

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

API 47-061-01891 County Monongalia District Battelle
Quad Wadestown Pad Name Phoenix Field/Pool Name _____
Farm name Phoenix Well Number 10H
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 4388196.3 Easting 562472.7
Landing Point of Curve Northing 4388538.5 Easting 563246.7
Bottom Hole Northing 4383691.5 Easting 566593.8

Elevation (ft) 1,503.5' 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 FOR 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 10/27/2021 Date drilling commenced 12/27/2021 Date drilling ceased 4/17/2022
Date completion activities began 11/1/2022 Date completion activities ceased 1/27/2023
Verbal plugging (Y/N) N Date permission granted NA Granted by _____

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

Freshwater depth(s) ft 1,240 Open mine(s) (Y/N) depths Y, Federal #2 @1,230
Salt water depth(s) ft 2,760 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1,230 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____

02/23/2024

API 47- 061 - 01891 Farm name Phoenix Well number 10H

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						

Please insert additional pages as applicable.

API 47- 061 - 01891 Farm name Phoenix Well number 10H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>7,989</u>	<u>TVD</u>	<u>28,802</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3274 psi Bottom Hole _____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 3939 mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>		<u>BOTTOM</u>		<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
<u>See Attached</u>	<u>0</u>		<u>0</u>		

Please insert additional pages as applicable.

Drilling Contractor Patterson UTI
Address 4000 Town Center Blvd, Suite 240 City Canonsburg State PA Zip 15317

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

Cementing Company NextTier
Address 4000 Town Center Blvd City Canonsburg State PA Zip 15317

Stimulating Company Pro Frac
Address 800 Mountain View Drive City Smithfield State PA Zip 15478

Please insert additional pages as applicable.

Completed by Hollie Medley Telephone _____
Signature Hollie Medley Title Regulatory Manager Date 1/10/2024

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

Phoenix 10H Stimulation Report

Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbbls)	Total Clean Fluid (Bbbls)	Total Proppant Amount (lbs)	Flush Volume (bbbls)
1	11/9/2022	5,275	10,324	9,512	79	1,910	8,601	306,000	467
2	11/10/2022	5,804	6,361	9,380	80	239	10,342	501,780	700
3	11/11/2022	5,859	6,301	9,483	82	349	11,156	499,930	699
4	11/11/2022	5,442	6,100	9,422	85	405	11,343	500,063	712
5	11/12/2022	5,702	6,825	9,548	79	27	10,875	501,800	705
6	11/12/2022	5,374	6,337	9,345	85	39	11,015	500,757	690
7	11/13/2022	5,634	6,938	9,432	81	19	10,810	501,020	686
8	11/13/2022	6,168	7,625	9,607	80	42	10,817	500,580	676
9	11/13/2022	5,260	7,184	9,690	86	28	10,838	500,720	693
10	11/13/2022	5,326	7,541	9,399	82	15	10,694	500,384	600
11	11/14/2022	5,927	7,444	9,544	86	86	10,811	499,256	638
12	11/14/2022	5,934	7,650	9,590	80	11	10,291	502,606	603
13	11/14/2022	5,856	7,958	9,522	82	13	10,698	500,000	608
14	11/14/2022	6,023	6,835	9,526	86	65	10,538	504,951	615
15	11/14/2022	6,178	6,649	9,576	87	34	10,600	499,694	609
16	11/15/2022	5,949	7,192	9,606	88	38	10,767	500,352	604
17	11/15/2022	5,475	6,217	9,568	88	91	10,695	498,138	628
18	11/16/2022	6,094	6,920	9,282	87	75	10,805	500,600	582
19	11/16/2022	5,745	5,037	9,601	92	121	10,793	500,000	565
20	11/16/2022	6,117	5,623	9,644	92	34	10,775	499,844	562
21	11/16/2022	5,964	8,044	9,419	88	45	9,790	456,485	568
22	11/17/2022	5,570	7,699	9,759	93	50	9,799	455,091	550
23	11/17/2022	5,590	7,942	9,582	89	34	9,938	455,000	549
24	11/17/2022	5,699	8,134	9,546	88	58	10,353	478,038	706
25	1/11/2023	5,500	5,834	8,555	75	43	10,019	456,730	539
26	1/11/2023	5,603	7,997	9,365	88	58	9,937	458,678	533
27	1/11/2023	5,084	7,161	9,498	86	42	10,072	456,219	525
28	1/11/2023	9,368	6,631	9,411	88	79	9,844	455,700	537
29	1/12/2023	5,858	5,548	9,470	86	64	10,259	455,280	552
30	1/12/2023	5,963	7,777	9,452	89	105	9,862	456,777	523
31	1/12/2023	5,503	7,981	9,486	87	92	9,787	454,026	569
32	1/13/2023	6,292	7,474	9,428	87	78	9,823	457,260	447
33	1/13/2023	5,728	6,892	9,507	86	61	9,935	454,073	547
34	1/13/2023	6,298	7,477	9,466	88	63	10,011	454,906	552
35	1/13/2023	6,061	6,146	9,263	87	97	9,704	456,440	495
36	1/14/2023	6,276	5,053	9,351	87	77	9,908	456,707	326
37	1/14/2023	5,683	8,052	9,379	88	32	10,035	455,445	458
38	1/14/2023	5,577	8,383	9,486	88	41	9,925	457,873	417
39	1/14/2023	5,818	6,433	9,219	87	58	9,717	455,680	481
40	1/15/2023	6,305	6,362	9,434	88	90	10,003	454,860	474
41	1/15/2023	5,559	6,832	9,461	89	101	10,019	460,374	512
42	1/15/2023	5,633	6,283	9,458	91	44	9,991	457,313	513
43	1/15/2023	6,359	6,626	9,348	89	43	9,770	457,025	512
44	1/15/2023	5,717	6,791	9,536	79	54	9,672	455,580	459
45	1/16/2023	5,469	7,160	9,798	81	28	9,737	455,880	461
46	1/16/2023	5,666	6,865	9,649	80	92	9,862	455,995	464

47	1/16/2023	5,512	8,636	9,469	80	71	10,290	457,641	594
48	1/16/2023	5,344	8,136	9,343	79	51	9,739	456,210	439
49	1/16/2023	5,431	6,802	9,513	83	84	9,803	455,580	432
50	1/17/2023	5,446	6,384	9,521	84	70	9,890	456,300	489
51	1/17/2023	5,738	6,608	9,267	84	125	9,737	454,800	472
52	1/17/2023	5,636	8,094	9,397	84	51	9,746	454,179	466
53	1/17/2023	5,354	5,502	9,285	86	91	9,782	454,200	386
54	1/18/2023	5,649	6,318	9,380	85	78	9,834	454,600	400
55	1/18/2023	6,155	8,367	9,181	81	58	9,952	456,035	430
56	1/18/2023	6,324	7,574	9,281	83	54	9,921	458,726	446
57	1/18/2023	5,474	8,264	9,584	84	46	9,626	455,540	395
58	1/18/2023	5,516	6,001	9,497	84	87	9,636	454,780	385
59	1/19/2023	5,613	6,088	9,131	83	31	9,707	455,680	439
60	1/19/2023	6,231	6,532	8,869	85	62	9,240	445,355	429
61	1/19/2023	5,543	7,086	8,951	85	71	9,913	453,800	425
62	1/19/2023	4,940	7,479	9,291	87	53	9,945	456,140	381
63	1/20/2023	5,122	5,397	8,875	90	64	9,662	455,120	376
64	1/20/2023	5,900	6,916	8,637	85	56	9,723	456,721	417
65	1/20/2023	5,236	7,533	9,174	87	51	10,033	455,240	369
66	1/21/2023	5,236	7,533	9,174	87	51	10,033	455,240	369
67	1/21/2023	5,272	6,634	9,362	87	79	9,747	456,506	401
68	1/21/2023	5,574	6,215	8,672	85	37	9,726	456,226	363
69	1/21/2023	5,521	5,236	8,865	84	91	9,779	455,682	390
70	1/21/2023	5,218	6,914	9,067	87	32	9,500	454,460	341
71	1/21/2023	5,426	7,806	9,123	87	53	10,200	456,760	307
72	1/22/2023	5,536	7,555	8,947	87	46	9,810	453,190	382
73	1/22/2023	5,655	8,098	8,901	86	50	10,612	454,153	378
74	1/22/2023	5,358	7,366	8,872	88	65	9,747	454,340	378
75	1/22/2023	5,236	7,721	9,046	87	28	9,825	455,620	348
76	1/23/2023	5,413	6,919	8,935	89	44	9,809	454,840	378
77	1/23/2023	5,921	7,381	8,855	87	49	9,783	455,476	378
78	1/23/2023	5,718	8,687	8,537	88	72	9,870	456,006	378
79	1/23/2023	5,719	7,371	8,780	87	37	9,502	454,540	379
80	1/23/2023	5,605	7,324	8,432	86	31	9,660	455,740	378
81	1/24/2023	6,145	6,579	8,670	89	31	10,190	455,530	338
82	1/24/2023	5,532	6,560	8,664	86	53	10,818	456,540	339
83	1/24/2023	5,994	7,547	8,773	90	73	9,604	458,540	329
84	1/24/2023	5,357	6,827	8,539	88	32	9,535	455,420	287
85	1/25/2023	5,347	6,725	8,787	89	24	9,629	455,360	272
86	1/25/2023	5,663	7,794	8,636	88	36	10,027	457,480	319
87	1/25/2023	5,875	6,864	8,717	88	84	9,543	454,280	316
88	1/25/2023	8,202	7,059	8,450	88	45	9,726	454,740	304
89	1/25/2023	5,133	7,232	8,344	90	27	9,703	455,920	271
90	1/25/2023	5,196	7,107	8,360	89	38	9,755	455,360	252
91	1/26/2023	5,733	7,021	8,326	89	31	9,631	457,560	303
92	1/26/2023	5,719	7,753	8,371	92	82	9,779	458,660	264
93	1/26/2023	5,367	6,978	8,152	89	83	9,579	455,540	240
94	1/26/2023	5,507	7,481	8,386	93	37	9,744	455,180	231
95	1/27/2023	5,309	7,908	8,326	93	37	9,726	455,200	211
96	1/27/2023	5,678	7,528	8,146	91	113	9,763	454,850	275
97	1/27/2023	5,829	7,741	8,120	91	111	9,274	421,228	267
98	1/27/2023	5,319	7,228	8,172	90	99	9,311	414,765	261

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Phoenix 10H
Perforation Report

Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
1	11/9/2022	40		28,695
2	11/10/2022	40	28,651	28,493
3	11/11/2022	40	28,451	28,293
4	11/11/2022	40	28,251	28,094
5	11/12/2022	40	28,052	27,894
6	11/12/2022	40	27,852	27,694
7	11/13/2022	40	27,652	27,494
8	11/13/2022	40	27,452	27,294
9	11/13/2022	40	27,252	27,095
10	11/13/2022	40	27,053	26,895
11	11/14/2022	40	26,853	26,695
12	11/14/2022	40	26,653	26,495
13	11/14/2022	40	26,453	26,295
14	11/14/2022	40	26,253	26,096
15	11/14/2022	40	26,054	25,896
16	11/15/2022	40	25,854	25,696
17	11/15/2022	40	25,654	25,496
18	11/16/2022	40	25,454	25,296
19	11/16/2022	40	25,254	25,097
20	11/16/2022	40	25,055	24,897
21	11/16/2022	40	24,855	24,697
22	11/17/2022	40	24,655	24,497
23	11/17/2022	40	24,455	24,297
24	11/17/2022	40	24,255	24,098
25	1/11/2023	40	24,056	23,898
26	1/11/2023	40	23,856	23,698
27	1/11/2023	40	23,656	23,498
28	1/11/2023	40	23,456	23,298
29	1/12/2023	40	23,256	23,099
30	1/12/2023	40	23,057	22,899
31	1/12/2023	40	22,857	22,699
32	1/13/2023	40	22,657	22,499
33	1/13/2023	40	22,457	22,299
34	1/13/2023	40	22,257	22,100
35	1/13/2023	40	22,058	21,900
36	1/14/2023	40	21,858	21,700
37	1/14/2023	40	21,658	21,500
38	1/14/2023	40	21,458	21,300
39	1/14/2023	40	21,258	21,101
40	1/15/2023	40	21,059	20,901
41	1/15/2023	40	20,859	20,701
42	1/15/2023	40	20,659	20,501
43	1/15/2023	40	20,459	20,301
44	1/15/2023	40	20,259	20,102
45	1/16/2023	40	20,060	19,902
46	1/16/2023	40	19,860	19,702
47	1/16/2023	40	19,660	19,502

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48	1/16/2023	40	19,460	19,302
49	1/16/2023	40	19,260	19,103
50	1/17/2023	40	19,061	18,903
51	1/17/2023	40	18,861	18,703
52	1/17/2023	40	18,661	18,503
53	1/17/2023	40	18,461	18,303
54	1/18/2023	40	18,261	18,104
55	1/18/2023	40	18,062	17,904
56	1/18/2023	40	17,862	17,704
57	1/18/2023	40	17,662	17,504
58	1/18/2023	40	17,462	17,304
59	1/19/2023	40	17,262	17,105
60	1/19/2023	40	17,063	16,905
61	1/19/2023	40	16,863	16,705
62	1/19/2023	40	16,663	16,505
63	1/20/2023	40	16,463	16,305
64	1/20/2023	40	16,263	16,106
65	1/20/2023	40	16,064	15,906
66	1/21/2023	40	15,864	15,706
67	1/21/2023	40	15,664	15,506
68	1/21/2023	40	15,464	15,306
69	1/21/2023	40	15,264	15,107
70	1/21/2023	40	15,065	14,907
71	1/21/2023	40	14,865	14,707
72	1/22/2023	40	14,665	14,507
73	1/22/2023	40	14,465	14,307
74	1/22/2023	40	14,265	14,108
75	1/22/2023	40	14,066	13,908
76	1/23/2023	40	13,866	13,708
77	1/23/2023	40	13,666	13,508
78	1/23/2023	40	13,466	13,308
79	1/23/2023	40	13,266	13,109
80	1/23/2023	40	13,067	12,909
81	1/24/2023	40	12,867	12,709
82	1/24/2023	40	12,667	12,509
83	1/24/2023	40	12,467	12,309
84	1/24/2023	40	12,267	12,110
85	1/25/2023	40	12,068	11,910
86	1/25/2023	40	11,868	11,710
87	1/25/2023	40	11,668	11,510
88	1/25/2023	40	11,468	11,310
89	1/25/2023	40	11,268	11,111
90	1/25/2023	40	11,069	10,911
91	1/26/2023	40	10,869	10,711
92	1/26/2023	40	10,669	10,511
93	1/26/2023	40	10,469	10,311
94	1/26/2023	40	10,269	10,112
95	1/27/2023	40	10,070	9,912
96	1/27/2023	40	9,870	9,712
97	1/27/2023	40	9,670	9,512
98	1/27/2023	40	9,470	9,312

02/23/2024

Cement Job Log



NexTier Completion Solutions
3990 Rogerdale Rd., Houston, TX 77042
(713)325-6000

Customer: NORTHEAST NATURAL ENERGY LLC	Date: 30-Mar-22	Serv. Supervisor: Anthony Barbara
Cust. Rep.: Troy	Ticket #: BPA-2203-0043	Serv. Center: Black Lick - 1571
Well Name: Phoenix 10H	API Well #: 47-061-01891	County: Monongalia State: WV
Well Type:	Rig: Patterson 277	Type of Job: CM-SURFACE CASING

Materials Furnished by NexTier

Plugs	Casing Hardware	Physical Slurry Properties								
		Sacks of Cement	Fluid Density (lb/gal)	Excess	Yield (cuft/sk)	Mix Water (gal/sk)	Fluid Volume (bbls)	Fluid Volume (cuft)	Mix Water (bbls)	
6% Gel Spacer	+20.0 PPB NEX-020		8.7		4.62	33.66	25.00	-		
15.6 lb/gal Cement	100% NCM-910 +1.0% NAC-110+0.25 PPS NLM-600	2395	15.6	12%	1.19	5.21	506.68	2,845.01	297	
Fresh Water Displacement			8.33			-	225.39	-		
0						-		-		
						-		-		
						-		-		
						-		-		
						-		-		
						-		-		
						-		-		
						-		-		
						-		-		

Displacement Chemicals:

OPEN HOLE DATA						TUBULAR DATA							
22 in. O.H. 128 to 1,498 ft						13.375 in. 54.5#, (0 to 1,498 ft)							
Ambient Tmp.	Bulk Tmp.	Slurry 1 Tmp.	Slurry 2 Tmp.	Slurry 3 Tmp.	Slurry 4 Tmp.	SIZE WEIGHT	THRD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)	
75.0 °F		72.3 °F				13.375" 54.5#	BTC	1553	J-55	12.615	2730	1130	
PREVIOUS CASING DATA						PERFORATED INTERVAL DATA			CASING EQUIPMENT DEPTHS				
24 in. 97.4# (0 to 128 ft)						TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
										1553	1507		
WELL FLUID			DISPLACEMENT FLUID			DIFF PRESS (psi)	CSG LIFT (psi)	MAX PRESS (psi)	Mix H2O Chlorides (ppm)	Mix H2O pH	Mix H2O Temp	WATER ON LOC (bbl)	
TYPE	DENSITY	VOLUME	TYPE	DENSITY									
Air		230 bbl	Processed	8.4		586	458	1000	<200	8	66.5 °F	1500	
Bumped Plug	Final Differential (psi)	Floats Held (Y/N)	PSI Left on Casing	Cement to Surface (bbl)	Top of Cement (ft)	Full Circ. During Job (Y/N)	Max Pump Pressure (psi)	Casing Rotation	Additional Hrs Charged (hrs)	Casing Reciprocation	Rathole Length (ft)		
Yes	150.00	Y			220	No	950.00	No		No	33		

Comments/Additional Details:
Topped Out Twice with 425 sacks. No cement to Surface

<i>Anthony Barbara</i>	30-Mar-22
Service Supervisor	Date

02/23/2024



104 Heliport Loop Rd
Bridgeport Wv 26330
Office 304-933-3544

DETAILED TREATMENT LOG

COMPANY NAME: Northeast
FIELD: Blacks ville
WELL #: Phoenix 10H

SUPERVISOR: Jason starcher
PUMP NUMBER: Pump 05
COMPANY REP: Troy

DATE: Saturday, April 2, 2022

TYPE OF JOB: Intermediate 9 5/8

TIME (Hr:Min)	PRESSURE (PSI)	Wellhead Pressure	RATE (BPM)	FLUID TYPE	STAGE BBLs	COMMENTS:
13:20	2000					Pressure test lines
13:25	400	400	6	Production Water	210	Production water ahead to load hole
14:00	400	400	4.5	Fresh Water	30	Fresh water spacer
14:08	400	400	5	Gel	25	Gel spacer
14:15	450	450	5	Fresh Water	10	Fresh water spacer
14:17	800	800	7	Cement	225	Cement @ 15.6 PPG
15:05						Shutdown release plug
15:06	800-1000	800-1000	7	Production Water	208	Displacement
16:05	1500	1500				Plug Landed, Release pressure, floats held, 1 bbl back
16:08	950	950	0.5	Production Water		CIT Test
16:23						Release pressure, rig down cement head to wash up stack
16:24						20 bbl Cement returns back to surface
17:00						Wash up stack
17:30	0	0	.5 - 1	Cement	14	Grout 13" to surface
18:15						Wash up pump truck

NORTHEAST NATURAL ENERGY, LLC

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

Slot: Slot 10
 Well: Phoenix 10H
 Wellbore: Phoenix 10H PWB



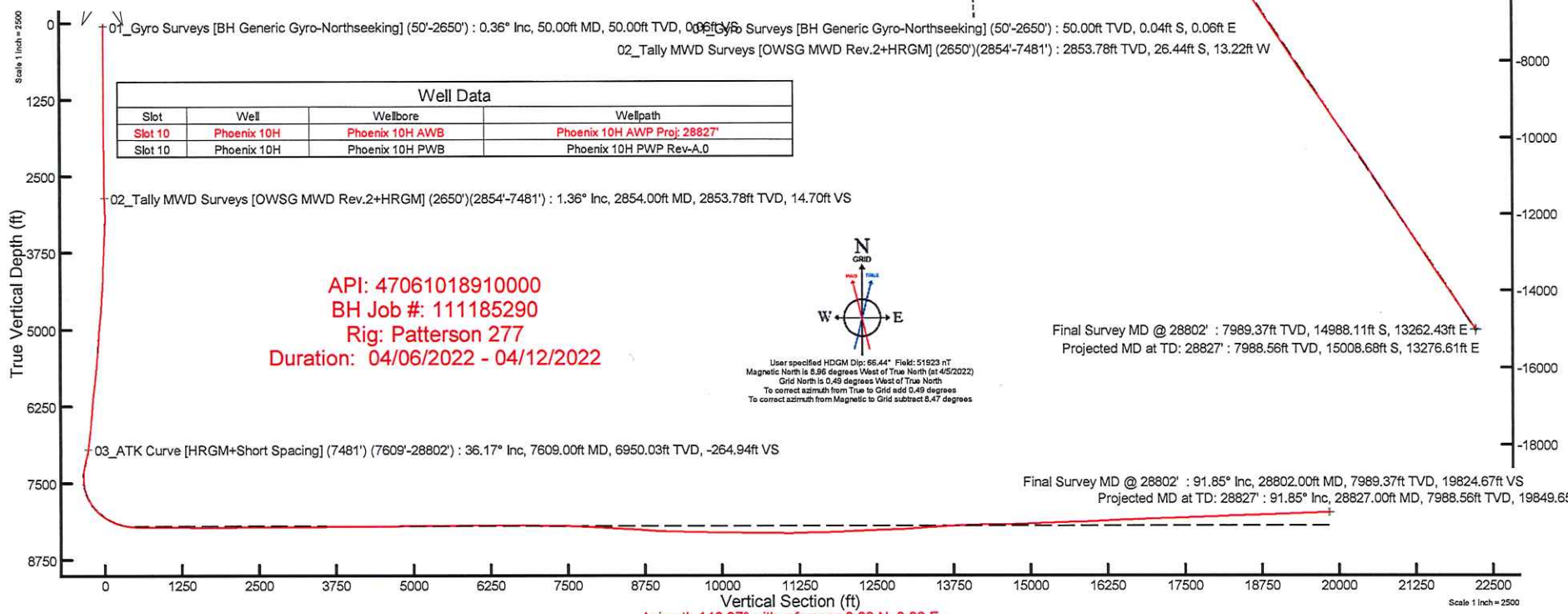
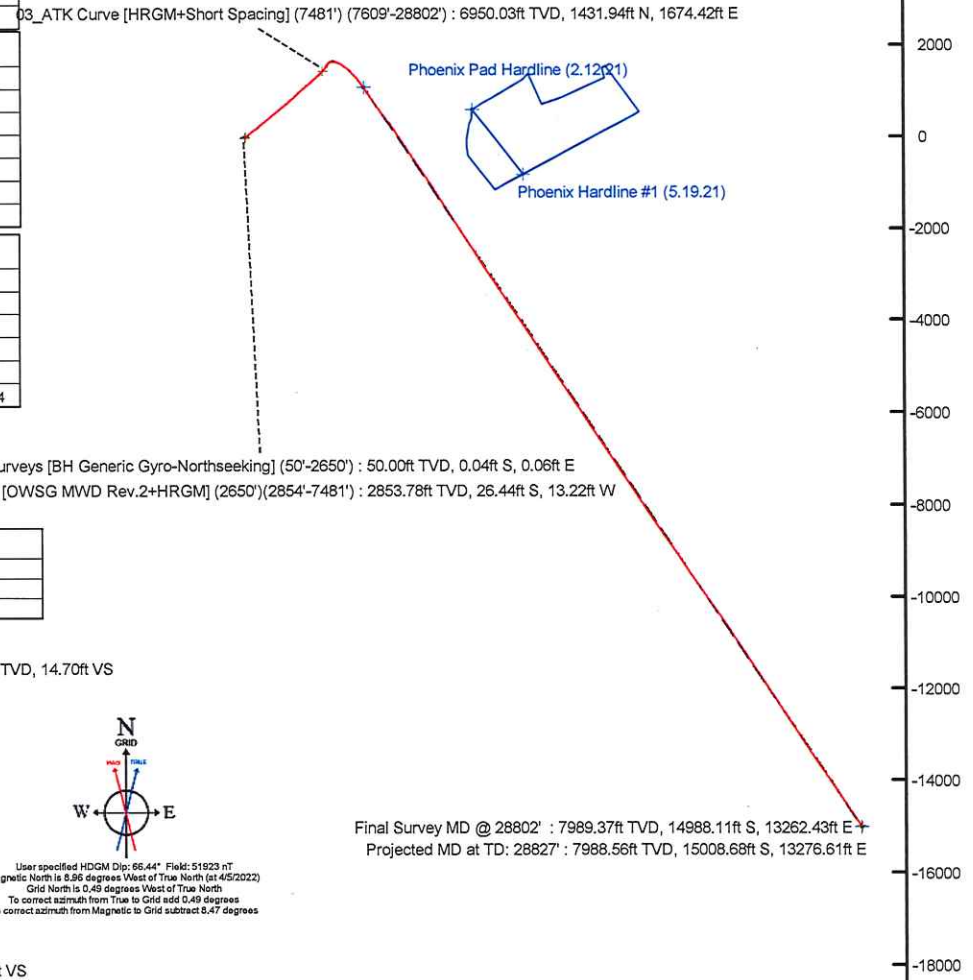
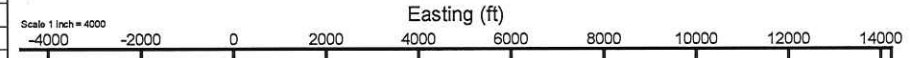
Plot reference wellpath is Phoenix 10H PWB Rev-A.0	Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet
True vertical depths are referenced to Patterson 277 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to Patterson 277 (RKB)	Scale: True distance
Patterson 277 (RKB) to Mean Sea Level: 1531 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot 10): -1503 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: manajeh on 2022-04-22; Database: WA_MPL_EASTERNUS_Defn

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
Phoenix Pad	1751051.980	416616.940	39°38'28.5589"N	80°16'19.8414"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot 10	0.68	71.58	1751123.560	416617.620	39°38'28.5717"N	80°16'18.9265"W
Patterson 277 (RKB) to Ground level (At Slot: Slot 10)			28ft			
Mean Sea Level to Ground level (At Slot: Slot 10)			-1503ft			
Patterson 277 (RKB) to Mean Sea Level			1531ft			

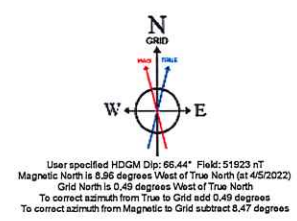
Well Profile Data

Design Comment	MD (ft)	Inc (")	Az (")	TVD (ft)	Local N (ft)	Local E (ft)	DLS (*/100ft)	VS (ft)
Tie On	7481.00	36.340	46.910	6846.81	1379.99	1619.36	0.81	-252.17
Projection	7644.00	36.340	46.910	6978.11	1445.97	1689.90	0.00	-268.05
Curve	7900.55	26.269	19.929	7198.09	1552.06	1765.32	6.65	-314.61
Landing Pt.	9484.08	90.000	146.373	8210.00	1081.97	2560.47	6.65	517.18
BHL	28817.34	90.000	146.373	8210.00	-15016.14	13266.83	0.00	19850.44



Slot	Well	Wellbore	Wellpath
Slot 10	Phoenix 10H	Phoenix 10H AWB	Phoenix 10H AWP Proj: 28827
Slot 10	Phoenix 10H	Phoenix 10H PWB	Phoenix 10H PWB Rev-A.0

API: 47061018910000
 BH Job #: 111185290
 Rig: Patterson 277
 Duration: 04/06/2022 - 04/12/2022



Final Survey MD @ 28802' : 7989.37ft TVD, 14988.11ft S, 13262.43ft E
 Projected MD at TD: 28827' : 7988.56ft TVD, 15008.68ft S, 13276.61ft E

Final Survey MD @ 28802' : 91.85° Inc, 28802.00ft MD, 7989.37ft TVD, 19824.67ft VS
 Projected MD at TD: 28827' : 91.85° Inc, 28827.00ft MD, 7988.56ft TVD, 19849.65ft VS

Vertical Section (ft)
 Azimuth 146.37° with reference 0.00 N, 0.00 E

Scale 1 inch = 2500



Actual Wellpath Report

Phoenix 10H AWP Proj: 28827'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

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	4/22/2022 at 12:18:26 PM
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	0.68	71.58	1751123.56	416617.62	39°38'28.5717"N	80°16'18.9265"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 10)	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	146.37°

REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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	125.900	0.00	0.00	0.00	0.00	1751123.56	416617.62	39°38'28.5717"N	80°16'18.9265"W	0.00	0.000	0.00	0.00	0.00
28.00	0.000	125.900	28.00	0.00	0.00	0.00	1751123.56	416617.62	39°38'28.5717"N	80°16'18.9265"W	0.00	0.000	0.00	0.00	0.00
50.00	0.360	125.900	50.00	0.06	-0.04	0.06	1751123.62	416617.58	39°38'28.5713"N	80°16'18.9257"W	0.07	125.900	1.64	1.64	0.00
100.00	0.200	354.600	100.00	0.14	-0.05	0.18	1751123.74	416617.57	39°38'28.5713"N	80°16'18.9242"W	0.18	104.651	1.03	-0.32	-262.60
150.00	0.330	283.300	150.00	-0.05	0.07	0.03	1751123.59	416617.69	39°38'28.5724"N	80°16'18.9261"W	0.08	19.761	0.65	0.26	-142.60
200.00	0.370	239.600	200.00	-0.16	0.03	-0.25	1751123.31	416617.65	39°38'28.5719"N	80°16'18.9297"W	0.25	275.802	0.53	0.08	-87.40
250.00	0.360	158.900	250.00	-0.02	-0.20	-0.34	1751123.22	416617.42	39°38'28.5697"N	80°16'18.9307"W	0.39	238.870	0.95	-0.02	-161.40
300.00	0.400	251.900	300.00	0.09	-0.40	-0.44	1751123.12	416617.22	39°38'28.5677"N	80°16'18.9321"W	0.60	227.795	1.10	0.08	186.00
350.00	0.210	135.100	350.00	0.13	-0.52	-0.55	1751123.01	416617.10	39°38'28.5665"N	80°16'18.9334"W	0.76	226.260	1.06	-0.38	-233.60
400.00	0.380	179.000	400.00	0.36	-0.75	-0.48	1751123.08	416616.87	39°38'28.5642"N	80°16'18.9325"W	0.89	212.423	0.54	0.34	87.80
450.00	0.350	255.700	450.00	0.45	-0.96	-0.62	1751122.94	416616.66	39°38'28.5622"N	80°16'18.9343"W	1.14	213.094	0.91	-0.06	153.40
500.00	0.200	357.300	499.99	0.33	-0.91	-0.78	1751122.78	416616.71	39°38'28.5627"N	80°16'18.9363"W	1.19	220.527	0.87	-0.30	203.20
550.00	0.360	185.300	549.99	0.37	-0.98	-0.79	1751122.77	416616.64	39°38'28.5620"N	80°16'18.9365"W	1.26	219.123	1.12	0.32	-344.00
600.00	0.440	216.200	599.99	0.56	-1.29	-0.92	1751122.64	416616.33	39°38'28.5589"N	80°16'18.9381"W	1.58	215.604	0.45	0.16	61.80
650.00	0.400	252.900	649.99	0.58	-1.49	-1.20	1751122.36	416616.13	39°38'28.5568"N	80°16'18.9417"W	1.92	218.825	0.53	-0.08	73.40
700.00	0.330	281.500	699.99	0.43	-1.52	-1.51	1751122.05	416616.10	39°38'28.5566"N	80°16'18.9456"W	2.14	224.879	0.39	-0.14	57.20
750.00	0.400	183.500	749.99	0.46	-1.66	-1.66	1751121.90	416615.96	39°38'28.5551"N	80°16'18.9475"W	2.35	224.997	1.11	0.14	-196.00
800.00	0.100	289.800	799.99	0.57	-1.82	-1.71	1751121.85	416615.80	39°38'28.5536"N	80°16'18.9482"W	2.50	223.252	0.88	-0.60	212.60
850.00	0.240	277.200	849.99	0.46	-1.79	-1.86	1751121.70	416615.83	39°38'28.5538"N	80°16'18.9500"W	2.58	226.019	0.29	0.28	-25.20
900.00	0.330	238.100	899.99	0.39	-1.86	-2.08	1751121.48	416615.76	39°38'28.5532"N	80°16'18.9529"W	2.79	228.313	0.42	0.18	-78.20
950.00	0.540	223.800	949.99	0.44	-2.10	-2.37	1751121.19	416615.52	39°38'28.5507"N	80°16'18.9565"W	3.17	228.420	0.47	0.42	-28.60
1000.00	0.480	230.600	999.99	0.51	-2.41	-2.69	1751120.87	416615.21	39°38'28.5477"N	80°16'18.9606"W	3.61	228.246	0.17	-0.12	13.60
1050.00	0.560	225.200	1049.98	0.58	-2.71	-3.03	1751120.53	416614.91	39°38'28.5447"N	80°16'18.9649"W	4.07	228.184	0.19	0.16	-10.80
1100.00	0.530	227.100	1099.98	0.66	-3.04	-3.37	1751120.19	416614.58	39°38'28.5414"N	80°16'18.9692"W	4.54	227.968	0.07	-0.06	3.80
1150.00	0.500	229.200	1149.98	0.73	-3.34	-3.71	1751119.85	416614.28	39°38'28.5384"N	80°16'18.9735"W	4.99	227.982	0.07	-0.06	4.20
1200.00	0.740	213.900	1199.98	0.88	-3.75	-4.05	1751119.51	416613.87	39°38'28.5343"N	80°16'18.9779"W	5.52	227.215	0.58	0.48	-30.60
1250.00	0.830	205.300	1249.97	1.19	-4.35	-4.39	1751119.17	416613.27	39°38'28.5284"N	80°16'18.9821"W	6.18	225.271	0.30	0.18	-17.20
1300.00	0.680	189.700	1299.97	1.59	-4.97	-4.59	1751118.97	416612.65	39°38'28.5222"N	80°16'18.9846"W	6.76	222.760	0.51	-0.30	-31.20
1350.00	0.390	178.800	1349.97	1.95	-5.43	-4.64	1751118.92	416612.19	39°38'28.5177"N	80°16'18.9852"W	7.14	220.513	0.61	-0.58	-21.80
1400.00	0.470	210.400	1399.96	2.18	-5.78	-4.74	1751118.82	416611.84	39°38'28.5142"N	80°16'18.9864"W	7.47	219.369	0.49	0.16	63.20



Actual Wellpath Report

Phoenix 10H AWP Proj: 28827'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
1450.00	0.740	234.900	1449.96	2.28	-6.14	-5.11	1751118.45	416611.48	39°38'28.5106"N	80°16'18.9911"W	7.99	219.760	0.74	0.54	49.00
1500.00	0.860	215.700	1499.96	2.42	-6.63	-5.59	1751117.97	416610.99	39°38'28.5057"N	80°16'18.9972"W	8.67	220.141	0.58	0.24	-38.40
1550.00	0.990	202.600	1549.95	2.80	-7.33	-5.98	1751117.59	416610.29	39°38'28.4987"N	80°16'19.0020"W	9.46	219.177	0.49	0.26	-26.20
1600.00	0.810	217.900	1599.94	3.15	-8.01	-6.36	1751117.20	416609.61	39°38'28.4920"N	80°16'19.0069"W	10.23	218.442	0.60	-0.36	30.60
1650.00	0.830	210.100	1649.94	3.42	-8.60	-6.76	1751116.80	416609.02	39°38'28.4861"N	80°16'19.0119"W	10.94	218.149	0.23	0.04	-15.60
1700.00	0.890	195.400	1699.93	3.84	-9.29	-7.04	1751116.52	416608.33	39°38'28.4793"N	80°16'19.0154"W	11.66	217.162	0.46	0.12	-29.40
1750.00	0.760	200.000	1749.93	4.29	-9.98	-7.26	1751116.30	416607.64	39°38'28.4725"N	80°16'19.0181"W	12.34	216.039	0.29	-0.26	9.20
1800.00	0.890	205.200	1799.92	4.68	-10.64	-7.54	1751116.02	416606.98	39°38'28.4659"N	80°16'19.0216"W	13.04	215.315	0.30	0.26	10.40
1850.00	0.850	205.700	1849.92	5.07	-11.32	-7.86	1751115.70	416606.30	39°38'28.4591"N	80°16'19.0257"W	13.79	214.774	0.08	-0.08	1.00
1900.00	0.890	201.300	1899.91	5.49	-12.02	-8.16	1751115.40	416605.60	39°38'28.4522"N	80°16'19.0295"W	14.53	214.187	0.16	0.08	-8.80
1950.00	1.080	203.100	1949.90	5.97	-12.82	-8.49	1751115.07	416604.81	39°38'28.4443"N	80°16'19.0336"W	15.37	213.526	0.38	0.38	3.60
2000.00	0.900	202.900	1999.90	6.44	-13.61	-8.83	1751114.73	416604.01	39°38'28.4365"N	80°16'19.0378"W	16.22	212.970	0.36	-0.36	-0.40
2050.00	1.190	196.500	2049.89	6.99	-14.47	-9.13	1751114.43	416603.15	39°38'28.4279"N	80°16'19.0416"W	17.11	212.247	0.62	0.58	-12.80
2100.00	1.200	202.500	2099.88	7.62	-15.45	-9.48	1751114.08	416602.17	39°38'28.4182"N	80°16'19.0459"W	18.13	211.521	0.25	0.02	12.00
2150.00	1.210	201.900	2149.87	8.21	-16.43	-9.87	1751113.69	416601.20	39°38'28.4085"N	80°16'19.0509"W	19.16	211.012	0.03	0.02	-1.20
2200.00	1.130	201.000	2199.86	8.79	-17.38	-10.25	1751113.31	416600.25	39°38'28.3991"N	80°16'19.0555"W	20.17	210.531	0.16	-0.16	-1.80
2250.00	1.050	200.500	2249.85	9.35	-18.26	-10.58	1751112.98	416599.36	39°38'28.3903"N	80°16'19.0598"W	21.11	210.093	0.16	-0.16	-1.00
2300.00	1.020	195.500	2299.84	9.91	-19.12	-10.86	1751112.70	416598.50	39°38'28.3818"N	80°16'19.0632"W	21.99	209.602	0.19	-0.06	-10.00
2350.00	0.900	201.600	2349.83	10.42	-19.92	-11.13	1751112.43	416597.70	39°38'28.3739"N	80°16'19.0665"W	22.81	209.192	0.31	-0.24	12.20
2400.00	0.500	181.300	2399.83	10.82	-20.50	-11.28	1751112.28	416597.12	39°38'28.3682"N	80°16'19.0684"W	23.40	208.815	0.93	-0.80	-40.60
2450.00	0.810	209.700	2449.82	11.16	-21.02	-11.46	1751112.10	416596.60	39°38'28.3630"N	80°16'19.0706"W	23.94	208.587	0.88	0.62	56.80
2500.00	0.750	212.500	2499.82	11.45	-21.61	-11.81	1751111.75	416596.01	39°38'28.3572"N	80°16'19.0750"W	24.62	208.655	0.14	-0.12	5.60
2550.00	0.920	202.400	2549.81	11.81	-22.26	-12.14	1751111.42	416595.37	39°38'28.3507"N	80°16'19.0792"W	25.35	208.606	0.45	0.34	-20.20
2600.00	0.760	208.500	2599.81	12.19	-22.92	-12.45	1751111.11	416594.70	39°38'28.3442"N	80°16'19.0831"W	26.08	208.509	0.37	-0.32	12.20
2650.00	0.530	225.400	2649.81	12.39	-23.37	-12.77	1751110.79	416594.25	39°38'28.3397"N	80°16'19.0871"W	26.63	208.654	0.59	-0.46	33.80
2854.00	1.360	174.620	2853.78	14.70	-26.44	-13.22	1751110.35	416591.18	39°38'28.3093"N	80°16'19.0925"W	29.56	206.554	0.54	0.41	-24.89
2917.00	2.630	170.350	2916.74	16.68	-28.61	-12.90	1751110.66	416589.01	39°38'28.2878"N	80°16'19.0883"W	31.39	204.273	2.03	2.02	-6.78
3010.00	2.580	115.900	3009.66	20.43	-31.63	-10.66	1751112.90	416585.99	39°38'28.2582"N	80°16'19.0593"W	33.38	198.628	2.56	-0.05	-58.55
3108.00	4.240	73.470	3107.49	23.40	-31.56	-5.20	1751118.36	416586.06	39°38'28.2593"N	80°16'18.9895"W	31.99	189.362	2.97	1.69	-43.30
3203.00	5.640	55.400	3202.14	24.35	-27.91	2.01	1751125.57	416589.71	39°38'28.2960"N	80°16'18.8977"W	27.99	175.889	2.19	1.47	-19.02

REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
3298.00	7.740	44.200	3296.50	22.93	-20.68	10.31	1751133.87	416596.95	39°38'28.3683"N	80°16'18.7924"W	23.10	153.497	2.59	2.21	-11.79
3392.00	10.210	41.110	3389.34	19.40	-9.86	20.20	1751143.76	416607.76	39°38'28.4760"N	80°16'18.6671"W	22.48	116.014	2.68	2.63	-3.29
3487.00	12.050	44.070	3482.55	15.07	3.61	32.64	1751156.19	416621.23	39°38'28.6102"N	80°16'18.5097"W	32.84	83.687	2.03	1.94	3.12
3582.00	14.480	44.360	3575.01	10.48	19.23	47.84	1751171.40	416636.85	39°38'28.7658"N	80°16'18.3171"W	51.56	68.102	2.56	2.56	0.31
3676.00	17.290	43.670	3665.41	4.97	37.74	65.71	1751189.26	416655.36	39°38'28.9503"N	80°16'18.0907"W	75.77	60.128	3.00	2.99	-0.73
3771.00	16.600	49.730	3756.29	0.29	56.72	85.81	1751209.36	416674.34	39°38'29.1396"N	80°16'17.8358"W	102.86	56.533	1.99	-0.73	6.38
3866.00	19.120	49.340	3846.71	-3.18	75.64	107.97	1751231.52	416693.25	39°38'29.3284"N	80°16'17.5546"W	131.83	54.988	2.66	2.65	-0.41
3961.00	21.860	47.540	3935.69	-7.80	97.72	132.83	1751256.38	416715.33	39°38'29.5487"N	80°16'17.2393"W	164.90	53.659	2.96	2.88	-1.89
4059.00	23.090	52.500	4026.25	-11.90	121.74	161.53	1751285.08	416739.35	39°38'29.7885"N	80°16'16.8750"W	202.27	52.998	2.31	1.26	5.06
4153.00	24.960	54.860	4112.11	-13.67	144.37	192.38	1751315.93	416761.99	39°38'30.0148"N	80°16'16.4832"W	240.53	53.113	2.24	1.99	2.51
4248.00	26.580	52.090	4197.66	-15.78	168.97	225.54	1751349.09	416786.58	39°38'30.2607"N	80°16'16.0620"W	281.82	53.160	2.12	1.71	-2.92
4343.00	27.940	49.890	4282.11	-19.88	196.37	259.34	1751382.88	416813.98	39°38'30.5344"N	80°16'15.6330"W	325.30	52.867	1.78	1.43	-2.32
4438.00	27.650	46.570	4366.15	-26.14	225.87	292.37	1751415.91	416843.47	39°38'30.8287"N	80°16'15.2140"W	369.45	52.312	1.66	-0.31	-3.49
4533.00	28.540	49.250	4449.96	-32.71	255.84	325.57	1751449.11	416873.44	39°38'31.1277"N	80°16'14.7929"W	414.06	51.839	1.63	0.94	2.82
4627.00	30.110	52.090	4531.92	-37.25	284.98	361.19	1751484.73	416902.59	39°38'31.4187"N	80°16'14.3408"W	460.08	51.726	2.23	1.67	3.02
4723.00	32.950	50.810	4613.74	-41.58	316.28	400.43	1751523.97	416933.88	39°38'31.7314"N	80°16'13.8426"W	510.27	51.696	3.04	2.96	-1.33
4816.00	36.000	49.390	4690.39	-47.35	350.06	440.79	1751564.32	416967.66	39°38'32.0686"N	80°16'13.3304"W	562.89	51.544	3.39	3.28	-1.53
4910.00	36.160	48.890	4766.36	-54.32	386.28	482.66	1751606.19	417003.88	39°38'32.4301"N	80°16'12.7992"W	618.20	51.329	0.36	0.17	-0.53
5009.00	35.450	50.320	4846.66	-61.15	423.82	526.76	1751650.29	417041.41	39°38'32.8048"N	80°16'12.2395"W	676.09	51.181	1.11	-0.72	1.44
5104.00	35.070	48.260	4924.23	-67.90	459.58	568.33	1751691.86	417077.17	39°38'33.1617"N	80°16'11.7121"W	730.90	51.039	1.31	-0.40	-2.17
5198.00	35.880	50.090	5000.78	-74.72	495.23	609.61	1751733.14	417112.82	39°38'33.5176"N	80°16'11.1883"W	785.42	50.911	1.42	0.86	1.95
5294.00	36.360	51.800	5078.33	-80.07	530.88	653.56	1751777.08	417148.47	39°38'33.8736"N	80°16'10.6305"W	842.00	50.913	1.16	0.50	1.78
5388.00	35.920	49.920	5154.25	-85.39	565.87	696.55	1751820.07	417183.45	39°38'34.2230"N	80°16'10.0847"W	897.44	50.910	1.27	-0.47	-2.00
5483.00	36.280	50.600	5231.00	-91.34	601.65	739.59	1751863.11	417219.23	39°38'34.5802"N	80°16'9.5384"W	953.40	50.872	0.57	0.38	0.72
5578.00	36.700	50.970	5307.38	-96.84	637.37	783.37	1751906.88	417254.95	39°38'34.9369"N	80°16'8.9828"W	1009.90	50.867	0.50	0.44	0.39
5673.00	35.890	48.860	5383.95	-103.15	673.56	826.39	1751949.90	417291.14	39°38'35.2983"N	80°16'8.4368"W	1066.12	50.818	1.57	-0.85	-2.22
5768.00	35.690	49.430	5461.01	-110.14	709.91	868.41	1751991.92	417327.48	39°38'35.6610"N	80°16'7.9036"W	1121.65	50.735	0.41	-0.21	0.60
5863.00	35.670	50.430	5538.18	-116.35	745.57	910.81	1752034.32	417363.15	39°38'36.0171"N	80°16'7.3655"W	1177.06	50.697	0.61	-0.02	1.05
5962.00	36.060	48.820	5618.41	-123.17	783.15	954.99	1752078.50	417400.72	39°38'36.3921"N	80°16'6.8049"W	1235.04	50.646	1.03	0.39	-1.63
6057.00	35.960	48.640	5695.26	-130.60	819.99	996.97	1752120.47	417437.56	39°38'36.7598"N	80°16'6.2723"W	1290.87	50.563	0.15	-0.11	-0.19



Actual Wellpath Report

Phoenix 10H AWP Proj: 28827'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
6151.00	37.280	47.690	5770.70	-138.61	857.39	1038.74	1752162.24	417474.96	39°38'37.1329"N	80°16'5.7424"W	1346.89	50.463	1.53	1.40	-1.01
6246.00	37.360	48.200	5846.25	-147.04	895.97	1081.51	1752205.00	417513.53	39°38'37.5178"N	80°16'5.2000"W	1404.43	50.360	0.34	0.08	0.54
6340.00	36.820	45.780	5921.24	-156.27	934.63	1122.96	1752246.45	417552.19	39°38'37.9033"N	80°16'4.6743"W	1461.01	50.230	1.66	-0.57	-2.57
6436.00	36.990	47.740	5998.01	-165.89	974.11	1164.95	1752288.44	417591.67	39°38'38.2971"N	80°16'4.1419"W	1518.55	50.098	1.24	0.18	2.04
6531.00	36.980	48.780	6073.89	-173.96	1012.16	1207.60	1752331.08	417629.72	39°38'38.6767"N	80°16'3.6009"W	1575.68	50.032	0.66	-0.01	1.09
6626.00	36.530	50.100	6150.01	-180.82	1049.13	1250.78	1752374.26	417666.68	39°38'39.0457"N	80°16'3.0529"W	1632.52	50.011	0.96	-0.47	1.39
6720.00	35.930	48.710	6225.83	-187.55	1085.27	1292.97	1752416.45	417702.82	39°38'39.4064"N	80°16'2.5176"W	1688.07	49.991	1.08	-0.64	-1.48
6818.00	34.710	50.310	6305.80	-194.33	1122.07	1336.04	1752459.52	417739.62	39°38'39.7737"N	80°16'1.9709"W	1744.72	49.975	1.56	-1.24	1.63
6913.00	34.650	49.040	6383.92	-200.63	1157.04	1377.25	1752500.73	417774.59	39°38'40.1229"N	80°16'1.4480"W	1798.77	49.966	0.76	-0.06	-1.34
7008.00	35.350	47.350	6461.74	-208.38	1193.37	1417.86	1752541.33	417810.91	39°38'40.4853"N	80°16'0.9328"W	1853.23	49.914	1.26	0.74	-1.78
7102.00	35.420	47.960	6538.38	-216.63	1230.03	1458.09	1752581.56	417847.58	39°38'40.8510"N	80°16'0.4226"W	1907.62	49.849	0.38	0.07	0.65
7198.00	35.260	48.500	6616.69	-224.50	1267.02	1499.51	1752622.97	417884.57	39°38'41.2200"N	80°15'59.8972"W	1963.13	49.804	0.37	-0.17	0.56
7293.00	35.180	46.400	6694.30	-232.99	1304.07	1539.86	1752663.33	417921.61	39°38'41.5895"N	80°15'59.3853"W	2017.86	49.740	1.28	-0.08	-2.21
7387.00	35.810	45.980	6770.83	-242.64	1341.85	1579.25	1752702.71	417959.39	39°38'41.9663"N	80°15'58.8860"W	2072.34	49.646	0.72	0.67	-0.45
7481.00	36.340	46.910	6846.81	-252.17	1379.99	1619.36	1752742.82	417997.52	39°38'42.3465"N	80°15'58.3774"W	2127.60	49.563	0.81	0.56	0.99
7609.00	36.170	46.410	6950.03	-264.94	1431.94	1674.42	1752797.87	418049.47	39°38'42.8646"N	80°15'57.6793"W	2203.21	49.463	0.27	-0.13	-0.39
7700.00	33.340	37.710	7024.83	-277.60	1470.27	1709.19	1752832.65	418087.80	39°38'43.2463"N	80°15'57.2389"W	2254.56	49.297	6.27	-3.11	-9.56
7795.00	28.810	29.960	7106.21	-296.15	1510.79	1736.62	1752860.07	418128.32	39°38'43.6491"N	80°15'56.8927"W	2301.81	48.978	6.35	-4.77	-8.16
7889.00	26.130	31.740	7189.60	-314.85	1548.03	1758.82	1752882.27	418165.55	39°38'44.0189"N	80°15'56.6129"W	2343.04	48.647	2.98	-2.85	1.89
7984.00	23.070	31.890	7275.97	-331.29	1581.63	1779.66	1752903.11	418199.15	39°38'44.3528"N	80°15'56.3502"W	2380.91	48.372	3.22	-3.22	0.16
8078.00	21.230	50.090	7363.13	-340.79	1608.22	1802.48	1752925.93	418225.74	39°38'44.6175"N	80°15'56.0614"W	2415.64	48.260	7.53	-1.96	19.36
8172.00	22.080	65.180	7450.57	-339.95	1626.57	1831.59	1752955.04	418244.09	39°38'44.8013"N	80°15'55.6913"W	2449.58	48.393	5.98	0.90	16.05
8267.00	24.550	77.980	7537.86	-329.94	1638.18	1867.13	1752990.57	418255.70	39°38'44.9191"N	80°15'55.2382"W	2483.91	48.737	5.92	2.60	13.47
8361.00	26.990	92.050	7622.58	-310.28	1641.49	1907.59	1753031.03	418259.01	39°38'44.9551"N	80°15'54.7214"W	2516.62	49.288	6.99	2.60	14.97
8455.00	30.380	101.590	7705.08	-280.94	1635.95	1952.23	1753075.67	418253.47	39°38'44.9041"N	80°15'54.1501"W	2547.06	50.037	6.05	3.61	10.15
8550.00	34.530	110.200	7785.27	-242.12	1621.81	2001.08	1753124.51	418239.33	39°38'44.7685"N	80°15'53.5241"W	2575.77	50.976	6.53	4.37	9.06
8644.00	39.450	116.650	7860.35	-194.63	1599.19	2052.82	1753176.26	418216.72	39°38'44.5494"N	80°15'52.8602"W	2602.21	52.081	6.66	5.23	6.86
8739.00	44.240	122.980	7931.14	-137.94	1567.58	2107.65	1753231.08	418185.11	39°38'44.2416"N	80°15'52.1558"W	2626.69	53.360	6.72	5.04	6.66
8834.00	49.960	127.860	7995.80	-72.97	1527.18	2164.23	1753287.66	418144.71	39°38'43.8470"N	80°15'51.4282"W	2648.80	54.791	7.10	6.02	5.14
8929.00	57.040	130.630	8052.28	-0.02	1478.84	2223.27	1753346.69	418096.37	39°38'43.3743"N	80°15'50.6682"W	2670.19	56.370	7.81	7.45	2.92



Actual Wellpath Report

Phoenix 10H AWP Proj: 28827'

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
9024.00	62.970	133.820	8099.76	79.73	1423.53	2284.11	1753407.53	418041.07	39°38'42.8328"N	80°15'49.8845"W	2691.39	58.067	6.89	6.24	3.36
9119.00	68.300	136.860	8138.94	164.63	1361.98	2344.87	1753468.29	417979.51	39°38'42.2296"N	80°15'49.1010"W	2711.72	59.851	6.32	5.61	3.20
9214.00	72.880	140.220	8170.52	253.36	1294.83	2404.14	1753527.56	417912.37	39°38'41.5710"N	80°15'48.3361"W	2730.66	61.694	5.86	4.82	3.54
9309.00	78.380	144.280	8194.09	345.10	1222.09	2460.42	1753583.83	417839.63	39°38'40.8568"N	80°15'47.6088"W	2747.21	63.586	7.12	5.79	4.27
9404.00	84.390	145.820	8208.32	438.96	1145.13	2514.19	1753637.60	417762.68	39°38'40.1008"N	80°15'46.9131"W	2762.69	65.512	6.53	6.33	1.62
9497.00	87.600	145.160	8214.81	531.71	1068.69	2566.75	1753690.15	417686.25	39°38'39.3498"N	80°15'46.2330"W	2780.34	67.395	3.52	3.45	-0.71
9593.00	89.510	145.460	8217.23	627.65	989.79	2621.36	1753744.76	417607.35	39°38'38.5746"N	80°15'45.5262"W	2802.00	69.314	2.01	1.99	0.31
9687.00	89.720	145.480	8217.86	721.64	912.35	2674.64	1753798.04	417529.91	39°38'37.8138"N	80°15'44.8367"W	2825.97	71.165	0.22	0.22	0.02
9781.00	89.380	145.610	8218.60	815.63	834.84	2727.82	1753851.22	417452.41	39°38'37.0523"N	80°15'44.1485"W	2852.71	72.983	0.39	-0.36	0.14
9876.00	90.220	145.500	8218.93	910.62	756.50	2781.56	1753904.95	417374.07	39°38'36.2826"N	80°15'43.4532"W	2882.59	74.785	0.89	0.88	-0.12
9971.00	90.150	145.200	8218.63	1005.60	678.35	2835.57	1753958.96	417295.93	39°38'35.5148"N	80°15'42.7542"W	2915.58	76.546	0.32	-0.07	-0.32
10064.00	89.850	145.370	8218.63	1098.58	601.90	2888.53	1754011.91	417219.49	39°38'34.7637"N	80°15'42.0689"W	2950.58	78.229	0.37	-0.32	0.18
10158.00	89.450	143.960	8219.20	1192.54	525.22	2942.89	1754066.27	417142.81	39°38'34.0105"N	80°15'41.3657"W	2989.40	79.881	1.56	-0.43	-1.50
10254.00	89.540	142.730	8220.05	1288.40	448.21	3000.20	1754123.58	417065.81	39°38'33.2542"N	80°15'40.6248"W	3033.50	81.503	1.28	0.09	-1.28
10348.00	89.630	142.190	8220.73	1382.18	373.68	3057.48	1754180.85	416991.28	39°38'32.5224"N	80°15'39.8846"W	3080.23	83.032	0.58	0.10	-0.57
10444.00	89.540	145.070	8221.42	1478.05	296.39	3114.40	1754237.77	416913.99	39°38'31.7634"N	80°15'39.1487"W	3128.47	84.564	3.00	-0.09	3.00
10538.00	89.260	146.210	8222.41	1572.04	218.80	3167.45	1754290.81	416836.41	39°38'31.0010"N	80°15'38.4621"W	3174.99	86.048	1.25	-0.30	1.21
10633.00	89.570	146.990	8223.38	1667.03	139.49	3219.74	1754343.10	416757.10	39°38'30.2217"N	80°15'37.7851"W	3222.76	87.519	0.88	0.33	0.82
10728.00	90.150	146.040	8223.61	1762.03	60.26	3272.15	1754395.51	416677.88	39°38'29.4430"N	80°15'37.1066"W	3272.71	88.945	1.17	0.61	-1.00
10822.00	90.250	147.070	8223.28	1856.03	-18.17	3323.96	1754447.31	416599.45	39°38'28.6722"N	80°15'36.4359"W	3324.01	90.313	1.10	0.11	1.10
10917.00	90.370	146.640	8222.77	1951.02	-97.71	3375.90	1754499.25	416519.91	39°38'27.8905"N	80°15'35.7633"W	3377.31	91.658	0.47	0.13	-0.45
11011.00	90.490	146.400	8222.06	2045.02	-176.11	3427.75	1754551.10	416441.52	39°38'27.1200"N	80°15'35.0921"W	3432.27	92.941	0.29	0.13	-0.26
11106.00	91.020	146.910	8220.81	2140.01	-255.47	3479.97	1754603.31	416362.17	39°38'26.3402"N	80°15'34.4161"W	3489.33	94.199	0.77	0.56	0.54
11201.00	90.920	146.460	8219.20	2235.00	-334.84	3532.14	1754655.48	416282.80	39°38'25.5601"N	80°15'33.7406"W	3547.97	95.415	0.49	-0.11	-0.47
11296.00	90.280	145.930	8218.21	2329.99	-413.78	3584.99	1754708.33	416203.87	39°38'24.7844"N	80°15'33.0565"W	3608.79	96.584	0.87	-0.67	-0.56
11391.00	90.090	146.020	8217.90	2424.99	-492.51	3638.15	1754761.48	416125.14	39°38'24.0108"N	80°15'32.3685"W	3671.33	97.710	0.22	-0.20	0.09
11486.00	90.650	146.380	8217.29	2519.98	-571.45	3690.99	1754814.33	416046.20	39°38'23.2350"N	80°15'31.6845"W	3734.97	98.801	0.70	0.59	0.38
11581.00	89.780	145.500	8216.93	2614.98	-650.15	3744.20	1754867.53	415967.51	39°38'22.4617"N	80°15'30.9959"W	3800.22	99.851	1.30	-0.92	-0.93
11676.00	90.120	146.370	8217.01	2709.97	-728.85	3797.41	1754920.74	415888.81	39°38'21.6884"N	80°15'30.3073"W	3866.72	100.865	0.98	0.36	0.92
11770.00	89.910	146.260	8216.99	2803.97	-807.07	3849.54	1754972.87	415810.60	39°38'20.9198"N	80°15'29.6324"W	3933.24	101.841	0.25	-0.22	-0.12



Actual Wellpath Report

Phoenix 10H AWP Proj: 28827'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
11865.00	89.690	146.400	8217.32	2898.97	-886.13	3902.21	1755025.53	415731.54	39°38'20.1428"N	80°15'28.9507"W	4001.56	102.794	0.27	-0.23	0.15
11959.00	90.370	146.270	8217.27	2992.97	-964.37	3954.32	1755077.64	415653.31	39°38'19.3740"N	80°15'28.2762"W	4070.21	103.706	0.74	0.72	-0.14
12053.00	90.250	146.240	8216.76	3086.97	-1042.53	4006.53	1755129.85	415575.16	39°38'18.6059"N	80°15'27.6004"W	4139.95	104.585	0.13	-0.13	-0.03
12147.00	89.970	147.410	8216.58	3180.97	-1121.21	4057.97	1755181.28	415496.48	39°38'17.8327"N	80°15'26.9344"W	4210.01	105.445	1.28	-0.30	1.24
12241.00	90.550	147.730	8216.16	3274.94	-1200.54	4108.38	1755231.69	415417.15	39°38'17.0528"N	80°15'26.2816"W	4280.20	106.289	0.70	0.62	0.34
12336.00	90.680	147.180	8215.14	3369.92	-1280.62	4159.48	1755282.79	415337.08	39°38'16.2657"N	80°15'25.6197"W	4352.16	107.113	0.59	0.14	-0.58
12431.00	90.520	147.600	8214.14	3464.90	-1360.64	4210.68	1755333.98	415257.06	39°38'15.4792"N	80°15'24.9568"W	4425.06	107.908	0.47	-0.17	0.44
12525.00	90.800	147.830	8213.06	3558.87	-1440.10	4260.88	1755384.18	415177.60	39°38'14.6980"N	80°15'24.3065"W	4497.67	108.674	0.39	0.30	0.24
12620.00	90.800	147.520	8211.73	3653.83	-1520.37	4311.67	1755434.97	415097.34	39°38'13.9090"N	80°15'23.6486"W	4571.88	109.424	0.33	0.00	-0.33
12715.00	90.620	147.870	8210.56	3748.80	-1600.66	4362.44	1755485.73	415017.06	39°38'13.1198"N	80°15'22.9911"W	4646.83	110.149	0.41	-0.19	0.37
12810.00	90.550	147.150	8209.59	3843.78	-1680.79	4413.47	1755536.76	414936.93	39°38'12.3321"N	80°15'22.3303"W	4722.68	110.848	0.76	-0.07	-0.76
12904.00	90.490	147.700	8208.73	3937.76	-1760.00	4464.08	1755587.36	414857.73	39°38'11.5536"N	80°15'21.6749"W	4798.50	111.517	0.59	-0.06	0.59
12999.00	89.630	146.650	8208.63	4032.75	-1839.83	4515.57	1755638.85	414777.91	39°38'10.7689"N	80°15'21.0081"W	4876.00	112.168	1.43	-0.91	-1.11
13094.00	90.520	147.670	8208.51	4127.73	-1919.64	4567.09	1755690.37	414698.09	39°38'9.9844"N	80°15'20.3411"W	4954.12	112.798	1.42	0.94	1.07
13189.00	90.710	148.130	8207.49	4222.69	-2000.11	4617.57	1755740.85	414617.63	39°38'9.1933"N	80°15'19.6872"W	5032.14	113.420	0.52	0.20	0.48
13284.00	90.340	147.560	8206.62	4317.66	-2080.54	4668.13	1755791.40	414537.21	39°38'8.4027"N	80°15'19.0323"W	5110.78	114.022	0.72	-0.39	-0.60
13379.00	90.710	147.430	8205.75	4412.64	-2160.65	4719.17	1755842.44	414457.10	39°38'7.6153"N	80°15'18.3713"W	5190.28	114.600	0.41	0.39	-0.14
13474.00	89.690	145.780	8205.42	4507.63	-2239.96	4771.46	1755894.73	414377.79	39°38'6.8358"N	80°15'17.6945"W	5271.08	115.148	2.04	-1.07	-1.74
13569.00	90.490	147.230	8205.27	4602.63	-2319.18	4823.88	1755947.15	414298.58	39°38'6.0572"N	80°15'17.0159"W	5352.43	115.677	1.74	0.84	1.53
13663.00	90.250	146.890	8204.66	4696.62	-2398.07	4875.00	1755998.26	414219.70	39°38'5.2819"N	80°15'16.3541"W	5432.89	116.193	0.44	-0.26	-0.36
13757.00	90.460	147.020	8204.08	4790.61	-2476.86	4926.25	1756049.51	414140.91	39°38'4.5075"N	80°15'15.6905"W	5513.88	116.693	0.26	0.22	0.14
13852.00	90.580	148.720	8203.22	4885.57	-2557.31	4976.78	1756100.03	414060.47	39°38'3.7166"N	80°15'15.0362"W	5595.37	117.196	1.79	0.13	1.79
13947.00	90.430	147.950	8202.38	4980.51	-2638.16	5026.64	1756149.90	413979.62	39°38'2.9217"N	80°15'14.3901"W	5676.89	117.692	0.83	-0.16	-0.81
14041.00	90.740	146.550	8201.42	5074.49	-2717.21	5077.49	1756200.74	413900.57	39°38'2.1447"N	80°15'13.7318"W	5758.83	118.153	1.53	0.33	-1.49
14135.00	90.950	147.360	8200.03	5168.48	-2796.00	5128.74	1756251.99	413821.79	39°38'1.3704"N	80°15'13.0682"W	5841.37	118.598	0.89	0.22	0.86
14234.00	90.310	146.650	8198.94	5267.46	-2879.03	5182.65	1756305.89	413738.77	39°38'0.5543"N	80°15'12.3703"W	5928.63	119.053	0.97	-0.65	-0.72
14329.00	90.520	146.730	8198.26	5362.46	-2958.42	5234.82	1756358.06	413659.38	39°37'59.7741"N	80°15'11.6950"W	6012.95	119.473	0.24	0.22	0.08
14424.00	90.120	145.600	8197.73	5457.46	-3037.33	5287.72	1756410.95	413580.48	39°37'58.9986"N	80°15'11.0105"W	6097.97	119.874	1.26	-0.42	-1.19
14520.00	90.710	146.780	8197.03	5553.45	-3117.09	5341.13	1756464.36	413500.72	39°37'58.2148"N	80°15'10.3193"W	6184.17	120.268	1.37	0.61	1.23
14615.00	90.060	145.930	8196.39	5648.45	-3196.17	5393.76	1756516.99	413421.65	39°37'57.4376"N	80°15'9.6381"W	6269.62	120.650	1.13	-0.68	-0.89

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REFERENCE WELLPATH IDENTIFICATION

Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
14710.00	91.350	147.880	8195.22	5743.43	-3275.75	5445.63	1756568.86	413342.07	39°37'56.6555"N	80°15'8.9667"W	6354.95	121.028	2.46	1.36	2.05
14805.00	90.090	146.360	8194.03	5838.41	-3355.52	5497.20	1756620.42	413262.31	39°37'55.8714"N	80°15'8.2991"W	6440.39	121.400	2.08	-1.33	-1.60
14900.00	90.370	146.110	8193.65	5933.41	-3434.49	5550.00	1756673.22	413183.34	39°37'55.0953"N	80°15'7.6158"W	6526.73	121.750	0.40	0.29	-0.26
14995.00	90.430	146.120	8192.98	6028.40	-3513.36	5602.96	1756726.18	413104.48	39°37'54.3203"N	80°15'6.9305"W	6613.38	122.090	0.06	0.06	0.01
15091.00	90.770	146.800	8191.98	6124.40	-3593.37	5656.00	1756779.21	413024.47	39°37'53.5340"N	80°15'6.2440"W	6700.94	122.429	0.79	0.35	0.71
15186.00	90.370	146.250	8191.03	6219.39	-3672.60	5708.39	1756831.60	412945.24	39°37'52.7552"N	80°15'5.5659"W	6787.77	122.756	0.72	-0.42	-0.58
15281.00	90.680	146.640	8190.16	6314.39	-3751.77	5760.90	1756884.11	412866.08	39°37'51.9772"N	80°15'4.8863"W	6874.86	123.074	0.52	0.33	0.41
15376.00	89.480	145.660	8190.03	6409.38	-3830.66	5813.82	1756937.02	412787.19	39°37'51.2019"N	80°15'4.2016"W	6962.36	123.380	1.63	-1.26	-1.03
15471.00	89.690	144.910	8190.72	6504.36	-3908.75	5867.92	1756991.12	412709.11	39°37'50.4347"N	80°15'3.5018"W	7050.59	123.668	0.82	0.22	-0.79
15566.00	89.320	146.130	8191.54	6599.35	-3987.06	5921.70	1757044.89	412630.81	39°37'49.6652"N	80°15'2.8062"W	7138.84	123.952	1.34	-0.39	1.28
15661.00	89.510	146.630	8192.51	6694.34	-4066.16	5974.29	1757097.49	412551.71	39°37'48.8878"N	80°15'2.1255"W	7226.75	124.240	0.56	0.20	0.53
15756.00	89.380	146.630	8193.43	6789.34	-4145.50	6026.54	1757149.74	412472.38	39°37'48.1081"N	80°15'1.4492"W	7314.67	124.523	0.14	-0.14	0.00
15852.00	89.510	146.860	8194.36	6885.33	-4225.77	6079.18	1757202.37	412392.11	39°37'47.3191"N	80°15'0.7679"W	7403.62	124.804	0.28	0.14	0.24
15947.00	89.480	146.580	8195.20	6980.32	-4305.19	6131.31	1757254.50	412312.69	39°37'46.5386"N	80°15'0.0932"W	7491.84	125.075	0.30	-0.03	-0.29
16042.00	89.540	146.690	8196.01	7075.32	-4384.53	6183.56	1757306.74	412233.36	39°37'45.7588"N	80°14'59.4170"W	7580.27	125.339	0.13	0.06	0.12
16137.00	89.380	146.600	8196.90	7170.31	-4463.88	6235.79	1757358.97	412154.02	39°37'44.9789"N	80°14'58.7410"W	7668.85	125.597	0.19	-0.17	-0.09
16233.00	89.480	146.490	8197.86	7266.31	-4543.97	6288.71	1757411.88	412073.93	39°37'44.1918"N	80°14'58.0561"W	7758.58	125.850	0.15	0.10	-0.11
16328.00	88.920	145.690	8199.19	7361.30	-4622.80	6341.70	1757464.87	411995.10	39°37'43.4171"N	80°14'57.3705"W	7847.77	126.090	1.03	-0.59	-0.84
16423.00	88.460	146.660	8201.36	7456.27	-4701.70	6394.57	1757517.74	411916.21	39°37'42.6417"N	80°14'56.6864"W	7937.03	126.326	1.13	-0.48	1.02
16518.00	88.030	146.260	8204.27	7551.23	-4780.84	6447.03	1757570.20	411837.07	39°37'41.8639"N	80°14'56.0075"W	8026.25	126.559	0.62	-0.45	-0.42
16614.00	87.010	146.110	8208.42	7647.13	-4860.53	6500.41	1757623.57	411757.39	39°37'41.0808"N	80°14'55.3168"W	8116.65	126.786	1.07	-1.06	-0.16
16709.00	87.780	147.010	8212.74	7742.03	-4939.72	6552.71	1757675.86	411678.20	39°37'40.3025"N	80°14'54.6401"W	8206.02	127.011	1.25	0.81	0.95
16804.00	87.170	146.010	8216.92	7836.94	-5018.87	6605.07	1757728.23	411599.06	39°37'39.5246"N	80°14'53.9624"W	8295.54	127.229	1.23	-0.64	-1.05
16900.00	87.630	146.750	8221.28	7932.84	-5098.73	6658.17	1757781.32	411519.20	39°37'38.7397"N	80°14'53.2753"W	8386.20	127.444	0.91	0.48	0.77
16995.00	86.890	145.880	8225.82	8027.73	-5177.69	6710.80	1757833.95	411440.25	39°37'37.9638"N	80°14'52.5943"W	8476.04	127.652	1.20	-0.78	-0.92
17090.00	86.830	146.600	8231.02	8122.59	-5256.55	6763.51	1757886.66	411361.39	39°37'37.1887"N	80°14'51.9122"W	8566.00	127.854	0.76	-0.06	0.76
17185.00	86.610	146.500	8236.46	8217.43	-5335.68	6815.79	1757938.93	411282.26	39°37'36.4110"N	80°14'51.2357"W	8655.90	128.055	0.25	-0.23	-0.11
17280.00	86.670	146.340	8242.03	8312.27	-5414.69	6868.25	1757991.39	411203.26	39°37'35.6345"N	80°14'50.5569"W	8745.95	128.251	0.18	0.06	-0.17
17375.00	87.440	147.320	8246.91	8407.14	-5494.11	6920.15	1758043.29	411123.85	39°37'34.8539"N	80°14'49.8851"W	8835.93	128.447	1.31	0.81	1.03
17471.00	87.320	145.730	8251.30	8503.03	-5574.10	6973.05	1758096.18	411043.87	39°37'34.0678"N	80°14'49.2006"W	8927.15	128.638	1.66	-0.13	-1.66



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
17566.00	86.710	147.800	8256.25	8597.90	-5653.44	7025.04	1758148.17	410964.52	39°37'33.2879"N	80°14'48.5277"W	9017.35	128.826	2.27	-0.64	2.18
17661.00	85.780	146.430	8262.47	8692.68	-5733.05	7076.51	1758199.64	410884.92	39°37'32.5054"N	80°14'47.8615"W	9107.40	129.013	1.74	-0.98	-1.44
17757.00	85.840	145.600	8269.48	8788.42	-5812.44	7130.03	1758253.15	410805.54	39°37'31.7252"N	80°14'47.1692"W	9199.00	129.187	0.86	0.06	-0.86
17852.00	86.180	146.250	8276.09	8883.19	-5890.93	7183.12	1758306.24	410727.05	39°37'30.9538"N	80°14'46.4823"W	9289.80	129.355	0.77	0.36	0.68
17947.00	86.210	145.970	8282.40	8977.98	-5969.62	7235.98	1758359.10	410648.37	39°37'30.1805"N	80°14'45.7985"W	9380.60	129.522	0.30	0.03	-0.29
18042.00	88.090	147.090	8287.12	9072.85	-6048.76	7288.30	1758411.42	410569.23	39°37'29.4027"N	80°14'45.1214"W	9471.37	129.690	2.30	1.98	1.18
18138.00	88.180	146.300	8290.24	9168.80	-6128.95	7340.99	1758464.10	410489.04	39°37'28.6145"N	80°14'44.4396"W	9563.17	129.858	0.83	0.09	-0.82
18233.00	88.770	146.740	8292.77	9263.77	-6208.16	7393.37	1758516.48	410409.84	39°37'27.8360"N	80°14'43.7617"W	9654.18	130.020	0.77	0.62	0.46
18328.00	88.430	146.730	8295.09	9358.74	-6287.57	7445.47	1758568.57	410330.43	39°37'27.0555"N	80°14'43.0876"W	9745.18	130.181	0.36	-0.36	-0.01
18424.00	88.950	146.770	8297.29	9454.71	-6367.83	7498.09	1758621.19	410250.18	39°37'26.2666"N	80°14'42.4066"W	9837.21	130.340	0.54	0.54	0.04
18519.00	88.890	146.100	8299.08	9549.69	-6446.98	7550.60	1758673.70	410171.04	39°37'25.4888"N	80°14'41.7271"W	9928.50	130.492	0.71	-0.06	-0.71
18614.00	88.650	144.790	8301.12	9644.65	-6525.20	7604.47	1758727.57	410092.82	39°37'24.7202"N	80°14'41.0304"W	10020.29	130.632	1.40	-0.25	-1.38
18709.00	88.550	145.320	8303.44	9739.60	-6603.05	7658.87	1758781.96	410014.98	39°37'23.9553"N	80°14'40.3270"W	10112.30	130.766	0.57	-0.11	0.56
18804.00	88.920	146.720	8305.54	9834.57	-6681.80	7711.95	1758835.04	409936.22	39°37'23.1813"N	80°14'39.6403"W	10203.96	130.906	1.52	0.39	1.47
18899.00	88.580	145.720	8307.61	9929.55	-6760.75	7764.76	1758887.85	409857.29	39°37'22.4055"N	80°14'38.9571"W	10295.59	131.046	1.11	-0.36	-1.05
18994.00	89.350	146.950	8309.32	10024.53	-6839.80	7817.41	1758940.49	409778.24	39°37'21.6285"N	80°14'38.2759"W	10387.24	131.184	1.53	0.81	1.29
19090.00	89.380	146.780	8310.39	10120.52	-6920.18	7869.88	1758992.96	409697.86	39°37'20.8384"N	80°14'37.5968"W	10479.70	131.326	0.18	0.03	-0.18
19185.00	89.380	147.060	8311.42	10215.51	-6999.78	7921.73	1759044.81	409618.27	39°37'20.0560"N	80°14'36.9258"W	10571.22	131.464	0.29	0.00	0.29
19280.00	89.570	147.180	8312.29	10310.50	-7079.56	7973.31	1759096.38	409538.50	39°37'19.2718"N	80°14'36.2584"W	10662.73	131.602	0.24	0.20	0.13
19375.00	88.950	146.500	8313.51	10405.49	-7159.08	8025.26	1759148.33	409458.98	39°37'18.4902"N	80°14'35.5860"W	10754.41	131.735	0.97	-0.65	-0.72
19470.00	89.110	146.500	8315.12	10500.47	-7238.29	8077.69	1759200.76	409379.78	39°37'17.7117"N	80°14'34.9076"W	10846.28	131.863	0.17	0.17	0.00
19566.00	89.380	146.560	8316.39	10596.46	-7318.36	8130.63	1759253.69	409299.71	39°37'16.9247"N	80°14'34.2227"W	10939.17	131.990	0.29	0.28	0.06
19661.00	89.260	146.360	8317.51	10691.46	-7397.54	8183.11	1759306.17	409220.53	39°37'16.1465"N	80°14'33.5436"W	11031.18	132.114	0.25	-0.13	-0.21
19756.00	89.720	146.590	8318.36	10786.45	-7476.73	8235.58	1759358.64	409141.35	39°37'15.3682"N	80°14'32.8648"W	11123.23	132.235	0.54	0.48	0.24
19851.00	89.380	146.440	8319.11	10881.45	-7555.96	8287.99	1759411.05	409062.12	39°37'14.5894"N	80°14'32.1867"W	11215.32	132.355	0.39	-0.36	-0.16
19946.00	88.950	146.750	8320.49	10976.44	-7635.26	8340.29	1759463.34	408982.83	39°37'13.8100"N	80°14'31.5100"W	11307.41	132.473	0.56	-0.45	0.33
20041.00	90.030	146.370	8321.34	11071.43	-7714.53	8392.64	1759515.68	408903.56	39°37'13.0309"N	80°14'30.8327"W	11399.57	132.589	1.21	1.14	-0.40
20137.00	90.680	147.290	8320.74	11167.43	-7794.88	8445.16	1759568.20	408823.22	39°37'12.2411"N	80°14'30.1530"W	11492.65	132.707	1.17	0.68	0.96
20232.00	92.400	146.830	8318.19	11262.38	-7874.58	8496.80	1759619.84	408743.52	39°37'11.4577"N	80°14'29.4848"W	11584.67	132.823	1.87	1.81	-0.48
20327.00	92.430	146.510	8314.19	11357.30	-7953.88	8548.95	1759671.99	408664.23	39°37'10.6782"N	80°14'28.8100"W	11676.85	132.935	0.34	0.03	-0.34



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
20422.00	92.060	146.430	8310.46	11452.22	-8033.01	8601.38	1759724.42	408585.10	39°37'9.9005"N	80°14'28.1316"W	11769.16	133.043	0.40	-0.39	-0.08
20517.00	91.290	146.720	8307.69	11547.18	-8112.27	8653.69	1759776.72	408505.85	39°37'9.1215"N	80°14'27.4548"W	11861.50	133.150	0.87	-0.81	0.31
20612.00	90.830	145.380	8305.93	11642.16	-8191.06	8706.74	1759829.76	408427.07	39°37'8.3472"N	80°14'26.7687"W	11954.10	133.252	1.49	-0.48	-1.41
20707.00	90.920	145.620	8304.48	11737.14	-8269.34	8760.54	1759883.56	408348.79	39°37'7.5779"N	80°14'26.0730"W	12046.95	133.348	0.27	0.09	0.25
20802.00	92.620	147.050	8301.54	11832.09	-8348.36	8813.17	1759936.19	408269.77	39°37'6.8012"N	80°14'25.3921"W	12139.49	133.449	2.34	1.79	1.51
20897.00	91.910	145.570	8297.79	11927.01	-8427.34	8865.83	1759988.84	408190.79	39°37'6.0250"N	80°14'24.7109"W	12232.05	133.548	1.73	-0.75	-1.56
20993.00	93.480	145.610	8293.28	12022.89	-8506.45	8920.01	1760043.03	408111.69	39°37'5.2476"N	80°14'24.0101"W	12325.84	133.641	1.64	1.64	0.04
21088.00	93.170	145.710	8287.77	12117.72	-8584.76	8973.51	1760096.52	408033.38	39°37'4.4780"N	80°14'23.3183"W	12418.62	133.732	0.34	-0.33	0.11
21183.00	92.550	145.890	8283.03	12212.60	-8663.24	9026.84	1760149.85	407954.91	39°37'3.7068"N	80°14'22.6285"W	12511.42	133.822	0.68	-0.65	0.19
21278.00	92.150	145.120	8279.13	12307.51	-8741.47	9080.60	1760203.60	407876.69	39°37'2.9381"N	80°14'21.9334"W	12604.39	133.910	0.91	-0.42	-0.81
21373.00	92.620	145.740	8275.18	12402.41	-8819.63	9134.46	1760257.46	407798.53	39°37'2.1701"N	80°14'21.2370"W	12697.41	133.995	0.82	0.49	0.65
21468.00	91.810	144.590	8271.51	12497.32	-8897.54	9188.68	1760311.68	407720.62	39°37'1.4045"N	80°14'20.5359"W	12790.55	134.078	1.48	-0.85	-1.21
21564.00	92.710	146.180	8267.72	12593.23	-8976.48	9243.17	1760366.17	407641.69	39°37'0.6287"N	80°14'19.8313"W	12884.62	134.161	1.90	0.94	1.66
21659.00	91.600	145.580	8264.15	12688.15	-9055.07	9296.42	1760419.41	407563.10	39°36'59.8564"N	80°14'19.1427"W	12977.59	134.247	1.33	-1.17	-0.63
21754.00	91.630	146.010	8261.47	12783.11	-9133.61	9349.80	1760472.79	407484.57	39°36'59.0846"N	80°14'18.4523"W	13070.64	134.330	0.45	0.03	0.45
21849.00	92.280	146.530	8258.23	12878.05	-9212.57	9402.52	1760525.51	407405.61	39°36'58.3085"N	80°14'17.7703"W	13163.55	134.415	0.88	0.68	0.55
21944.00	93.020	145.260	8253.84	12972.95	-9291.15	9455.73	1760578.71	407327.04	39°36'57.5363"N	80°14'17.0822"W	13256.56	134.497	1.55	0.78	-1.34
22039.00	93.140	146.380	8248.73	13067.80	-9369.62	9509.03	1760632.00	407248.57	39°36'56.7651"N	80°14'16.3930"W	13349.58	134.577	1.18	0.13	1.18
22135.00	94.740	146.030	8242.14	13163.57	-9449.21	9562.29	1760685.27	407168.99	39°36'55.9829"N	80°14'15.7040"W	13443.40	134.659	1.71	1.67	-0.36
22230.00	94.590	144.570	8234.41	13258.24	-9527.05	9616.20	1760739.17	407091.15	39°36'55.2179"N	80°14'15.0071"W	13536.47	134.733	1.54	-0.16	-1.54
22325.00	93.290	145.690	8227.88	13352.99	-9604.81	9670.38	1760793.35	407013.40	39°36'54.4539"N	80°14'14.3066"W	13629.69	134.805	1.80	-1.37	1.18
22420.00	92.890	145.380	8222.76	13447.84	-9683.02	9724.06	1760847.03	406935.19	39°36'53.6853"N	80°14'13.6124"W	13722.91	134.879	0.53	-0.42	-0.33
22515.00	93.910	145.350	8217.13	13542.66	-9761.05	9777.96	1760900.92	406857.17	39°36'52.9186"N	80°14'12.9156"W	13816.17	134.950	1.07	1.07	-0.03
22611.00	93.110	145.360	8211.25	13638.46	-9839.88	9832.43	1760955.39	406778.35	39°36'52.1440"N	80°14'12.2113"W	13910.42	135.022	0.83	-0.83	0.01
22706.00	93.110	146.550	8206.10	13733.32	-9918.48	9885.54	1761008.49	406699.75	39°36'51.3715"N	80°14'11.5245"W	14003.57	135.095	1.25	0.00	1.25
22801.00	92.560	145.750	8201.40	13828.20	-9997.28	9938.39	1761061.34	406620.96	39°36'50.5970"N	80°14'10.8409"W	14096.70	135.169	1.02	-0.58	-0.84
22895.00	92.250	145.390	8197.45	13922.11	-10074.74	9991.49	1761114.44	406543.50	39°36'49.8358"N	80°14'10.1543"W	14189.09	135.238	0.51	-0.33	-0.38
22989.00	92.280	145.470	8193.74	14016.02	-10152.08	10044.78	1761167.73	406466.16	39°36'49.0757"N	80°14'9.4652"W	14281.54	135.304	0.09	0.03	0.09
23085.00	91.940	145.820	8190.20	14111.95	-10231.28	10098.92	1761221.86	406386.96	39°36'48.2974"N	80°14'8.7652"W	14375.93	135.373	0.51	-0.35	0.36
23180.00	92.250	146.010	8186.73	14206.88	-10309.91	10152.13	1761275.06	406308.34	39°36'47.5247"N	80°14'8.0771"W	14469.27	135.442	0.38	0.33	0.20



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
23275.00	89.320	143.440	8185.43	14301.81	-10387.44	10206.97	1761329.91	406230.81	39°36'46.7629"N	80°14'7.3682"W	14563.01	135.502	4.10	-3.08	-2.71
23371.00	90.280	144.970	8185.76	14397.74	-10465.31	10263.12	1761386.05	406152.95	39°36'45.9979"N	80°14'6.6427"W	14657.91	135.559	1.88	1.00	1.59
23466.00	91.290	146.710	8184.46	14492.72	-10543.90	10316.45	1761439.38	406074.36	39°36'45.2255"N	80°14'5.9530"W	14751.38	135.625	2.12	1.06	1.83
23560.00	90.710	146.360	8182.82	14586.71	-10622.31	10368.28	1761491.21	405995.96	39°36'44.4548"N	80°14'5.2826"W	14843.68	135.693	0.72	-0.62	-0.37
23654.00	91.540	147.160	8180.98	14680.69	-10700.91	10419.80	1761542.72	405917.36	39°36'43.6822"N	80°14'4.6162"W	14935.92	135.763	1.23	0.88	0.85
23750.00	91.820	146.900	8178.16	14776.64	-10781.42	10472.02	1761594.94	405836.86	39°36'42.8908"N	80°14'3.9405"W	15030.04	135.834	0.40	0.29	-0.27
23845.00	92.550	146.660	8174.54	14871.57	-10860.83	10524.02	1761646.94	405757.45	39°36'42.1102"N	80°14'3.2677"W	15123.25	135.902	0.81	0.77	-0.25
23940.00	92.550	146.570	8170.31	14966.47	-10940.08	10576.25	1761699.16	405678.21	39°36'41.3312"N	80°14'2.5922"W	15216.52	135.969	0.09	0.00	-0.09
24035.00	91.810	146.650	8166.70	15061.40	-11019.34	10628.49	1761751.40	405598.95	39°36'40.5521"N	80°14'1.9164"W	15309.82	136.034	0.78	-0.78	0.08
24131.00	92.460	146.980	8163.12	15157.33	-11099.63	10681.00	1761803.91	405518.67	39°36'39.7629"N	80°14'1.2371"W	15404.07	136.101	0.76	0.68	0.34
24226.00	92.060	146.810	8159.38	15252.25	-11179.14	10732.85	1761855.75	405439.16	39°36'38.9813"N	80°14'0.5664"W	15497.33	136.167	0.46	-0.42	-0.18
24321.00	92.520	146.670	8155.58	15347.17	-11258.52	10784.91	1761907.81	405359.79	39°36'38.2010"N	80°13'59.8929"W	15590.65	136.231	0.51	0.48	-0.15
24417.00	92.000	147.070	8151.79	15443.10	-11338.85	10837.33	1761960.23	405279.46	39°36'37.4114"N	80°13'59.2147"W	15684.94	136.296	0.68	-0.54	0.42
24512.00	92.000	147.030	8148.48	15538.03	-11418.52	10888.97	1762011.87	405199.80	39°36'36.6282"N	80°13'58.5466"W	15778.22	136.360	0.04	0.00	-0.04
24607.00	91.420	147.110	8145.64	15632.98	-11498.22	10940.59	1762063.48	405120.10	39°36'35.8447"N	80°13'57.8787"W	15871.54	136.424	0.62	-0.61	0.08
24701.00	91.510	146.940	8143.24	15726.94	-11577.05	10991.74	1762114.62	405041.28	39°36'35.0697"N	80°13'57.2171"W	15963.91	136.486	0.20	0.10	-0.18
24795.00	91.170	146.350	8141.04	15820.92	-11655.55	11043.41	1762166.29	404962.79	39°36'34.2982"N	80°13'56.5487"W	16056.42	136.545	0.72	-0.36	-0.63
24891.00	93.050	147.350	8137.51	15916.84	-11735.86	11095.86	1762218.74	404882.48	39°36'33.5087"N	80°13'55.8701"W	16150.81	136.606	2.22	1.96	1.04
24986.00	91.690	145.950	8133.58	16011.76	-11815.15	11148.04	1762270.92	404803.20	39°36'32.7293"N	80°13'55.1952"W	16244.28	136.664	2.05	-1.43	-1.47
25081.00	94.340	148.770	8128.58	16106.59	-11895.02	11199.20	1762322.08	404723.33	39°36'31.9441"N	80°13'54.5332"W	16337.49	136.726	4.07	2.79	2.97
25177.00	92.370	146.620	8122.96	16202.39	-11976.01	11250.42	1762373.29	404642.34	39°36'31.1478"N	80°13'53.8704"W	16431.58	136.789	3.03	-2.05	-2.24
25272.00	92.550	146.350	8118.89	16297.30	-12055.14	11302.82	1762425.69	404563.22	39°36'30.3700"N	80°13'53.1926"W	16525.14	136.845	0.34	0.19	-0.28
25366.00	92.370	146.350	8114.85	16391.22	-12133.32	11354.86	1762477.73	404485.05	39°36'29.6016"N	80°13'52.5196"W	16617.77	136.898	0.19	-0.19	0.00
25462.00	92.030	145.920	8111.17	16487.15	-12212.97	11408.32	1762531.18	404405.40	39°36'28.8187"N	80°13'51.8284"W	16712.46	136.951	0.57	-0.35	-0.45
25557.00	92.370	146.800	8107.52	16582.07	-12292.00	11460.91	1762583.76	404326.37	39°36'28.0419"N	80°13'51.1483"W	16806.12	137.004	0.99	0.36	0.93
25652.00	92.740	147.480	8103.28	16676.97	-12371.72	11512.40	1762635.26	404246.65	39°36'27.2582"N	80°13'50.4821"W	16899.55	137.061	0.81	0.39	0.72
25747.00	92.280	146.630	8099.12	16771.87	-12451.37	11564.01	1762686.87	404167.01	39°36'26.4752"N	80°13'49.8144"W	16993.03	137.116	1.02	-0.48	-0.89
25843.00	92.180	146.660	8095.39	16867.80	-12531.50	11616.76	1762739.61	404086.89	39°36'25.6876"N	80°13'49.1322"W	17087.64	137.169	0.11	-0.10	0.03
25938.00	91.660	146.460	8092.21	16962.74	-12610.73	11669.08	1762791.92	404007.67	39°36'24.9088"N	80°13'48.4555"W	17181.32	137.221	0.59	-0.55	-0.21
26033.00	92.090	147.320	8089.10	17057.69	-12690.26	11720.94	1762843.79	403928.14	39°36'24.1270"N	80°13'47.7846"W	17274.93	137.274	1.01	0.45	0.91



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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
26127.00	92.060	147.160	8085.69	17151.61	-12769.25	11771.78	1762894.62	403849.15	39°36'23.3504"N	80°13'47.1269"W	17367.46	137.328	0.17	-0.03	-0.17
26221.00	91.910	146.460	8082.44	17245.56	-12847.87	11823.20	1762946.04	403770.54	39°36'22.5776"N	80°13'46.4617"W	17460.12	137.378	0.76	-0.16	-0.74
26320.00	91.970	146.760	8079.09	17344.50	-12930.48	11877.65	1763000.49	403687.93	39°36'21.7655"N	80°13'45.7575"W	17557.79	137.430	0.31	0.06	0.30
26415.00	91.880	146.550	8075.89	17439.44	-13009.80	11929.84	1763052.67	403608.62	39°36'20.9858"N	80°13'45.0825"W	17651.52	137.480	0.24	-0.09	-0.22
26511.00	92.460	147.060	8072.26	17535.37	-13090.07	11982.37	1763105.19	403528.35	39°36'20.1967"N	80°13'44.4032"W	17746.19	137.530	0.80	0.60	0.53
26606.00	91.820	146.910	8068.71	17630.30	-13169.68	12034.09	1763156.91	403448.75	39°36'19.4142"N	80°13'43.7341"W	17839.84	137.580	0.69	-0.67	-0.16
26702.00	92.090	146.690	8065.44	17726.24	-13249.96	12086.63	1763209.45	403368.47	39°36'18.6250"N	80°13'43.0545"W	17934.55	137.629	0.36	0.28	-0.23
26797.00	92.220	147.230	8061.87	17821.17	-13329.54	12138.39	1763261.20	403288.90	39°36'17.8426"N	80°13'42.3850"W	18028.23	137.678	0.58	0.14	0.57
26892.00	92.000	147.240	8058.37	17916.09	-13409.37	12189.76	1763312.58	403209.07	39°36'17.0578"N	80°13'41.7204"W	18121.85	137.728	0.23	-0.23	0.01
26987.00	91.790	145.480	8055.23	18011.04	-13488.42	12242.36	1763365.17	403130.03	39°36'16.2809"N	80°13'41.0402"W	18215.73	137.772	1.86	-0.22	-1.85
27083.00	93.750	146.900	8050.59	18106.92	-13568.08	12295.71	1763418.52	403050.37	39°36'15.4978"N	80°13'40.3503"W	18310.58	137.816	2.52	2.04	1.48
27178.00	91.970	146.040	8045.85	18201.79	-13647.17	12348.12	1763470.93	402971.28	39°36'14.7204"N	80°13'39.6726"W	18404.38	137.861	2.08	-1.87	-0.91
27273.00	92.000	145.750	8042.56	18296.73	-13725.78	12401.36	1763524.16	402892.68	39°36'13.9477"N	80°13'38.9843"W	18498.40	137.902	0.31	0.03	-0.31
27369.00	91.660	145.820	8039.49	18392.68	-13805.13	12455.31	1763578.11	402813.34	39°36'13.1679"N	80°13'38.2868"W	18593.45	137.942	0.36	-0.35	0.07
27464.00	91.880	144.800	8036.56	18487.62	-13883.20	12509.35	1763632.15	402735.27	39°36'12.4007"N	80°13'37.5884"W	18687.62	137.980	1.10	0.23	-1.07
27560.00	91.880	145.850	8033.41	18583.55	-13962.11	12563.94	1763686.73	402656.36	39°36'11.6252"N	80°13'36.8828"W	18782.79	138.017	1.09	0.00	1.09
27655.00	91.750	146.260	8030.40	18678.50	-14040.88	12616.96	1763739.75	402577.60	39°36'10.8510"N	80°13'36.1973"W	18876.81	138.058	0.45	-0.14	0.43
27750.00	91.970	145.620	8027.31	18773.44	-14119.54	12670.14	1763792.92	402498.94	39°36'10.0779"N	80°13'35.5098"W	18970.87	138.097	0.71	0.23	-0.67
27845.00	92.060	145.510	8023.97	18868.38	-14197.85	12723.82	1763846.60	402420.64	39°36'9.3083"N	80°13'34.8159"W	19065.01	138.134	0.15	0.09	-0.12
27941.00	91.630	145.210	8020.88	18964.31	-14276.79	12778.36	1763901.14	402341.71	39°36'8.5325"N	80°13'34.1109"W	19160.20	138.170	0.55	-0.45	-0.31
28036.00	92.400	146.130	8017.54	19059.24	-14355.19	12831.90	1763954.68	402263.31	39°36'7.7620"N	80°13'33.4188"W	19254.33	138.207	1.26	0.81	0.97
28130.00	91.690	146.120	8014.19	19153.18	-14433.18	12884.26	1764007.04	402185.32	39°36'6.9954"N	80°13'32.7418"W	19347.38	138.245	0.76	-0.76	-0.01
28224.00	92.620	145.650	8010.65	19247.11	-14510.95	12936.95	1764059.71	402107.56	39°36'6.2310"N	80°13'32.0608"W	19440.48	138.282	1.11	0.99	-0.50
28319.00	92.710	145.540	8006.24	19342.00	-14589.25	12990.57	1764113.33	402029.27	39°36'5.4615"N	80°13'31.3677"W	19534.61	138.317	0.15	0.09	-0.12
28415.00	91.780	145.790	8002.48	19437.92	-14668.46	13044.67	1764167.43	401950.06	39°36'4.6830"N	80°13'30.6683"W	19629.75	138.353	1.00	-0.97	0.26
28510.00	91.880	145.850	7999.44	19532.86	-14747.01	13098.02	1764220.77	401871.51	39°36'3.9110"N	80°13'29.9787"W	19723.90	138.389	0.12	0.11	0.06
28605.00	91.970	145.710	7996.25	19627.81	-14825.52	13151.41	1764274.17	401793.01	39°36'3.1394"N	80°13'29.2885"W	19818.06	138.424	0.18	0.09	-0.15
28700.00	92.090	145.640	7992.89	19722.74	-14903.92	13204.95	1764327.70	401714.61	39°36'2.3688"N	80°13'28.5965"W	19912.25	138.459	0.15	0.13	-0.07
28795.00	91.880	145.720	7989.59	19817.67	-14982.34	13258.48	1764381.22	401636.20	39°36'1.5981"N	80°13'27.9046"W	20006.44	138.493	0.24	-0.22	0.08
28802.00	91.850	145.430	7989.37	19824.67	-14988.11	13262.43	1764385.18	401630.43	39°36'1.5414"N	80°13'27.8535"W	20013.38	138.496	4.16	-0.43	-4.14



Actual Wellpath Report

Phoenix 10H AWP Proj: 28827'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

WELLPATH DATA (331 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]
28827.00‡	91.850	145.430	7988.56	19849.65	-15008.68	13276.61	1764399.36	401609.85	39°36'1.3392"N	80°13'27.6702"W	20038.19	138.504	0.00	0.00	0.00

HOLE & CASING SECTIONS - Ref Wellbore: Phoenix 10H AWB Ref Wellpath: Phoenix 10H AWP Proj: 28827'									
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	1528.00	1500.00	28.00	1527.95	0.00	0.00	-7.00	-5.82
13.375in Casing Surface	28.00	1498.00	1470.00	28.00	1497.96	0.00	0.00	-6.60	-5.57
12.25in Open Hole	1528.00	2758.00	1230.00	1527.95	2757.80	-7.00	-5.82	-24.56	-13.23
9.625in Casing Intermediate	28.00	2728.00	2700.00	28.00	2727.80	0.00	0.00	-24.13	-13.15
8.75in Open Hole	2758.00	7644.00	4886.00	2757.80	6978.49	-24.56	-13.23	1446.38	1688.77
8.5in Open Hole	7644.00	28827.00	21183.00	6978.49	7988.56	1446.38	1688.77	-15008.68	13276.61
5.5in Casing Production	28.00	28797.00	28769.00	28.00	7989.53	0.00	0.00	-14983.99	13259.60



Actual Wellpath Report

Phoenix 10H AWP Proj: 28827'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Phoenix 10H BHL Rev-8	8210.00	-15016.14	13266.83	1764389.57	401602.40	39°36'1.2647"N	80°13'27.7944"W	point
Phoenix 10H LP Rev-6	8210.00	1081.97	2560.47	1753683.87	417699.52	39°38'39.4805"N	80°15'46.3146"W	point
Phoenix Hardline #1 (5.19.21)	8528.00	-813.30	5993.68	1757116.87	415804.37	39°38'21.0362"N	80°15'2.2251"W	polygon
2D Polygon: dimensions not calculated								
Phoenix Pad Hardline (2.12.21)	8528.00	597.48	4904.73	1756027.99	417215.07	39°38'34.8882"N	80°15'16.2957"W	polygon
2D Polygon: dimensions not calculated								

WELLPATH COMPOSITION - Ref Wellbore: Phoenix 10H AWB Ref Wellpath: Phoenix 10H AWP Proj: 28827'								
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date			
28.00	2650.00	BH Generic gyro - northseeking (Standard)	01_Gyro Surveys [BH Generic Gyro-Northseeking] (50'-2650')	Phoenix 10H AWB	4/5/2022			
2650.00	7481.00	OWSG MWD rev2 + HRGM	02_Tally MWD Surveys [OWSG MWD Rev.2+HRGM] (2650')(2854'-7481')	Phoenix 10H AWB	4/5/2022			
7481.00	28827.00	BH AutoTrak Curve/eXpress (2019) (HRGM, Short spacing)	03_ATK Curve [HRGM+Short Spacing] (7481') (7609'-28802')	Phoenix 10H AWB	4/5/2022			



Actual Wellpath Report

Phoenix 10H AWP Proj: 28827'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	NORTHEAST NATURAL ENERGY, LLC	Well	Phoenix 10H
Field	Monongalia	API/Legal	
Facility	Phoenix Pad	Wellbore	Phoenix 10H AWB
Slot	Slot 10		

COMMENTS
<p>Wellpath general comments API: 47061018910000 BH Job #: 111185290 Rig: Patterson 277 Duration: 04/06/2022 - 04/12/2022</p> <p>01_Gyro Surveys [BH Generic Gyro-Northseeking] (50'-2650') 02_Tally MWD Surveys [OWSG MWD Rev.2+HRGM] (2650')(2854'-7481') 03_ATK Curve [HRGM+Short Spacing] (7481') (7609'-28802') Final Survey MD @ 28802' Projected MD at TD: 28827'</p>

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/9/2022
Job End Date:	1/27/2023
State:	West Virginia
County:	Monongalia
API Number:	47-061-01891-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Phoenix 10H
Latitude:	39.64127800
Longitude:	-80.27192700
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,193
Total Base Water Volume (gal):	41,150,046
Total Base Non Water Volume:	0



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
Water	Northeast Natural Energy	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	88.14233	None
Sand (100 Mesh Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	10.42124	None
Sand (40/70 White Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	1.15640	None
Hydrochloric Acid (7.5%)	CNR	Acidizing					
			Water	7732-18-5	85.00000	0.14208	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.06185	None
StimSTREAM FR 2800	Chemstream	Friction Reducer					
			Non-Hazardous Substances	Proprietary	70.00000	0.02207	None
			Petroleum Distillates, Hydrotreated Light	64742-47-8	25.00000	0.00788	None
			Ethoxylated alcohols (C11-14)	78330-21-9	5.00000	0.00158	None
StimSTREAM FR 9800	Chemstream	Friction Reducer					
			Butene, homopolymer	9003-29-6	25.00000	0.01044	None

			alkanes, C16-20-iso-	90622-59-6	25.00000	0.01044	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00125	None
Clearal 268	Chemstream	Biocide					
			Non-hazardous substances	Proprietary	80.00000	0.01602	None
			Glutaraldehyde	111-30-8	20.00000	0.00401	None
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00060	None
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00060	None
			Ethanol	64-17-5	1.50000	0.00030	None
StimSTREAM SC 405	Chemstream	Scale Control					
			Non-Hazardous Substances	Proprietary	70.00000	0.01303	None
			Citric Acid	77-92-9	10.00000	0.00186	None
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00186	None
			2-Phosphono-1,2,4-butanetricarboxylic acid (PBTC)	37971-36-1	10.00000	0.00186	None
ProHib 100	CNR	Acid Inhibitor					
			2-Butoxyethanol	111-76-2	60.00000	0.00032	None
			Proprietary material	Proprietary	30.00000	0.00016	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00011	None
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00005	None
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00005	None
ProFE 105	CNR	Iron Control					
			Citric Acid	77-92-9	20.00000	0.00008	None
			Acetic Acid	64-19-7	5.00000	0.00002	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Water	7732-18-5	85.00000	0.14208	
			Non-Hazardous Substances	Proprietary	70.00000	0.02207	
			Non-hazardous substances	Proprietary	80.00000	0.01602	
			Non-Hazardous Substances	Proprietary	70.00000	0.01303	
			Butene, homopolymer	9003-29-6	25.00000	0.01044	
			Citric Acid	77-92-9	10.00000	0.00186	
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00186	
			Ethoxylated alcohols (C11-14)	78330-21-9	5.00000	0.00158	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00125	
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00060	
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00060	
			Ethanol	64-17-5	1.50000	0.00030	
			Proprietary material	Proprietary	30.00000	0.00016	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00011	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00005	

		Proprietary corrosion inhibitor	Proprietary	10.00000	0.00005
		Acetic Acid	64-19-7	5.00000	0.00002

* Total Water Volume sources may include fresh water, produced water, and/or 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)