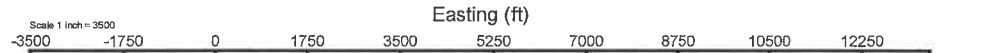


NORTHEAST NATURAL ENERGY, LLC

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

Slot: Slot 2H
 Well: Bunner 2H
 Wellbore: Bunner 2H PWB

API: 47-061-01868-0000
 BH Job #: 110853541
 Rig: Patterson 277
 Duration: 5/31/21 - 6/4/21



Scale 1 inch = 2000'



Plot reference wellpath: Bunner 2H PWP Rev-A.0	Grid System: NAD83 Lambert West Virginia SP. Northern Zone (KT0), US feet
True vertical depths are referenced to Patterson 277 (RKB)	North Reference: GRT north
Reference wellpath measured depths are referenced to Patterson 277 (RKB)	Scale: True distance
Patterson 277 (RKB) to Mean Sea Level: 1305 feet	Coordinates are in feet referenced to GRT
Mean Sea Level to Ground level (At Slot: Slot 2H): -1277 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default TVD datum	Created by: hdbtop on 2021-06-05; Database: VA_APR_PAT277RKB_Defn

Javins Inertial Gyro <8-3/4"> (100'-5250') : 0.63° Inc, 100.00ft MD, 100.00ft TVD, 0.04ft VS

Well Data			
Slot	Well	Wellbore	Wellpath
Slot 2H	Bunner 2H	Bunner 2H AWB	Bunner 2H AWP Proj: 24286'
Slot 2H	Bunner 2H	Bunner 2H PWB	Bunner 2H PWP Rev-A.0

Location Information					
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Bunner Pad		1786458.500	424248.370	39°39'45.2443"N	80°13'3.6735"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Longitude
Slot 2H	-30.00	0.00	1786458.500	424248.370	39°39'44.9478"N
Patterson 277 (RKB) to Ground level (At Slot: Slot 2H)		28ft			
Mean Sea Level to Ground level (At Slot: Slot 2H)		-1277ft			
Patterson 277 (RKB) to Mean Sea Level		1305ft			

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	8550.00	83.310	153.290	8081.10	-836.59	-409.94	5.93	458.25
Pro to Bit	8618.00	85.500	152.000	8087.54	-894.92	-379.76	3.85	523.43
End of Build	8914.39	85.512	143.051	8110.96	-1145.62	-220.20	2.99	820.42
Landing Pt	9043.01	90.000	145.968	8118.00	-1249.97	-145.25	4.00	948.87
BHL	24286.93	90.000	145.968	8118.00	-13818.12	8470.76	0.00	16188.79

True Vertical Depth (ft)

Tally MWD <8-3/4"> (5375'-8550') : 0.81° Inc, 5375.00ft MD, 5374.70ft TVD, 25.17ft VS

Projected MD at TD: 24286' : 91.42° Inc, 24286.00ft MD, 7835.94ft TVD, 16185.76ft VS

BH AT Curve <8-1/2"> (8591'-24263') : 85.23° Inc, 8591.00ft MD, 8085.19ft TVD, 498.67ft VS

8000

7000

6000

5000

4000

3000

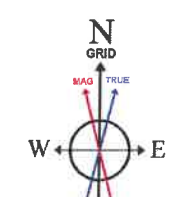
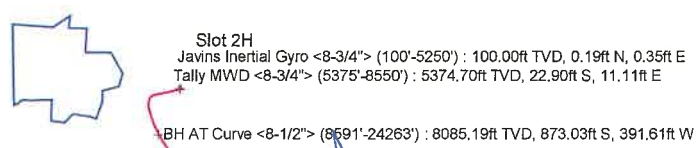
2000

1000

0

Vertical Section (ft)

Azimuth 145.57° with reference 0.00 N, 0.00 E



User specified (HDGM) Dip: 66.54° Field: 52033 nT
 Magnetic North is 9.08 degrees West of True North (at 5/30/2021)
 Grid North is 0.46 degrees West of True North
 To correct azimuth from True to Grid add 0.46 degrees
 To correct azimuth from Magnetic to Grid subtract 8.62 degrees

Projected MD at TD: 24286' : 7835.94ft TVD, 13821.11ft S, 8464.59ft E

Northing (ft)

1750

0

-1750

-3500

-5250

-7000

-8750

-10500

-12250

-14000

-15750

Scale 1 inch = 2000'



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect@ 6.0
North Reference	Grid	User	Hilpthop
Scale	0.999941	Report Generated	6/5/2021 at 1:13:43 PM
Convergence at slot	0.46° West	Database	WA_MPL_EASTERNUS_Defn

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-30.00	0.00	1766458.50	424218.37	39°39'44.9478"N	80°13'3.6705"W
Facility Reference Pt			1766458.50	424248.37	39°39'45.2443"N	80°13'3.6735"W
Field Reference Pt			1777685.71	440640.65	39°42'28.1140"N	80°10'41.6900"W

WELLPATH DATUM

Calculation method	Minimum curvature	Patterson 277 (RKB) to Facility Vertical Datum	1305.00ft
Horizontal Reference Pt	Slot	Patterson 277 (RKB) to Mean Sea Level	1305.00ft
Vertical Reference Pt	Patterson 277 (RKB)	Patterson 277 (RKB) to Ground Level at Slot (Slot 2H)	28.00ft
MD Reference Pt	Patterson 277 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	145.57°



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

WELLPATH DATA (260 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	61.100	0.00	0.00	0.00	0.00	1766458.50	424218.37	39°39'44.9478"N	80°13'3.6705"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	61.100	28.00	0.00	0.00	0.00	1766458.50	424218.37	39°39'44.9478"N	80°13'3.6705"W	0.00	0.000	0.00	0.00	0.00
100.00	0.630	61.100	100.00	0.04	0.19	0.35	1766458.85	424218.56	39°39'44.9498"N	80°13'3.6660"W	0.40	61.100	0.87	0.88	0.00
200.00	0.410	297.700	200.00	-0.23	0.62	0.51	1766459.01	424218.99	39°39'44.9540"N	80°13'3.6640"W	0.81	39.348	0.92	-0.22	-123.40
300.00	0.330	352.400	299.99	-0.80	1.08	0.16	1766458.66	424219.45	39°39'44.9585"N	80°13'3.6686"W	1.09	8.266	0.35	-0.08	54.70
400.00	0.650	78.000	399.99	-0.84	1.48	0.67	1766459.17	424219.85	39°39'44.9625"N	80°13'3.6620"W	1.62	24.473	0.71	0.32	85.60
500.00	0.650	155.500	499.99	-0.06	1.08	1.46	1766459.96	424219.45	39°39'44.9586"N	80°13'3.6519"W	1.82	53.559	0.81	0.00	77.50
600.00	0.190	347.900	599.99	0.34	0.73	1.66	1766460.16	424219.10	39°39'44.9552"N	80°13'3.6493"W	1.82	66.416	0.84	-0.46	-167.60
700.00	0.670	91.000	699.98	0.53	0.88	2.21	1766460.71	424219.25	39°39'44.9567"N	80°13'3.6422"W	2.38	68.359	0.74	0.48	103.10
800.00	0.700	143.300	799.98	1.48	0.38	3.16	1766461.66	424218.75	39°39'44.9518"N	80°13'3.6300"W	3.19	83.182	0.60	0.03	52.30
900.00	0.250	256.200	899.97	2.01	-0.16	3.32	1766461.82	424218.21	39°39'44.9465"N	80°13'3.6280"W	3.32	92.825	0.83	-0.45	112.90
1000.00	0.510	50.200	999.97	1.89	0.07	3.45	1766461.95	424218.44	39°39'44.9488"N	80°13'3.6264"W	3.45	88.850	0.74	0.26	154.00
1100.00	0.710	100.200	1099.97	2.29	0.24	4.40	1766462.90	424218.61	39°39'44.9506"N	80°13'3.6142"W	4.40	86.820	0.55	0.20	50.00
1200.00	0.220	292.800	1199.97	2.56	0.21	4.83	1766463.33	424218.58	39°39'44.9503"N	80°13'3.6087"W	4.84	87.522	0.93	-0.49	-167.40
1300.00	0.450	78.200	1299.97	2.55	0.36	5.04	1766463.54	424218.73	39°39'44.9518"N	80°13'3.6061"W	5.05	85.871	0.64	0.23	145.40
1400.00	0.690	168.500	1399.96	3.25	-0.15	5.54	1766464.04	424218.22	39°39'44.9468"N	80°13'3.5996"W	5.54	91.509	0.83	0.24	90.30
1500.00	0.560	232.300	1499.96	3.84	-1.03	5.28	1766463.78	424217.34	39°39'44.9380"N	80°13'3.6029"W	5.38	101.098	0.67	-0.13	63.80
1600.00	0.130	7.500	1599.96	3.78	-1.22	4.90	1766463.40	424217.15	39°39'44.9362"N	80°13'3.6076"W	5.05	103.984	0.66	-0.43	135.20
1700.00	0.210	68.100	1699.96	3.74	-1.04	5.09	1766463.59	424217.33	39°39'44.9380"N	80°13'3.6053"W	5.19	101.555	0.18	0.08	60.60
1800.00	0.450	89.200	1799.95	3.99	-0.97	5.65	1766464.15	424217.40	39°39'44.9387"N	80°13'3.5981"W	5.73	99.705	0.27	0.24	21.10
1900.00	0.930	143.600	1899.95	5.02	-1.61	6.53	1766465.03	424216.76	39°39'44.9324"N	80°13'3.5868"W	6.72	103.894	0.76	0.48	54.40
2000.00	1.080	185.300	1999.93	6.56	-3.21	6.92	1766465.42	424215.16	39°39'44.9167"N	80°13'3.5816"W	7.63	114.856	0.73	0.15	41.70
2100.00	0.220	119.600	2099.93	7.45	-4.24	7.00	1766465.50	424214.13	39°39'44.9065"N	80°13'3.5805"W	8.18	121.198	1.01	-0.86	-65.70
2200.00	0.230	143.900	2199.93	7.83	-4.50	7.29	1766465.79	424213.87	39°39'44.9040"N	80°13'3.5768"W	8.56	121.680	0.10	0.01	24.30
2300.00	1.210	135.600	2299.92	9.07	-5.41	8.14	1766466.64	424212.96	39°39'44.8950"N	80°13'3.5658"W	9.78	123.614	0.98	0.98	-8.30
2400.00	1.320	140.700	2399.89	11.26	-7.06	9.61	1766468.11	424211.31	39°39'44.8788"N	80°13'3.5468"W	11.92	126.295	0.16	0.11	5.10
2500.00	0.550	166.100	2499.88	12.85	-8.42	10.46	1766468.96	424209.95	39°39'44.8655"N	80°13'3.5359"W	13.42	128.830	0.86	-0.77	25.40
2600.00	0.780	182.300	2599.87	13.85	-9.56	10.54	1766469.04	424208.81	39°39'44.8542"N	80°13'3.5347"W	14.23	132.204	0.29	0.23	16.20
2700.00	0.570	176.300	2699.86	14.82	-10.74	10.55	1766469.05	424207.63	39°39'44.8426"N	80°13'3.5345"W	15.05	135.511	0.22	-0.21	-6.00
2800.00	0.960	169.700	2799.86	16.01	-12.05	10.73	1766469.23	424206.31	39°39'44.8295"N	80°13'3.5320"W	16.14	138.336	0.40	-0.39	-6.60



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

WELLPATH DATA (260 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]
2900.00	0.750	98.400	2899.85	17.22	-12.98	11.53	1766470.03	424205.39	39°39'44.8205"N	80°13'3.5217"W	17.36	138.389	1.01	-0.21	-71.30
3000.00	0.940	115.500	2999.84	18.38	-13.43	12.92	1766471.41	424204.94	39°39'44.8162"N	80°13'3.5039"W	18.63	136.113	0.31	0.19	17.10
3100.00	1.040	157.000	3099.82	19.98	-14.62	14.01	1766472.51	424203.75	39°39'44.8045"N	80°13'3.4898"W	20.25	136.212	0.71	0.10	41.50
3200.00	0.930	117.200	3199.81	21.58	-15.82	15.09	1766473.59	424202.55	39°39'44.7927"N	80°13'3.4759"W	21.86	136.363	0.68	-0.11	-39.80
3300.00	0.340	196.900	3299.80	22.48	-16.48	15.72	1766474.22	424201.89	39°39'44.7862"N	80°13'3.4677"W	22.77	136.343	0.93	-0.59	79.70
3400.00	0.250	179.600	3399.80	22.85	-16.98	15.64	1766474.14	424201.39	39°39'44.7813"N	80°13'3.4688"W	23.08	137.355	0.13	-0.09	-17.30
3500.00	0.190	7.600	3499.80	22.90	-17.03	15.66	1766474.16	424201.34	39°39'44.7807"N	80°13'3.4685"W	23.14	137.403	0.44	-0.06	-172.00
3600.00	0.240	8.400	3599.80	22.63	-16.66	15.71	1766474.21	424201.71	39°39'44.7844"N	80°13'3.4678"W	22.90	136.677	0.05	0.05	0.80
3700.00	0.340	26.000	3699.80	22.33	-16.19	15.87	1766474.37	424202.18	39°39'44.7891"N	80°13'3.4658"W	22.67	135.560	0.13	0.10	17.60
3800.00	0.750	76.300	3799.80	22.41	-15.77	16.64	1766475.14	424202.61	39°39'44.7933"N	80°13'3.4561"W	22.92	133.455	0.59	0.41	50.30
3900.00	0.790	118.800	3899.79	23.26	-15.94	17.88	1766476.38	424202.43	39°39'44.7917"N	80°13'3.4402"W	23.96	131.722	0.56	0.04	42.50
4000.00	0.280	215.000	3999.78	23.96	-16.48	18.34	1766476.84	424201.90	39°39'44.7865"N	80°13'3.4342"W	24.66	131.928	0.87	-0.51	96.20
4100.00	0.710	103.400	4099.78	24.51	-16.82	18.81	1766477.31	424201.55	39°39'44.7831"N	80°13'3.4283"W	25.23	131.807	0.85	0.43	-111.60
4200.00	0.370	315.200	4199.78	24.65	-16.73	19.18	1766477.68	424201.64	39°39'44.7840"N	80°13'3.4235"W	25.45	131.100	1.04	-0.34	-148.20
4300.00	0.590	186.000	4299.78	24.72	-17.02	18.90	1766477.40	424201.35	39°39'44.7812"N	80°13'3.4270"W	25.43	131.997	0.87	0.22	-129.20
4400.00	0.620	140.800	4399.77	25.65	-17.95	19.19	1766477.69	424200.42	39°39'44.7720"N	80°13'3.4233"W	26.27	133.086	0.47	0.03	-45.20
4500.00	0.460	269.600	4499.77	25.97	-18.37	19.13	1766477.63	424200.00	39°39'44.7678"N	80°13'3.4240"W	26.52	133.840	0.98	-0.16	128.80
4600.00	0.460	300.700	4599.77	25.38	-18.17	18.38	1766476.88	424200.20	39°39'44.7697"N	80°13'3.4335"W	25.85	134.663	0.25	0.00	31.10
4700.00	0.810	228.500	4699.76	25.10	-18.43	17.51	1766476.01	424199.94	39°39'44.7671"N	80°13'3.4447"W	25.42	136.471	0.80	0.35	-72.20
4800.00	0.180	311.300	4799.76	25.04	-18.80	16.86	1766475.36	424199.58	39°39'44.7634"N	80°13'3.4529"W	25.25	138.106	0.81	-0.63	82.80
4900.00	1.190	221.300	4899.75	25.14	-19.47	16.06	1766474.56	424198.90	39°39'44.7567"N	80°13'3.4631"W	25.24	140.490	1.20	1.01	-90.00
5000.00	0.280	192.000	4999.74	25.56	-20.49	15.32	1766473.82	424197.88	39°39'44.7465"N	80°13'3.4725"W	25.59	143.215	0.96	-0.91	-29.30
5100.00	0.930	202.000	5099.74	26.18	-21.48	14.97	1766473.47	424196.89	39°39'44.7367"N	80°13'3.4769"W	26.18	145.137	0.66	0.65	10.00
5200.00	1.020	253.500	5199.72	26.36	-22.49	13.81	1766472.31	424195.88	39°39'44.7267"N	80°13'3.4916"W	26.39	148.448	0.85	0.09	51.50
5250.00	0.980	275.100	5249.72	25.95	-22.58	12.96	1766471.46	424195.79	39°39'44.7258"N	80°13'3.5025"W	26.03	150.149	0.75	-0.08	43.20
5375.00	0.810	241.590	5374.70	25.17	-22.90	11.11	1766469.61	424195.47	39°39'44.7224"N	80°13'3.5260"W	25.46	154.112	0.43	-0.14	-26.81
5470.00	2.990	258.200	5469.64	24.15	-23.73	8.10	1766466.60	424194.64	39°39'44.7140"N	80°13'3.5645"W	25.07	161.156	2.34	2.29	17.48
5564.00	5.290	255.500	5563.39	21.73	-25.31	1.50	1766460.00	424193.06	39°39'44.6978"N	80°13'3.6487"W	25.36	176.604	2.45	2.45	-2.87
5659.00	6.970	262.750	5657.85	17.60	-27.14	-8.46	1766450.04	424191.23	39°39'44.6790"N	80°13'3.7758"W	28.43	197.307	1.94	1.77	7.63
5757.00	8.780	264.330	5754.92	11.29	-28.63	-21.80	1766436.70	424189.74	39°39'44.6632"N	80°13'3.9463"W	35.98	217.288	1.86	1.85	1.61



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

WELLPATH DATA (260 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]
5852.00	8.490	262.330	5848.84	4.64	-30.28	-35.96	1766422.54	424188.09	39°39'44.6458"N	80°13'4.1272"W	47.01	229.904	0.44	-0.31	-2.11
5947.00	10.210	262.730	5942.58	-2.36	-32.28	-51.27	1766407.24	424186.09	39°39'44.6248"N	80°13'4.3227"W	60.58	237.802	1.81	1.81	0.42
6042.00	12.050	256.590	6035.79	-9.76	-35.65	-69.27	1766389.24	424182.72	39°39'44.5901"N	80°13'4.5525"W	77.90	242.768	2.30	1.94	-6.46
6136.00	13.440	254.880	6127.47	-16.89	-40.77	-89.36	1766369.15	424177.60	39°39'44.5378"N	80°13'4.8089"W	98.22	245.473	1.53	1.48	-1.82
6232.00	15.580	256.470	6220.40	-25.18	-46.70	-112.67	1766345.84	424171.67	39°39'44.4774"N	80°13'5.1063"W	121.96	247.486	2.27	2.23	1.66
6325.00	17.770	254.010	6309.49	-34.13	-53.53	-138.45	1766320.05	424164.84	39°39'44.4079"N	80°13'5.4353"W	148.44	248.861	2.47	2.35	-2.65
6420.00	19.680	257.130	6399.46	-44.59	-61.09	-167.99	1766290.52	424157.28	39°39'44.3309"N	80°13'5.8122"W	178.75	250.016	2.27	2.01	3.28
6515.00	19.870	257.310	6488.86	-56.45	-68.20	-199.33	1766259.18	424150.17	39°39'44.2581"N	80°13'6.2123"W	210.68	251.112	0.21	0.20	0.19
6610.00	20.130	257.820	6578.13	-68.62	-75.19	-231.06	1766227.45	424143.18	39°39'44.1865"N	80°13'6.6173"W	242.99	251.974	0.33	0.27	0.54
6705.00	21.530	259.010	6666.92	-81.75	-81.97	-264.16	1766194.36	424136.41	39°39'44.1169"N	80°13'7.0397"W	276.58	252.761	1.54	1.47	1.25
6803.00	22.760	258.770	6757.69	-96.37	-89.09	-300.40	1766158.11	424129.29	39°39'44.0437"N	80°13'7.5025"W	313.34	253.482	1.26	1.26	-0.24
6897.00	22.140	258.810	6844.56	-110.52	-96.07	-335.62	1766122.90	424122.31	39°39'43.9719"N	80°13'7.9520"W	349.09	254.027	0.66	-0.66	0.04
6992.00	21.250	258.820	6932.83	-124.38	-102.88	-370.07	1766088.46	424115.50	39°39'43.9019"N	80°13'8.3918"W	384.10	254.464	0.94	-0.94	0.01
7087.00	23.320	258.390	7020.73	-138.47	-110.00	-405.38	1766053.15	424108.38	39°39'43.8287"N	80°13'8.8426"W	420.04	254.818	2.19	2.18	-0.45
7181.00	24.360	257.520	7106.71	-152.93	-117.94	-442.53	1766015.99	424100.44	39°39'43.7474"N	80°13'9.3168"W	457.98	255.077	1.17	1.11	-0.93
7275.00	24.720	256.440	7192.22	-167.18	-126.73	-480.57	1765977.96	424091.64	39°39'43.6574"N	80°13'9.8023"W	497.00	255.227	0.61	0.38	-1.15
7369.00	22.010	246.560	7278.54	-177.55	-138.35	-515.86	1765942.68	424080.02	39°39'43.5398"N	80°13'10.2523"W	534.09	254.986	5.06	-2.88	-10.51
7414.00	21.290	235.720	7320.38	-179.18	-146.31	-530.35	1765928.18	424072.07	39°39'43.4600"N	80°13'10.4368"W	550.16	254.577	9.02	-1.60	-24.09
7464.00	22.000	226.950	7366.86	-177.80	-157.82	-544.70	1765913.84	424060.56	39°39'43.3451"N	80°13'10.6190"W	567.10	253.841	6.62	1.42	-17.54
7558.00	21.320	211.720	7454.30	-168.24	-184.40	-566.56	1765891.97	424033.98	39°39'43.0807"N	80°13'10.8959"W	595.82	251.972	6.01	-0.72	-16.20
7653.00	22.770	198.200	7542.41	-150.09	-216.58	-581.40	1765877.14	424001.81	39°39'42.7615"N	80°13'11.0823"W	620.42	249.569	5.54	1.53	-14.23
7753.00	26.550	189.840	7633.30	-122.32	-257.01	-591.27	1765867.27	423961.38	39°39'42.3612"N	80°13'11.2044"W	644.71	246.507	5.14	3.78	-8.36
7849.00	31.720	181.450	7717.16	-86.47	-303.43	-595.58	1765862.96	423914.96	39°39'41.9021"N	80°13'11.2547"W	668.42	243.003	6.85	5.39	-8.74
7944.00	37.070	169.740	7795.61	-40.03	-356.66	-591.10	1765867.44	423861.73	39°39'41.3763"N	80°13'11.1920"W	690.37	238.894	8.93	5.63	-12.33
8034.00	44.330	163.690	7863.82	14.70	-413.63	-577.41	1765881.12	423804.76	39°39'40.8144"N	80°13'11.0112"W	710.28	234.384	9.17	8.07	-6.72
8129.00	51.840	161.370	7927.24	82.29	-480.98	-556.13	1765902.40	423737.42	39°39'40.1505"N	80°13'10.7321"W	735.27	229.144	8.11	7.91	-2.44
8224.00	57.490	161.950	7982.16	156.72	-554.52	-531.77	1765926.77	423663.88	39°39'39.4257"N	80°13'10.4131"W	768.29	223.800	5.97	5.95	0.61
8319.00	66.950	157.950	8026.40	238.05	-633.32	-502.87	1765955.66	423585.09	39°39'38.6492"N	80°13'10.0356"W	808.69	218.450	10.63	9.96	-4.21
8414.00	75.110	155.900	8057.26	326.06	-715.88	-467.66	1765990.87	423502.53	39°39'37.8361"N	80°13'9.5768"W	855.10	213.155	8.83	8.59	-2.16
8459.00	79.600	154.490	8067.11	369.34	-755.73	-449.24	1766009.29	423462.69	39°39'37.4438"N	80°13'9.3372"W	879.17	210.729	10.44	9.98	-3.13



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

WELLPATH DATA (260 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]
8508.00	81.000	154.230	8075.37	417.07	-799.27	-428.34	1766030.19	423419.15	39°39'37.0151"N	80°13'9.0656"W	906.81	208.187	2.90	2.86	-0.53
8550.00	83.310	153.290	8081.10	458.25	-836.59	-409.94	1766048.58	423381.84	39°39'36.6478"N	80°13'8.8265"W	931.63	206.106	5.93	5.50	-2.24
8591.00	85.230	153.290	8085.19	498.67	-873.03	-391.61	1766066.92	423345.40	39°39'36.2891"N	80°13'8.5884"W	956.83	204.159	4.68	4.68	0.00
8629.00	85.620	152.070	8088.22	536.26	-906.68	-374.22	1766084.30	423311.75	39°39'35.9579"N	80°13'8.3626"W	980.87	202.428	3.36	1.03	-3.21
8725.00	85.320	148.710	8095.81	631.61	-989.87	-326.94	1766131.58	423228.56	39°39'35.1395"N	80°13'7.7496"W	1042.47	198.278	3.50	-0.31	-3.50
8819.00	85.690	146.880	8103.18	725.24	-1069.16	-277.00	1766181.51	423149.28	39°39'34.3599"N	80°13'7.1030"W	1104.46	194.525	1.98	0.39	-1.95
8914.00	85.440	142.930	8110.53	819.93	-1146.64	-222.56	1766235.95	423071.80	39°39'33.5985"N	80°13'6.3989"W	1168.04	190.984	4.15	-0.26	-4.16
9009.00	88.490	143.080	8115.56	914.69	-1222.40	-165.48	1766293.03	422996.04	39°39'32.8543"N	80°13'5.6614"W	1233.55	187.709	3.21	3.21	0.16
9104.00	90.490	143.330	8116.40	1009.61	-1298.47	-108.58	1766349.92	422919.98	39°39'32.1071"N	80°13'4.9262"W	1303.00	184.780	2.12	2.11	0.26
9200.00	89.910	143.040	8116.07	1105.52	-1375.32	-51.06	1766407.44	422843.13	39°39'31.3521"N	80°13'4.1828"W	1376.27	182.126	0.68	-0.60	-0.30
9294.00	89.910	145.610	8116.21	1199.49	-1451.68	3.76	1766462.26	422766.78	39°39'30.6018"N	80°13'3.4742"W	1451.68	179.852	2.73	0.00	2.73
9389.00	90.180	145.370	8116.14	1294.49	-1529.96	57.58	1766516.07	422688.51	39°39'29.8324"N	80°13'2.7780"W	1531.04	177.845	0.38	0.28	-0.25
9483.00	90.740	145.290	8115.38	1388.49	-1607.26	111.05	1766569.54	422611.20	39°39'29.0727"N	80°13'2.0865"W	1611.10	176.048	0.60	0.60	-0.09
9578.00	91.230	145.220	8113.75	1483.47	-1685.31	165.18	1766623.67	422533.16	39°39'28.3056"N	80°13'1.3863"W	1693.39	174.402	0.52	0.52	-0.07
9673.00	90.120	145.110	8112.63	1578.46	-1763.28	219.44	1766677.93	422455.19	39°39'27.5394"N	80°13'0.6846"W	1776.89	172.906	1.17	-1.17	-0.12
9768.00	90.120	145.490	8112.43	1673.46	-1841.39	273.52	1766732.01	422377.10	39°39'26.7718"N	80°12'59.9852"W	1861.59	171.551	0.40	0.00	0.40
9863.00	90.280	145.450	8112.10	1768.46	-1919.65	327.37	1766785.85	422298.84	39°39'26.0026"N	80°12'59.2887"W	1947.36	170.322	0.17	0.17	-0.04
9957.00	89.970	145.230	8111.90	1862.46	-1996.97	380.83	1766839.31	422221.52	39°39'25.2427"N	80°12'58.5974"W	2032.96	169.203	0.40	-0.33	-0.23
10052.00	90.340	145.030	8111.64	1957.45	-2074.91	435.14	1766893.62	422143.59	39°39'24.4767"N	80°12'57.8950"W	2120.05	168.156	0.44	0.39	-0.21
10146.00	90.890	145.650	8110.63	2051.45	-2152.22	488.60	1766947.07	422066.28	39°39'23.7168"N	80°12'57.2037"W	2206.99	167.209	0.88	0.59	0.68
10241.00	91.140	145.300	8108.95	2146.43	-2230.48	542.43	1767000.90	421988.03	39°39'22.9477"N	80°12'56.5074"W	2295.49	166.331	0.45	0.26	-0.37
10336.00	91.450	145.090	8106.80	2241.40	-2308.46	596.64	1767055.11	421910.05	39°39'22.1813"N	80°12'55.8064"W	2384.32	165.508	0.39	0.33	-0.22
10431.00	91.790	145.300	8104.11	2336.36	-2386.44	650.85	1767109.31	421832.08	39°39'21.4150"N	80°12'55.1054"W	2473.60	164.745	0.42	0.36	0.22
10526.00	91.970	145.430	8101.00	2431.31	-2464.56	704.81	1767163.27	421753.96	39°39'20.6471"N	80°12'54.4075"W	2563.36	164.041	0.23	0.19	0.14
10620.00	91.940	145.090	8097.79	2525.26	-2541.76	758.35	1767216.80	421676.77	39°39'19.8884"N	80°12'53.7152"W	2652.48	163.387	0.36	-0.03	-0.36
10715.00	91.510	144.470	8094.93	2620.20	-2619.33	813.11	1767271.56	421599.20	39°39'19.1261"N	80°12'53.0072"W	2742.64	162.754	0.79	-0.45	-0.65
10810.00	90.920	145.210	8092.92	2715.17	-2696.98	867.80	1767326.25	421521.55	39°39'18.3630"N	80°12'52.3000"W	2833.16	162.163	1.00	-0.62	0.78
10904.00	90.770	144.990	8091.53	2809.16	-2774.07	921.58	1767380.02	421444.47	39°39'17.6054"N	80°12'51.6046"W	2923.14	161.623	0.28	-0.16	-0.23
10998.00	90.680	146.680	8090.34	2903.15	-2851.84	974.36	1767432.80	421366.71	39°39'16.8410"N	80°12'50.9219"W	3013.69	161.137	1.80	-0.10	1.80
11093.00	90.280	146.020	8089.55	2998.14	-2930.92	1027.00	1767485.44	421287.63	39°39'16.0637"N	80°12'50.2409"W	3105.64	160.689	0.81	-0.42	-0.69



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

WELLPATH DATA (260 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]
11186.00	91.290	146.300	8088.27	3091.12	-3008.15	1078.78	1767537.22	421210.40	39°39'15.3044"N	80°12'49.5710"W	3195.74	160.271	1.13	1.09	0.30
11281.00	91.480	146.180	8085.98	3186.09	-3087.11	1131.56	1767589.99	421131.45	39°39'14.5283"N	80°12'48.8882"W	3287.96	159.870	0.24	0.20	-0.13
11376.00	91.510	146.400	8083.50	3281.05	-3166.11	1184.27	1767642.69	421052.45	39°39'13.7517"N	80°12'48.2063"W	3380.35	159.492	0.23	0.03	0.23
11471.00	91.660	146.120	8080.87	3376.00	-3245.08	1237.01	1767695.44	420973.49	39°39'12.9754"N	80°12'47.5240"W	3472.86	159.133	0.33	0.16	-0.29
11565.00	92.030	146.690	8077.84	3469.94	-3323.34	1289.00	1767747.42	420895.24	39°39'12.2061"N	80°12'46.8514"W	3564.56	158.801	0.72	0.39	0.61
11660.00	91.630	146.400	8074.81	3564.88	-3402.56	1341.34	1767799.76	420816.02	39°39'11.4273"N	80°12'46.1742"W	3657.40	158.485	0.52	-0.42	-0.31
11755.00	91.780	146.090	8071.98	3659.83	-3481.51	1394.10	1767852.52	420737.08	39°39'10.6512"N	80°12'45.4916"W	3750.25	158.177	0.36	0.16	-0.33
11850.00	91.790	146.350	8069.02	3754.78	-3560.43	1446.90	1767905.31	420658.16	39°39'9.8754"N	80°12'44.8086"W	3843.20	157.884	0.27	0.01	0.27
11945.00	91.880	145.880	8065.98	3849.73	-3639.25	1499.84	1767958.25	420579.34	39°39'9.1005"N	80°12'44.1238"W	3936.20	157.602	0.50	0.09	-0.49
12040.00	91.140	146.340	8063.48	3944.69	-3718.09	1552.79	1768011.20	420500.51	39°39'8.3256"N	80°12'43.4389"W	4029.31	157.333	0.92	-0.78	-0.48
12135.00	89.850	146.220	8062.66	4039.68	-3797.10	1605.53	1768063.93	420421.50	39°39'7.5489"N	80°12'42.7567"W	4122.58	157.080	1.36	-1.36	-0.13
12230.00	91.020	146.510	8061.94	4134.66	-3876.19	1658.14	1768116.54	420342.42	39°39'6.7714"N	80°12'42.0760"W	4215.96	156.840	1.27	1.23	0.31
12324.00	90.060	146.450	8061.05	4228.64	-3954.55	1710.05	1768168.45	420264.06	39°39'6.0010"N	80°12'41.4044"W	4308.45	156.615	1.02	-1.02	-0.06
12420.00	90.520	146.390	8060.56	4324.63	-4034.53	1763.15	1768221.54	420184.09	39°39'5.2148"N	80°12'40.7175"W	4402.97	156.394	0.48	0.48	-0.06
12515.00	89.880	146.430	8060.23	4419.62	-4113.67	1815.70	1768274.09	420104.96	39°39'4.4368"N	80°12'40.0376"W	4496.56	156.184	0.67	-0.67	0.04
12609.00	89.910	145.040	8060.40	4513.62	-4191.35	1868.63	1768327.01	420027.28	39°39'3.6733"N	80°12'39.3531"W	4589.03	155.971	1.48	0.03	-1.48
12704.00	90.400	146.320	8060.15	4608.62	-4269.81	1922.19	1768380.57	419948.82	39°39'2.9021"N	80°12'38.6605"W	4682.53	155.764	1.44	0.52	1.35
12799.00	90.120	145.950	8059.72	4703.61	-4348.69	1975.12	1768433.50	419869.95	39°39'2.1266"N	80°12'37.9757"W	4776.21	155.573	0.49	-0.29	-0.39
12893.00	89.690	145.990	8059.87	4797.61	-4426.59	2027.73	1768486.11	419792.05	39°39'1.3609"N	80°12'37.2953"W	4868.92	155.388	0.46	-0.46	0.04
12988.00	89.970	145.810	8060.15	4892.61	-4505.26	2080.99	1768539.36	419713.39	39°39'0.5876"N	80°12'36.6065"W	4962.65	155.208	0.35	-0.29	-0.19
13082.00	90.060	146.250	8060.13	4986.60	-4583.21	2133.51	1768591.88	419635.44	39°38'59.8213"N	80°12'35.9271"W	5055.47	155.038	0.48	0.10	0.47
13176.00	89.940	146.030	8060.13	5080.60	-4661.27	2185.89	1768644.25	419557.38	39°38'59.0540"N	80°12'35.2497"W	5148.35	154.876	0.27	-0.13	-0.23
13271.00	89.720	145.910	8060.41	5175.59	-4740.00	2239.05	1768697.41	419478.66	39°38'58.2801"N	80°12'34.5621"W	5242.23	154.715	0.26	-0.23	-0.13
13365.00	90.030	145.990	8060.62	5269.59	-4817.89	2291.68	1768750.04	419400.78	39°38'57.5145"N	80°12'33.8814"W	5335.15	154.561	0.34	0.33	0.09
13461.00	89.660	145.790	8060.88	5365.59	-4897.37	2345.52	1768803.87	419321.30	39°38'56.7332"N	80°12'33.1851"W	5430.07	154.409	0.44	-0.39	-0.21
13555.00	89.850	146.220	8061.28	5459.59	-4975.30	2398.07	1768856.43	419243.37	39°38'55.9671"N	80°12'32.5054"W	5523.08	154.266	0.50	0.20	0.46
13650.00	90.770	146.120	8060.76	5554.58	-5054.22	2450.96	1768909.31	419164.46	39°38'55.1914"N	80°12'31.8213"W	5617.15	154.130	0.97	0.97	-0.11
13745.00	90.800	146.260	8059.46	5649.56	-5133.14	2503.82	1768962.17	419085.54	39°38'54.4155"N	80°12'31.1376"W	5711.24	153.998	0.15	0.03	0.15
13839.00	91.970	146.240	8057.19	5743.53	-5211.28	2556.03	1769014.37	419007.41	39°38'53.6474"N	80°12'30.4623"W	5804.37	153.873	1.24	1.24	-0.02
13934.00	91.320	145.900	8054.46	5838.48	-5290.07	2609.03	1769067.37	418928.63	39°38'52.8729"N	80°12'29.7768"W	5898.46	153.748	0.77	-0.68	-0.36



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

WELLPATH DATA (260 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]
14029.00	91.170	146.120	8052.40	5933.46	-5368.82	2662.13	1769120.47	418849.88	39°38'52.0987"N	80°12'29.0900"W	5992.59	153.625	0.28	-0.16	0.23
14123.00	92.090	146.320	8049.73	6027.41	-5446.92	2714.37	1769172.71	418771.79	39°38'51.3310"N	80°12'28.4143"W	6085.78	153.511	1.00	0.98	0.21
14218.00	91.820	145.960	8046.48	6122.35	-5525.76	2767.27	1769225.60	418692.95	39°38'50.5559"N	80°12'27.7301"W	6179.95	153.399	0.47	-0.28	-0.38
14313.00	92.060	145.860	8043.27	6217.30	-5604.39	2820.49	1769278.82	418614.33	39°38'49.7830"N	80°12'27.0419"W	6274.10	153.286	0.27	0.25	-0.11
14407.00	91.910	146.100	8040.01	6311.24	-5682.25	2873.05	1769331.37	418536.47	39°38'49.0176"N	80°12'26.3622"W	6367.29	153.178	0.30	-0.16	0.26
14502.00	92.220	146.610	8036.59	6406.17	-5761.29	2925.65	1769383.97	418457.44	39°38'48.2406"N	80°12'25.6818"W	6461.57	153.078	0.63	0.33	0.54
14600.00	92.030	144.940	8032.96	6504.10	-5842.26	2980.73	1769439.05	418376.47	39°38'47.4447"N	80°12'24.9695"W	6558.71	152.969	1.71	-0.19	-1.70
14694.00	92.150	145.130	8029.53	6598.03	-5919.24	3034.56	1769492.88	418299.49	39°38'46.6881"N	80°12'24.2736"W	6651.76	152.858	0.24	0.13	0.20
14790.00	92.030	144.940	8026.03	6693.96	-5997.86	3089.54	1769547.85	418220.88	39°38'45.9154"N	80°12'23.5629"W	6746.82	152.747	0.23	-0.13	-0.20
14885.00	92.370	144.790	8022.38	6788.88	-6075.49	3144.17	1769602.48	418143.25	39°38'45.1524"N	80°12'22.8567"W	6840.86	152.638	0.39	0.36	-0.16
14980.00	92.460	144.860	8018.38	6883.79	-6153.08	3198.85	1769657.15	418065.67	39°38'44.3900"N	80°12'22.1499"W	6934.91	152.531	0.12	0.09	0.07
15074.00	92.180	145.100	8014.57	6977.71	-6229.99	3252.75	1769711.05	417988.76	39°38'43.6340"N	80°12'21.4532"W	7028.03	152.430	0.39	-0.30	0.26
15170.00	92.000	144.980	8011.07	7073.64	-6308.62	3307.72	1769766.02	417910.14	39°38'42.8612"N	80°12'20.7425"W	7123.18	152.331	0.23	-0.19	-0.12
15265.00	92.120	144.930	8007.66	7168.57	-6386.35	3362.24	1769820.53	417832.41	39°38'42.0973"N	80°12'20.0378"W	7217.34	152.234	0.14	0.13	-0.05
15360.00	91.880	144.870	8004.34	7263.51	-6464.02	3416.83	1769875.12	417754.74	39°38'41.3839"N	80°12'19.3322"W	7311.52	152.139	0.26	-0.25	-0.06
15455.00	91.970	144.930	8001.15	7358.45	-6541.70	3471.42	1769929.71	417677.07	39°38'40.5705"N	80°12'18.6265"W	7405.72	152.047	0.11	0.09	0.06
15551.00	92.520	145.170	7997.39	7454.37	-6620.33	3526.38	1769984.66	417598.45	39°38'39.7977"N	80°12'17.9161"W	7500.94	151.958	0.63	0.57	0.25
15646.00	92.190	145.310	7993.48	7549.29	-6698.31	3580.49	1770038.77	417520.47	39°38'39.0312"N	80°12'17.2165"W	7595.21	151.874	0.38	-0.35	0.15
15742.00	92.060	145.180	7989.92	7645.22	-6777.13	3635.18	1770093.46	417441.66	39°38'38.2565"N	80°12'16.5095"W	7690.51	151.791	0.19	-0.14	-0.14
15837.00	91.970	145.270	7986.58	7740.16	-6855.11	3689.33	1770147.61	417363.68	39°38'37.4900"N	80°12'15.8095"W	7784.84	151.711	0.13	-0.09	-0.09
15932.00	90.860	144.770	7984.24	7835.13	-6932.93	3743.78	1770202.05	417285.87	39°38'36.7253"N	80°12'15.1057"W	7879.17	151.631	1.28	-1.17	-0.53
16027.00	90.310	144.900	7983.27	7930.11	-7010.58	3798.49	1770256.76	417208.21	39°38'35.9620"N	80°12'14.3986"W	7973.51	151.550	0.59	-0.58	0.14
16123.00	89.850	145.200	7983.13	8026.11	-7089.27	3853.48	1770311.75	417129.53	39°38'35.1887"N	80°12'13.6877"W	8068.90	151.473	0.57	-0.48	0.31
16218.00	90.090	145.520	7983.18	8121.11	-7167.43	3907.48	1770365.74	417051.38	39°38'34.4204"N	80°12'12.9896"W	8163.36	151.402	0.42	0.25	0.34
16312.00	89.750	145.020	7983.32	8215.11	-7244.68	3961.03	1770419.29	416974.13	39°38'33.6611"N	80°12'12.2973"W	8256.83	151.332	0.64	-0.36	-0.53
16408.00	89.940	144.970	7983.58	8311.10	-7323.32	4016.10	1770474.36	416895.50	39°38'32.8883"N	80°12'11.5855"W	8352.25	151.260	0.20	0.20	-0.05
16503.00	90.030	145.020	7983.60	8406.10	-7401.13	4070.60	1770528.85	416817.69	39°38'32.1235"N	80°12'10.8811"W	8446.69	151.189	0.11	0.09	0.05
16598.00	90.060	145.100	7983.53	8501.09	-7479.01	4125.01	1770583.26	416739.82	39°38'31.3580"N	80°12'10.1778"W	8541.15	151.121	0.09	0.03	0.08
16693.00	90.000	145.340	7983.48	8596.09	-7557.04	4179.20	1770637.44	416661.80	39°38'30.5911"N	80°12'9.4773"W	8635.65	151.056	0.26	-0.06	0.25
16788.00	89.660	144.360	7983.76	8691.08	-7634.71	4233.89	1770692.13	416584.13	39°38'29.8277"N	80°12'8.7704"W	8730.10	150.989	1.09	-0.36	-1.03



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

WELLPATH DATA (260 stations)															
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect	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]
16883.00	88.950	145.150	7984.91	8786.06	-7712.29	4288.71	1770746.95	416506.55	39°38'29.0653"N	80°12'8.0620"W	8824.54	150.922	1.12	-0.75	0.83
16978.00	88.550	144.800	7986.98	8881.04	-7790.07	4343.22	1770801.45	416428.78	39°38'28.3008"N	80°12'7.3574"W	8919.01	150.859	0.56	-0.42	-0.37
17072.00	88.060	145.020	7989.76	8974.99	-7866.95	4397.23	1770855.46	416351.90	39°38'27.5452"N	80°12'6.6593"W	9012.47	150.797	0.57	-0.52	0.23
17167.00	88.190	145.130	7992.87	9069.93	-7944.80	4451.59	1770909.82	416274.06	39°38'26.7800"N	80°12'5.9567"W	9106.95	150.737	0.18	0.14	0.12
17262.00	88.860	144.980	7995.32	9164.90	-8022.64	4505.99	1770964.21	416196.22	39°38'26.0149"N	80°12'5.2536"W	9201.45	150.679	0.72	0.71	-0.16
17356.00	89.020	145.210	7997.06	9258.88	-8099.72	4559.77	1771017.99	416119.15	39°38'25.2574"N	80°12'4.5585"W	9294.99	150.623	0.30	0.17	0.24
17451.00	88.860	144.860	7998.81	9353.86	-8177.56	4614.20	1771072.42	416041.31	39°38'24.4923"N	80°12'3.8549"W	9389.53	150.566	0.41	-0.17	-0.37
17546.00	89.850	145.320	7999.88	9448.85	-8255.46	4668.56	1771126.78	415963.42	39°38'23.7266"N	80°12'3.1523"W	9484.09	150.511	1.15	1.04	0.48
17641.00	89.170	144.960	8000.69	9543.84	-8333.41	4722.86	1771181.07	415885.47	39°38'22.9605"N	80°12'2.4504"W	9578.68	150.458	0.81	-0.72	-0.38
17736.00	89.750	145.430	8001.59	9638.83	-8411.41	4777.08	1771235.29	415807.48	39°38'22.1938"N	80°12'1.7496"W	9673.28	150.406	0.79	0.61	0.49
17831.00	89.480	144.860	8002.23	9733.83	-8489.36	4831.37	1771289.58	415729.53	39°38'21.4276"N	80°12'1.0479"W	9767.88	150.355	0.66	-0.28	-0.60
17926.00	89.720	145.370	8002.89	9828.82	-8567.29	4885.71	1771343.91	415651.61	39°38'20.6617"N	80°12'0.3456"W	9862.48	150.305	0.59	0.25	0.54
18022.00	89.380	145.140	8003.65	9924.82	-8646.17	4940.42	1771398.61	415572.73	39°38'19.8863"N	80°11'59.6384"W	9958.11	150.256	0.43	-0.35	-0.24
18117.00	89.260	144.800	8004.77	10019.81	-8723.95	4994.94	1771453.14	415494.95	39°38'19.1218"N	80°11'58.9337"W	10052.70	150.206	0.38	-0.13	-0.36
18211.00	89.230	145.150	8006.01	10113.79	-8800.92	5048.89	1771507.08	415417.98	39°38'18.3653"N	80°11'58.2365"W	10146.31	150.158	0.37	-0.03	0.37
18306.00	88.920	144.820	8007.55	10208.77	-8878.72	5103.39	1771561.58	415340.19	39°38'17.6007"N	80°11'57.5321"W	10240.91	150.110	0.48	-0.33	-0.35
18399.00	89.690	145.270	8008.67	10301.76	-8954.93	5156.67	1771614.85	415263.98	39°38'16.8515"N	80°11'56.8435"W	10333.54	150.065	0.96	0.83	0.48
18495.00	91.020	145.070	8008.08	10397.76	-9033.73	5211.50	1771669.68	415185.19	39°38'16.0770"N	80°11'56.1349"W	10429.19	150.020	1.40	1.39	-0.21
18590.00	91.170	145.060	8006.26	10492.74	-9111.60	5265.89	1771724.07	415107.33	39°38'15.3117"N	80°11'55.4319"W	10523.82	149.975	0.16	0.16	-0.01
18685.00	91.380	145.420	8004.15	10587.71	-9189.63	5320.04	1771778.21	415029.30	39°38'14.5447"N	80°11'54.7320"W	10618.48	149.933	0.44	0.22	-0.38
18780.00	91.450	145.010	8001.80	10682.68	-9267.63	5374.22	1771832.39	414951.31	39°38'13.7780"N	80°11'54.0317"W	10713.13	149.891	0.44	0.07	-0.43
18876.00	91.510	145.050	7999.32	10778.64	-9346.27	5429.22	1771887.39	414872.67	39°38'13.0051"N	80°11'53.3209"W	10808.75	149.848	0.08	0.06	0.04
18971.00	91.600	145.680	7996.75	10873.61	-9424.40	5483.19	1771941.36	414794.54	39°38'12.2370"N	80°11'52.6233"W	10903.43	149.809	0.67	0.09	0.66
19066.00	91.480	145.220	7994.19	10968.57	-9502.62	5537.05	1771995.21	414716.33	39°38'11.4682"N	80°11'51.9271"W	10998.12	149.771	0.50	-0.13	-0.48
19161.00	91.600	145.180	7991.64	11063.54	-9580.60	5591.25	1772049.41	414638.35	39°38'10.7017"N	80°11'51.2266"W	11092.79	149.732	0.13	0.13	-0.04
19256.00	91.110	145.770	7989.39	11158.51	-9658.85	5645.08	1772103.23	414560.11	39°38'9.9325"N	80°11'50.5308"W	11187.50	149.696	0.81	-0.52	0.62
19352.00	91.020	146.440	7987.61	11254.49	-9738.52	5698.60	1772156.76	414480.45	39°38'9.1493"N	80°11'49.8388"W	11283.30	149.665	0.70	-0.09	0.70
19447.00	90.740	146.160	7986.15	11349.47	-9817.55	5751.31	1772209.46	414401.42	39°38'8.3723"N	80°11'49.1573"W	11378.13	149.637	0.42	-0.29	-0.29
19542.00	91.020	146.070	7984.69	11444.45	-9896.40	5804.27	1772262.41	414322.57	39°38'7.5971"N	80°11'48.4726"W	11472.94	149.608	0.31	0.29	-0.09
19638.00	91.570	146.260	7982.52	11540.42	-9976.12	5857.71	1772315.85	414242.86	39°38'6.8133"N	80°11'47.7816"W	11568.74	149.580	0.61	0.57	-0.20



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	NORTHEAST NATURAL ENERGY, LLC		Well	Bunner 2H
Field	Monongalia		API	47-061-01868-0000
Facility	Bunner Pad		Wellbore	Bunner 2H AWB
Slot	Slot 2H			

WELLPATH DATA (260 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]
19733.00	91.660	146.010	7979.84	11635.38	-10054.97	5910.62	1772368.76	414164.01	39°38'6.0381"N	80°11'47.0975"W	11663.53	149.552	0.28	0.09	-0.26
19828.00	91.690	146.070	7977.07	11730.34	-10133.74	5963.67	1772421.80	414085.25	39°38'5.2638"N	80°11'46.4117"W	11758.31	149.523	0.07	0.03	0.06
19923.00	92.370	146.580	7973.70	11825.27	-10212.74	6016.31	1772474.44	414006.25	39°38'4.4870"N	80°11'45.7310"W	11853.11	149.498	0.89	0.72	0.54
20018.00	91.810	146.130	7970.24	11920.19	-10291.78	6068.91	1772527.04	413927.22	39°38'3.7100"N	80°11'45.0509"W	11947.90	149.473	0.76	-0.59	-0.47
20113.00	92.030	146.150	7967.05	12015.14	-10370.62	6121.81	1772579.94	413848.38	39°38'2.9349"N	80°11'44.3669"W	12042.69	149.447	0.23	0.23	0.02
20209.00	92.090	146.280	7963.60	12111.07	-10450.36	6175.16	1772633.28	413768.65	39°38'2.1509"N	80°11'43.6772"W	12138.48	149.421	0.15	0.06	0.14
20303.00	92.060	146.380	7960.20	12205.00	-10528.54	6227.24	1772685.36	413690.47	39°38'1.3823"N	80°11'43.0038"W	12232.28	149.397	0.11	-0.03	0.11
20399.00	91.850	146.210	7956.92	12300.93	-10608.35	6280.48	1772738.60	413610.66	39°38'0.5976"N	80°11'42.3154"W	12328.08	149.373	0.28	-0.22	-0.18
20493.00	91.780	145.810	7953.95	12394.88	-10686.25	6333.01	1772791.12	413532.77	39°37'59.8317"N	80°11'41.6364"W	12421.87	149.348	0.43	-0.07	-0.43
20588.00	92.340	146.080	7950.53	12489.82	-10764.91	6386.17	1772844.28	413454.12	39°37'59.0585"N	80°11'40.9491"W	12516.65	149.322	0.65	0.59	0.28
20683.00	92.520	146.570	7946.50	12584.73	-10843.90	6438.80	1772896.90	413375.13	39°37'58.2819"N	80°11'40.2687"W	12611.43	149.299	0.55	0.19	0.52
20778.00	92.150	146.390	7942.63	12679.64	-10923.03	6491.22	1772949.32	413296.00	39°37'57.5038"N	80°11'39.5909"W	12706.24	149.278	0.43	-0.39	-0.19
20874.00	92.310	145.880	7938.90	12775.56	-11002.69	6544.67	1773002.77	413216.36	39°37'56.7207"N	80°11'38.8998"W	12802.02	149.255	0.56	0.17	-0.53
20969.00	92.310	146.200	7935.07	12870.48	-11081.42	6597.69	1773055.79	413137.63	39°37'55.9467"N	80°11'38.2144"W	12896.80	149.231	0.34	0.00	0.34
21064.00	92.430	146.170	7931.14	12965.39	-11160.28	6650.52	1773108.61	413058.77	39°37'55.1713"N	80°11'37.5314"W	12991.58	149.209	0.13	0.13	-0.03
21159.00	92.680	146.540	7926.91	13060.29	-11239.29	6703.10	1773161.19	412979.77	39°37'54.3946"N	80°11'36.8516"W	13086.37	149.188	0.47	0.26	0.39
21255.00	91.850	146.280	7923.11	13156.20	-11319.19	6756.17	1773214.26	412899.87	39°37'53.6089"N	80°11'36.1654"W	13182.18	149.168	0.91	-0.86	-0.27
21350.00	91.320	146.380	7920.48	13251.16	-11398.23	6808.82	1773266.90	412820.84	39°37'52.8319"N	80°11'35.4847"W	13277.03	149.148	0.57	-0.56	0.11
21445.00	91.350	146.250	7918.27	13346.12	-11477.25	6861.49	1773319.57	412741.82	39°37'52.0549"N	80°11'34.8037"W	13371.89	149.128	0.14	0.03	-0.14
21540.00	91.880	146.260	7915.59	13441.08	-11556.22	6914.24	1773372.32	412662.86	39°37'51.2785"N	80°11'34.1217"W	13466.73	149.107	0.56	0.56	0.01
21636.00	91.940	146.430	7912.39	13537.01	-11636.08	6967.42	1773425.49	412583.00	39°37'50.4933"N	80°11'33.4343"W	13562.57	149.088	0.19	0.06	0.18
21731.00	92.060	146.230	7909.08	13631.95	-11715.10	7020.05	1773478.13	412503.99	39°37'49.7165"N	80°11'32.7538"W	13657.40	149.069	0.25	0.13	-0.21
21827.00	92.000	146.330	7905.68	13727.88	-11794.89	7073.31	1773531.38	412424.20	39°37'48.9319"N	80°11'32.0652"W	13753.23	149.049	0.12	-0.06	0.10
21922.00	91.850	146.300	7902.49	13822.82	-11873.90	7125.97	1773584.04	412345.20	39°37'48.1551"N	80°11'31.3844"W	13848.07	149.030	0.16	-0.16	-0.03
22017.00	92.490	146.300	7898.89	13917.74	-11952.88	7178.65	1773636.71	412266.22	39°37'47.3786"N	80°11'30.7035"W	13942.89	149.012	0.67	0.67	0.00
22112.00	92.280	146.330	7894.94	14012.65	-12031.86	7231.29	1773689.35	412187.25	39°37'46.6021"N	80°11'30.0229"W	14037.71	148.994	0.22	-0.22	0.03
22207.00	92.580	146.120	7890.91	14107.56	-12110.75	7284.06	1773742.11	412108.35	39°37'45.8264"N	80°11'29.3407"W	14132.51	148.975	0.39	0.32	-0.22
22302.00	92.150	146.590	7886.99	14202.47	-12189.77	7336.64	1773794.70	412029.34	39°37'45.0495"N	80°11'28.6609"W	14227.33	148.958	0.67	-0.45	0.49
22398.00	91.690	146.090	7883.77	14298.41	-12269.63	7389.82	1773847.87	411949.49	39°37'44.2643"N	80°11'27.9734"W	14323.18	148.940	0.71	-0.48	-0.52
22493.00	91.510	146.240	7881.12	14393.37	-12348.05	7443.39	1773901.43	411871.08	39°37'43.4934"N	80°11'27.2811"W	14417.98	148.918	0.91	-0.19	-0.89



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

WELLPATH DATA (260 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect	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]
22588.00	91.140	144.790	7878.92	14488.34	-12425.86	7497.84	1773955.88	411793.27	39°37'42.7286"N	80°11'26.5775"W	14512.74	148.893	0.61	-0.39	-0.47
22684.00	91.420	145.130	7876.78	14584.31	-12504.44	7552.94	1774010.98	411714.69	39°37'41.9562"N	80°11'25.8656"W	14608.49	148.867	0.46	0.29	0.35
22778.00	91.380	144.970	7874.48	14678.28	-12581.46	7606.78	1774064.81	411637.67	39°37'41.1990"N	80°11'25.1700"W	14702.26	148.843	0.18	-0.04	-0.17
22874.00	91.450	145.080	7872.11	14774.24	-12660.10	7661.79	1774119.82	411559.04	39°37'40.4261"N	80°11'24.4592"W	14798.01	148.818	0.14	0.07	0.11
22969.00	91.350	145.110	7869.79	14869.21	-12737.99	7716.13	1774174.16	411481.16	39°37'39.6605"N	80°11'23.7570"W	14892.79	148.794	0.11	-0.11	0.03
23064.00	91.480	145.360	7867.44	14964.18	-12816.01	7770.29	1774228.31	411403.14	39°37'38.8935"N	80°11'23.0573"W	14987.58	148.772	0.30	0.14	0.26
23158.00	91.510	145.130	7864.99	15058.15	-12893.21	7823.86	1774281.88	411325.95	39°37'38.1346"N	80°11'22.3651"W	15081.37	148.750	0.25	0.03	-0.24
23253.00	91.480	145.330	7862.51	15153.11	-12971.22	7878.01	1774336.03	411247.94	39°37'37.3678"N	80°11'21.6653"W	15176.16	148.728	0.21	-0.03	0.21
23349.00	91.510	145.320	7860.01	15249.08	-13050.15	7932.61	1774390.63	411169.02	39°37'36.5920"N	80°11'20.9598"W	15271.96	148.706	0.03	0.03	-0.01
23444.00	91.420	145.270	7857.58	15344.05	-13128.22	7986.68	1774444.70	411090.95	39°37'35.8245"N	80°11'20.2611"W	15366.76	148.685	0.11	-0.09	-0.05
23539.00	91.450	145.500	7855.20	15439.02	-13206.38	8040.63	1774498.64	411012.80	39°37'35.0561"N	80°11'19.5640"W	15461.57	148.665	0.24	0.03	0.24
23635.00	91.510	145.500	7852.72	15534.99	-13285.47	8094.99	1774552.99	410933.71	39°37'34.2786"N	80°11'18.8616"W	15557.39	148.646	0.06	0.06	0.00
23730.00	91.380	145.480	7850.33	15629.96	-13363.73	8148.79	1774606.80	410855.46	39°37'33.5093"N	80°11'18.1663"W	15652.22	148.626	0.14	-0.14	-0.02
23825.00	91.510	145.350	7847.93	15724.92	-13441.91	8202.70	1774660.70	410777.28	39°37'32.7407"N	80°11'17.4697"W	15747.04	148.607	0.19	0.14	-0.14
23921.00	91.630	145.440	7845.30	15820.89	-13520.90	8257.20	1774715.20	410698.30	39°37'31.9642"N	80°11'16.7655"W	15842.86	148.588	0.16	-0.12	-0.09
24016.00	91.480	145.400	7842.72	15915.85	-13599.09	8311.10	1774769.09	410620.11	39°37'31.1956"N	80°11'16.0691"W	15937.68	148.569	0.16	-0.16	-0.04
24111.00	91.480	145.390	7840.27	16010.82	-13677.25	8365.03	1774823.02	410541.95	39°37'30.4272"N	80°11'15.3722"W	16032.50	148.550	0.01	0.00	-0.01
24204.00	91.380	145.170	7837.95	16103.79	-13753.67	8417.99	1774875.97	410465.54	39°37'29.6760"N	80°11'14.6880"W	16125.32	148.531	0.26	-0.11	-0.24
24263.00	91.420	145.450	7836.51	16162.77	-13802.17	8451.55	1774909.54	410417.04	39°37'29.1992"N	80°11'14.2542"W	16184.21	148.519	0.48	0.07	0.47
24286.00	91.420	145.450	7835.94	16185.76	-13821.11	8464.59	1774922.58	410398.11	39°37'29.0131"N	80°11'14.0857"W	16207.17	148.515	0.00	0.00	0.00



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

HOLE & CASING SECTIONS - Ref Wellbore: Bunner 2H AWB Ref Wellpath: Bunner 2H AWP Proj: 24286'									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
17.5in Open Hole	28.00	1250.00	1222.00	28.00	1249.97	0.00	0.00	0.28	4.79
13.375in Casing Surface	28.00	1250.00	1222.00	28.00	1249.97	0.00	0.00	0.28	4.79
12.25in Open Hole	1250.00	2525.00	1275.00	1249.97	2524.88	0.28	4.79	-8.66	10.50
9.625in Casing Intermediate	28.00	2525.00	2497.00	28.00	2524.88	0.00	0.00	-8.66	10.50
8.75in Open Hole	2525.00	8616.00	6091.00	2524.88	8087.22	-8.66	10.50	-895.21	-380.25
8.5in Open Hole	8616.00	24286.00	15670.00	8087.22	7835.94	-895.21	-380.25	-13821.11	8464.59
5.5in Casing Production	28.00	24286.00	24258.00	28.00	7835.94	0.00	0.00	-13821.11	8464.59

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Bunner 2H BHL Rev-5	8116.00	-13818.12	8470.76	1774928.74	410401.09	39°37'29.0430"N	80°11'14.0073"W	point
Bunner 2H LP Rev-3	8116.00	-1249.97	-145.25	1766313.26	422968.48	39°39'32.5835"N	80°13'5.3999"W	point
Bunner South Hardline #1 (4.1.21)	8600.00	-818.90	2923.24	1769381.56	423399.52	39°39'37.0841"N	80°12'26.2100"W	polygon
	2D Polygon: dimensions not calculated							
Bunner South Hardline #2 (4.1.21)	8600.00	1373.42	-2085.07	1764373.55	425591.71	39°39'58.3553"N	80°13'30.4730"W	polygon
	2D Polygon: dimensions not calculated							



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

WELLPATH COMPOSITION - Ref Wellbore: Bunner 2H AWB Ref Wellpath: Bunner 2H AWP Proj: 24286'					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	5250.00	BH Generic gyro - northseeking (Standard)	01_Javins Inertial Gyro <8-3/4"> (100'-5250')	Bunner 2H AWB	5/30/2021
5250.00	8550.00	OWSG MWD rev2 + HRGM	02_Tally MWD <8-3/4"> (5375'-8550')	Bunner 2H AWB	5/30/2021
8550.00	24286.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	03_BH AT Curve <8-1/2"> (8591'-24263')	Bunner 2H AWB	5/30/2021



Actual Wellpath Report

Bunner 2H AWP Proj: 24286'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Bunner 2H
Field	Monongalia	API	47-061-01868-0000
Facility	Bunner Pad	Wellbore	Bunner 2H AWB
Slot	Slot 2H		

COMMENTS
<p>Wellpath general comments API: 47-061-01868-0000 BH Job #: 110853541 Rig: Patterson 277 Duration: 5/31/21 - 6/4/21</p> <p>Javins Inertial Gyro <8-3/4"> (100'-5250') Tally MWD <8-3/4"> (5375'-8550') BH AT Curve <8-1/2"> (8591'-24263') Projected MD at TD: 24286'</p>