

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47 - 061 - 01940 County Monongalia District Battelle
Quad Wadestown Pad Name Phoenix Field/Pool Name _____
Farm name Charles Wendell Moore & Frank M Chisler Well Number 5H
Operator (as registered with the OOG) Northeast Natural Energy LLC
Address 707 Virginia St. E., Suite 1200 City Charleston State WV Zip 25301

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4388198.4 Easting 562456.3
Landing Point of Curve Northing 4388615.5 Easting 562825.4
Bottom Hole Northing 4391858.2 Easting 560589.7

Elevation (ft) 1,503' GL Type of Well ☒ New ☐ Existing Type of Report ☐ Interim ☒ Final
Permit Type ☐ Deviated ☐ Horizontal ☒ Horizontal 6A ☐ Vertical Depth Type ☐ Deep ☒ Shallow
Type of Operation ☐ Convert ☐ Deepen ☒ Drill ☐ Plug Back ☐ Redrilling ☐ Rework ☐ Stimulate
Well Type ☐ Brine Disposal ☐ CBM ☒ Gas ☐ Oil ☐ Secondary Recovery ☐ Solution Mining ☐ Storage ☐ Other _____
Type of Completion ☐ Single ☒ Multiple Fluids Produced ☒ Brine ☒ Gas ☐ NGL ☐ Oil ☐ Other _____
Drilled with ☐ Cable ☒ Rotary

Drilling Media Surface hole ☒ Air ☐ Mud ☐ Fresh Water Intermediate hole ☒ Air ☐ Mud ☐ Fresh Water ☐ Brine
Production hole ☐ Air ☒ Mud ☐ Fresh Water ☐ Brine

Mud Type(s) and Additive(s)

Synthetic Based Mud - Horizontal Section: BIO-BASE 365, CALCIUM CHLORIDE POWDER, G-SEAL PLUS, HRP, LIME, M-I WATE (BARITE),
M-I-X II MEDIUM, MEGADRIL P SYSTEM, MEGADRIL P SYSTEM RENTAL, MEGAMUL, SAFE-CARB 250, VERSATHIN HF, VERSAWET, VG-PLUS, VINSEAL MEDIUM, WALNUT NUT PLUG MEDIUM

Date permit issued 7/5/23 Date drilling commenced 8/17/23 Date drilling ceased 11/19/23
Date completion activities began 2/7/24 Date completion activities ceased 3/17/24
Verbal plugging (Y/N) NA Date permission granted _____ Granted by _____

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Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

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Freshwater depth(s) ft 1,360 Open mine(s) (Y/N) depths Y, Federal #2 @ 1,230
Salt water depth(s) ft 2,760 Void(s) encountered (Y/N) depths _____
Coal depth(s) ft 1,230 Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) N

APPROVED

Reviewed by:

HJK

WR-35
Rev. 8/23/13

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API 47- 061 - 01940 Farm name Charles Wendell Moore & Frank M Chisler Well number 5H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	32"	24"	100'	N		NA	N
Surface	17-1/2"	13-3/8"	1,555'	N	54.5	1400	N
Coal							
Intermediate 1	12-1/4"	9-5/8"	2,815'	N	J-55/36	2494	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	21,817'	N	P-110/20	NA	N
Tubing							
Packer type and depth set							

Comment Details Casing depths based on KB elevation.

Permit approved to set FW casing to cover Red Rock Formation.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	A Common	272	15.6			CTS	48
Surface	L, NCM-956	2155	15.6	1.14	2,448	CTS	8
Coal							
Intermediate 1	L, NCM-956	1070	15.6	1.13	1,207	CTS	8
Intermediate 2							
Intermediate 3							
Production	L, NCM-956	4115	14.5	1.12	4,629	2,270	48
Tubing							

Drillers TD (ft) 21,858' Loggers TD (ft) 21,833'

Deepest formation penetrated Marcellus Plug back to (ft) NA

Plug back procedure _____

Kick off depth (ft) 7,754'

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Check all wireline logs run ☐ caliper ☐ density ☐ deviated/directional ☐ induction ☐ neutron ☐ resistivity ☒ gamma ray ☐ temperature ☐ sonic

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Well cored ☐ Yes ☒ No Conventional Sidewall Were cuttings collected ☒ Yes ☐ No

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DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Surface: Bow spring centralizers every 3rd joint or approximately 120'

Intermediate: Bow spring centralizers every 3rd joint or approximately 120'

Production: Single piece bowspring centralizers placed every joint (~40') from TD to surface

WAS WELL COMPLETED AS SHOT HOLE ☒ Yes ☐ No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? ☐ Yes ☒ No DETAILS _____

WERE TRACERS USED ☐ Yes ☒ No TYPE OF TRACER(S) USED _____

API 47- 061 - 01940 Farm name Charles Wendell Moore & Frank M Chisler Well number 5H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	See attached				

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
	See	Attached						

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Please insert additional pages as applicable.

API 47- 061 - 01940 Farm name Charles Wendell Moore & Frank M Chisler Well number 5H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
Marcellus	8,164' TVD	21,858' MD

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ☒ Open Flow OIL TEST ☐ Flow ☐ Pump

SHUT-IN PRESSURE Surface 3109 psi Bottom Hole 5810 psi DURATION OF TEST 24 hrs

OPEN FLOW Gas Oil NGL Water GAS MEASURED BY
 3093 ☐ Estimated ☒ Orifice ☐ Pilot
 mcfpd bpd bpd bpd

[illegible]

Please insert additional pages as applicable.

Drilling Contractor	Patterson UTI						
Address	67090 Executive Dr.	City	St. Clairsville	State	OH	Zip	43950

Logging Company	Baker Hughes						
Address	837 Phillippi Pike	City	Clarksburg	State	PA	Zip	26301

Cementing Company		NexTier									
Address		730 Braddock View Drive		City		Lemont Furnace		State		PA Zip 15456	

Stimulating Company	Evolution Well Services						
Address	1780 Hughes Landing Blvd, Suite 123	City	The Woodlands	State	TX	Zip	77381

Please insert additional pages as applicable.

Completed by Hollie Medley Telephone 304-212-0422
Signature Hollie Medley Title Regulatory Manager Date 4-7-25

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

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Phoenix 5H

Stimulation Report

Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
1	2/7/2024	4,648		9,442	84	418	7,443	300,050	513
2	2/7/2024	5,260	5,854	9,497	90	444	10,121	455,088	476
3	2/8/2024	5,247	6,904	9,694	93	13	9,851	454,060	475
4	2/8/2024	5,056	6,132	9,509	87	78	9,649	455,098	473
5	2/9/2024	5,088	7,200	9,604	88	58	9,689	455,170	469
6	2/9/2024	5,719	7,297	9,666	93	11	9,654	455,000	463
7	2/10/2024	5,037	6,792	9,588	90	32	9,614	455,137	457
8	2/10/2024	5,191	7,215	9,727	90	48	9,584	455,104	455
9	2/12/2024	5,089	7,311	9,741	86	74	9,613	455,149	442
10	2/12/2024	5,984	7,345	9,735	89	37	9,632	455,073	440
11	2/13/2024	4,785	7,154	9,749	90	63	9,698	454,994	46
12	2/13/2024	5,443	6,728	9,725	88	35	9,707	455,072	431
13	2/14/2024	5,566	6,803	9,623	93	35	9,639	455,140	427
14	2/15/2024	5,509	7,012	9,698	92	59	9,612	455,089	427
15	2/15/2024	6,380	7,203	9,715	92	11	9,652	455,716	424
16	2/16/2024	6,528	7,011	9,664	93	306	10,409	455,451	416
17	2/17/2024	5,875	7,011	9,650	93	48	9,658	455,355	414
18	2/18/2024	5,435	7,106	9,534	93	58	9,669	455,120	409
19	2/18/2024	5,532	6,669	9,525	90	62	9,590	455,137	404
20	2/19/2024	6,694	7,130	9,718	94	14	9,603	455,389	409
21	2/20/2024	6,521	7,099	9,546	90	18	9,618	455,126	398
22	2/20/2024	5,393	7,365	9,410	90	64	9,583	455,094	388
23	2/21/2024	6,137	7,208	9,567	94	21	9,632	455,527	388
24	2/22/2024	5,404	6,945	9,634	90	65	9,664	455,078	382
25	2/22/2024	6,748	7,145	9,439	94	24	9,646	455,325	381
26	2/23/2024	7,056	6,913	9,540	94	12	9,596	455,363	376
27	2/24/2024	6,317	6,733	9,225	94	18	9,558	455,198	365
28	2/24/2024	5,830	6,783	8,865	93	19	9,545	455,068	363
29	2/25/2024	5,971	6,695	9,356	94	41	9,629	455,261	369
30	2/26/2024	6,451	7,222	9,364	94	22	10,177	455,399	356
31	2/27/2024	5,848	7,440	9,432	93	18	9,545	455,018	343
32	2/27/2024	7,040	6,844	9,486	93	18	9,569	455,294	360
33	2/28/2024	6,603	7,201	9,600	93	9	9,576	455,394	351
34	2/29/2024	5,565	7,177	9,420	93	10	9,495	455,219	352
35	3/1/2024	5,604	7,848	9,519	93	11	9,494	455,175	330
36	3/1/2024	5,732	7,334	9,383	87	40	9,502	455,174	326
37	3/1/2024	5,828	7,420	9,295	89	43	9,525	455,058	320
38	3/1/2024	5,645	6,866	9,267	94	6	9,482	454,211	318
39	3/2/2024	5,694	7,043	9,307	90	9	9,486	455,058	312
40	3/2/2024	5,678	7,212	9,299	94	8	9,524	454,532	319
41	3/3/2024	5,529	6,723	9,059	90	38	9,479	455,311	303

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Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
42	3/4/2024	5,813	6,259	8,862	94	13	9,488	455,459	298
43	3/4/2024	5,678	6,313	8,873	94	19	9,487	455,126	292
44	3/5/2024	6,931	8,062	8,890	93	7	9,552	455,101	289
45	3/5/2024	5,165	7,645	8,619	94	20	9,474	455,085	286
46	3/6/2024	5,256	5,956	8,510	93	37	9,487	455,300	285
47	3/7/2024	5,456	6,452	8,786	94	5	9,429	455,405	278
48	3/7/2024	5,169	6,448	8,199	91	55	9,484	455,053	274
49	3/8/2024	6,494	7,009	8,605	93	60	9,449	455,078	269
50	3/8/2024	5,366	5,921	8,598	94	48	9,487	455,168	263
51	3/9/2024	5,257	6,765	8,411	94	12	9,533	456,868	278
52	3/10/2024	5,096	4,933	8,423	94	10	9,500	455,051	258
53	3/11/2024	5,360	5,904	8,310	94	48	9,493	455,082	254
54	3/11/2024	5,156	6,877	8,210	94	11	9,469	454,996	248
55	3/12/2024	5,209	5,742	8,310	94	69	9,452	455,066	242
56	3/12/2024	5,427	5,850	8,070	94	23	9,521	455,115	239
57	3/13/2024	4,995	7,027	8,363	94	10	9,469	455,916	229
58	3/13/2024	5,374	6,653	8,190	94	10	9,484	455,070	231
59	3/14/2024	6,177	7,155	8,233	94	49	9,486	455,343	286
60	3/14/2024	5,056	7,686	8,145	94	58	9,499	455,129	221
61	3/15/2024	5,941	7,849	8,315	94	7	9,434	455,830	226
62	3/15/2024	5,146	7,258	8,353	94	46	9,459	455,063	212
63	3/16/2024	5,782	7,077	8,271	94	7	9,406	455,330	213
64	3/16/2024	5,768	7,263	8,458	94	54	9,459	455,037	203
65	3/17/2024	6,056	8,112	8,640	94	20	9,462	455,334	210
66	3/17/2024	5,616	6,747	8,355	93	38	9,439	455,085	195

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Phoenix 5H Perforation Report				
Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
1	2/7/2024	40		21,714
2	2/7/2024	40	21,671	21,512
3	2/8/2024	40	21,470	21,312
4	2/8/2024	40	21,270	21,111
5	2/9/2024	40	21,069	20,911
6	2/9/2024	40	20,869	20,711
7	2/10/2024	40	20,669	20,510
8	2/10/2024	40	20,468	20,310
9	2/12/2024	40	20,268	20,110
10	2/12/2024	40	20,067	19,909
11	2/13/2024	40	19,867	19,709
12	2/13/2024	40	19,667	19,508
13	2/14/2024	40	19,466	19,308
14	2/15/2024	40	19,266	19,108
15	2/15/2024	40	19,066	18,907
16	2/16/2024	40	18,865	18,707
17	2/17/2024	40	18,665	18,507
18	2/18/2024	40	18,464	18,306
19	2/18/2024	40	18,264	18,106
20	2/19/2024	40	18,064	17,905
21	2/20/2024	40	17,863	17,705
22	2/20/2024	40	17,663	17,505
23	2/21/2024	40	17,463	17,304
24	2/22/2024	40	17,262	17,104
25	2/22/2024	40	17,062	16,903
26	2/23/2024	40	16,861	16,703
27	2/24/2024	40	16,661	16,503
28	2/24/2024	40	16,461	16,302
29	2/25/2024	40	16,260	16,102
30	2/26/2024	40	16,060	15,902
31	2/27/2024	40	15,860	15,701
32	2/27/2024	40	15,659	15,501
33	2/28/2024	40	15,459	15,300
34	2/29/2024	40	15,258	15,100
35	3/1/2024	40	15,058	14,900
36	3/1/2024	40	14,858	14,699
37	3/1/2024	40	14,657	14,499
38	3/1/2024	40	14,457	14,299
39	3/2/2024	40	14,256	14,098
40	3/2/2024	40	14,056	13,898
41	3/3/2024	40	13,856	13,697
42	3/4/2024	40	13,655	13,497
43	3/4/2024	40	13,455	13,297
44	3/5/2024	40	13,255	13,096
45	3/5/2024	40	13,054	12,896
46	3/6/2024	40	12,854	12,696
47	3/7/2024	40	12,653	12,495

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Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
48	3/7/2024	40	12,453	12,295
49	3/8/2024	40	12,253	12,094
50	3/8/2024	40	12,052	11,894
51	3/9/2024	40	11,852	11,694
52	3/10/2024	40	11,652	11,493
53	3/11/2024	40	11,451	11,293
54	3/11/2024	40	11,251	11,092
55	3/12/2024	40	11,050	10,892
56	3/12/2024	40	10,850	10,692
57	3/13/2024	40	10,650	10,491
58	3/13/2024	40	10,449	10,291
59	3/14/2024	40	10,249	10,091
60	3/14/2024	40	10,048	9,890
61	3/15/2024	40	9,848	9,690
62	3/15/2024	40	9,648	9,489
63	3/16/2024	40	9,447	9,289
64	3/16/2024	40	9,247	9,089
65	3/17/2024	40	9,047	8,888
66	3/17/2024	40	8,846	8,688

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	PROPERTY OWNER INDEX
1-14-08	KING FAMILY TRUST
1-14-10	MICHAEL A & ANITA K BRAGG (LIFE-GEORGE H FOLEY)
1-17-05	KENT A. & SHIRLEY A. LEONHARDT
1-17-12	PHOENIX ENERGY RESOURCES, LLC
1-17-12.1	NANCY MOORE & CATHERINE ANN MOORE
1-17-14	PHOENIX ENERGY RESOURCES, LLC
1-17-14.1	FRANK M. CHISLER
1-24-19.1	CHARLES WENDELL MOORE

	LEASE INDEX		
A	WV-061-004079-002	G	WV-061-004281-002
B	WV-061-003767-004	H	WV-061-004290-001
C	WV-061-004463-001	I	WV-061-004937-006
D	WV-061-004076-010	J	WV-061-005790-003
E	WV-061-004433-001	K	WV-061-004505-001
F	WV-061-004433-001	L	WV-061-004874-001

FILE #:

NEE14

DRAWING #:

3031

SCALE:

N/A

DATE:

APRIL 2, 2025

OPERATOR’S WELL #:

PHOENIX 5H AS-DRILLED

API WELL #:

47

61

01940

STATE

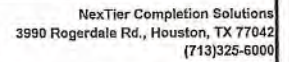
COUNTY

PERMIT

Scale: 1 inch = 2000

Cement Job Log

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[illegible]

[illegible]

Actual Wellpath Report

Phoenix 5H AWP Proj: 21858'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 5H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 5H AWB
Slot	Slot 05		

REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Manajohj
Scale	0.999941	Report Generated	11/20/2023 at 10:51:45 AM
Convergence at slot	0.49° 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	8.55	18.07	1751070.05	416625.49	39°38'28.6449"N	80°16'19.6114"W
Facility Reference Pt			1751051.98	416616.94	39°38'28.5589"N	80°16'19.8414"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	1531.00ft
Horizontal Reference Pt	Slot	Patterson 277 (RKB) to Mean Sea Level	1531.00ft
Vertical Reference Pt	Patterson 277 (RKB)	Patterson 277 (RKB) to Ground Level at Slot (Slot 05)	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	326.37°

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150628

Actual Wellpath Report

Phoenix 5H AWP Proj: 21858'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 5H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 5H AWB
Slot	Slot 05		

WELLPATH DATA (245 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [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	134.720	0.00	-1531.00	0.00	0.00	0.00	1751070.05	416625.49	39°38'28.6449"N	80°16'19.6114"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	134.720	28.00	-1503.00	0.00	0.00	0.00	1751070.05	416625.49	39°38'28.6449"N	80°16'19.6114"W	0.00	0.000	0.00	0.00	0.00
50.00	0.090	134.720	50.00	-1481.00	-0.02	-0.01	0.01	1751070.06	416625.48	39°38'28.6448"N	80°16'19.6112"W	0.02	134.720	0.41	0.41	0.00
100.00	0.090	325.060	100.00	-1431.00	-0.02	-0.01	0.02	1751070.07	416625.48	39°38'28.6449"N	80°16'19.6111"W	0.02	113.245	0.36	0.00	-339.32
150.00	0.310	330.920	150.00	-1381.00	0.16	0.14	-0.07	1751069.98	416625.63	39°38'28.6464"N	80°16'19.6123"W	0.16	336.712	0.44	0.44	11.72
200.00	0.100	308.920	200.00	-1331.00	0.33	0.29	-0.17	1751069.88	416625.78	39°38'28.6478"N	80°16'19.6136"W	0.33	329.451	0.44	-0.42	-44.00
250.00	0.120	321.990	250.00	-1281.00	0.43	0.36	-0.24	1751069.81	416625.85	39°38'28.6485"N	80°16'19.6144"W	0.43	326.493	0.06	0.04	26.14
300.00	0.100	322.290	300.00	-1231.00	0.52	0.43	-0.30	1751069.75	416625.92	39°38'28.6492"N	80°16'19.6152"W	0.52	325.694	0.04	-0.04	0.60
350.00	0.130	201.330	350.00	-1181.00	0.53	0.41	-0.34	1751069.71	416625.90	39°38'28.6490"N	80°16'19.6158"W	0.54	320.422	0.40	0.06	-241.92
400.00	0.090	113.930	400.00	-1131.00	0.47	0.35	-0.33	1751069.72	416625.84	39°38'28.6483"N	80°16'19.6156"W	0.48	316.563	0.31	-0.08	-174.80
450.00	0.090	24.250	450.00	-1081.00	0.46	0.37	-0.28	1751069.77	416625.86	39°38'28.6485"N	80°16'19.6149"W	0.46	323.015	0.25	0.00	-179.36
500.00	0.190	155.160	500.00	-1031.00	0.40	0.33	-0.22	1751069.83	416625.82	39°38'28.6482"N	80°16'19.6143"W	0.40	325.473	0.52	0.20	261.82
550.00	0.170	169.850	550.00	-981.00	0.25	0.18	-0.18	1751069.87	416625.67	39°38'28.6467"N	80°16'19.6136"W	0.25	315.234	0.10	-0.04	29.38
600.00	0.130	164.160	600.00	-931.00	0.12	0.05	-0.15	1751069.90	416625.54	39°38'28.6454"N	80°16'19.6133"W	0.16	288.807	0.09	-0.08	-11.38
650.00	0.080	28.830	650.00	-881.00	0.09	0.03	-0.12	1751069.93	416625.52	39°38'28.6452"N	80°16'19.6129"W	0.12	283.011	0.39	-0.10	-274.66
700.00	0.150	181.330	700.00	-831.00	0.05	-0.01	-0.10	1751069.95	416625.48	39°38'28.6449"N	80°16'19.6127"W	0.10	265.923	0.45	0.14	309.00
750.00	0.110	132.280	750.00	-781.00	-0.05	-0.11	-0.07	1751069.98	416625.38	39°38'28.6439"N	80°16'19.6122"W	0.13	213.119	0.23	-0.08	-98.10
800.00	0.090	51.700	800.00	-731.00	-0.09	-0.11	0.00	1751070.05	416625.38	39°38'28.6438"N	80°16'19.6114"W	0.11	181.110	0.26	-0.04	-161.16
850.00	0.080	28.260	850.00	-681.00	-0.07	-0.06	0.05	1751070.10	416625.43	39°38'28.6444"N	80°16'19.6108"W	0.07	142.046	0.07	-0.02	-46.88
900.00	0.110	347.940	900.00	-631.00	-0.01	0.02	0.05	1751070.10	416625.51	39°38'28.6451"N	80°16'19.6107"W	0.06	69.039	0.14	0.06	-80.64
950.00	0.090	355.390	950.00	-581.00	0.07	0.11	0.04	1751070.09	416625.60	39°38'28.6460"N	80°16'19.6109"W	0.11	19.971	0.05	-0.04	14.90
1000.00	0.110	273.470	1000.00	-531.00	0.13	0.15	-0.01	1751070.04	416625.64	39°38'28.6464"N	80°16'19.6115"W	0.15	355.134	0.26	0.04	-163.84
1050.00	0.070	53.240	1050.00	-481.00	0.16	0.17	-0.04	1751070.01	416625.66	39°38'28.6466"N	80°16'19.6118"W	0.17	347.971	0.34	-0.08	279.54
1100.00	0.300	197.310	1100.00	-431.00	0.08	0.06	-0.05	1751070.00	416625.55	39°38'28.6456"N	80°16'19.6120"W	0.08	321.015	0.72	0.46	288.14
1150.00	0.160	246.020	1150.00	-381.00	0.01	-0.09	-0.15	1751069.90	416625.40	39°38'28.6440"N	80°16'19.6133"W	0.18	239.315	0.46	-0.28	-97.42
1200.00	0.650	225.040	1200.00	-331.00	-0.03	-0.32	-0.42	1751069.63	416625.17	39°38'28.6418"N	80°16'19.6167"W	0.53	232.570	1.01	0.98	-41.96
1250.00	0.630	219.630	1249.99	-281.01	-0.17	-0.73	-0.79	1751069.26	416624.76	39°38'28.6376"N	80°16'19.6214"W	1.08	227.324	0.13	-0.04	-10.82
1300.00	0.710	208.710	1299.99	-231.01	-0.39	-1.22	-1.12	1751068.93	416624.27	39°38'28.6328"N	80°16'19.6255"W	1.65	222.610	0.30	0.16	-21.84
1350.00	0.570	218.900	1349.99	-181.01	-0.63	-1.68	-1.42	1751068.63	416623.81	39°38'28.6282"N	80°16'19.6294"W	2.20	220.254	0.36	-0.28	20.38
1364.00	0.180	187.870	1363.99	-187.01	-0.65	-1.76	-1.42	1751068.58	416623.73	39°38'28.6275"N	80°16'19.6300"W	2.29	219.919	3.04	-2.79	-221.64

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Actual Wellpath Report

Phoenix 5H AWP Proj: 21858'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 5H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 5H AWB
Slot	Slot 05		

WELLPATH DATA (245 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [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]
1592.00	0.240	265.530	1591.98	60.98	-0.68	-2.15	-1.99	1751068.06	416623.34	39°38'28.6235"N	80°16'19.6366"W	2.93	222.875	0.12	0.03	34.06
1686.00	0.140	25.090	1685.98	154.98	-0.53	-2.06	-2.14	1751067.91	416623.43	39°38'28.6244"N	80°16'19.6385"W	2.97	226.125	0.35	-0.11	127.19
1781.00	0.340	39.270	1780.98	249.98	-0.39	-1.74	-1.91	1751068.14	416623.75	39°38'28.6276"N	80°16'19.6356"W	2.58	227.794	0.22	0.21	14.93
1876.00	1.110	49.440	1875.98	344.98	-0.19	-0.92	-1.04	1751069.01	416624.57	39°38'28.6358"N	80°16'19.6245"W	1.39	228.428	0.82	0.81	10.71
1971.00	2.050	52.030	1970.94	439.94	0.05	0.72	1.00	1751071.05	416626.21	39°38'28.6522"N	80°16'19.5986"W	1.24	54.140	0.99	0.99	2.73
2065.00	3.170	30.320	2064.84	533.84	1.32	4.00	3.64	1751073.69	416629.49	39°38'28.6848"N	80°16'19.5653"W	5.41	42.281	1.57	1.19	-23.10
2160.00	3.290	14.550	2159.69	628.69	4.29	8.91	5.65	1751075.70	416634.40	39°38'28.7335"N	80°16'19.5401"W	10.55	32.385	0.94	0.13	-16.60
2255.00	3.260	359.000	2254.54	723.54	8.38	14.25	6.29	1751076.34	416639.74	39°38'28.7863"N	80°16'19.5326"W	15.57	23.813	0.93	-0.03	-16.37
2349.00	2.660	344.950	2348.41	817.41	12.70	19.03	5.67	1751075.72	416644.52	39°38'28.8335"N	80°16'19.5409"W	19.85	16.607	1.00	-0.64	-14.95
2444.00	2.520	324.840	2443.32	912.32	16.88	22.86	3.90	1751073.95	416648.35	39°38'28.8712"N	80°16'19.5640"W	23.19	9.679	0.96	-0.15	-21.17
2539.00	1.930	318.060	2538.25	1007.25	20.55	25.76	1.63	1751071.68	416651.25	39°38'28.8997"N	80°16'19.5934"W	25.81	3.615	0.68	-0.62	-7.14
2633.00	0.550	269.820	2632.22	1101.22	22.36	26.94	0.12	1751070.17	416652.42	39°38'28.9112"N	80°16'19.6128"W	26.94	0.252	1.72	-1.47	-51.32
2728.00	0.920	189.530	2727.22	1196.22	22.06	26.18	-0.46	1751069.59	416651.67	39°38'28.9037"N	80°16'19.6202"W	26.19	358.985	1.04	0.39	-84.52
3020.00	1.540	186.880	3019.15	1488.15	17.45	19.99	-1.46	1751068.59	416645.48	39°38'28.8424"N	80°16'19.6322"W	20.05	355.830	0.21	0.21	-0.22
3115.00	1.600	113.190	3114.12	1583.12	15.40	18.21	-0.44	1751069.61	416643.70	39°38'28.8249"N	80°16'19.6189"W	18.22	358.630	2.03	0.06	-79.67
3209.00	3.780	70.660	3208.02	1677.02	13.54	18.72	3.70	1751073.75	416644.21	39°38'28.8303"N	80°16'19.5662"W	19.08	11.167	3.00	2.32	-45.24
3304.00	5.460	48.500	3302.72	1771.72	13.39	22.75	10.04	1751080.09	416648.24	39°38'28.8706"N	80°16'19.4856"W	24.87	23.802	2.55	1.77	-23.33
3399.00	7.640	38.500	3397.09	1866.09	15.94	30.69	17.35	1751087.40	416656.18	39°38'28.9497"N	80°16'19.3929"W	35.26	29.485	2.58	2.29	-10.53
3493.00	10.350	35.910	3489.93	1958.93	20.81	42.42	26.20	1751096.25	416667.81	39°38'29.0664"N	80°16'19.2811"W	49.86	31.697	2.91	2.88	-2.76
3588.00	11.930	30.720	3583.14	2052.14	28.05	57.78	36.22	1751106.27	416683.26	39°38'29.2190"N	80°16'19.1547"W	68.19	32.083	1.97	1.68	-5.46
3686.00	11.270	31.380	3679.14	2148.14	36.48	74.66	46.38	1751116.43	416700.15	39°38'29.3667"N	80°16'19.0267"W	87.89	31.850	0.69	-0.67	0.67
3781.00	11.330	38.980	3772.30	2241.30	43.19	89.84	57.09	1751127.13	416715.32	39°38'29.5376"N	80°16'18.8915"W	106.44	32.432	1.57	0.06	8.00
3876.00	12.600	43.180	3865.24	2334.24	48.34	104.65	70.05	1751140.09	416730.13	39°38'29.6851"N	80°16'18.7275"W	125.93	33.796	1.62	1.34	4.42
3970.00	14.150	46.530	3956.69	2425.69	52.65	120.03	85.40	1751155.45	416745.52	39°38'29.8384"N	80°16'18.5329"W	147.31	35.431	1.84	1.65	3.56
4065.00	16.000	56.670	4048.43	2517.43	54.56	135.22	104.77	1751174.82	416760.70	39°38'29.9902"N	80°16'18.2869"W	171.06	37.770	3.38	1.95	10.67
4159.00	18.270	62.270	4138.26	2607.26	52.98	149.20	128.64	1751198.69	416774.68	39°38'30.1303"N	80°16'17.9833"W	197.00	40.769	2.98	2.41	5.96
4254.00	20.070	67.570	4227.99	2696.99	48.28	162.35	156.90	1751226.94	416787.83	39°38'30.2627"N	80°16'17.6236"W	225.77	44.022	2.63	1.89	5.58
4349.00	21.890	69.920	4316.69	2785.69	40.97	174.65	188.60	1751258.64	416800.13	39°38'30.3869"N	80°16'17.2197"W	257.05	47.200	2.11	1.92	2.47
4443.00	22.120	69.500	4403.84	2872.84	32.84	186.86	221.64	1751291.67	416812.34	39°38'30.5104"N	80°16'16.7988"W	289.90	49.865	0.30	0.24	-0.45
4538.00	21.530	70.380	4492.03	2961.03	24.56	198.98	254.81	1751324.84	416824.46	39°38'30.6330"N	80°16'16.8761"W	323.30	52.014	0.71	-0.62	0.93

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Actual Wellpath Report

Phoenix 5H AWP Proj: 21858'

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Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 5H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 5H AWB
Slot	Slot 05		

WELLPATH DATA (245 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [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]
4635.00	20.830	73.120	4582.48	3051.48	15.28	209.96	288.08	1751358.11	416835.44	39°38'30.7444"N	80°16'15.9520"W	356.48	53.914	1.25	-0.72	2.82
4730.00	20.510	74.260	4671.37	3140.37	5.30	219.38	320.26	1751390.29	416844.86	39°38'30.8402"N	80°16'15.5417"W	388.20	55.588	0.54	-0.34	1.20
4825.00	20.990	70.930	4760.21	3229.21	-4.09	229.46	352.36	1751422.39	416854.93	39°38'30.9425"N	80°16'15.1325"W	420.49	56.928	1.34	0.51	-3.51
4919.00	20.330	71.990	4848.16	3317.16	-12.72	240.01	383.80	1751453.83	416865.48	39°38'31.0494"N	80°16'14.7317"W	452.67	57.981	0.81	-0.70	1.13
5014.00	19.970	73.830	4937.35	3406.35	-22.03	249.63	415.08	1751485.10	416875.10	39°38'31.1471"N	80°16'14.3330"W	484.36	58.977	0.77	-0.38	1.94
5109.00	20.780	75.230	5026.41	3495.41	-32.35	258.44	446.95	1751516.98	416883.92	39°38'31.2369"N	80°16'13.9265"W	516.30	59.962	1.00	0.85	1.47
5204.00	20.960	73.550	5115.17	3584.17	-42.82	267.55	479.55	1751549.57	416893.02	39°38'31.3297"N	80°16'13.5109"W	549.13	60.842	0.66	0.19	-1.77
5299.00	21.340	75.300	5203.78	3672.78	-53.44	276.75	512.56	1751582.58	416902.22	39°38'31.4234"N	80°16'13.0898"W	582.50	61.634	0.78	0.40	1.84
5393.00	21.900	74.410	5291.16	3760.16	-64.42	285.80	545.99	1751616.01	416911.27	39°38'31.5157"N	80°16'12.6635"W	616.27	62.370	0.69	0.60	-0.95
5488.00	21.980	72.370	5379.28	3848.28	-74.96	295.80	580.05	1751650.06	416921.27	39°38'31.6174"N	80°16'12.2293"W	651.11	62.980	0.61	0.08	-1.62
5586.00	21.260	73.800	5470.39	3939.39	-85.49	306.16	614.64	1751684.65	416931.63	39°38'31.7227"N	80°16'11.7883"W	686.67	63.522	0.81	-0.73	0.95
5681.00	20.640	73.520	5559.11	4028.11	-95.58	315.71	647.23	1751717.24	416941.18	39°38'31.8199"N	80°16'11.3727"W	720.13	63.997	0.66	-0.65	-0.29
5775.00	21.560	73.470	5646.80	4115.80	-105.55	325.33	679.68	1751749.68	416950.80	39°38'31.9176"N	80°16'10.9590"W	753.52	64.422	0.98	0.98	-0.05
5870.00	23.170	71.920	5734.66	4203.66	-115.69	336.09	714.18	1751784.19	416961.56	39°38'32.0270"N	80°16'10.5191"W	789.31	64.798	1.80	1.69	-1.63
5965.00	23.650	72.350	5821.84	4290.84	-125.95	347.67	750.10	1751820.11	416973.14	39°38'32.1444"N	80°16'10.0612"W	826.76	65.132	0.54	0.51	0.45
6059.00	23.470	70.850	5908.00	4377.00	-135.82	359.53	785.75	1751855.76	416985.00	39°38'32.2646"N	80°16'9.6068"W	864.10	65.413	0.67	-0.19	-1.60
6154.00	21.250	72.170	5995.85	4464.85	-145.24	371.01	820.02	1751890.02	416996.47	39°38'32.3810"N	80°16'9.1701"W	900.04	65.656	2.40	-2.34	1.39
6249.00	21.100	71.610	6084.44	4553.44	-154.42	381.67	852.63	1751922.63	417007.14	39°38'32.4891"N	80°16'8.7543"W	934.16	65.885	0.27	-0.16	-0.59
6344.00	20.590	70.560	6173.22	4642.22	-163.01	392.63	884.61	1751954.61	417018.09	39°38'32.6001"N	80°16'8.3467"W	967.83	66.066	0.67	-0.54	-1.11
6439.00	19.490	69.490	6262.47	4731.47	-170.70	403.74	915.21	1751985.20	417029.21	39°38'32.7125"N	80°16'7.9568"W	1000.31	66.196	1.22	-1.16	-1.13
6536.00	18.510	71.470	6354.18	4823.18	-178.39	414.30	944.97	1752014.96	417039.77	39°38'32.8194"N	80°16'7.5776"W	1031.80	66.326	1.21	-1.01	2.04
6631.00	18.270	70.280	6444.33	4913.33	-185.89	424.12	973.28	1752043.27	417049.58	39°38'32.9188"N	80°16'7.2167"W	1061.68	66.454	0.47	-0.25	-1.25
6725.00	17.310	73.210	6533.84	5002.84	-193.49	433.13	1000.54	1752070.53	417058.60	39°38'33.0102"N	80°16'6.8693"W	1090.27	66.592	1.40	-1.02	3.12
6820.00	16.230	76.340	6624.80	5093.80	-202.12	440.35	1026.97	1752096.96	417065.81	39°38'33.0838"N	80°16'6.5322"W	1117.40	66.791	1.48	-1.14	3.29
6915.00	15.810	77.350	6716.11	5185.11	-211.28	446.32	1052.50	1752122.49	417071.78	39°38'33.1449"N	80°16'6.2065"W	1143.22	67.020	0.53	-0.44	1.06
7010.00	19.110	75.300	6806.72	5275.72	-220.97	453.10	1080.18	1752150.16	417078.56	39°38'33.2143"N	80°16'5.8535"W	1171.36	67.243	3.53	3.47	-2.16
7105.00	20.540	77.090	6896.09	5365.09	-231.91	460.77	1111.47	1752181.45	417086.23	39°38'33.2927"N	80°16'5.4544"W	1203.19	67.483	1.64	1.51	1.88
7200.00	20.990	76.530	6984.92	5453.92	-243.67	468.46	1144.26	1752214.24	417093.92	39°38'33.3715"N	80°16'5.0360"W	1236.44	67.736	0.52	0.47	-0.59
7298.00	21.970	72.490	7076.11	5545.11	-254.81	478.06	1178.81	1752248.79	417103.52	39°38'33.4693"N	80°16'4.5954"W	1272.06	67.925	1.81	1.00	-4.12
7392.00	22.860	72.720	7163.01	5632.01	-264.83	488.78	1213.02	1752282.99	417114.24	39°38'33.5781"N	80°16'4.1593"W	1307.79	68.053	0.95	0.95	0.24

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Phoenix 5H AWP Proj: 21858'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 5H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 5H AWB
Slot	Slot 05		

WELLPATH DATA (245 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [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]
7487.00	24.640	68.970	7249.97	5718.97	-274.35	501.37	1249.13	1752319.10	417126.83	39°38'33.7055"N	80°16'3.6991"W	1345.99	68.131	2.46	1.87	-3.95
7581.00	23.720	59.550	7335.75	5804.75	-279.67	517.99	1283.73	1752353.70	417143.45	39°38'33.8727"N	80°16'3.2586"W	1384.29	68.026	4.22	-0.98	-10.02
7702.00	21.700	53.380	7447.38	5916.38	-279.85	543.67	1322.67	1752392.64	417169.13	39°38'34.1298"N	80°16'2.7636"W	1430.05	67.655	2.58	-1.67	-5.10
7731.00	21.360	52.270	7474.36	5943.36	-279.20	550.10	1331.15	1752401.12	417175.56	39°38'34.1941"N	80°16'2.6559"W	1440.34	67.547	1.83	-1.17	-3.83
7796.00	24.490	52.730	7534.22	6003.22	-277.50	565.51	1351.24	1752421.21	417190.96	39°38'34.3480"N	80°16'2.4008"W	1464.80	67.290	4.82	4.82	0.71
7889.00	26.140	38.120	7618.37	6087.37	-269.85	593.33	1379.26	1752449.22	417218.78	39°38'34.6253"N	80°16'2.0457"W	1501.46	66.724	6.93	1.77	-15.71
7983.00	29.940	17.580	7701.51	6170.51	-248.61	632.08	1399.18	1752469.14	417257.53	39°38'35.0100"N	80°16'1.7953"W	1535.33	66.689	10.98	4.04	-21.85
8077.00	33.780	9.500	7781.37	6250.37	-214.82	680.26	1410.58	1752480.55	417305.71	39°38'35.4871"N	80°16'1.6548"W	1566.05	64.254	6.10	4.09	-8.60
8171.00	39.490	1.630	7856.81	6325.81	-171.28	735.99	1415.76	1752485.72	417361.43	39°38'36.0383"N	80°16'1.5948"W	1595.63	62.532	7.85	6.07	-8.37
8265.00	43.860	354.110	7927.05	6396.05	-117.99	798.33	1413.26	1752483.22	417423.77	39°38'36.6541"N	80°16'1.6334"W	1623.16	60.539	7.06	4.65	-8.00
8359.00	50.140	351.910	7991.13	6460.13	-56.55	866.51	1404.83	1752474.80	417491.95	39°38'37.3273"N	80°16'1.7486"W	1650.58	58.333	6.90	6.68	-2.34
8453.00	56.140	348.070	8047.51	6516.51	12.35	940.50	1391.67	1752461.64	417565.94	39°38'38.0574"N	80°16'1.9249"W	1679.67	55.949	7.17	6.38	-4.09
8546.00	60.710	345.380	8096.20	6565.20	86.62	1017.58	1373.44	1752443.41	417643.00	39°38'38.8175"N	80°16'2.1664"W	1709.33	53.465	5.50	4.91	-2.89
8640.00	67.060	341.320	8137.57	6606.57	167.30	1098.35	1349.20	1752419.17	417723.78	39°38'39.6138"N	80°16'2.4851"W	1739.75	50.852	7.79	6.76	-4.32
8735.00	73.970	337.780	8169.24	6638.24	254.44	1182.18	1317.88	1752387.85	417807.60	39°38'40.4395"N	80°16'2.8946"W	1770.41	48.107	9.08	7.27	-3.73
8830.00	79.980	333.370	8190.65	6659.65	345.75	1266.37	1279.59	1752349.57	417891.79	39°38'41.2683"N	80°16'3.3932"W	1800.30	45.298	7.78	6.33	-4.64
8925.00	84.020	328.480	8203.88	6672.88	439.48	1348.54	1233.89	1752303.86	417973.95	39°38'42.0765"N	80°16'3.9865"W	1827.85	42.458	6.64	4.25	-5.15
9020.00	89.780	326.760	8209.02	6678.02	534.27	1428.61	1183.10	1752253.08	418054.02	39°38'42.8635"N	80°16'4.6444"W	1854.91	39.630	6.33	6.06	-1.81
9114.00	89.570	326.850	8209.55	6678.55	628.27	1507.27	1131.64	1752201.62	418132.67	39°38'43.6366"N	80°16'5.3109"W	1884.80	36.899	0.24	-0.22	0.10
9209.00	89.910	326.570	8209.98	6678.98	723.27	1586.68	1079.50	1752149.48	418212.08	39°38'44.4169"N	80°16'5.9861"W	1919.08	34.229	0.46	0.36	-0.29
9304.00	90.120	326.170	8209.96	6678.96	818.27	1665.78	1026.88	1752096.87	418291.17	39°38'45.1942"N	80°16'6.6673"W	1956.87	31.652	0.48	0.22	-0.42
9398.00	90.460	326.720	8209.48	6678.48	912.26	1744.12	974.93	1752044.92	418369.50	39°38'45.9639"N	80°16'7.3401"W	1998.11	29.204	0.69	0.36	0.59
9493.00	90.090	326.610	8209.02	6678.02	1007.26	1823.49	922.72	1751992.72	418448.88	39°38'46.7439"N	80°16'8.0161"W	2043.65	26.840	0.41	-0.39	-0.12
9588.00	88.980	326.480	8209.79	6678.79	1102.26	1902.74	870.35	1751940.35	418528.12	39°38'47.5227"N	80°16'8.6943"W	2092.35	24.580	1.18	-1.17	-0.14
9682.00	88.250	326.970	8212.07	6681.07	1196.23	1981.31	818.80	1751888.80	418606.68	39°38'48.2948"N	80°16'9.3619"W	2143.83	22.453	0.94	-0.78	0.52
9777.00	87.970	327.410	8215.20	6684.20	1291.17	2061.11	767.35	1751837.35	418686.47	39°38'49.0790"N	80°16'10.0284"W	2199.32	20.420	0.55	-0.29	0.46
9871.00	87.720	324.270	8218.74	6687.74	1385.08	2138.83	714.61	1751784.62	418764.18	39°38'49.8426"N	80°16'10.7111"W	2255.05	18.475	3.35	-0.27	-3.34
9966.00	88.340	327.620	8222.00	6691.00	1480.01	2217.48	661.45	1751731.48	418842.83	39°38'50.6154"N	80°16'11.3992"W	2314.03	16.609	3.58	0.65	3.53
10061.00	87.440	327.030	8225.50	6694.50	1574.93	2297.39	610.20	1751680.21	418922.74	39°38'51.4008"N	80°16'12.0632"W	2377.04	14.875	1.13	-0.95	-0.62
10156.00	87.230	323.450	8229.92	6698.92	1669.79	2375.34	556.10	1751626.12	419000.68	39°38'52.1665"N	80°16'12.7633"W	2439.56	13.177	3.77	-0.22	-3.77

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Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 5H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 5H AWB
Slot	Slot 05		

WELLPATH DATA (245 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [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]
10251.00	87.230	328.180	8234.51	6703.51	1764.65	2453.81	502.80	1751572.82	419079.15	39°38'52.9375"N	80°16'13.4532"W	2504.79	11.580	4.97	0.00	4.98
10345.00	87.440	327.660	8238.88	6707.88	1858.52	2533.37	452.93	1751522.96	419158.70	39°38'53.7196"N	80°16'14.0995"W	2573.54	10.137	0.60	0.22	-0.55
10440.00	87.110	326.990	8243.40	6712.40	1953.39	2613.24	401.70	1751471.73	419238.57	39°38'54.5046"N	80°16'14.7632"W	2643.94	8.739	0.79	-0.35	-0.71
10535.00	88.120	325.800	8247.35	6716.35	2048.31	2692.30	349.17	1751419.20	419317.62	39°38'55.2814"N	80°16'15.4434"W	2714.84	7.390	1.64	1.06	-1.25
10630.00	88.310	325.760	8250.31	6719.31	2143.26	2770.81	295.77	1751365.80	419396.13	39°38'56.0528"N	80°16'16.1347"W	2786.55	6.093	0.20	0.20	-0.04
10725.00	88.240	325.400	8253.17	6722.17	2238.21	2849.14	242.10	1751312.13	419474.46	39°38'56.8223"N	80°16'16.8294"W	2859.41	4.857	0.39	-0.07	-0.38
10819.00	89.200	326.640	8255.27	6724.27	2332.18	2927.07	189.58	1751259.61	419552.38	39°38'57.5880"N	80°16'17.5094"W	2933.20	3.706	1.67	1.02	1.32
10914.00	87.140	325.900	8258.31	6727.31	2427.12	3006.03	136.85	1751206.90	419631.34	39°38'58.3639"N	80°16'18.1921"W	3009.15	2.607	2.30	-2.17	-0.78
11009.00	89.050	325.640	8261.46	6730.46	2522.06	3084.53	83.45	1751153.49	419709.83	39°38'59.1351"N	80°16'18.8835"W	3085.66	1.550	2.03	2.01	-0.27
11104.00	88.490	326.400	8263.50	6732.50	2617.04	3163.29	30.36	1751100.41	419788.58	39°38'59.9089"N	80°16'19.5707"W	3163.43	0.550	0.99	-0.59	0.80
11199.00	87.750	326.800	8266.62	6735.62	2711.98	3242.46	-22.04	1751048.01	419867.76	39°39'0.6869"N	80°16'20.2494"W	3242.54	359.611	0.81	-0.78	0.21
11293.00	87.720	323.950	8270.33	6739.33	2805.88	3319.65	-75.54	1750994.51	419944.94	39°39'1.4452"N	80°16'20.9418"W	3320.51	358.696	2.82	-0.03	-2.82
11388.00	87.780	328.190	8274.07	6743.07	2900.79	3398.40	-128.51	1750941.54	420023.68	39°39'2.2189"N	80°16'21.6277"W	3400.83	357.834	4.46	0.06	4.46
11482.00	89.600	324.670	8276.22	6745.22	2994.75	3476.68	-180.47	1750889.59	420101.96	39°39'2.9882"N	80°16'22.3005"W	3481.37	357.029	4.21	1.94	-3.74
11577.00	86.490	323.090	8279.46	6748.46	3089.58	3553.37	-236.43	1750833.64	420178.64	39°39'3.7412"N	80°16'23.0244"W	3561.22	356.198	3.67	-3.27	-1.66
11672.00	88.460	327.130	8283.64	6752.64	3184.45	3631.20	-290.70	1750779.37	420256.47	39°39'4.5058"N	80°16'23.7267"W	3642.82	355.423	4.73	2.07	4.25
11766.00	87.320	324.850	8287.10	6756.10	3278.37	3709.06	-343.24	1750726.84	420334.32	39°39'5.2708"N	80°16'24.4070"W	3724.91	354.713	2.71	-1.21	-2.43
11861.00	88.000	325.720	8290.98	6759.98	3373.27	3787.08	-397.29	1750672.78	420412.34	39°39'6.0372"N	80°16'25.1066"W	3807.86	354.011	1.16	0.72	0.92
11955.00	86.860	325.370	8295.20	6764.20	3467.17	3864.51	-450.42	1750619.66	420489.77	39°39'6.7979"N	80°16'25.7944"W	3890.67	353.352	1.27	-1.21	-0.37
12050.00	88.090	326.980	8299.38	6768.38	3562.07	3943.35	-503.25	1750566.83	420568.60	39°39'7.5726"N	80°16'26.4784"W	3975.34	352.727	2.13	1.29	1.69
12145.00	89.350	326.470	8301.51	6770.51	3657.04	4022.76	-555.35	1750514.73	420648.00	39°39'8.3528"N	80°16'27.1533"W	4060.91	352.140	1.43	1.33	-0.54
12239.00	90.150	328.180	8301.92	6770.92	3751.03	4101.88	-606.10	1750463.99	420727.11	39°39'9.1304"N	80°16'27.8108"W	4146.41	351.595	2.01	0.85	1.82
12334.00	89.450	326.350	8302.25	6771.25	3846.01	4181.78	-657.47	1750412.62	420807.02	39°39'9.9157"N	80°16'28.4764"W	4233.15	351.065	2.06	-0.74	-1.93
12429.00	90.400	326.760	8302.37	6771.37	3941.01	4261.05	-709.83	1750360.27	420886.28	39°39'10.6946"N	80°16'29.1545"W	4319.77	350.542	1.09	1.00	0.43
12524.00	90.150	326.700	8301.92	6770.92	4036.00	4340.48	-761.94	1750308.16	420966.70	39°39'11.4752"N	80°16'29.8295"W	4406.85	350.044	0.27	-0.26	-0.06
12619.00	90.740	326.910	8301.18	6770.18	4131.00	4419.97	-813.95	1750256.15	421045.19	39°39'12.2563"N	80°16'30.5032"W	4494.29	349.566	0.66	0.62	0.22
12713.00	90.950	327.130	8299.79	6768.79	4224.98	4498.82	-865.11	1750204.99	421124.03	39°39'13.0311"N	80°16'31.1660"W	4581.24	349.115	0.32	0.22	0.23
12808.00	90.220	325.160	8298.82	6767.82	4319.97	4577.70	-918.03	1750152.07	421202.91	39°39'13.8062"N	80°16'31.8513"W	4668.85	348.660	2.21	-0.77	-2.07
12902.00	88.610	324.430	8299.78	6768.78	4413.93	4654.50	-972.22	1750097.89	421279.71	39°39'14.5606"N	80°16'32.5525"W	4754.96	348.202	1.88	-1.71	-0.78
12997.00	91.320	328.460	8299.84	6768.84	4508.90	4733.65	-1024.71	1750045.40	421358.85	39°39'15.3382"N	80°16'33.2324"W	4843.29	347.785	5.11	2.85	4.24

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [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]
13092.00	89.050	326.550	8299.53	6768.53	4603.87	4813.76	-1075.74	1749994.37	421438.96	39°39'16.1256"N	80°16'33.8936"W	4932.50	347.403	3.12	-2.39	-2.01
13186.00	90.580	326.600	8299.84	6768.84	4697.86	4892.21	-1127.52	1749942.60	421517.41	39°39'16.8965"N	80°16'34.5643"W	5020.47	347.022	1.63	1.63	0.05
13281.00	91.290	328.290	8298.29	6767.29	4792.83	4972.27	-1178.63	1749891.49	421597.46	39°39'17.6833"N	80°16'35.2266"W	5110.06	346.665	1.93	0.75	1.78
13376.00	89.170	324.350	8297.90	6766.90	4887.81	5051.31	-1231.30	1749838.82	421676.49	39°39'18.4599"N	80°16'35.9087"W	5199.21	346.301	4.71	-2.23	-4.15
13470.00	90.980	327.770	8297.78	6766.78	4981.79	5129.28	-1283.77	1749786.35	421754.45	39°39'19.2259"N	80°16'36.5882"W	5287.49	345.948	4.12	1.98	3.64
13565.00	91.170	326.070	8296.00	6765.00	5076.76	5208.86	-1335.61	1749734.52	421834.03	39°39'20.0080"N	80°16'37.2598"W	5377.37	345.619	1.80	0.20	-1.79
13660.00	91.480	328.390	8293.80	6762.80	5171.72	5288.71	-1387.02	1749683.12	421913.88	39°39'20.7928"N	80°16'37.9258"W	5467.57	345.305	2.48	0.33	2.44
13754.00	92.280	327.480	8290.72	6759.72	5265.63	5368.33	-1436.89	1749633.25	421993.49	39°39'21.5753"N	80°16'38.5723"W	5557.30	345.015	1.29	0.85	-0.97
13849.00	91.970	326.660	8287.20	6756.20	5360.56	5448.01	-1488.50	1749581.64	422073.17	39°39'22.3583"N	80°16'39.2409"W	5647.70	344.719	0.92	-0.33	-0.86
13943.00	91.140	327.040	8284.64	6753.64	5454.52	5526.68	-1539.88	1749530.26	422151.83	39°39'23.1314"N	80°16'39.9066"W	5737.20	344.431	0.97	-0.88	0.40
14038.00	91.570	326.850	8282.40	6751.40	5549.49	5606.28	-1591.69	1749478.46	422231.43	39°39'23.9136"N	80°16'40.5777"W	5827.85	344.150	0.49	0.45	-0.20
14133.00	91.720	326.600	8279.67	6748.67	5644.45	5685.68	-1643.79	1749426.36	422310.82	39°39'24.6938"N	80°16'41.2526"W	5918.53	343.875	0.31	0.16	-0.26
14228.00	91.660	327.000	8276.87	6745.87	5739.40	5765.13	-1695.78	1749374.37	422390.27	39°39'25.4746"N	80°16'41.9262"W	6009.36	343.609	0.43	-0.06	0.42
14322.00	90.800	327.290	8274.85	6743.85	5833.37	5844.08	-1746.77	1749323.39	422469.21	39°39'26.2504"N	80°16'42.5868"W	6099.55	343.359	0.97	-0.91	0.31
14417.00	92.530	327.390	8272.09	6741.09	5928.31	5924.02	-1798.01	1749272.15	422549.15	39°39'27.0360"N	80°16'43.2508"W	6190.87	343.116	1.82	1.82	0.11
14512.00	93.360	327.180	8267.21	6736.21	6023.18	6003.85	-1849.28	1749220.88	422628.97	39°39'27.8205"N	80°16'43.9152"W	6282.20	342.880	0.90	0.87	-0.22
14606.00	92.120	325.410	8262.72	6731.72	6117.06	6081.95	-1901.38	1749168.78	422707.07	39°39'28.5879"N	80°16'44.5900"W	6372.24	342.639	2.30	-1.32	-1.88
14701.00	92.310	326.930	8259.04	6728.04	6211.99	6160.80	-1954.23	1749115.94	422785.92	39°39'29.3627"N	80°16'45.2745"W	6463.32	342.401	1.61	0.20	1.60
14795.00	92.030	326.630	8255.49	6724.49	6305.92	6239.39	-2005.69	1749064.48	422864.49	39°39'30.1348"N	80°16'45.9412"W	6553.83	342.180	0.44	-0.30	-0.32
14890.00	92.430	325.970	8251.79	6720.79	6400.84	6318.36	-2058.86	1749011.81	422943.46	39°39'30.9108"N	80°16'46.6233"W	6645.19	341.956	0.81	0.42	-0.69
14985.00	92.280	326.770	8247.89	6716.89	6495.76	6397.39	-2110.93	1748959.25	423022.49	39°39'31.6873"N	80°16'47.3042"W	6736.67	341.739	0.86	-0.16	0.84
15080.00	92.090	324.940	8244.26	6713.26	6590.69	6475.96	-2164.21	1748905.97	423101.05	39°39'32.4592"N	80°16'47.9942"W	6828.02	341.521	1.94	-0.20	-1.93
15174.00	93.020	327.320	8240.07	6709.07	6684.58	6553.92	-2216.55	1748853.64	423179.01	39°39'33.2251"N	80°16'48.6720"W	6918.60	341.314	2.72	0.99	2.53
15269.00	91.450	327.450	8236.37	6705.37	6779.49	6633.88	-2267.71	1748802.48	423258.96	39°39'34.0109"N	80°16'49.3350"W	7010.77	341.128	1.66	-1.65	0.14
15364.00	92.890	326.210	8232.77	6701.77	6874.42	6713.34	-2319.65	1748750.55	423338.42	39°39'34.7917"N	80°16'50.0079"W	7102.79	340.939	2.00	1.52	-1.31
15458.00	92.990	326.900	8227.95	6696.95	6968.29	6791.67	-2371.38	1748698.81	423416.74	39°39'35.5614"N	80°16'50.6781"W	7193.76	340.753	0.74	0.11	0.73
15553.00	92.310	327.600	8223.56	6692.56	7063.18	6871.48	-2422.72	1748647.48	423496.55	39°39'36.3457"N	80°16'51.3434"W	7286.07	340.579	1.03	-0.72	0.74
15648.00	92.680	326.680	8219.42	6688.42	7158.08	6951.20	-2474.22	1748595.98	423576.27	39°39'37.1292"N	80°16'52.0107"W	7378.41	340.407	1.04	0.39	-0.97
15742.00	92.030	323.840	8215.56	6684.56	7251.97	7028.37	-2527.73	1748542.47	423653.43	39°39'37.8872"N	80°16'52.7035"W	7469.10	340.219	3.10	-0.69	-3.02
15836.00	94.180	327.010	8210.48	6679.48	7345.81	7105.64	-2580.99	1748489.22	423730.70	39°39'38.6463"N	80°16'53.3931"W	7559.87	340.037	4.08	2.27	3.87

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Actual Wellpath Report

Phoenix 5H AWP Proj: 21858'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 5H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 5H AWB
Slot	Slot 05		

WELLPATH DATA (245 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [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]
15931.00	93.450	325.970	8204.18	6673.18	7440.59	7184.68	-2633.32	1748436.89	423809.73	39°39'39.4228"N	80°16'54.0710"W	7652.06	339.871	1.32	-0.75	-1.09
16026.00	93.390	325.140	8198.51	6667.51	7535.41	7262.88	-2686.96	1748383.25	423887.93	39°39'40.1910"N	80°16'54.7655"W	7743.98	339.698	0.87	-0.06	-0.87
16120.00	93.170	324.380	8193.13	6662.13	7629.22	7339.53	-2741.11	1748329.11	423964.57	39°39'40.9438"N	80°16'55.4664"W	7834.69	339.521	0.84	-0.23	-0.81
16215.00	92.030	326.130	8188.82	6657.82	7724.10	7417.50	-2795.19	1748275.03	424042.54	39°39'41.7098"N	80°16'56.1666"W	7926.69	339.352	2.20	-1.20	1.84
16309.00	90.620	325.820	8186.65	6655.85	7818.07	7495.39	-2847.78	1748222.45	424120.42	39°39'42.4750"N	80°16'56.8476"W	8018.15	339.196	1.54	-1.50	-0.38
16404.00	91.820	325.410	8184.63	6653.63	7913.04	7573.77	-2901.41	1748168.81	424198.80	39°39'43.2449"N	80°16'57.5422"W	8110.50	339.039	1.33	1.26	-0.43
16499.00	89.450	324.350	8183.57	6652.57	8007.99	7651.46	-2956.06	1748114.17	424276.48	39°39'44.0080"N	80°16'58.2495"W	8202.63	338.877	2.73	-2.49	-1.12
16593.00	90.580	326.440	8183.55	6652.55	8101.97	7728.83	-3009.44	1748060.80	424353.84	39°39'44.7680"N	80°16'58.9407"W	8294.06	338.725	2.53	1.20	2.22
16688.00	90.890	326.190	8182.33	6651.33	8196.97	7807.87	-3062.12	1748008.11	424432.88	39°39'45.5446"N	80°16'59.6231"W	8386.86	338.586	0.42	0.33	-0.26
16782.00	90.680	325.240	8181.04	6650.04	8290.95	7885.53	-3115.07	1747955.17	424510.54	39°39'46.3075"N	80°17'0.8088"W	8478.52	338.444	1.03	-0.22	-1.01
16877.00	91.910	325.960	8178.89	6647.89	8385.91	7963.89	-3168.73	1747901.52	424588.89	39°39'47.0773"N	80°17'1.0036"W	8571.14	338.303	1.50	1.29	0.76
16972.00	92.340	326.310	8175.37	6644.37	8480.85	8042.72	-3221.63	1747848.62	424667.72	39°39'47.8518"N	80°17'1.6888"W	8663.96	338.171	0.58	0.45	0.37
17066.00	92.280	326.160	8171.58	6640.58	8574.77	8120.80	-3273.83	1747796.42	424745.79	39°39'48.6189"N	80°17'2.3650"W	8755.88	338.044	0.17	-0.06	-0.16
17161.00	90.620	326.840	8169.18	6638.18	8669.74	8199.99	-3326.24	1747744.01	424824.98	39°39'49.3970"N	80°17'3.0441"W	8848.94	337.921	1.89	-1.75	0.72
17255.00	90.370	325.400	8168.37	6637.37	8763.73	8278.03	-3378.64	1747691.82	424903.01	39°39'50.1637"N	80°17'3.7228"W	8940.97	337.797	1.55	-0.27	-1.53
17350.00	91.020	325.450	8167.21	6636.21	8858.71	8356.24	-3432.55	1747637.71	424981.22	39°39'50.9320"N	80°17'4.4208"W	9033.78	337.668	0.69	0.68	0.05
17445.00	90.030	323.510	8166.34	6635.34	8953.65	8433.56	-3487.74	1747582.53	425058.53	39°39'51.6913"N	80°17'5.1351"W	9126.29	337.532	2.29	-1.04	-2.04
17540.00	90.000	325.810	8166.32	6635.32	9048.60	8511.05	-3542.68	1747527.58	425136.01	39°39'52.4523"N	80°17'5.8464"W	9218.92	337.401	2.42	-0.03	2.42
17635.00	90.430	326.940	8165.96	6634.96	9143.60	8590.15	-3595.29	1747474.98	425215.11	39°39'53.2295"N	80°17'6.5278"W	9312.18	337.289	1.27	0.45	1.19
17730.00	90.980	327.900	8164.79	6633.79	9238.57	8670.19	-3646.44	1747423.83	425295.15	39°39'54.0151"N	80°17'7.1908"W	9405.78	337.190	1.16	0.58	1.01
17824.00	90.030	327.480	8163.97	6632.97	9332.54	8749.63	-3696.68	1747373.60	425374.59	39°39'54.7969"N	80°17'7.8421"W	9498.50	337.096	1.10	-1.01	-0.45
17919.00	90.920	326.670	8163.18	6632.18	9427.53	8829.37	-3748.31	1747321.97	425454.32	39°39'55.5804"N	80°17'8.5113"W	9592.06	336.997	1.27	0.94	-0.85
18014.00	90.770	327.110	8161.78	6630.78	9522.52	8908.94	-3800.20	1747270.08	425533.88	39°39'56.3622"N	80°17'9.1837"W	9685.59	336.899	0.49	-0.16	0.46
18108.00	90.180	326.830	8161.00	6630.00	9616.51	8987.74	-3851.44	1747218.85	425612.68	39°39'57.1366"N	80°17'9.8476"W	9778.19	336.804	0.69	-0.63	-0.30
18203.00	90.370	327.000	8160.54	6629.54	9711.50	9067.34	-3903.29	1747166.99	425692.27	39°39'57.9187"N	80°17'10.5197"W	9871.79	336.709	0.27	0.20	0.18
18298.00	90.180	326.980	8160.09	6629.09	9806.49	9147.00	-3955.05	1747115.24	425771.93	39°39'58.7015"N	80°17'11.1904"W	9965.44	336.617	0.20	-0.20	-0.02
18393.00	90.220	326.810	8159.75	6628.75	9901.49	9226.58	-4006.93	1747063.36	425851.50	39°39'59.4834"N	80°17'11.8628"W	10059.09	336.526	0.18	0.04	-0.18
18488.00	90.370	326.930	8159.26	6628.26	9996.49	9306.13	-4058.86	1747011.44	425931.05	39°40'0.2652"N	80°17'12.5356"W	10152.76	336.436	0.20	0.16	0.13
18582.00	90.550	327.090	8158.51	6627.51	10090.48	9384.98	-4110.04	1746960.27	426009.89	39°40'1.0399"N	80°17'13.1989"W	10245.49	336.350	0.26	0.19	0.17
18677.00	90.370	326.880	8157.75	6626.75	10185.47	9464.61	-4161.83	1746908.47	426089.52	39°40'1.8224"N	80°17'13.8701"W	10339.23	336.264	0.38	-0.19	-0.27

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Actual Wellpath Report

Phoenix 5H AWP Proj: 21858'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 5H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 5H.AWB
Slot	Slot 05		

WELLPATH DATA (245 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [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]
18771.00	90.370	326.990	8157.14	6626.14	10279.46	9543.36	-4213.15	1746857.16	426168.27	39°40'2.5962"N	80°17'14.5352"W	10431.99	336.180	0.17	0.00	0.17
18866.00	90.120	326.530	8156.73	6625.73	10374.46	9622.82	-4265.22	1746805.09	426247.72	39°40'3.3769"N	80°17'15.2099"W	10525.72	336.095	0.55	-0.26	-0.48
18961.00	90.400	326.650	8156.30	6625.30	10469.46	9702.12	-4317.53	1746752.78	426327.01	39°40'4.1561"N	80°17'15.8877"W	10619.43	336.010	0.32	0.29	0.13
19056.00	89.780	326.580	8156.15	6625.15	10564.46	9781.44	-4369.81	1746700.51	426406.33	39°40'4.9355"N	80°17'16.5651"W	10713.16	335.928	0.66	-0.65	-0.07
19150.00	90.090	326.430	8156.26	6625.26	10658.45	9859.83	-4421.68	1746648.64	426484.72	39°40'5.7057"N	80°17'17.2372"W	10805.90	335.846	0.37	0.33	-0.16
19245.00	90.000	326.720	8156.19	6625.19	10753.45	9939.12	-4474.01	1746596.31	426564.00	39°40'6.4847"N	80°17'17.9153"W	10899.67	335.766	0.32	-0.09	0.31
19339.00	89.630	326.620	8156.49	6625.49	10847.45	10017.66	-4525.66	1746544.67	426642.53	39°40'7.2564"N	80°17'18.5846"W	10992.50	335.688	0.41	-0.39	-0.11
19434.00	89.850	326.740	8156.92	6625.92	10942.45	10097.04	-4577.84	1746492.49	426721.91	39°40'8.0363"N	80°17'19.2608"W	11086.34	335.611	0.26	0.23	0.13
19529.00	89.540	326.680	8157.43	6626.43	11037.45	10176.45	-4629.99	1746440.35	426801.32	39°40'8.8166"N	80°17'19.9365"W	11180.20	335.536	0.33	-0.33	-0.06
19624.00	89.780	326.470	8157.99	6626.99	11132.44	10255.74	-4682.32	1746388.02	426880.60	39°40'9.5956"N	80°17'20.6146"W	11274.05	335.461	0.34	0.25	-0.22
19718.00	89.910	326.700	8158.24	6627.24	11226.44	10334.20	-4734.08	1746336.26	426959.06	39°40'10.3665"N	80°17'21.2853"W	11366.93	335.388	0.28	0.14	0.24
19813.00	89.970	326.330	8158.34	6627.34	11321.44	10413.43	-4786.50	1746283.85	427038.28	39°40'11.1449"N	80°17'21.9645"W	11460.81	335.314	0.39	0.06	-0.39
19908.00	89.910	326.720	8158.44	6627.44	11416.44	10492.67	-4838.89	1746231.45	427117.52	39°40'11.9235"N	80°17'22.6435"W	11554.70	335.242	0.42	-0.06	0.41
20002.00	89.910	326.930	8158.59	6627.59	11510.44	10571.35	-4890.33	1746180.02	427196.19	39°40'12.6966"N	80°17'23.3101"W	11647.69	335.175	0.22	0.00	0.22
20087.00	89.940	326.750	8158.72	6627.72	11605.44	10650.88	-4942.29	1746128.06	427275.72	39°40'13.4780"N	80°17'23.9835"W	11741.70	335.107	0.19	0.03	-0.19
20192.00	90.030	326.700	8158.74	6627.74	11700.43	10730.30	-4994.42	1746075.94	427355.14	39°40'14.2584"N	80°17'24.8590"W	11835.69	335.040	0.11	0.09	-0.05
20286.00	89.600	325.540	8159.04	6628.04	11794.43	10808.34	-5046.82	1746023.54	427433.17	39°40'15.0250"N	80°17'25.3378"W	11928.56	334.970	1.32	-0.46	-1.23
20381.00	89.720	325.670	8159.61	6628.61	11889.42	10886.73	-5100.48	1745969.88	427511.55	39°40'15.7950"N	80°17'26.0329"W	12022.30	334.897	0.19	0.13	0.14
20476.00	89.970	325.510	8159.86	6628.86	11984.41	10965.11	-5154.17	1745916.20	427589.93	39°40'16.5649"N	80°17'26.7282"W	12116.06	334.824	0.31	0.26	-0.17
20570.00	89.850	325.520	8160.01	6629.01	12078.40	11042.59	-5207.39	1745862.98	427667.40	39°40'17.3260"N	80°17'27.4176"W	12208.83	334.753	0.13	-0.13	0.01
20665.00	89.600	325.330	8160.47	6629.47	12173.39	11120.81	-5261.30	1745809.07	427745.62	39°40'18.0943"N	80°17'28.1158"W	12302.59	334.681	0.33	-0.26	-0.20
20760.00	90.000	325.940	8160.80	6629.80	12268.38	11199.23	-5314.92	1745755.45	427824.03	39°40'18.8646"N	80°17'28.8104"W	12396.41	334.612	0.77	0.42	0.64
20854.00	89.570	325.120	8161.15	6630.15	12362.37	11276.72	-5368.12	1745702.26	427901.52	39°40'19.6258"N	80°17'29.4994"W	12489.24	334.544	0.98	-0.46	-0.87
20949.00	89.780	325.370	8161.69	6630.69	12457.35	11354.77	-5422.28	1745648.11	427979.57	39°40'20.3924"N	80°17'30.2008"W	12583.00	334.474	0.34	0.22	0.26
21043.00	89.690	324.960	8162.13	6631.13	12551.32	11431.93	-5475.97	1745594.41	428056.72	39°40'21.1502"N	80°17'30.8961"W	12675.77	334.405	0.45	-0.10	-0.44
21138.00	89.750	326.660	8162.59	6631.59	12646.31	11510.50	-5529.35	1745541.04	428135.29	39°40'21.9221"N	80°17'31.5876"W	12769.71	334.342	1.79	0.06	1.79
21233.00	89.660	326.580	8163.08	6632.08	12741.31	11589.83	-5581.62	1745488.77	428214.61	39°40'22.7015"N	80°17'32.2650"W	12863.85	334.285	0.13	-0.09	-0.08
21327.00	89.850	326.580	8163.48	6632.48	12835.31	11668.29	-5633.39	1745437.00	428293.06	39°40'23.4724"N	80°17'32.9359"W	12957.01	334.229	0.20	0.20	0.00
21422.00	89.910	326.650	8163.68	6632.68	12930.31	11747.61	-5685.67	1745384.73	428372.38	39°40'24.2517"N	80°17'33.6134"W	13051.18	334.174	0.10	0.06	0.07
21517.00	89.970	326.690	8163.78	6632.78	13025.31	11826.99	-5737.86	1745332.54	428451.75	39°40'25.0316"N	80°17'34.2899"W	13145.37	334.120	0.08	0.06	0.04

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Regulatory Programs

234628

Actual Wellpath Report

Phoenix 5H AWP Proj: 21858'
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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 5H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 5H AWB
Slot	Slot 05		

WELLPATH DATA (245 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVDSS [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]
21611.00	89.880	326.810	8163.90	6632.90	13119.31	11905.60	-5789.40	1745281.00	428530.36	39°40'25.8040"N	80°17'34.9579"W	13238.60	334.067	0.16	-0.10	0.13
21706.00	89.910	326.830	8164.08	6633.08	13214.30	11985.11	-5841.39	1745229.01	428609.86	39°40'26.5852"N	80°17'35.6317"W	13332.84	334.016	0.04	0.03	0.02
21800.00	90.120	326.460	8164.05	6633.05	13308.30	12063.62	-5893.08	1745177.33	428688.38	39°40'27.3566"N	80°17'36.3016"W	13426.07	333.964	0.45	0.22	-0.39
21833.00	89.970	326.730	8164.03	6633.03	13341.30	12091.17	-5911.25	1745159.17	428715.92	39°40'27.6273"N	80°17'36.5370"W	13458.80	333.946	0.94	-0.45	0.82
21858.00‡	89.970	326.730	8164.04	6633.04	13366.30	12112.07	-5924.96	1745145.45	428736.82	39°40'27.8327"N	80°17'36.7148"W	13483.60	333.933	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Phoenix 5H AWB Ref Wellpath: Phoenix 5H AWP Proj: 21858'

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	1555.00	1527.00	28.00	1554.99	0.00	0.00	-2.13	-1.85
13.375in Casing Surface	28.00	1525.00	1497.00	28.00	1524.99	0.00	0.00	-2.10	-1.75
12.25in Open Hole	1555.00	2845.00	1290.00	1554.99	2844.20	-2.13	-1.85	24.08	-0.81
9.625in Casing Intermediate	28.00	2815.00	2787.00	28.00	2814.21	0.00	0.00	24.67	-0.71
8.75in Open Hole	2845.00	7754.00	4909.00	2844.20	7495.70	24.08	-0.81	555.34	1337.95
8.5in Open Hole	7754.00	21858.00	14104.00	7495.70	8164.04	555.34	1337.95	12112.07	-5924.96
5.5in Casing Production	28.00	21828.00	21800.00	28.00	8164.02	0.00	0.00	12086.99	-5908.50

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Slot	Slot 05		

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Phoenix 5H LP Rev-5	8190.00	1354.23	1229.31	1752299.28	417979.64	39°38'42.1323"N	80°16'4.0457"W	point
Phoenix 5H BHL Rev-5	8641.17	12112.02	-5925.37	1745145.04	428736.77	39°40'27.8320"N	80°17'36.7200"W	point

WELLPATH COMPOSITION - Ref Wellbore: Phoenix 5H AWB Ref Wellpath: Phoenix 5H AWP Proj: 21858'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
28.00	1364.00	BH Generic gyro - northseeking (Standard)	01 17.5" Gyro [Northseeking-Standard] (50' - 1364')	Phoenix 5H AWB	11/9/2023
1364.00	2728.00	OWSG MWD rev2 + HRGM	02 12.25" SDI MWD [OWSG MWD Rev.2+HRGM] (1364')(1592' - 2728')	Phoenix 5H AWB	11/9/2023
2728.00	7581.00	OWSG MWD rev2 + HRGM	03 8.75" SDI MWD [OWSG MWD Rev.2+HRGM] (2728')(3020' - 7581')	Phoenix 5H AWB	11/9/2023
7581.00	21858.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	04 8.5" BH ATK Curve <HRGM+Short Spacing> (7581')(7702' - 21833')	Phoenix 5H AWB	11/9/2023

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Slot	Slot 05		

COMMENTS

Wellpath general comments

API: 47061019400000

BH Job #: 111974127

Rig: Patterson 277

Duration: 11/13/2023 - 11/16/2023

01_17.5" Gyro [Northseeking-Standard] (50' - 1364')

02_12.25" SDI MWD [OWSG MWD Rev.2+HRGM] (1364')(1592' - 2728')

03_8.75" SDI MWD [OWSG MWD Rev.2+HRGM] (2728')(3020' - 7581')

04_8.5" BH ATK Curve <HRGM+Short Spacing> (7581')(7702'- 21833')

Final Survey MD @ 21833'

Projected MD at TD: 21858'

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	02/06/2024
Job End Date:	03/23/2024
State:	West Virginia
County:	Monongalia
API Number:	47-061-01940-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	PHOENIX 5H
Latitude:	39.641167
Longitude:	-80.272417
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7581
Total Base Water Volume (gal)*:	26472684
Total Base Non Water Volume:	0



Water Source	Percent
Surface Water, < 1000TDS	85.00%
Other, > 1000TDS	15.00%

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Clearal 268	Chemstream	Biocide					
EZ-A 431	TARQUIN	HCL Additive					
HCL Acid (28%)	TARQUIN	Acid					
Sand	US Silica	Proppant					
StimSTREAM FR 9800	Chemstream	Friction Reducer					
StimSTREAM SC 405	Chemstream	Scale Control					
Water	NNE	Carrier/Base Fluid					
Items above are Trade Names. Items below are the individual ingredients.							
			Water	7732-18-5	100.00000	88.00770	None
			Crystalline Silica in the form of Quartz	14808-60-7	99.90000	11.88654	None
			Acrylamide-Chloride Salt of Trimethylammonio-	69418-26-4	40.00000	0.02230	None

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			Ethyl Acrylate Copolymer				
			Alkanes, C12-26-Branched and Linear	90622-53-0	40.00000	0.02230	None
			Hydrogen chloride	7647-01-0	28.00000	0.01015	None
			Glutaraldehyde	111-30-8	20.00000	0.00444	None
			Ethoxylated Alcohols (C12-16)	68551-12-2	5.00000	0.00279	None
			AA/Maleic Anhydride Co-polymer	9003-04-7	5.00000	0.00197	None
			AA/ATBS Co-polymer	9003-05-8	5.00000	0.00197	None
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00067	None
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00067	None
			Ethanol	64-17-5	1.50000	0.00033	None
			Methanol	67-56-1	25.00000	0.00004	None
			Pyridinium, 1-(phenylmethyl)-, ethyl methyl derivs., chlorides	68909-18-2	25.00000	0.00004	None
			Proprietary	Proprietary	10.00000	0.00003	None -
			Ethanoic Acid	64-19-7	15.00000	0.00002	None
			Ethoxylated Alcohols	68439-50-9	15.00000	0.00002	None
			2-ethylhexanol	104-76-7	5.00000	0.00001	None
			Ethoxylated Nonylphenols	127087-87-0	5.00000	0.00001	None

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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