

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

API 47 - 061 - 01906 County Monongalia District Clay  
Quad Blacksville Pad Name Bunner Field/Pool Name \_\_\_\_\_  
Farm name Patricia A. Bunner Well Number 1H  
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 4390598.9 Easting 567105.7  
Landing Point of Curve Northing 4390558.7 Easting 566823.9  
Bottom Hole Northing 4394918.1 Easting 563820.0

Elevation (ft) 1,277' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

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

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

Date permit issued 9/19/2022 Date drilling commenced 10/11/2022 Date drilling ceased 12/11/2022  
Date completion activities began 2/13/2023 Date completion activities ceased 3/30/2023  
Verbal plugging (Y/N) NA Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

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

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Freshwater depth(s) ft 1,150' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 1,359' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 865' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) \_\_\_\_\_

Reviewed by:

*Handwritten Signature*  
02/23/2024

**APPROVED**

API 47-061 - 01906 Farm name Patricia A. Bunner Well number 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	30"	24"		N		NA	
Surface	17-1/2"	13-3/8"	1,294	N	54.5	NA	Y, 43 bbl
Coal							
Intermediate 1	12-1/4"	9-5/8"	2,533	N	40	NA	Y, 5 bbl
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	25,936	N	20	NA	Y
Tubing							-
Packer type and depth set							

Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	4,500 PSI Grout						48
Surface	Class A + 2%	1,145	15.6	1.14	1,300	CTS	8
Coal							
Intermediate 1	Class A + 1%	895	15.6	1.13	1,009	CTS	8
Intermediate 2							
Intermediate 3							
Production	50:50 Class A + Additives	4,980	14.5	1.13	5,611	2,067	48
Tubing							

Drillers TD (ft) 25,970' Loggers TD (ft) 25,940'

Deepest formation penetrated Marcellus Plug back to (ft) \_\_\_\_\_

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 7,245'

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

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sonic

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_

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

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

Production: Rigid body centralizers placed at a minimum of every other joint (~80') from TD to surface

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_

API 47- 061 - 01906 Farm name Patricia A. Bunner Well number 1H

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 (gals)
	See	Attached						

Please insert additional pages as applicable.

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API 47- 061 - 01906 Farm name Patricia A. Bunner Well number 1H

PRODUCING FORMATION(S)	DEPTHS	
Marcellus	8,133'	TVD 25,970' MD

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump  
 SHUT-IN PRESSURE Surface 3418 psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST 24 hrs  
 OPEN FLOW Gas 3645 mcfpd Oil \_\_\_\_\_ bpd NGL \_\_\_\_\_ bpd Water \_\_\_\_\_ bpd GAS MEASURED BY  
 Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
See attached	0		0		

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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 ProFrac  
Address 800 Mountain View Drive City Smithfield State PA Zip 15478

Please insert additional pages as applicable.

Completed by Hollie Medley Telephone 304-212-0422  
Signature *Hollie Medley* Title Regulatory Manager Date 1/25/2024

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

02/23/2024

## Bunner 1H Stimulation Report

Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
1	2/15/2023	5,118	6,533	8,986	77	227	1,373	299,420	585
2	2/15/2023	5,643	5,770	9,390	92	96	8,627	390,040	563
3	2/15/2023	5,891	6,479	9,072	78	39	8,469	392,900	575
4	2/16/2023	5,229	5,755	9,415	83	57	8,588	390,860	571
5	2/16/2023	5,734	6,870	9,602	87	87	8,831	390,940	562
6	2/17/2023	5,636	7,346	9,606	85	67	8,541	389,960	562
7	2/17/2023	5,885	7,399	9,704	84	45	8,740	389,900	548
8	2/18/2023	6,085	6,103	9,695	84	44	8,570	389,940	545
9	2/18/2023	6,063	7,091	9,806	85	46	8,517	391,760	557
10	2/19/2023	6,409	7,405	9,799	85	113	8,506	390,280	538
11	2/19/2023	6,517	7,255	9,747	87	64	8,590	390,840	540
12	2/19/2023	5,895	5,959	9,394	86	83	8,513	390,430	533
13	2/20/2023	5,657	5,964	9,485	88	51	8,518	390,060	532
14	2/20/2023	5,681	6,962	9,543	86	38	8,523	391,690	539
15	2/21/2023	6,020	6,119	8,919	76	135	8,855	389,338	539
16	2/21/2023	5,497	7,760	9,646	88	53	8,465	391,540	524
17	2/22/2023	5,738	7,769	9,585	86	26	8,423	393,440	527
18	2/22/2023	5,476	7,544	9,670	88	74	8,038	390,538	514
19	2/23/2023	5,863	8,053	9,725	89	97	8,489	390,588	513
20	2/23/2023	5,399	7,629	9,733	88	51	8,248	390,555	506
21	2/23/2023	6,375	6,789	8,810	73	68	8,621	390,900	504
22	2/24/2023	6,152	8,038	9,913	93	76	8,370	391,430	500
23	2/24/2023	6,424	7,125	9,791	83	71	8,571	391,700	500
24	2/25/2023	5,973	7,478	9,858	85	74	8,426	389,846	486
25	2/25/2023	7,143	7,743	9,795	82	37	8,208	390,820	488
26	2/26/2023	6,441	7,528	9,707	87	22	8,035	387,870	487
27	2/26/2023	6,134	7,639	9,629	83	43	8,284	391,180	476
28	2/27/2023	6,038	7,572	9,762	86	62	8,106	388,463	475
29	2/27/2023	6,035	8,358	9,634	88	88	8,541	391,580	478
30	2/28/2023	6,388	7,752	9,757	87	70	7,995	391,641	470
31	2/28/2023	6,215	7,550	9,732	88	40	9,380	389,400	474
32	3/1/2023	6,326	7,998	9,865	89	92	8,021	390,000	449
33	3/1/2023	6,272	7,612	9,843	89	94	8,325	390,000	449
34	3/2/2023	5,913	7,774	9,760	87	52	8,056	391,750	444
35	3/2/2023	5,752	8,320	9,634	88	69	8,395	390,600	434
36	3/3/2023	5,632	8,569	9,878	86	46	8,017	391,418	442
37	3/3/2023	5,474	8,596	9,796	85	106	8,435	390,300	449
38	3/4/2023	5,721	8,337	9,754	86	63	8,419	390,165	426
39	3/4/2023	5,798	7,939	9,796	89	50	8,313	390,260	423
40	3/5/2023	5,905	7,228	9,496	89	75	8,385	389,767	423
41	3/5/2023	5,921	7,757	9,575	89	54	8,370	390,100	414
42	3/6/2023	6,195	8,067	9,464	91	29	8,504	393,223	420
43	3/7/2023	5,557	7,629	9,545	89	89	8,405	390,060	404
44	3/7/2023	6,050	8,903	9,524	90	110	8,393	391,270	426
45	3/8/2023	6,330	8,727	9,629	89	37	8,330	391,800	412

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Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
46	3/8/2023	5,602	8,041	9,327	88	36	8,334	390,740	412
47	3/9/2023	5,467	8,312	9,225	87	62	8,435	391,390	408
48	3/9/2023	5,727	8,364	9,464	89	41	8,542	390,520	393
49	3/10/2023	6,029	8,149	9,416	87	23	8,242	392,260	402
50	3/10/2023	5,725	7,585	9,345	91	61	8,325	390,440	390
51	3/11/2023	6,388	7,883	9,348	86	64	8,388	392,870	390
52	3/11/2023	3,471	7,425	9,389	89	35	8,439	390,200	389
53	3/12/2023	5,576	7,965	9,258	88	27	8,229	400,780	379
54	3/12/2023	5,894	7,851	9,217	88	31	8,257	390,320	376
55	3/12/2023	5,900	8,128	9,427	91	38	8,800	390,440	379
56	3/13/2023	6,373	8,009	9,198	88	41	8,229	391,040	370
57	3/14/2023	6,362	5,541	9,143	90	66	8,327	390,720	384
58	3/14/2023	6,170	7,745	9,137	89	38	8,066	391,060	364
59	3/15/2023	6,190	7,855	9,257	90	26	8,179	389,769	355
60	3/15/2023	6,304	6,321	8,791	85	28	8,097	395,360	350
61	3/15/2023	6,149	7,685	9,038	92	50	7,946	390,092	342
62	3/16/2023	6,108	8,664	8,987	89	38	8,238	390,560	345
63	3/16/2023	6,056	8,160	8,950	91	69	7,946	390,815	339
64	3/17/2023	6,684	7,775	9,092	91	40	8,202	390,540	331
65	3/17/2023	6,191	7,170	8,963	92	122	8,290	390,508	343
66	3/18/2023	6,226	6,492	8,412	84	39	7,918	391,253	322
67	3/18/2023	6,163	7,564	8,846	91	81	8,480	392,420	324
68	3/18/2023	6,261	7,957	8,791	90	55	8,009	389,751	329
69	3/19/2023	6,147	7,408	8,777	92	100	8,259	393,270	316
70	3/19/2023	6,272	7,761	8,954	91	58	7,863	389,658	307
71	3/20/2023	6,104	7,613	9,017	90	65	8,585	391,120	311
72	3/20/2023	6,407	8,064	9,080	91	42	7,745	390,039	383
73	3/20/2023	6,104	7,613	9,017	90	65	8,585	391,120	311
74	3/21/2023	6,749	6,812	8,392	86	67	8,132	390,320	382
75	3/22/2023	6,087	7,465	8,732	94	37	7,593	390,478	380
76	3/22/2023	5,798	6,946	8,636	89	111	8,125	390,580	289
77	3/22/2023	5,648	8,095	8,896	90	53	8,231	389,436	668
78	3/23/2023	5,616	7,974	9,106	92	3,457	7,937	390,160	273
79	3/23/2023	6,100	7,712	8,998	92	47	8,147	397,849	580
80	3/24/2023	6,239	7,582	9,094	92	84	8,049	390,620	279
81	3/24/2023	6,449	7,880	9,027	92	143	7,980	390,422	581
82	3/25/2023	6,272	7,733	8,893	91	82	8,405	390,239	265
83	3/25/2023	5,716	7,551	9,003	92	68	7,793	391,060	277
84	3/26/2023	6,214	7,945	8,825	92	27	8,391	391,161	248
85	3/26/2023	5,811	8,383	9,162	93	75	7,547	389,960	255
86	3/26/2023	6,413	7,948	8,762	90	32	8,155	391,304	252
87	3/27/2023	5,959	8,719	8,978	90	57	8,148	393,978	234
88	3/27/2023	5,886	8,067	9,004	91	53	8,043	390,880	238
89	3/27/2023	6,094	7,797	8,972	92	51	8,136	391,480	225
90	3/27/2023	6,101	7,606	8,852	90	41	7,773	393,633	246
91	3/28/2023	6,278	7,881	8,839	90	32	8,147	388,947	248
92	3/28/2023	6,029	7,310	8,324	90	115	8,121	391,420	230
93	3/28/2023	5,980	7,484	8,387	92	58	7,977	392,540	227

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Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
94	3/28/2023	5,964	7,619	8,312	91	58	7,740	390,330	220
95	3/26/2023	6,549	7,369	8,365	91	62	7,835	390,040	218
96	3/29/2023	6,359	7,034	8,361	93	64	7,850	390,380	214
97	3/29/2023	5,789	7,457	8,524	94	74	7,895	389,960	230
98	3/29/2023	5,945	7,600	8,252	91	21	8,011	391,220	261
99	3/29/2023	6,407	7,274	8,350	93	11	7,883	391,790	201
100	3/29/2023	6,350	7,285	8,364	91	12	8,052	391,840	197
101	3/30/2023	6,169	8,248	8,465	91	14	8,080	396,257	193

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<b>Bunner 1H</b>				
<b>Perforation Report</b>				
Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
1	2/15/2023	40		25,830
2	2/15/2023	40	25,791	25,653
3	2/15/2023	40	25,616	25,478
4	2/16/2023	40	25,441	25,303
5	2/16/2023	40	25,266	25,128
6	2/17/2023	40	25,091	24,953
7	2/17/2023	40	24,916	24,778
8	2/18/2023	40	24,916	24,778
9	2/18/2023	40	24,566	24,428
10	2/19/2023	40	24,391	24,253
11	2/19/2023	40	24,216	24,078
12	2/19/2023	40	24,041	23,903
13	2/20/2023	40	23,866	23,728
14	2/20/2023	40	23,691	23,553
15	2/21/2023	40	23,516	23,378
16	2/21/2023	40	23,341	23,203
17	2/22/2023	40	23,166	23,028
18	2/22/2023	40	22,991	22,853
19	2/23/2023	40	22,816	22,678
20	2/23/2023	40	22,641	22,503
21	2/23/2023	40	22,466	22,328
22	2/24/2023	40	22,291	22,153
23	2/24/2023	40	22,116	21,978
24	2/25/2023	40	21,941	21,803
25	2/25/2023	40	21,766	21,628
26	2/26/2023	40	21,591	21,453
27	2/26/2023	40	21,416	21,278
28	2/27/2023	40	21,241	21,103
29	2/27/2023	40	21,066	20,928
30	2/28/2023	40	20,891	20,753
31	2/28/2023	40	20,716	20,578
32	3/1/2023	40	20,541	20,403
33	3/1/2023	40	20,366	20,228
34	3/2/2023	40	20,191	20,053
35	3/2/2023	40	20,016	19,878
36	3/3/2023	40	19,841	19,703
37	3/3/2023	40	19,666	19,528
38	3/4/2023	40	19,491	19,353
39	3/4/2023	40	19,316	19,178
40	3/5/2023	40	19,141	19,003
41	3/5/2023	40	18,966	18,828
42	3/6/2023	40	18,791	18,653
43	3/7/2023	40	18,616	18,478
44	3/7/2023	40	18,441	18,302
45	3/8/2023	40	18,266	18,128
46	3/8/2023	40	18,091	17,953
47	3/9/2023	40	17,916	17,779

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Environmental Protection

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Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
48	3/9/2023	40	17,741	17,603
49	3/10/2023	40	17,566	17,428
50	3/10/2023	40	17,391	17,253
51	3/11/2023	40	17,216	17,078
52	3/11/2023	40	17,041	16,903
53	3/12/2023	40	16,866	16,728
54	3/12/2023	40	16,691	16,553
55	3/12/2023	40	16,516	16,378
56	3/13/2023	40	16,341	16,203
57	3/14/2023	40	16,166	16,028
58	3/14/2023	40	15,991	15,853
59	3/15/2023	40	15,816	15,678
60	3/15/2023	40	15,641	15,503
61	3/15/2023	40	15,466	15,327
62	3/16/2023	40	15,290	15,152
63	3/16/2023	40	15,115	14,977
64	3/17/2023	40	14,940	14,802
65	3/17/2023	40	14,765	14,627
66	3/18/2023	40	14,590	14,452
67	3/18/2023	40	14,415	14,277
68	3/18/2023	40	14,240	14,102
69	3/19/2023	40	14,065	13,927
70	3/19/2023	40	13,890	13,752
71	3/20/2023	40	13,715	13,577
72	3/20/2023	40	13,540	13,402
73	3/20/2023	40	13,365	13,227
74	3/21/2023	40	13,190	13,052
75	3/22/2023	40	13,015	12,877
76	3/22/2023	40	12,840	12,702
77	3/22/2023	40	12,665	12,527
78	3/23/2023	40	12,490	12,352
79	3/23/2023	40	12,315	12,177
80	3/24/2023	40	12,140	12,002
81	3/24/2023	40	11,965	11,827
82	3/25/2023	40	11,790	11,652
83	3/25/2023	40	11,615	11,477
84	3/26/2023	40	11,440	11,302
85	3/26/2023	40	11,265	11,127
86	3/26/2023	40	11,090	10,952
87	3/27/2023	40	10,915	10,777
88	3/27/2023	40	10,740	10,602
89	3/27/2023	40	10,565	10,427
90	3/27/2023	40	10,390	10,252
91	3/28/2023	40	10,215	10,077
92	3/28/2023	40	10,040	9,902
93	3/28/2023	40	9,865	9,727
94	3/28/2023	40	9,690	9,552
95	3/26/2023	40	9,515	9,377
96	3/29/2023	40	9,340	9,202

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Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
97	3/29/2023	40	9,165	9,027
98	3/29/2023	40	8,990	8,852
99	3/29/2023	40	8,815	8,677
100	3/29/2023	40	8,640	8,502
101	3/30/2023	40	8,465	8,327

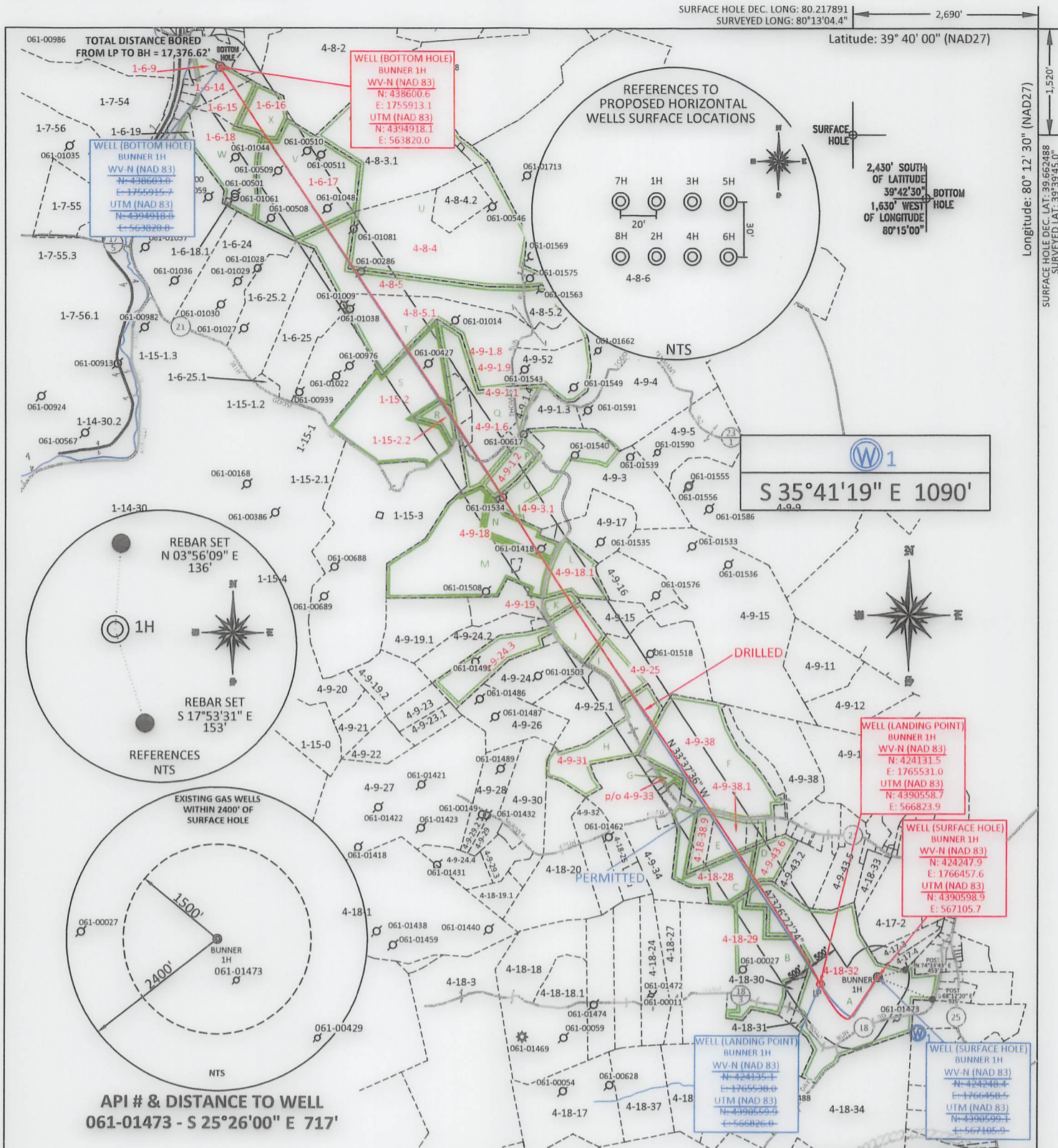
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**Bunner Completion Lithology**

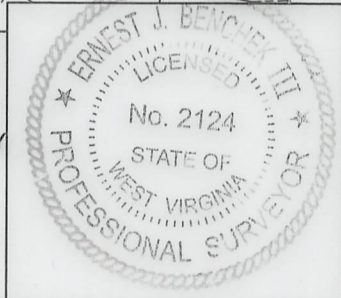
Lithology/Formation	Top Depth in FT TVD	Bottom Depth in FT TVD	Describe rock type and record quantity and type of fluid (freshwater, brine, oil, gas, H2S, etc)
Sand/silt	0	280	Sand/silt
silt/shale	280	520	silt/shale
sandstone	520	590	sandstone
coal	530	533	coal
coal	580	584	coal
sandstone	590	680	sandstone
siltstone/sandstone	680	715	siltstone/sandstone
sandstone/siltstone	715	767	sandstone/siltstone
sandstone/limestone	767	800	sandstone/limestone
Limestone/sandstone/shale	800	865	Limestone/sandstone/shale
Pittsburgh coal	865	873	Pittsburgh coal
Limestone/siltstone	873	910	Limestone/siltstone
Limestone	910	950	Limestone
sandstone/siltstone	950	974	sandstone/siltstone
coal	974	978	coal
sandstone/siltstone	978	1000	sandstone/siltstone
Limestone	1000	1040	Limestone
Limestone/siltstone	1040	1063	Limestone/siltstone
coal	1063	1066	coal
Limestone/siltstone	1066	1090	Limestone/siltstone
Maxon	1090	1110	Maxon
Limestone/siltstone	1110	1220	Limestone/siltstone
Red Rock/siltstone/limestone	1220	1440	Red Rock/siltstone/limestone
Limestone/siltstone	1440	1610	Limestone/siltstone
sandstone/siltstone	1610	2080	sandstone/siltstone
Little Lime	2080	2140	Little Lime
Big Lime	2140	2250	Big Lime
siltstone/sandstone	2250	2320	siltstone/sandstone
Big Injun	2320	2410	Big Injun
Gantz	2410	2420	Gantz
Sand/shale	2420	5560	Sand/shale
gray shale/siltstone	5560	7705	gray shale/siltstone
Middlesex	7395	7646	Middlesex
Burkett	7646	7819	Burkett
Geneseo	7819	7870	Geneseo
Tully	7870	7923	Tully
Hamilton	7923	8026	Hamilton
Marcellus	8026	TD	Marcellus

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FILE #: NEE14  
 DRAWING #: 3074  
 SCALE: PLAT: 1" = 2200'  
 TICK MARK: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/200  
 PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.  
 Signed: *[Signature]*  
 L.L.S. #2124 : Ernest J. Benchek III



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304  
 Well Type:  Oil  Waste Diposal  Production  Deep  
 Gas  Liquid Injection  Storage  Shallow  
 WATERSHED: DUNKARD CREEK  
 COUNTY/DISTRICT: MONONGALIA / CLAY  
 SURFACE OWNER: PATRICIA A. BUNNER  
 OIL & GAS ROYALTY OWNER: PATRICIA BUNNER, et al  
 LEASE NUMBERS:

DATE: JANUARY 10, 2024  
 OPERATOR'S WELL #: BUNNER 1H DRILLED  
 API WELL #: 47 61 01906 WR-36  
 STATE COUNTY PERMIT  
 AS-BUILT  
 ELEVATION: 1277.25'  
 QUADRANGLE: BLACKSVILLE, WV  
 ACREAGE: 94.72 02/23/2024  
 ACREAGE: 935.18 +/-  
 DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
 PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
 CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY):  
 TARGET FORMATION: MARCELLUS  
 DRILLED DEPTH: TVD: 8,133' TMD: 26,076'  
 DESIGNATED AGENT: JOHN ADAMS  
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

PROPERTY OWNER INDEX	
4-9-33	CHRISTOPHER BLAINE & SHARON WILSON
4-18-28	SHANNON REEVES
4-18-29	GILBERT DONALD BERRY (LIFE-ROBERT E BERRY SR)
4-9-38	ALLEN K & VIRGINIA L MOORE
4-9-38.1	KELLI D WILSON
4-9-38.9	JOHN B & KELLI D WILSON
4-9-43.6	THOMAS R LUZADER
4-18-32	PATRICIA A BUNNER
1-6-9	LUCY E MCCOY
1-6-14	ALTON G MYERS SR EST
1-6-15	KYLE EUGENE & SANDRA JO REBOLD
1-6-16	KATHY LYNN SNYDER; ELIZABETH A REESE; JOHM M BUTCHER SR
1-6-17	JACK LEMLEY; JAMES R LEMLEY; OLESTON SURVIVORS TRUST
1-6-18	DAVID N & WILLA R HOWARD
4-8-4	L DOUGLAS & VICKI L TENNANT
4-8-5	DENNY & LILLIAN SNYDER
4-8-5.1	JANICE M STILES IRREVOCABLE TRUST
4-9-1.8	ZYNDALL & LAURA BARR
4-9-1.9	GREYLYN D BARR
4-9-1.1	DELORES BARR
1-15-2	ERP FEDERAL MINING COMPLEX LLC
4-9-1.6	ERP FEDERAL MINING COMPLEX LLC
1-15-2.2	DELORES BARR
4-9-1.2	JOSEPH E & JUDITH E KOAST
4-9-3.1	JEFFREY TODD & CARLENE MOORE ET AL
4-9-18	JODIE DAWN & JEFFREY LANE SHRIVER
4-9-18.1	CHARLIE CHASE II & VICKI M CHASE
4-9-19	BART L, CHRIS M & BUCKEY L WILSON
4-9-24.3	AARON D & CARLA R WILSON

LEASE INDEX			
A	WV-061-004154-001	M	WV-061-004821-004
B	WV-061-005966-001	N	WV-061-004821-004
C	WV-061-005189-011	O	WV-061-003670-037
D	WV-061-002667-023	P	WV-061-004777-001
E	WV-061-005864-001	Q	WV-061-005823-001
F	WV-061-005864-001	R	WV-061-004139-001
G	WV-061-004996-001	S	WV-061-004139-001
H	WV-061-000160-001-LA	T	WV-061-006004-001
I	WV-061-002693-003	U	WV-061-000160-001-LA
J	WV-061-004823-023	V	WV-061-000160-001-LA
K	WV-061-004823-023	W	WV-061-003896-005
L	WV-061-000160-001-LA	X	WV-061-005930-001

02/23/2024

FILE #: NEE14

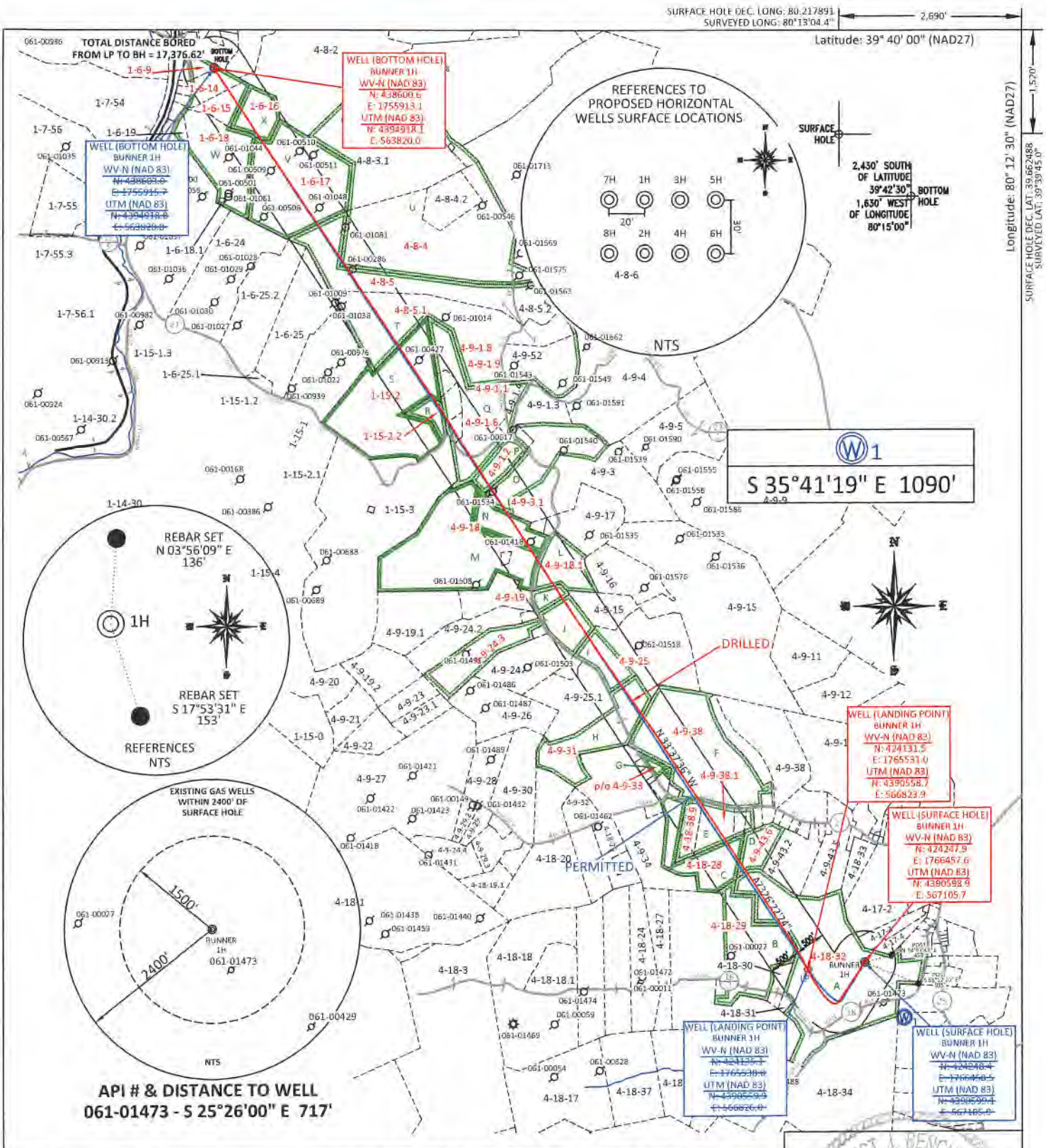
DRAWING #: 3074

SCALE: N/A

DATE: JANUARY 10, 2024

OPERATOR'S WELL #: BUNNER 1H DRILLED

API WELL #: 47 61 01906  
STATE COUNTY PERMIT



FILE #: NEE14  
 DRAWING #: 3074  
 SCALE: PLAT: 1" = 2200' TICK MARK: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/200  
 PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.  
 Signed: *[Signature]*  
 L.L.S. #2124; Ernest J. Benchek III



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304

Well Type:  Oil  Waste Disposal  Production  Deep  Gas  Liquid Injection  Storage  Shallow

WATERSHED: DUNKARD CREEK

COUNTY/DISTRICT: MONONGALIA / CLAY  
 SURFACE OWNER: PATRICIA A. BUNNER  
 OIL & GAS ROYALTY OWNER: PATRICIA BUNNER, et al  
 LEASE NUMBERS:

DATE: JANUARY 10, 2024  
 OPERATOR'S WELL #: BUNNER 1H DRILLED  
 API WELL #: 47 61 **01906**  
 STATE COUNTY PERMIT  
 AS-BUILT  
 ELEVATION: 1277.25'

QUADRANGLE: BLACKSVILLE, WV  
 ACREAGE: 94.72 **02/23/2024**  
 ACREAGE: 935.18 +/-

TARGET FORMATION: MARCELLUS  
 DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
 PLUG OFF FORMATION  PERFORATE NEW FORMATION  PLUG & ABANDON   
 CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY):

DRILLED DEPTH: TVD: 8,133' TMD: 26,076'  
 WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC  
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301  
 DESIGNATED AGENT: JOHN ADAMS  
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

Cement Job Log



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

Customer:	NORTHEAST NATURAL ENERGY LLC	Date:	27-Nov-22	Serv. Supervisor:	Anthony Barbara
Cust. Rep.:	Josh Angeline	Ticket #:	BPA-2211-0056	Serv. Center:	Black Lick - 1571
Well Name:	Bunner 1H	API Well #:	47-061-01906	County:	Monongalia
Well Type:		Rig:	Patterson 277	State:	WV
			Type of Job: CM-SURFACE CASING		

Plugs	Casing Hardware	Materials Furnished by NexTier							
		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-956 +1.5 % NAC-110+0.25 PPS NLM-600	1145	15.6	30%	1.14	4.79	231.66	1,300.79	131
Fresh Water Displacement			8.33			-	187.06	-	
0									

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Displacement Chemicals:												
OPEN HOLE DATA						TUBULAR DATA						
17.5 in. O.H. 128 to 1,250 ft			13.375 in. 54.5#, ( 0 to 1,250 ft)			SIZE WEIGHT	THRD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
Ambient Temp.	Bulk Temp.	Slurry 1 Temp.	Slurry 2 Temp.	Slurry 3 Temp.	Slurry 4 Temp.							
42.0 °F		59.0 °F				13.375" 54.5#	BTC	1294	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	
								1293	1248			
WELL FLUID			DISPLACEMENT FLUID			DIFF PRESS (psi)	C99 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		189 bbl	H2O	8.5 ppg	472	369	850	<200	7	45.6 °F		
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	570.00	Y		43.00		Yes	570.00	No	1.00	No	55	
Comments/Additional Details:												

Anthony Barbara  
Service Supervisor

27-Nov-22  
Date

02/23/2024

Cement Job Log



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

Customer:	NORTHEAST NATURAL ENERGY LLC	Date:	29-Nov-22	Serv. Supervisor:	Robert Given
Cust. Rep.:	JOSH	Ticket #:	BPA-2211-0058	Serv. Center:	Black Lick - 1571
Well Name:	Bunner 1H	API Well #:	47-081-01906	County:	Monongalia
Well Type:	NATURAL GAS	Rig:	PATTERSON 277	State:	WV
			Type of Job:	GM-INTER. 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 (bbbls)	Fluid Volume (cuft)	Mix Water (bbbls)
6% Gel Spacer	+20.0 PPB NEX-020		8.7		4.62	33.66	25.00	-	
15.6 lb/gal Cement	100 % NCM-956 +0.5 % NAC-110	895	15.6	30%	1.13	4.82	179.77	1,009.43	103
Fresh Water Displacement			8.33			-	190.18	-	
0									

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WV Department of Environmental Protection

Displacement Chemicals:

OPEN HOLE DATA				TUBULAR DATA										
12.375 in. O.H. 1,250 to 2,500 ft				9.625 in. 36#, ( 0 to 2,500 ft)				SIZE WEIGHT	THRD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
Ambient Tmp.	Bulk Tmp.	Slurry 1 Tmp.	Slurry 2 Tmp.	Slurry 3 Tmp.	Slurry 4 Tmp.									
55.0 °F		69.0 °F				9.625/36#	BTC	2533	J-55	8.835	3520	2020		

PREVIOUS CASING DATA			PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS					
13.375 in. 54.5# ( 0 to 1,250 ft)			TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP		
							2533	2469	1			

WELL FLUID			DISPLACEMENT FLUID			DIFF PRESS	CSG LIFT	MAX PRESS	Mix H2O Chlorides (ppm)	Mix H2O pH	Mix H2O Temp	WATER ON LOC (bbl)
TYPE	DENSITY	VOLUME	TYPE	DENSITY		(psi)	(psi)	(psi)				
PROCESSED	8.3 ppg	194.5 bbl	PROCESSED	8.3 ppg		941	1253	1750	<600	7.5	53.0 °F	1200

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	1,100.00	Y	-	5.00	-	Yes	1,610.00	No	2.00	No	50

Comments/Additional Details:

Robert Given  
Service Supervisor  
29-Nov-22  
Date



**Cement Job Log**



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

<b>Customer:</b> NORTHEAST NATURAL ENERGY LLC	<b>Date:</b> 11-Dec-22	<b>Serv. Supervisor:</b> Steven Long
<b>Cust. Rep.:</b> PATRICK	<b>Ticket #:</b> BPA-2212-0016	<b>Serv. Center:</b> Black Lick - 1571
<b>Well Name:</b> Bunner 1H	<b>API Well #:</b> 47-061-01906	<b>County:</b> Monongalia <b>State:</b> WV
<b>Well Type:</b>	<b>Rig:</b> PATTERSON 577	<b>Type of Job:</b> CM-PROD. CASING

**Materials Furnished by NextTier**

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)
13.5 lb/gal PureScrub Spacer w/ Surfactant	+7.0 PPB NFP-703+5.0 PPB NSU-888		13.5		5.65	26.46	80.00	-	
14.5 lb/gal Cement	50 % NCM-956+50 % NPZ-010 +0.2 % NFP-703+0.2 % NAS-504+0.5 % NRT-213+0.2 % NFL-549+0.2 % NTC-405	4980	14.5		1.13	4.64	999.45	5,611.92	550
Sugar Water Displacement	+5.0 PPB NRT-215					-	20.00	-	
Fresh Water Displacement						-	554.60	-	
						-		-	
						-		-	
						-		-	
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						-		-	

Displacement Chemicals:

OPEN HOLE DATA				TUBULAR DATA									
8.75 in. O.H. 2,500 to 7,200 ft 8.5 in. O.H. 7,200 to 25,913 ft				5.5 in. 20#, ( 0 to 25,913 ft)			SIZE WEIGHT	THRD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)
Ambient Tmp.	Bulk Tmp.	Slurry 1 Tmp.	Slurry 2 Tmp.	Slurry 3 Tmp.	Slurry 4 Tmp.	5.5 20#	BTC	25936.8	P-110	4.778	12640	11080	
40.0 °F		61.0 °F											
PREVIOUS CASING DATA				PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS					
9.625 in. 36# ( 0 to 2,500 ft)				TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP		
								25936.8					
WELL FLUID			DISPLACEMENT FLUID			DIFF PRESS (psi)	CSG LEFT (psi)	MAX PRESS (psi)	Mix H2O Chlorides (ppm)	Mix H2O pH	Mix H2O Temp	WATER ON LOC (bbl)	
TYPE	DENSITY	VOLUME	TYPE	DENSITY		3500		6048	< 200	7	50.0 °F	1800	
OBM	13.1 ppg	575.8 bbl	H2O	8.4 ppg									
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	4,400.00	Y	-	-	2,067	Yes	5,400.00	No	-	No	40		

Comments/Additional Details:

*Steven Long*  
Service Supervisor
*11-Dec-22*  
Date

02/23/2024

## Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/15/2023
Job End Date:	3/30/2023
State:	West Virginia
County:	Monongalia
API Number:	47-061-01906-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Bunner 1H
Latitude:	39.66256800
Longitude:	-80.21768700
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,063
Total Base Water Volume (gal):	34,954,752
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	87.85139	None
Sand (100 Mesh Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	10.64591	None
Sand (40/70 White Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	1.21929	None
Hydrochloric Acid (7.5%)	CNR	Acidizing					
			Water	7732-18-5	85.00000	0.14464	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	37.00000	0.06296	None
StimSTREAM FR 9800	Chemstream	Friction Reducer					
			Butene, homopolymer	9003-29-6	25.00000	0.01760	None
			alkanes, C16-20-iso-	90622-59-6	25.00000	0.01760	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00211	None
Clearal 268	Chemstream	Biocide					
			Non-hazardous substances	Proprietary	80.00000	0.01796	None

			Glutaraldehyde	111-30-8	20.00000	0.00449	None
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00067	None
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00067	None
			Ethanol	64-17-5	1.50000	0.00034	None
StimSTREAM SC 405	Chemstream	Scale Control					
			Non-Hazardous Substances	Proprietary	70.00000	0.01364	None
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00195	None
			Citric Acid	77-92-9	10.00000	0.00195	None
			2-Phosphono-1,2,4-butanetricarboxylic acid (PBTC)	37971-36-1	10.00000	0.00195	None
ProHib 100	CNR	Acid Inhibitor					
			2-Butoxyethanol	111-76-2	60.00000	0.00031	None
			Proprietary material	Proprietary	30.00000	0.00015	None
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00010	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	0.14464	
			Non-hazardous substances	Proprietary	80.00000	0.01796	
			Butene, homopolymer	9003-29-6	25.00000	0.01760	
			Non-Hazardous Substances	Proprietary	70.00000	0.01364	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00211	
			Citric Acid	77-92-9	10.00000	0.00195	
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00195	
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00067	
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00067	
			Ethanol	64-17-5	1.50000	0.00034	
			Proprietary material	Proprietary	30.00000	0.00015	
			Proprietary non-ionic surfactant	Proprietary	20.00000	0.00010	
			Proprietary corrosion inhibitor	Proprietary	10.00000	0.00005	
			Proprietary ethoxylated alcohol	Proprietary	10.00000	0.00005	
			Acetic Acid	64-19-7	5.00000	0.00002	

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\* 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)

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