

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

API 47-061-01874 County Monongalia District Battelle
Quad Wadestown Pad Name Phoenix Field/Pool Name _____
Farm name Phoenix Well Number 2H
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 4388190.2 Easting 562460.5
Landing Point of Curve Northing 4388015.6 Easting 562488.3
Bottom Hole Northing 4383528.0 Easting 565575.7

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 4/19/2021 Date drilling commenced 12/27/2021 Date drilling ceased 2/18/2022
Date completion activities began 4/28/2022 Date completion activities ceased 5/30/2022
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 _____
Coal depth(s) ft 1,230 Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) N

Reviewed by: _____

02/23/2024

Phoenix 2H
Perforation Report

Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
1	4/29/22	40	-	26,372
2	4/29/22	40	26,334	26,195
3	4/29/22	40	26,157	26,019
4	4/30/22	40	25,981	25,842
5	4/30/22	40	25,805	25,666
6	4/30/22	40	25,629	25,490
7	4/30/22	40	25,453	25,314
8	4/30/22	40	25,277	25,138
9	5/1/22	40	25,101	24,962
10	5/1/22	40	24,924	24,786
11	5/1/22	40	24,748	24,609
12	5/2/22	40	24,572	24,433
13	5/2/22	40	24,396	24,257
14	5/2/22	40	24,220	24,081
15	5/3/22	40	24,044	23,905
16	5/3/22	40	23,868	23,729
17	5/3/22	40	23,691	23,553
18	5/3/22	40	23,515	23,376
19	5/4/22	40	23,339	23,200
20	5/4/22	40	23,163	23,024
21	5/5/22	40	22,987	22,848
22	5/5/22	40	22,811	22,672
23	5/5/22	40	22,635	22,496
24	5/6/22	40	22,458	22,320
25	5/6/22	40	22,282	22,143
26	5/7/22	40	22,106	21,967
27	5/7/22	40	21,930	21,791
28	5/8/22	40	21,754	21,615
29	5/8/22	40	21,578	21,439
30	5/8/22	40	21,402	21,263
31	5/9/22	40	21,226	21,087
32	5/9/22	40	21,049	20,910
33	5/9/22	40	20,873	20,734
34	5/10/22	40	20,697	20,558
35	5/10/22	40	20,521	20,382
36	5/11/22	40	20,345	20,206
37	5/11/22	40	20,169	20,030
38	5/11/22	40	19,993	19,854
39	5/11/22	40	19,816	19,677
40	5/12/22	40	19,640	19,501
41	5/12/22	40	19,464	19,325
42	5/12/22	40	19,288	19,149
43	5/13/22	40	19,112	18,973
44	5/13/22	40	18,936	18,797
45	5/13/22	40	18,760	18,621
46	5/14/22	40	18,583	18,445
47	5/14/22	40	18,407	18,268

02/23/2024

100	5/29/22	40	9,072	8,933
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Phoenix 2H
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	4/29/22	4,434	-	9,567	92	582	7,911	299,920	606
2	4/29/22	4,990	6,710	9,638	90	59	8,638	385,900	587
3	4/29/22	4,620	6,162	9,650	91	15	8,256	393,825	585
4	4/30/22	5,098	5,695	9,545	91	5	8,063	394,702	575
5	4/30/22	5,412	7,662	9,735	90	34	8,413	390,360	576
6	4/30/22	5,917	7,103	9,849	90	55	8,179	389,880	569
7	4/30/22	5,464	7,623	9,791	91	46	8,434	414,320	562
8	4/30/22	5,245	7,163	9,734	89	8	8,393	391,660	558
9	5/1/22	5,734	7,415	9,659	91	19	8,170	392,660	554
10	5/1/22	5,268	7,517	9,724	89	21	8,531	389,340	548
11	5/1/22	5,658	7,671	9,935	89	62	8,289	390,420	537
12	5/2/22	5,193	7,211	9,714	89	22	8,347	390,000	542
13	5/2/22	5,390	7,103	9,962	87	29	8,423	388,880	544
14	5/2/22	5,481	7,352	9,824	91	18	8,327	389,220	535
15	5/3/22	5,657	7,877	9,737	90	22	8,207	392,640	-
16	5/3/22	5,796	7,410	9,785	92	34	8,263	393,608	535
17	5/3/22	6,520	5,520	9,775	92	38	8,053	385,100	532
18	5/3/22	5,725	9,672	9,897	91	22	8,204	387,760	520
19	5/4/22	5,563	7,923	9,736	91	44	8,246	390,531	521
20	5/4/22	6,020	7,842	9,871	91	6	8,001	390,820	515
21	5/5/22	6,367	7,641	9,740	90	29	8,557	390,220	510
22	5/5/22	5,906	7,432	9,766	90	28	8,103	389,536	698
23	5/5/22	5,859	7,737	9,695	92	64	8,189	388,249	500
24	5/6/22	6,076	7,840	9,599	92	25	8,228	387,660	503
25	5/6/22	5,895	7,960	9,707	91	30	8,249	387,020	497
26	5/7/22	5,691	7,981	9,489	91	49	7,976	389,469	490
27	5/7/22	5,640	6,937	9,348	92	22	8,233	385,809	488
28	5/8/22	6,183	7,054	9,305	92	24	7,933	388,689	482
29	5/8/22	6,490	7,714	9,474	91	23	8,198	387,061	487
30	5/8/22	5,835	7,984	9,559	92	45	8,171	387,989	472
31	5/9/22	5,690	8,286	9,580	90	25	8,188	384,429	473
32	5/9/22	5,602	8,278	9,523	89	22	8,188	388,566	356
33	5/9/22	5,805	7,990	9,631	92	32	8,075	388,909	461
34	5/10/22	5,945	8,064	9,513	91	22	8,272	387,132	456
35	5/10/22	3,077	7,464	9,592	90	37	8,185	388,506	456
36	5/11/22	5,747	7,150	9,406	91	66	8,171	388,889	449
37	5/11/22	6,019	6,923	9,357	92	54	8,286	384,215	460
38	5/11/22	6,307	7,205	9,483	91	34	8,135	386,855	452
39	5/11/22	5,719	7,235	9,412	90	28	8,143	389,329	433

02/23/2024

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)
40	5/12/22	5,746	7,847	9,363	91	27	8,190	386,895	450
41	5/12/22	5,905	7,923	9,544	91	71	8,185	388,350	434
42	5/12/22	5,450	7,919	9,428	91	16	8,268	386,789	431
43	5/13/22	5,751	8,122	9,326	91	28	7,924	387,280	433
44	5/13/22	6,504	7,383	9,480	92	81	8,246	386,895	429
45	5/13/22	5,404	6,991	9,491	91	72	8,211	387,429	415
46	5/14/22	5,261	8,550	9,357	90	32	9,376	455,112	383
47	5/14/22	5,940	6,440	9,727	93	31	8,147	387,714	415
48	5/14/22	6,041	5,752	9,465	87	27	8,086	385,829	408
49	5/15/22	3,661	8,388	407	91	11	7,977	391,385	407
50	5/15/22	6,397	6,887	9,693	94	25	7,812	387,117	404
51	5/15/22	5,884	7,924	9,779	93	187	8,184	389,720	393
52	5/16/22	5,638	7,023	9,695	93	93	8,119	393,320	393
53	5/16/22	5,828	8,825	9,477	94	24	7,982	390,011	393
54	5/16/22	5,658	6,976	9,408	94	19	7,925	390,840	393
55	5/17/22	5,658	6,976	9,408	93	19	7,925	390,840	393
56	5/17/22	5,684	6,176	9,480	95	37	7,957	400,751	393
57	5/17/22	6,075	8,033	9,363	94	20	7,691	378,100	393
58	5/17/22	5,583	6,647	9,201	93	12	7,406	389,640	365
59	5/18/22	5,626	6,950	9,152	90	56	8,097	389,800	382
60	5/18/22	6,992	8,774	9,398	94	31	8,617	357,560	371
61	5/18/22	5,498	7,679	9,304	93	24	7,751	385,720	371
62	5/19/22	5,482	7,135	9,088	93	10	7,957	388,223	355
63	5/19/22	6,151	8,475	9,079	94	37	7,656	382,300	358
64	5/19/22	5,844	6,475	9,133	94	40	7,965	387,580	348
65	5/19/22	5,499	8,369	9,149	92	6	7,987	393,500	339
66	5/20/22	5,424	6,702	9,027	94	32	7,906	391,480	348
67	5/20/22	5,856	8,760	9,080	94	31	7,704	388,440	345
68	5/20/22	5,641	8,001	8,999	94	22	7,809	391,920	328
69	5/21/22	5,647	6,666	8,959	93	19	7,870	389,900	324
70	5/21/22	6,098	6,891	8,946	94	28	8,003	393,940	323
71	5/21/22	5,455	8,700	8,913	94	60	7,981	392,320	318
72	5/21/22	5,225	8,116	8,840	94	128	8,081	394,220	363
73	5/22/22	5,708	8,516	8,775	94	92	7,982	390,040	308
74	5/22/22	5,492	7,511	8,646	94	33	8,284	390,080	304
75	5/22/22	6,549	7,305	8,721	92	37	7,895	396,600	301
76	5/23/22	5,811	7,419	8,788	94	29	7,896	392,600	296
77	5/23/22	5,701	8,550	8,756	95	71	7,836	394,600	288
78	5/23/22	6,277	7,043	8,651	94	9	7,722	390,300	289
79	5/24/22	5,842	6,907	8,516	93	17	7,885	390,570	283
80	5/24/22	5,836	6,668	8,548	94	35	7,759	389,600	277
81	5/24/22	5,974	7,351	8,510	94	56	7,736	390,065	279
82	5/25/22	5,593	7,811	8,492	94	43	7,915	391,088	277

02/23/2024

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)
83	5/25/22	5,429	8,152	8,440	94	28	7,741	393,840	265
84	5/25/22	5,533	8,298	8,425	94	37	6,812	389,700	261
85	5/25/22	6,217	7,720	8,429	94	32	7,108	391,080	305
86	5/26/22	5,992	6,803	8,449	95	29	6,967	392,220	253
87	5/27/22	6,586	8,230	8,490	94	16	6,906	390,520	261
88	5/27/22	5,801	7,754	8,594	95	21	7,156	394,560	245
89	5/27/22	6,162	7,326	8,286	94	77	7,030	391,060	258
90	5/27/22	6,329	6,745	8,190	94	31	6,947	391,790	244
91	5/28/22	5,833	7,863	8,151	94	53	6,884	391,230	247
92	5/28/22	6,001	8,314	8,197	94	34	6,886	390,670	249
93	5/28/22	6,089	7,741	8,250	94	30	6,927	389,530	226
94	5/28/22	6,023	8,327	8,297	95	13	6,886	388,200	221
95	5/28/22	6,511	8,684	8,279	95	29	6,952	388,300	218
96	5/28/22	6,280	8,668	8,498	94	44	6,979	390,282	226
97	5/28/22	5,758	7,948	8,329	94	24	6,989	390,653	223
98	5/29/22	5,525	7,976	8,289	94	43	6,972	388,280	220
99	5/29/22	5,344	8,717	8,525	95	15	6,991	391,060	202
100	5/29/22	5,368	8,495	8,429	94	15	6,770	384,660	199
101	5/29/22	5,681	8,787	8,418	94	15	6,955	390,650	211
102	5/30/22	5,802	8,377	8,343	94	13	7,047	392,540	204
103	5/30/22	5,490	8,471	8,314	95	15	7,053	391,860	187

02/23/2024

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/29/2022
Job End Date:	5/30/2022
State:	West Virginia
County:	Monongalia
API Number:	47-061-01874-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Phoenix 2H
Latitude:	39.64122400
Longitude:	-80.27207100
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,203
Total Base Water Volume (gal):	34,053,978
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	87.35708	None
Sand (100 Mesh Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	9.88470	None
Sand (40/70 White Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	2.45097	None
Hydrochloric Acid (7.5%)	CNR	Acidizing					
			Water	7732-18-5	85.00000	0.16971	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.07387	None
StimSTREAM FR 9800	Chemstream	Friction Reducer					
			alkanes, C16-20-iso-	90622-59-6	25.00000	0.01413	None
			Butene, homopolymer	9003-29-6	25.00000	0.01413	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00170	None
Clearal 268	Chemstream	Biocide					
			Non-hazardous substances	Proprietary	80.00000	0.02122	None

			Glutaraldehyde	111-30-8	20.00000	0.00531	None
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00080	None
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00080	None
			Ethanol	64-17-5	1.50000	0.00040	None
StimSTREAM SC 405	Chemstream	Scale Control					
			Non-Hazardous Substances	Proprietary	70.00000	0.01640	None
			2-Phosphono-1,2,4-butanetricarboxylic acid (PBTC)	37971-36-1	10.00000	0.00234	None
			Citric Acid	77-92-9	10.00000	0.00234	None
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00234	None
ProHib 100	CNR	Acid Inhibitor					
			2-Butoxyethanol	111-76-2	60.00000	0.00038	None
			Proprietary material	Proprietary	30.00000	0.00019	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00013	None
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00006	None
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00006	None
ProFE 105	CNR	Iron Control					
			Citric Acid	77-92-9	20.00000	0.00010	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	0.16971	
			Non-hazardous substances	Proprietary	80.00000	0.02122	
			Non-Hazardous Substances	Proprietary	70.00000	0.01640	
			Butene, homopolymer	9003-29-6	25.00000	0.01413	
			Citric Acid	77-92-9	10.00000	0.00234	
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00234	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00170	
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00080	
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00080	
			Ethanol	64-17-5	1.50000	0.00040	
			Proprietary material	Proprietary	30.00000	0.00019	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00013	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00006	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00006	
			Acetic Acid	64-19-7	5.00000	0.00002	