1788630.04	441035.52	39°42'32.810"N	80°08'21.685"W	19.27	82.999	0.54	-0.21	-18.70
2010.00	1.510	80.310	2009.77	8.17	3.13	21.53	1788632.44	441036.30	39°42'32.818"N	80°08'21.655"W	21.76	81.721	0.45	0.09	17.30
2110.00	1.690	78.810	2109.73	9.12	3.64	24.28	1788635.18	441036.81	39°42'32.823"N	80°08'21.620"W	24.55	81.471	0.18	0.18	-1.50
2210.00	1.560	81.310	2209.69	10.11	4.13	27.07	1788637.98	441037.30	39°42'32.828"N	80°08'21.584"W	27.38	81.319	0.15	-0.13	2.50
2310.00	1.340	83.110	2309.65	11.07	4.48	29.57	1788640.48	441037.65	39°42'32.832"N	80°08'21.552"W	29.91	81.389	0.22	-0.22	1.80
2410.00	0.850	87.110	2409.64	11.88	4.66	31.48	1788642.38	441037.83	39°42'32.833"N	80°08'21.528"W	31.82	81.585	0.50	-0.49	4.00
2510.00	0.590	79.510	2509.63	12.40	4.79	32.72	1788643.63	441037.96	39°42'32.835"N	80°08'21.512"W	33.07	81.677	0.28	-0.26	-7.60
2610.00	0.890	66.510	2609.62	12.66	5.19	33.94	1788644.85	441038.36	39°42'32.839"N	80°08'21.496"W	34.34	81.305	0.34	0.30	-13.00
2710.00	0.820	44.810	2709.61	12.57	6.01	35.16	1788646.07	441039.18	39°42'32.847"N	80°08'21.481"W	35.67	80.303	0.33	-0.07	-21.70
2810.00	0.040	357.810	2809.60	12.36	6.55	35.66	1788646.57	441039.72	39°42'32.852"N	80°08'21.474"W	36.26	79.592	0.79	-0.78	-47.00



Actual Wellpath Report

Jenkins 14H AWP Proj: 19435'MD

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #14
Area	Monongalia County, WV	Well	Jenkins 14H
Field	Monongalia	Wellbore	Jenkins 14H AWB
Facility	Jenkins Pad		

WELLPATH DATA (204 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]
2910.00	0.510	86.110	2909.60	12.53	6.62	36.10	1788647.01	441039.79	39°42'32.853"N	80°08'21.469"W	36.70	79.617	0.51	0.47	88.30
3010.00	0.340	356.110	3009.60	12.46	6.94	36.53	1788647.44	441040.11	39°42'32.856"N	80°08'21.463"W	37.18	79.240	0.61	-0.17	-90.00
3110.00	0.340	1.510	3109.60	11.94	7.53	36.52	1788647.42	441040.70	39°42'32.862"N	80°08'21.463"W	37.28	78.342	0.03	0.00	5.40
3210.00	0.360	8.110	3209.60	11.44	8.14	36.57	1788647.47	441041.31	39°42'32.868"N	80°08'21.463"W	37.46	77.447	0.04	0.02	6.60
3310.00	0.360	52.910	3309.60	11.16	8.64	36.86	1788647.77	441041.81	39°42'32.873"N	80°08'21.459"W	37.86	76.805	0.27	0.00	44.80
3410.00	0.340	352.210	3409.59	10.85	9.13	37.07	1788647.98	441042.30	39°42'32.878"N	80°08'21.456"W	38.18	76.171	0.35	-0.02	-60.70
3510.00	0.340	189.610	3509.59	10.80	9.13	36.98	1788647.89	441042.30	39°42'32.878"N	80°08'21.458"W	38.09	76.137	0.67	0.00	-162.60
3610.00	0.400	222.210	3609.59	11.14	8.58	36.70	1788647.61	441041.75	39°42'32.873"N	80°08'21.461"W	37.69	76.847	0.22	0.06	32.60
3710.00	0.230	37.610	3709.59	11.17	8.48	36.59	1788647.49	441041.65	39°42'32.872"N	80°08'21.463"W	37.56	76.956	0.63	-0.17	175.40
3810.00	0.440	291.310	3809.59	10.79	8.78	36.35	1788647.26	441041.94	39°42'32.874"N	80°08'21.466"W	37.40	76.429	0.55	0.21	-106.30
3910.00	0.270	160.110	3909.59	10.72	8.69	36.07	1788646.98	441041.86	39°42'32.874"N	80°08'21.469"W	37.11	76.451	0.65	-0.17	-131.20
4010.00	0.270	163.210	4009.59	11.18	8.25	36.22	1788647.13	441041.42	39°42'32.869"N	80°08'21.467"W	37.15	77.175	0.01	0.00	3.10
4110.00	0.240	151.910	4109.59	11.62	7.84	36.39	1788647.30	441041.01	39°42'32.865"N	80°08'21.465"W	37.22	77.848	0.06	-0.03	-11.30
4210.00	0.460	292.110	4209.59	11.51	7.80	36.12	1788647.02	441040.97	39°42'32.865"N	80°08'21.469"W	36.95	77.810	0.66	0.22	140.20
4310.00	0.420	182.210	4309.58	11.50	7.59	35.73	1788646.64	441040.76	39°42'32.863"N	80°08'21.474"W	36.53	78.012	0.72	-0.04	-109.90
4410.00	0.360	145.510	4409.58	12.12	6.96	35.89	1788646.80	441040.13	39°42'32.857"N	80°08'21.471"W	36.56	79.024	0.25	-0.06	-36.70
4510.00	0.390	300.310	4509.58	12.14	6.87	35.78	1788646.69	441040.04	39°42'32.856"N	80°08'21.473"W	36.43	79.123	0.73	0.03	154.80
4610.00	0.130	81.310	4609.58	11.88	7.06	35.60	1788646.50	441040.23	39°42'32.858"N	80°08'21.475"W	36.29	78.776	0.50	-0.26	141.00
4710.00	0.530	140.310	4709.58	12.38	6.72	36.00	1788646.91	441039.89	39°42'32.854"N	80°08'21.470"W	36.63	79.420	0.48	0.40	59.00
4810.00	0.790	194.510	4809.57	13.33	5.70	36.13	1788647.03	441038.87	39°42'32.844"N	80°08'21.468"W	36.57	81.032	0.64	0.26	54.20
4910.00	1.120	182.810	4909.56	14.63	4.06	35.91	1788646.81	441037.23	39°42'32.828"N	80°08'21.471"W	36.13	83.552	0.38	0.33	-11.70
5010.00	1.060	148.310	5009.54	16.38	2.29	36.34	1788647.25	441035.46	39°42'32.810"N	80°08'21.465"W	36.42	86.387	0.65	-0.06	-34.50
5110.00	1.110	175.410	5109.53	18.17	0.54	36.91	1788647.81	441033.71	39°42'32.793"N	80°08'21.458"W	36.91	89.159	0.51	0.05	27.10
5210.00	1.010	173.110	5209.51	19.86	-1.30	37.09	1788648.00	441031.87	39°42'32.775"N	80°08'21.455"W	37.11	92.005	0.11	-0.10	-2.30
5310.00	1.050	180.510	5309.49	21.45	-3.09	37.19	1788648.10	441030.08	39°42'32.757"N	80°08'21.454"W	37.32	94.750	0.14	0.04	7.40
5410.00	1.180	122.810	5409.48	23.16	-4.56	38.04	1788648.95	441028.61	39°42'32.743"N	80°08'21.443"W	38.32	96.841	1.08	0.13	-57.70
5510.00	0.380	110.110	5509.47	24.33	-5.24	39.22	1788650.13	441027.93	39°42'32.736"N	80°08'21.428"W	39.57	97.604	0.81	-0.80	-12.70
5610.00	0.480	67.610	5609.46	24.64	-5.19	39.92	1788650.83	441027.98	39°42'32.737"N	80°08'21.419"W	40.26	97.408	0.33	0.10	-42.50
5710.00	1.270	186.910	5709.46	25.58	-6.13	40.17	1788651.08	441027.04	39°42'32.727"N	80°08'21.415"W	40.64	98.677	1.56	0.79	119.30
5814.00	0.680	101.680	5813.44	26.92	-7.40	40.64	1788651.55	441025.77	39°42'32.715"N	80°08'21.409"W	41.31	100.320	1.34	-0.57	-81.95

Actual Wellpath Report

Jenkins 14H AWP Proj: 19435'MD

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #14
Area	Monongalia County, WV	Well	Jenkins 14H
Field	Monongalia	Wellbore	Jenkins 14H AWB
Facility	Jenkins Pad		

WELLPATH DATA (204 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]
5909.00	9.460	34.040	5908.00	23.91	-1.03	45.57	1788656.48	441032.14	39°42'32.778"N	80°08'21.347"W	45.58	91.296	9.71	9.24	-71.20
6004.00	16.170	30.960	6000.58	14.17	16.80	56.76	1788667.67	441049.97	39°42'32.955"N	80°08'21.205"W	59.20	73.510	7.10	7.06	-3.24
6099.00	24.080	33.890	6089.71	-0.63	44.28	74.40	1788685.31	441077.45	39°42'33.228"N	80°08'20.982"W	86.58	59.242	8.39	8.33	3.08
6194.00	32.950	47.060	6173.19	-14.74	78.07	104.21	1788715.11	441111.23	39°42'33.564"N	80°08'20.604"W	130.21	53.162	11.40	9.34	13.86
6289.00	41.940	44.710	6248.54	-28.59	118.31	145.54	1788756.45	441151.48	39°42'33.965"N	80°08'20.078"W	187.57	50.892	9.58	9.46	-2.47
6384.00	41.900	39.650	6319.24	-47.64	165.31	188.13	1788799.03	441198.47	39°42'34.432"N	80°08'19.538"W	250.44	48.694	3.56	-0.04	-5.33
6478.00	41.910	37.860	6389.21	-70.04	214.27	227.43	1788838.33	441247.43	39°42'34.919"N	80°08'19.039"W	312.47	46.707	1.27	0.01	-1.90
6572.00	41.960	39.390	6459.14	-92.59	263.34	266.64	1788877.54	441296.50	39°42'35.406"N	80°08'18.542"W	374.76	45.357	1.09	0.05	1.63
6667.00	42.020	46.860	6529.79	-110.65	309.66	310.02	1788920.92	441342.81	39°42'35.867"N	80°08'17.991"W	438.18	45.034	5.26	0.06	7.86
6762.00	41.910	42.610	6600.44	-127.00	354.76	354.71	1788965.60	441387.91	39°42'36.316"N	80°08'17.424"W	501.67	44.996	2.99	-0.12	-4.47
6857.00	42.060	38.190	6671.07	-147.95	403.13	395.88	1789006.76	441436.28	39°42'36.797"N	80°08'16.901"W	565.01	44.480	3.12	0.16	-4.65
6952.00	40.690	40.800	6742.37	-169.61	451.59	435.79	1789046.68	441484.73	39°42'37.279"N	80°08'16.395"W	627.57	43.980	2.32	-1.44	2.75
7048.00	39.940	45.530	6815.58	-187.25	496.88	478.24	1789089.12	441530.02	39°42'37.729"N	80°08'15.856"W	689.64	43.905	3.28	-0.78	4.93
7142.00	40.040	43.940	6887.60	-202.81	539.79	520.76	1789131.63	441572.93	39°42'38.156"N	80°08'15.316"W	750.04	43.972	1.09	0.11	-1.69
7237.00	40.140	41.050	6960.29	-220.87	584.89	562.07	1789172.95	441618.02	39°42'38.605"N	80°08'14.791"W	811.19	43.860	1.96	0.11	-3.04
7332.00	40.130	39.490	7032.92	-241.19	631.61	601.65	1789212.53	441664.74	39°42'39.069"N	80°08'14.289"W	872.31	43.608	1.06	-0.01	-1.64
7428.00	40.020	39.110	7106.38	-262.70	679.44	640.80	1789251.67	441712.57	39°42'39.545"N	80°08'13.793"W	933.95	43.324	0.28	-0.11	-0.40
7523.00	39.600	38.940	7179.36	-284.13	726.69	679.10	1789289.97	441759.81	39°42'40.014"N	80°08'13.307"W	994.61	43.061	0.46	-0.44	-0.18
7618.00	38.970	39.300	7252.89	-305.24	773.36	717.05	1789327.91	441806.48	39°42'40.478"N	80°08'12.825"W	1054.63	42.836	0.71	-0.66	0.38
7713.00	37.970	41.810	7327.27	-324.59	818.26	755.46	1789366.32	441851.38	39°42'40.925"N	80°08'12.338"W	1113.67	42.715	1.95	-1.05	2.64
7808.00	36.710	44.380	7402.80	-341.03	860.34	794.80	1789405.66	441893.46	39°42'41.343"N	80°08'11.838"W	1171.28	42.732	2.11	-1.33	2.71
7903.00	36.220	55.460	7479.29	-350.58	896.59	837.83	1789448.69	441929.70	39°42'41.705"N	80°08'11.291"W	1227.12	43.060	6.94	-0.52	11.66
7999.00	37.700	71.330	7556.17	-346.71	922.12	889.12	1789499.98	441955.24	39°42'41.961"N	80°08'10.637"W	1280.96	43.956	10.04	1.54	16.53
8093.00	39.340	86.210	7629.87	-327.54	933.32	946.21	1789557.06	441966.43	39°42'42.075"N	80°08'09.908"W	1329.06	45.393	9.99	1.74	15.83
8188.00	44.110	97.480	7700.86	-293.74	931.00	1009.16	1789620.01	441964.12	39°42'42.057"N	80°08'09.102"W	1373.01	47.307	9.34	5.02	11.86
8283.00	51.560	105.700	7764.64	-246.57	916.60	1077.92	1789688.76	441949.71	39°42'41.919"N	80°08'08.221"W	1414.94	49.624	10.12	7.84	8.65
8378.00	57.380	111.350	7819.85	-188.32	891.93	1151.10	1789761.94	441925.05	39°42'41.680"N	80°08'07.282"W	1456.22	52.230	7.80	6.13	5.95
8473.00	63.150	120.540	7867.03	-119.74	855.74	1225.04	1789835.88	441888.86	39°42'41.328"N	80°08'06.333"W	1494.33	55.064	10.36	6.07	9.67
8568.00	68.390	129.530	7906.07	-41.06	805.98	1295.77	1789906.60	441839.10	39°42'40.841"N	80°08'05.423"W	1525.98	58.118	10.24	5.52	9.46
8663.00	73.950	138.260	7936.77	45.37	743.65	1360.39	1789971.22	441776.78	39°42'40.230"N	80°08'04.591"W	1550.38	61.337	10.48	5.85	9.19



Actual Wellpath Report

Jenkins 14H AWP Proj: 19435'MD

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #14
Area	Monongalia County, WV	Well	Jenkins 14H
Field	Monongalia	Wellbore	Jenkins 14H AWB
Facility	Jenkins Pad		

WELLPATH DATA (204 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]
8758.00	79.170	146.330	7958.88	136.90	670.60	1416.77	1790027.59	441703.73	39°42'39.512"N	80°08'03.863"W	1567.46	64.670	9.92	5.49	8.49
8852.00	84.610	150.800	7972.14	229.88	591.23	1465.25	1790076.07	441624.37	39°42'38.731"N	80°08'03.235"W	1580.04	68.026	7.46	5.79	4.76
8947.00	87.380	149.230	7978.78	324.64	509.16	1512.61	1790123.43	441542.30	39°42'37.923"N	80°08'02.622"W	1596.01	71.396	3.35	2.92	-1.65
9042.00	88.400	150.590	7982.28	419.57	427.02	1560.20	1790171.02	441460.17	39°42'37.115"N	80°08'02.005"W	1617.59	74.693	1.79	1.07	1.43
9138.00	90.740	154.670	7983.00	515.41	341.80	1604.33	1790215.14	441374.94	39°42'36.275"N	80°08'01.433"W	1640.33	77.973	4.90	2.44	4.25
9233.00	91.510	152.000	7981.13	610.19	256.92	1646.95	1790257.76	441290.08	39°42'35.440"N	80°08'00.880"W	1666.87	81.133	2.92	0.81	-2.81
9327.00	91.540	152.660	7978.63	704.05	173.70	1690.58	1790301.39	441206.86	39°42'34.620"N	80°08'00.314"W	1699.48	84.134	0.70	0.03	0.70
9423.00	91.450	152.100	7976.13	799.91	88.67	1735.07	1790345.88	441121.84	39°42'33.783"N	80°07'59.737"W	1737.34	87.074	0.59	-0.09	-0.58
9518.00	91.290	145.750	7973.85	894.83	7.37	1784.07	1790394.87	441040.54	39°42'32.983"N	80°07'59.103"W	1784.08	89.763	6.68	-0.17	-6.68
9614.00	91.260	143.960	7971.72	990.46	-71.11	1839.32	1790450.11	440962.07	39°42'32.211"N	80°07'58.389"W	1840.69	92.214	1.86	-0.03	-1.86
9709.00	91.110	148.940	7969.75	1085.26	-150.24	1891.79	1790502.59	440882.94	39°42'31.433"N	80°07'57.711"W	1897.75	94.541	5.24	-0.16	5.24
9803.00	90.310	145.600	7968.58	1179.16	-229.29	1942.60	1790553.40	440803.89	39°42'30.655"N	80°07'57.053"W	1956.09	96.732	3.65	-0.85	-3.55
9896.00	90.580	145.990	7967.86	1271.94	-306.21	1994.88	1790605.67	440726.98	39°42'29.899"N	80°07'56.378"W	2018.25	98.727	0.51	0.29	0.42
9992.00	90.770	150.640	7966.73	1367.88	-387.87	2045.29	1790656.08	440645.32	39°42'29.095"N	80°07'55.725"W	2081.74	100.738	4.85	0.20	4.84
10087.00	90.650	151.330	7965.55	1462.85	-470.94	2091.36	1790702.15	440562.26	39°42'28.277"N	80°07'55.128"W	2143.73	102.690	0.74	-0.13	0.73
10182.00	91.260	151.920	7963.97	1557.78	-554.51	2136.50	1790747.29	440478.69	39°42'27.455"N	80°07'54.543"W	2207.29	104.550	0.89	0.64	0.62
10277.00	90.860	151.510	7962.21	1652.70	-638.15	2181.51	1790792.29	440395.05	39°42'26.631"N	80°07'53.960"W	2272.94	106.306	0.60	-0.42	-0.43
10372.00	91.020	150.320	7960.65	1747.67	-721.16	2227.69	1790838.46	440312.05	39°42'25.814"N	80°07'53.361"W	2341.51	107.938	1.26	0.17	-1.25
10468.00	90.250	146.230	7959.59	1843.61	-802.80	2278.15	1790888.93	440230.42	39°42'25.011"N	80°07'52.708"W	2415.46	109.412	4.33	-0.80	-4.26
10563.00	89.510	143.340	7959.79	1938.26	-880.40	2332.93	1790943.70	440152.82	39°42'24.248"N	80°07'52.001"W	2493.52	110.676	3.14	-0.78	-3.04
10659.00	89.720	148.900	7960.43	2034.03	-960.07	2386.42	1790997.19	440073.16	39°42'23.464"N	80°07'51.309"W	2572.30	111.915	5.80	0.22	5.79
10753.00	90.060	151.210	7960.61	2128.02	-1041.51	2433.34	1791044.10	439991.72	39°42'22.662"N	80°07'50.701"W	2646.86	113.172	2.48	0.36	2.46
10848.00	90.090	152.310	7960.49	2222.96	-1125.20	2478.29	1791089.05	439908.03	39°42'21.838"N	80°07'50.119"W	2721.77	114.419	1.16	0.03	1.16
10943.00	90.430	155.110	7960.06	2317.71	-1210.37	2520.36	1791131.12	439822.87	39°42'21.000"N	80°07'49.573"W	2795.93	115.652	2.97	0.36	2.95
11039.00	89.940	156.140	7959.75	2413.19	-1297.81	2559.98	1791170.74	439735.44	39°42'20.138"N	80°07'49.058"W	2870.16	116.883	1.19	-0.51	1.07
11134.00	89.600	150.140	7960.13	2507.97	-1382.52	2602.88	1791213.64	439650.73	39°42'19.304"N	80°07'48.502"W	2947.26	117.975	6.33	-0.36	-6.32
11229.00	89.540	150.980	7960.84	2602.95	-1465.25	2649.58	1791260.33	439568.01	39°42'18.490"N	80°07'47.897"W	3027.74	118.943	0.89	-0.06	0.88
11324.00	89.450	150.080	7961.68	2697.94	-1547.95	2696.31	1791307.06	439485.31	39°42'17.676"N	80°07'47.291"W	3109.06	119.860	0.95	-0.09	-0.95
11420.00	90.430	150.490	7961.78	2793.93	-1631.33	2743.90	1791354.64	439401.94	39°42'16.855"N	80°07'46.675"W	3192.21	120.733	1.11	1.02	0.43
11512.00	90.430	148.290	7961.09	2885.92	-1710.50	2790.74	1791401.48	439322.77	39°42'16.076"N	80°07'46.069"W	3273.23	121.505	2.39	0.00	-2.39



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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #14
Area	Monongalia County, WV	Well	Jenkins 14H
Field	Monongalia	Wellbore	Jenkins 14H AWB
Facility	Jenkins Pad		

WELLPATH DATA (204 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]
11608.00	90.550	146.990	7960.27	2981.86	-1791.59	2842.12	1791452.86	439241.69	39°42'15.278"N	80°07'45.404"W	3359.68	122.226	1.36	0.12	-1.35
11702.00	90.580	145.410	7959.34	3075.68	-1869.70	2894.40	1791505.14	439163.59	39°42'14.510"N	80°07'44.728"W	3445.77	122.861	1.68	0.03	-1.68
11797.00	90.710	143.630	7958.27	3170.29	-1947.05	2949.54	1791560.27	439086.24	39°42'13.749"N	80°07'44.016"W	3534.23	123.430	1.88	0.14	-1.87
11892.00	90.340	147.290	7957.40	3265.01	-2025.29	3003.39	1791614.12	439008.01	39°42'12.980"N	80°07'43.320"W	3622.45	123.993	3.87	-0.39	3.85
11987.00	90.400	153.100	7956.79	3359.96	-2107.68	3050.59	1791661.31	438925.61	39°42'12.169"N	80°07'42.708"W	3707.89	124.641	6.12	0.06	6.12
12082.00	90.220	150.000	7956.28	3454.90	-2191.20	3095.84	1791706.56	438842.10	39°42'11.346"N	80°07'42.122"W	3792.83	125.290	3.27	-0.19	-3.26
12178.00	90.280	148.730	7955.86	3550.90	-2273.80	3144.76	1791755.48	438759.51	39°42'10.533"N	80°07'41.489"W	3880.68	125.869	1.32	0.06	-1.32
12273.00	90.220	149.280	7955.44	3645.89	-2355.23	3193.68	1791804.39	438678.08	39°42'09.732"N	80°07'40.856"W	3968.21	126.408	0.58	-0.06	0.58
12367.00	90.830	149.160	7954.58	3739.88	-2435.99	3241.78	1791852.49	438597.33	39°42'08.937"N	80°07'40.233"W	4055.02	126.922	0.66	0.65	-0.13
12463.00	90.620	147.510	7953.37	3835.84	-2517.69	3292.17	1791902.88	438515.64	39°42'08.133"N	80°07'39.581"W	4144.53	127.407	1.73	-0.22	-1.72
12558.00	90.800	146.920	7952.19	3930.75	-2597.55	3343.61	1791954.31	438435.78	39°42'07.348"N	80°07'38.916"W	4234.02	127.843	0.65	0.19	-0.62
12653.00	90.650	146.030	7950.99	4025.60	-2676.73	3396.07	1792006.77	438356.60	39°42'06.569"N	80°07'38.237"W	4324.14	128.245	0.95	-0.16	-0.94
12748.00	90.650	148.050	7949.91	4120.48	-2756.44	3447.75	1792058.45	438276.90	39°42'05.785"N	80°07'37.569"W	4414.17	128.642	2.13	0.00	2.13
12842.00	90.770	149.830	7948.74	4214.47	-2836.95	3496.24	1792106.94	438196.39	39°42'04.992"N	80°07'36.942"W	4502.44	129.057	1.90	0.13	1.89
12938.00	90.770	152.800	7947.45	4310.41	-2921.15	3542.31	1792153.01	438112.20	39°42'04.163"N	80°07'36.345"W	4591.41	129.511	3.09	0.00	3.09
13033.00	90.770	154.150	7946.18	4405.19	-3006.14	3584.73	1792195.43	438027.21	39°42'03.326"N	80°07'35.794"W	4678.37	129.983	1.42	0.00	1.42
13128.00	90.680	151.140	7944.97	4500.04	-3090.50	3628.38	1792239.07	437942.86	39°42'02.496"N	80°07'35.228"W	4766.16	130.423	3.17	-0.09	-3.17
13223.00	90.520	149.710	7943.98	4595.02	-3173.12	3675.26	1792285.95	437860.24	39°42'01.682"N	80°07'34.621"W	4855.53	130.806	1.51	-0.17	-1.51
13317.00	90.920	150.860	7942.80	4689.01	-3254.75	3721.85	1792332.54	437778.62	39°42'00.879"N	80°07'34.018"W	4944.24	131.170	1.30	0.43	1.22
13413.00	91.170	154.510	7941.05	4784.84	-3340.01	3765.89	1792376.57	437693.36	39°42'00.039"N	80°07'33.447"W	5033.65	131.570	3.81	0.26	3.80
13507.00	91.690	151.730	7938.70	4878.63	-3423.82	3808.37	1792419.05	437609.55	39°41'59.214"N	80°07'32.896"W	5121.16	131.956	3.01	0.55	-2.96
13602.00	90.650	151.110	7936.76	4973.56	-3507.23	3853.81	1792464.48	437526.15	39°41'58.393"N	80°07'32.307"W	5210.80	132.304	1.27	-1.09	-0.65
13697.00	90.180	149.950	7936.07	5068.55	-3589.93	3900.54	1792511.22	437443.45	39°41'57.579"N	80°07'31.702"W	5301.12	132.625	1.32	-0.49	-1.22
13792.00	90.370	147.910	7935.62	5163.54	-3671.30	3949.57	1792560.24	437362.09	39°41'56.778"N	80°07'31.068"W	5392.36	132.909	2.16	0.20	-2.15
13887.00	90.550	147.540	7934.85	5258.48	-3751.62	4000.29	1792610.96	437281.78	39°41'55.988"N	80°07'30.411"W	5484.25	133.163	0.43	0.19	-0.39
13983.00	90.250	149.730	7934.18	5354.45	-3833.58	4050.26	1792660.92	437199.82	39°41'55.181"N	80°07'29.765"W	5576.82	133.426	2.30	-0.31	2.28
14078.00	90.280	150.510	7933.74	5449.45	-3915.95	4097.58	1792708.25	437117.45	39°41'54.370"N	80°07'29.152"W	5667.88	133.702	0.82	0.03	0.82
14173.00	90.310	148.640	7933.25	5544.44	-3997.87	4145.69	1792756.35	437035.54	39°41'53.564"N	80°07'28.529"W	5759.31	133.960	1.97	0.03	-1.97
14269.00	90.120	146.530	7932.89	5640.37	-4078.90	4197.15	1792807.80	436954.51	39°41'52.767"N	80°07'27.864"W	5852.65	134.181	2.21	-0.20	-2.20
14364.00	90.030	146.920	7932.77	5735.25	-4158.33	4249.27	1792859.92	436875.09	39°41'51.986"N	80°07'27.190"W	5945.42	134.380	0.42	-0.09	0.41



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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #14
Area	Monongalia County, WV	Well	Jenkins 14H
Field	Monongalia	Wellbore	Jenkins 14H AWB
Facility	Jenkins Pad		

WELLPATH DATA (204 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]
14459.00	90.060	149.100	7932.70	5830.20	-4238.90	4299.59	1792910.24	436794.53	39°41'51.193"N	80°07'26.539"W	6037.78	134.593	2.29	0.03	2.29
14553.00	91.410	149.630	7931.49	5924.19	-4319.77	4347.49	1792958.14	436713.66	39°41'50.397"N	80°07'25.919"W	6128.71	134.817	1.54	1.44	0.56
14648.00	91.450	150.620	7929.12	6019.16	-4402.12	4394.79	1793005.44	436631.32	39°41'49.586"N	80°07'25.307"W	6220.36	135.048	1.04	0.04	1.04
14743.00	90.980	151.380	7927.10	6114.11	-4485.19	4440.84	1793051.48	436548.25	39°41'48.768"N	80°07'24.710"W	6311.73	135.285	0.94	-0.49	0.80
14838.00	90.740	151.480	7925.68	6209.06	-4568.61	4486.27	1793096.91	436464.84	39°41'47.947"N	80°07'24.122"W	6403.03	135.521	0.27	-0.25	0.11
14932.00	90.430	150.250	7924.72	6303.03	-4650.71	4532.03	1793142.67	436382.74	39°41'47.139"N	80°07'23.529"W	6493.72	135.740	1.35	-0.33	-1.31
15026.00	91.110	149.490	7923.46	6397.02	-4732.00	4579.21	1793189.84	436301.45	39°41'46.339"N	80°07'22.918"W	6584.91	135.940	1.08	0.72	-0.81
15121.00	91.110	148.080	7921.62	6491.99	-4813.23	4628.43	1793239.06	436220.23	39°41'45.539"N	80°07'22.281"W	6677.54	136.121	1.48	0.00	-1.48
15216.00	90.090	148.670	7920.62	6586.96	-4894.12	4678.24	1793288.87	436139.35	39°41'44.743"N	80°07'21.637"W	6770.40	136.292	1.24	-1.07	0.62
15311.00	90.150	148.810	7920.42	6681.94	-4975.32	4727.54	1793338.16	436058.14	39°41'43.944"N	80°07'20.999"W	6863.20	136.463	0.16	0.06	0.15
15406.00	89.320	147.260	7920.86	6776.90	-5055.92	4777.83	1793388.45	435977.56	39°41'43.151"N	80°07'20.349"W	6956.29	136.620	1.85	-0.87	-1.63
15502.00	89.780	148.560	7921.61	6872.85	-5137.24	4828.83	1793439.45	435896.24	39°41'42.351"N	80°07'19.689"W	7050.45	136.773	1.44	0.48	1.35
15597.00	89.780	147.260	7921.98	6967.80	-5217.73	4879.29	1793489.91	435815.76	39°41'41.559"N	80°07'19.036"W	7143.68	136.920	1.37	0.00	-1.37
15692.00	89.820	147.080	7922.31	7062.71	-5297.55	4930.80	1793541.41	435735.94	39°41'40.774"N	80°07'18.370"W	7237.18	137.054	0.19	0.04	-0.19
15787.00	89.690	149.540	7922.72	7157.68	-5378.38	4980.70	1793591.31	435655.11	39°41'39.978"N	80°07'17.725"W	7330.37	137.198	2.59	-0.14	2.59
15882.00	89.420	150.270	7923.46	7252.67	-5460.57	5028.33	1793638.94	435572.93	39°41'39.169"N	80°07'17.108"W	7423.07	137.360	0.82	-0.28	0.77
15978.00	89.320	156.660	7924.51	7348.41	-5546.41	5071.20	1793681.80	435487.09	39°41'38.324"N	80°07'16.552"W	7515.30	137.563	6.66	-0.10	6.66
16073.00	89.510	155.690	7925.48	7442.79	-5633.31	5109.57	1793720.17	435400.20	39°41'37.468"N	80°07'16.054"W	7605.38	137.791	1.04	0.20	-1.02
16168.00	89.910	152.220	7925.96	7537.50	-5718.65	5151.27	1793761.87	435314.87	39°41'36.627"N	80°07'15.513"W	7696.66	137.988	3.68	0.42	-3.65
16262.00	90.340	151.910	7925.76	7631.42	-5801.69	5195.31	1793805.91	435231.83	39°41'35.810"N	80°07'14.942"W	7787.87	138.156	0.56	0.46	-0.33
16357.00	90.520	150.360	7925.04	7726.38	-5884.89	5241.17	1793851.76	435148.64	39°41'34.991"N	80°07'14.348"W	7880.47	138.311	1.64	0.19	-1.63
16453.00	90.430	146.650	7924.25	7822.34	-5966.73	5291.31	1793901.90	435066.80	39°41'34.185"N	80°07'13.699"W	7974.95	138.433	3.87	-0.09	-3.86
16548.00	90.400	145.560	7923.56	7917.16	-6045.58	5344.29	1793954.88	434987.95	39°41'33.409"N	80°07'13.015"W	8069.10	138.523	1.15	-0.03	-1.15
16643.00	90.580	146.350	7922.75	8011.95	-6124.29	5397.47	1794008.05	434909.25	39°41'32.635"N	80°07'12.327"W	8163.31	138.610	0.85	0.19	0.83
16738.00	90.520	147.220	7921.84	8106.83	-6203.77	5449.51	1794060.09	434829.78	39°41'31.853"N	80°07'11.655"W	8257.35	138.703	0.92	-0.06	0.92
16833.00	90.430	148.360	7921.05	8201.77	-6284.14	5500.14	1794110.72	434749.41	39°41'31.062"N	80°07'11.000"W	8351.17	138.806	1.20	-0.09	1.20
16929.00	90.430	151.750	7920.33	8297.76	-6367.31	5548.05	1794158.63	434666.24	39°41'30.244"N	80°07'10.380"W	8445.33	138.933	3.53	0.00	3.53
17023.00	90.280	152.500	7919.75	8391.67	-6450.40	5592.00	1794202.57	434583.15	39°41'29.426"N	80°07'09.810"W	8536.87	139.077	0.81	-0.16	0.80
17118.00	90.520	153.160	7919.08	8486.52	-6534.92	5635.38	1794245.95	434498.64	39°41'28.593"N	80°07'09.248"W	8629.18	139.227	0.74	0.25	0.69
17213.00	90.770	151.790	7918.01	8581.39	-6619.16	5679.28	1794289.85	434414.41	39°41'27.764"N	80°07'08.679"W	8721.67	139.370	1.47	0.26	-1.44



northeast
NATURAL ENERGY

Actual Wellpath Report

Jenkins 14H AWP Proj: 19435MD

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BAKER HUGHES
a GE company



REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC
Area	Monongalia County, WV
Field	Monongalia
Facility	Jenkins Pad
Slot	Slot #14
Well	Jenkins 14H
Wellbore	Jenkins 14H AWB

WELLPATH DATA (204 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Buidl Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)	(ft)	(ft)	(ft)	(°)	(%/100ft)	(%/100ft)	(%/100ft)
17308.00	90.860	150.460	7916.66	-6702.34	5725.15	1794335.71	434331.24	39°41'26.945"N	80°07'08.085"W	8814.68	139.496	140	0.09	-1.40	
17402.00	90.800	149.840	7915.30	-6783.86	5771.93	1794382.49	434249.72	39°41'26.143"N	80°07'07.479"W	8907.07	139.608	0.66	-0.06	-0.66	
17498.00	90.710	148.710	7914.03	-6866.33	5820.97	1794431.53	434167.21	39°41'25.330"N	80°07'06.845"W	9001.71	139.710	1.18	-0.09	-1.18	
17592.00	90.220	146.160	7913.27	-6945.59	5871.56	1794482.12	434088.00	39°41'24.551"N	80°07'06.190"W	9094.86	139.790	2.76	-0.52	-2.71	
17688.00	89.420	150.500	7913.57	-7027.27	5921.95	1794532.51	434006.32	39°41'23.747"N	80°07'05.539"W	9189.78	139.879	4.60	-0.83	-4.52	
17783.00	89.170	147.030	7914.74	-7108.48	5971.20	1794581.75	433925.12	39°41'22.948"N	80°07'04.901"W	9283.63	139.969	3.66	-0.26	-3.65	
17878.00	89.750	148.150	7915.64	-7188.68	6022.12	1794632.67	433844.93	39°41'22.159"N	80°07'04.243"W	9377.79	140.046	1.33	0.61	1.18	
17973.00	90.460	152.550	7915.46	-7271.22	6069.10	1794679.65	433762.39	39°41'21.346"N	80°07'03.635"W	9471.25	140.149	4.69	0.75	4.63	
18067.00	90.460	151.590	7914.71	-7354.97	6113.13	1794723.67	433679.35	39°41'20.529"N	80°07'03.064"W	9563.24	140.265	1.02	-1.07	-1.02	
18161.00	90.680	153.910	7913.77	-7437.82	6156.16	1794766.70	433595.80	39°41'19.706"N	80°07'02.507"W	9655.03	140.386	2.48	2.47	2.47	
18256.00	90.800	151.360	7912.55	-7522.18	6199.82	1794810.36	433511.45	39°41'18.875"N	80°07'01.941"W	9747.87	140.504	2.69	0.13	-2.68	
18349.00	90.710	149.300	7911.32	-7602.97	6245.85	1794856.39	433430.66	39°41'18.080"N	80°07'01.345"W	9839.51	140.597	2.22	-0.10	-2.22	
18444.00	90.220	148.670	7910.55	-7684.39	6294.80	1794905.33	433349.25	39°41'17.278"N	80°07'00.712"W	9933.50	140.677	0.84	-0.52	-0.66	
18540.00	90.520	147.210	7909.93	-7765.74	6345.76	1794956.28	433267.90	39°41'16.478"N	80°07'00.053"W	10028.73	140.746	1.55	0.31	-1.52	
18635.00	90.740	148.960	7908.89	-7846.37	6395.97	1795006.50	433187.27	39°41'15.684"N	80°06'59.403"W	10122.96	140.815	1.86	0.23	-1.84	
18730.00	90.770	150.440	7907.63	-7928.39	6443.90	1795054.42	433105.26	39°41'14.877"N	80°06'58.783"W	10216.81	140.897	1.56	0.03	-1.56	
18825.00	90.920	151.930	7906.23	-8011.61	6489.68	1795100.20	433022.04	39°41'14.058"N	80°06'58.190"W	10310.28	140.991	1.58	0.16	-1.57	
18920.00	89.940	147.290	7905.52	-8093.53	6537.73	1795148.24	432940.12	39°41'13.251"N	80°06'57.568"W	10404.19	141.070	4.99	-1.03	-4.88	
19014.00	89.630	144.670	7905.87	-8171.44	6590.31	1795200.82	432862.22	39°41'12.485"N	80°06'56.889"W	10497.84	141.114	2.81	-0.33	-2.79	
19110.00	90.090	146.780	7906.11	-8250.76	6644.37	1795254.88	432782.91	39°41'11.705"N	80°06'56.190"W	10593.52	141.156	2.25	0.48	-2.20	
19204.00	89.970	149.380	7906.06	-8330.54	6694.07	1795304.58	432703.13	39°41'10.920"N	80°06'55.548"W	10686.84	141.216	2.77	-0.13	-2.77	
19299.00	89.380	143.750	7906.60	-8409.79	6746.39	1795356.89	432623.89	39°41'10.140"N	80°06'54.872"W	10781.39	141.263	5.96	-0.62	-5.93	
19394.00	89.350	145.530	7907.65	-8487.25	6801.36	1795411.86	432546.43	39°41'09.378"N	80°06'54.162"W	10876.21	141.293	1.87	-0.03	-1.87	
19435.00	89.350	145.530	7908.11	-8521.05	6824.57	1795435.07	432512.63	39°41'09.046"N	80°06'53.862"W	10917.10	141.309	0.00	0.00	0.00	



Actual Wellpath Report

Jenkins 14H AWP Proj: 19435'MD

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #14
Area	Monongalia County, WV	Well	Jenkins 14H
Field	Monongalia	Wellbore	Jenkins 14H AWB
Facility	Jenkins Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Jenkins 14H AWB Ref Wellpath: Jenkins 14H AWP Proj: 19435'MD

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]
9.625in Casing	25.00	2275.00	2250.00	25.00	2274.66	0.00	0.00	4.37	28.74
8.75in Open Hole	2275.00	5805.00	3530.00	2274.66	5804.44	4.37	28.74	-7.37	40.54
8.5in Open Hole	5805.00	19435.00	13630.00	5804.44	7908.11	-7.37	40.54	-8521.05	6824.57

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Jenkins 14H BHL Rev-1	7980.00	-8532.25	6806.97	1795417.47	432501.43	39°41'08.934"N	80°06'54.086"W	point
Jenkins 14H LP Rev-1	7980.00	603.84	1460.83	1790071.65	441636.97	39°42'38.855"N	80°08'03.293"W	point

WELLPATH COMPOSITION - Ref Wellbore: Jenkins 14H AWB Ref Wellpath: Jenkins 14H AWP Proj: 19435'MD

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	5710.00	BHI Generic gyro - northseeking (Standard)	01_Javins Gyro <8-3/4"> (110'-5710')	Jenkins 14H AWB
5710.00	19394.00	BHI AutoTrak Curve (Short)	02_BH AT Curve <8-1/2"> (5710')(5814'-19394')	Jenkins 14H AWB
19394.00	19435.00	Blind Drilling (std)	Projection to bit	Jenkins 14H AWB



Actual Wellpath Report

Jenkins 14H AWP Proj: 19435'MD

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Slot	Slot #14
Area	Monongalia County, WV	Well	Jenkins 14H
Field	Monongalia	Wellbore	Jenkins 14H AWB
Facility	Jenkins Pad		

COMMENTS
Wellpath general comments API: 47-061-01768-0000 Job #: 9047081 Rig: Patterson 334 Duration: 03/12/2018 -03/21/2018