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

API 47 - 061 - 01917 County Monongalia District Clay
Quad Grant Town Pad Name Sullivan Field/Pool Name
Farm name Alan Sullivan 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 4385299.9 Easting 566693.8
Landing Point of Curve Northing 4385579.0 Easting 567131.7
Bottom Hole Northing 4388700.8 Easting 564978.0

Elevation (ft) 1,476' 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 12/19/2022 Date drilling commenced 3/26/2023 Date drilling ceased 4/30/2023
Date completion activities began 8/27/2023 Date completion activities ceased 10/4/2023
Verbal plugging (Y/N) NA Date permission granted ___ Granted by ___

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

Freshwater depth(s) ft 914' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2,402' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 894' - 914' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

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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"	128'	N		NA	
Surface	17-1/2"	13-3/8"	1,016'	N	54.5	NA	Y, 1 bbl
Coal							
Intermediate 1	12-1/4"	9-5/8"	2,502'	N	36	NA	Y, 6 bbl
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	21,380'	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 ^{3}/sks)	Volume (ft ^{3})	Cement Top (MD)	WOC (hrs)
Conductor	4,500 PSI Grout						48
Surface	Class A + 2%	1,395	15.6	1.14	1,584	CTS	8
Coal							
Intermediate 1	Class A + 1%	940	15.6	1.13	1,060	CTS	8
Intermediate 2							
Intermediate 3							
Production	50:50 Class A + Additives	4,080	14.5	1.13	4,590	1,900'	48
Tubing							

Drillers TD (ft) 22,000' Loggers TD (ft) 21,970'

Deepest formation penetrated Marcellus Plug back to (ft) NA

Plug back procedure

Kick off depth (ft) 4,760'

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

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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.

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus	8247'	TVD	22,000' MD

Please insert additional pages as applicable.

GAS TEST □ Build up □ Drawdown ■ Open Flow OIL TEST □ Flow □ Pump

SHUT-IN PRESSURE Surface 2612 psi Bottom Hole ____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 3711 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_2S, ETC)
See attached	0		0		

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 Universal Pressure Pumping
Address 2198 University Dr. City Lemont Furnace State PA Zip 15456
Please insert additional pages as applicable.

Completed by Hollie Medley Telephone 304-212-0422
Signature Hollie Medley Title Regulatory Manager Date 3/6/24

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

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Sullivan 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	8/28/2023	4,233	6,192	8,964	91	93	7,374	300,398	599
2	8/28/2023	5,175	7,544	9,412	93	15	9,740	455,500	470
3	8/28/2023	5,390	7,349	9,215	95	59	9,732	455,300	465
4	8/28/2023	5,566	6,807	9,185	92	40	9,678	455,061	600
5	8/29/2023	5,864	7,624	9,320	94	26	9,506	455,825	462
6	8/29/2023	5,390	6,341	9,167	93	449	10,102	456,000	452
7	8/30/2023	5,184	7,913	9,074	93	27	9,713	456,200	521
8	8/30/2023	5,437	6,971	9,414	94	46	9,669	461,100	442
9	8/31/2023	5,685	7,329	9,711	93	72	9,720	456,200	443
10	9/1/2023	4,773	6,817	9,258	93	33	8,989	454,860	442
11	9/2/2023	5,836	6,018	9,354	92	60	9,632	455,748	419
12	9/3/2023	5,647	7,486	9,645	94	31	9,427	455,300	426
13	9/3/2023	5,740	7,016	9,270	93	28	9,437	455,900	427
14	9/4/2023	5,714	5,320	9,434	94	26	9,398	455,600	413
15	9/4/2023	5,127	4,167	9,518	94	22	9,455	455,500	414
16	9/5/2023	5,637	7,814	9,598	94	43	9,493	456,000	413
17	9/6/2023	5,507	6,615	9,541	94	70	9,042	455,800	452
18	9/6/2023	5,325	6,947	9,452	94	6	9,269	455,400	403
19	9/7/2023	5,420	6,770	9,273	94	20	8,882	455,100	516
20	9/8/2023	5,763	7,519	9,252	93	32	9,027	457,900	386
21	9/9/2023	5,432	6,353	9,138	94	22	8,413	455,600	366
22	9/9/2023	6,264	6,364	9,218	94	11	9,157	455,400	387
23	9/10/2023	5,558	6,957	9,096	93	43	8,273	458,000	375
24	9/10/2023	5,609	7,172	9,219	94	15	8,974	456,200	380
25	9/11/2023	5,283	6,740	9,081	93	29	8,454	457,200	366
26	9/12/2023	5,835	7,511	9,232	94	12	8,487	454,400	369
27	9/12/2023	5,576	5,830	9,215	94	29	7,953	458,700	357
28	9/13/2023	5,432	6,752	9,003	94	24	8,270	457,600	359
29	9/13/2023	5,137	6,449	8,907	94	25	8,981	455,000	412
30	9/14/2023	5,666	6,650	9,006	94	9	7,549	455,688	390
31	9/14/2023	6,004	6,720	9,055	94	32	9,362	455,200	349
32	9/15/2023	5,314	6,823	9,000	95	10	8,416	455,621	375
33	9/16/2023	4,675	7,625	8,879	93	20	8,275	454,800	338
34	9/16/2023	5,750	7,364	8,866	94	12	8,678	456,100	360
35	9/17/2023	5,403	7,445	8,957	94	16	8,575	454,900	331
36	9/17/2023	5,607	7,239	9,032	94	18	8,591	454,900	367
37	9/18/2023	5,633	7,128	9,035	94	10	8,535	454,500	324
38	9/18/2023	6,385	6,455	8,885	94	62	8,315	454,700	345
39	9/19/2023	5,509	6,604	8,991	94	6	9,357	455,400	319
40	9/20/2023	5,144	6,858	9,065	94	104	8,540	455,000	379
41	9/20/2023	5,418	7,410	8,880	94	11	8,134	455,400	320
42	9/21/2023	5,391	6,658	8,790	94	17	8,392	455,200	297
43	9/21/2023	5,347	5,715	8,347	94	17	8,310	457,500	297
44	9/22/2023	5,766	5,170	7,965	94	18	8,078	455,700	294
45	9/23/2023	5,022	5,057	7,930	94	45	8,351	456,600	277

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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	9/23/2023	4,965	6,500	7,864	94	14	8,051	456,200	286
47	9/24/2023	5,341	5,714	7,871	94	6	8,450	455,500	314
48	9/24/2023	5,184	6,378	7,808	94	22	8,331	456,700	263
49	9/25/2023	4,788	4,509	7,911	94	19	8,027	455,400	286
50	9/26/2023	4,989	6,735	7,861	94	32	8,236	456,600	265
51	9/26/2023	4,737	7,612	7,972	94	17	8,057	456,500	254
52	9/27/2023	4,134	4,322	7,969	94	33	8,073	455,900	249
53	9/27/2023	3,965	7,257	7,813	95	25	8,118	456,400	239
54	9/28/2023	4,880	6,795	7,658	95	21	8,409	455,000	318
55	9/28/2023	4,992	7,053	7,699	95	30	8,260	87,388	230
56	9/29/2023	4,280	6,583	7,740	94	17	8,106	455,000	325
57	9/30/2023	4,824	7,361	7,868	95	42	8,121	456,400	208
58	9/30/2023	4,903	6,848	7,729	94	7	8,129	455,000	276
59	10/1/2023	5,231	7,061	7,474	94	29	8,204	456,800	212
60	10/1/2023	5,060	6,942	7,450	94	9	7,985	454,800	228
61	10/2/2023	5,446	7,083	7,263	93	19	8,139	456,500	206
62	10/2/2023	5,314	6,682	7,416	94	18	8,089	454,900	243
63	10/3/2023	5,334	6,742	7,324	94	26	8,335	456,400	203
64	10/3/2023	5,147	6,866	7,531	94	12	8,063	454,900	195
65	10/4/2023	5,279	7,937	7,329	94	25	8,205	456,500	189

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Sullivan 1H
Perforation Report

Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
1	8/28/2023	36		21,271
2	8/28/2023	40	21,227	21,070
3	8/28/2023	40	21,029	20,872
4	8/28/2023	40	20,830	20,673
5	8/29/2023	40	20,632	20,475
6	8/29/2023	40	20,433	20,276
7	8/30/2023	40	20,235	20,078
8	8/30/2023	40	20,036	19,879
9	8/31/2023	40	19,838	19,681
10	9/1/2023	40	19,639	19,482
11	9/2/2023	40	19,441	19,284
12	9/3/2023	40	19,242	19,085
13	9/3/2023	40	19,044	18,887
14	9/4/2023	40	18,845	18,688
15	9/4/2023	40	18,647	18,490
16	9/5/2023	40	18,448	18,291
17	9/6/2023	40	18,249	18,093
18	9/6/2023	40	18,051	17,894
19	9/7/2023	40	17,852	17,696
20	9/8/2023	40	17,654	17,497
21	9/9/2023	40	17,455	17,299
22	9/9/2023	40	17,257	17,100
23	9/10/2023	40	17,058	16,902
24	9/10/2023	40	16,860	16,703
25	9/11/2023	40	16,661	16,505
26	9/12/2023	40	16,463	16,306
27	9/12/2023	40	16,264	16,107
28	9/13/2023	40	16,066	15,909
29	9/13/2023	40	15,867	15,710
30	9/14/2023	40	15,669	15,512
31	9/14/2023	40	15,470	15,313
32	9/15/2023	40	15,272	15,115
33	9/16/2023	40	15,073	14,916
34	9/16/2023	40	14,875	14,718
35	9/17/2023	40	14,676	14,519
36	9/17/2023	40	14,478	14,321
37	9/18/2023	40	14,279	14,122
38	9/18/2023	40	14,081	13,924
39	9/19/2023	40	13,882	13,725
40	9/20/2023	40	13,684	13,527
41	9/20/2023	40	13,485	13,328
42	9/21/2023	40	13,286	13,130
43	9/21/2023	40	13,088	12,931
44	9/22/2023	40	12,889	12,733
45	9/23/2023	40	12,691	12,534
46	9/23/2023	40	12,492	12,336
47	9/24/2023	40	12,294	12,137

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Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
48	9/24/2023	40	12,095	11,939
49	9/25/2023	40	11,897	11,740
50	9/26/2023	40	11,698	11,542
51	9/26/2023	40	11,500	11,343
52	9/27/2023	40	11,301	11,144
53	9/27/2023	40	11,103	10,946
54	9/28/2023	40	10,904	10,747
55	9/28/2023	40	10,706	10,549
56	9/29/2023	40	10,507	10,350
57	9/30/2023	40	10,309	10,152
58	9/30/2023	40	10,110	9,953
59	10/1/2023	40	9,912	9,755
60	10/1/2023	40	9,713	9,556
61	10/2/2023	40	9,515	9,358
62	10/2/2023	40	9,316	9,159
63	10/3/2023	40	9,118	8,961
64	10/3/2023	40	8,919	8,762
65	10/4/2023	40	8,721	8,564

Sullivan 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	175	Sand/silt
Sand/red shale	175	280	sand with reddish shale
sandstone/shale	280	620	sandstone/shale
Washington coal	530	534	coal
siltstone/sandstone	534	607	
Waynesburg coal	607	614	Waynesburg coal
sandstone/limestone	614	680	sandstone/limestone
siltstone/sandstone	680	715	siltstone/sandstone
sandstone/siltstone	715	750	sandstone/siltstone
Limestone/sandstone/shale	750	767	Limestone/sandstone/shale
Sewickley coal	767	774	Sewickley coal
Limestone	774	893	Limestone
Pittsburgh coal	894	914	Pittsburgh coal
Limestone/siltstone	915	1220	Limestone/siltstone
sandstone/siltstone	1450	1960	sandstone/siltstone
Red Rock/silstone/limestone	1960	2100	Red Rock/silstone/limestone
Little Lime	2100	2156	Little Lime
Big Lime	2156	2280	Big Lime
Big Injun	2280	2410	Big Injun
Sand/silt	2410	2790	Sand/silt
Gantz	2790	2800	Gantz
Sand/shale	2800	3040	Sand/shale
Red Rock/silstone	3040	3135	Red Rock/silstone
siltstone/sandstone	3135	7393	siltstone/sandstone
Middlesex	7393	7610	Middlesex
Burkett	7610	7793	Burkett
Geneseo	7793	7846	Geneseo
Tully	7846	7905	Tully
Hamilton	7905	8035	Hamilton
Marcellus	8035	TD	Marcellus

02/23/2024

Cement Job Log

NEXTIER

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

Customer:	NORTHEAST NATURAL ENERGY LLC	Date:	28-Mar-23	Serv. Supervisor:	Drew Forsythe
Cust. Rep.:	Josh, Pat	Ticket #:	BPA-2303-0032	Serv. Center	Black Lick - 1571
Well Name:	Sullivan 1H	API Well #:	47-061-01917	County: Monongalia	State: WV
Well Type:		Rig:	Patterson 277	Type of Job:	CM-MINE 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)
Top Rubber Plug	13 3/8 Single Plug Container w/ Buttress Crossover								
Supplied by Customer									
6% Gel Spacer	+20.0 PPB NEX-020		8.7		4.62	33.66	25.00	-	
900' - 1520' Mine 15.6 lb/gal Cement	100 % NCM-956 +1.5 % NAC-110+0.25 PPS NLM-600	1395	15.6	50%	1.14	4.79	282.24	1,584.80	159
Fresh Water Displacement			8.33			-	228.79	-	
0' - 500' Packer 15.6 lb/gal Cement	100 % NCM-956 +1.5 % NAC-110+0.25 PPS NLM-600	940	15.6	30%	1.14	4.79	190.19	1,067.89	107
						-		-	
						-		-	
						-		-	
						-		-	
						-		-	
Displacement Chemicals:									

OPEN HOLE DATA						TUBULAR DATA						
22 in. O.H. 100 to 1,520 ft			13.375 in. 54.5#, (0 to 1,520 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.	13.375" 54.5#	BTC	1044	J55	12.615	2730	1130
35.0 °F		64.0 °F	68.0 °F									

PREVIOUS CASING DATA	PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS			
	TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
24 in. 97.4# (0 to 100 ft)					1041.9	998.6		

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)				
H2O	8.3 ppg	155 bbl	H2O	8.3 ppg			2000		7	62.0 °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	120.00	Y	-	1.00	-	No	600.00	No	12.00	No	

Comments/Additional Details:

Drew Forsythe — Service Supervisor

28-Mar-23 — Date

02/23/2024

Cement Job Log

NEXTIER

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

Customer:	NORTHEAST NATURAL ENERGY LLC	Date:	18-Apr-23	Serv. Supervisor:	Drew Forsythe
Cust. Rep.:	Neil	Ticket #:	BPA-2304-0017	Serv. Center	Black Lick - 1571
Well Name:	Sullivan 1H	API Well #:	47-061-01917	County: Monongalia	State: WV
Well Type:		Rig:	Patterson 277	Type of Job:	CM-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 (bbls)	Fluid Volume (cuft)	Mix Water (bbls)
Top Rubber	9.625" Single	Plug Container w/ Buttress Crossover								
Supplied by Customer										
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	940	15.6	30%	1.13	4.82	188.81	1,060.19	108
Fresh Water Displacement				8.33			-	190.18	-	
0							-		-	
							-		-	
							-		-	
							-		-	
							-		-	
							-		-	
Displacement Chemicals:										

OPEN HOLE DATA			TUBULAR DATA								
22 in. O.H. 1,044 to 1,074 ft 12.25 in. O.H. 1,074 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.	9.625" 36#	BTC	2502	J55	8.921	3520	2020
40.0 °F		63.0 °F										

PREVIOUS CASING DATA	PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS			
	TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
13.375 in. 54.5# (0 to 1,044 ft)					2499.9	2455.5		

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							
H20	8.3 ppg	158.5 bbl	H20	8.3 ppg	927	943	1500		7	52.0 °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	1,000.00	Y	-	6.00	-	Yes	900.00	No	3.00	No	53

Comments/Additional Details:

Drew Forsythe — Service Supervisor

18-Apr-23 — Date

02/23/2024

Cement Job Log

NEXTIER

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

Customer:	NORTHEAST NATURAL ENERGY LLC	Date:	29-Apr-23	Serv. Supervisor:	Drew Forsythe		
Cust. Rep.:	Josh, Pat	Ticket #:	BPA-2304-0035	Serv. Center	Black Lick - 1571		
Well Name:	Sullivan 1H	API Well #:	47-061-01917	County:	Monongalia	State:	WV
Well Type:		Rig:	Patterson 277	Type of Job:	CM-PROD. 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)
Top and Bottom Latch	5.5" 10K Citadel Double Plug Container w/ Latch Collar								
Plugs. Supplied by Cust.									
13.5 lb/gal PureScrub Spacer w/ Surfactant	+7.0 PPB NFP-703+5.0 PPB NSU-888+2.0 PPB NRT-221		13.5		5.65	26.44	80.00	-	
14.5 lb/gal Cement	50 % NCM-956+50 % NPZ-010 +0.2 % NFP-703+0.1 % NAS-504+0.25 % NRT-213+0.2 % NFL-549+0.2 % NTC-405	4080	14.5		1.13	4.65	817.59	4,590.75	451
Sugar Water Displacement	+5.0 PPB NRT-215					-	20.00	-	
Fresh Water Displacement						-	457.89	-	
						-		-	
						-		-	
						-		-	
						-		-	
						-		-	
Displacement Chemicals:									

OPEN HOLE DATA			TUBULAR DATA									
8.75 in. O.H. 2,650 to 8,000 ft 6.5 in. O.H. 8,000 to 21,552 ft			5.5 in. 20#, (0 to 21,552 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	21380'		4.778		
51.0 °F		65.0 °F										

PREVIOUS CASING DATA	PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS			
	TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
9.625 in. 36# (0 to 2,650 ft)					21376.8			

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							
OBM	13.6 ppg	474.6 bbl	H2O	8.3 ppg	2470		7000		7	62.0 °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	3,200.00	Y	-	-	1,900	Yes	4,200.00	No	-	No	27

Comments/Additional Details:

Drew Forsythe — Service Supervisor

29-Apr-23 — Date

02/23/2024

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	08/27/2023
Job End Date:	10/04/2023
State:	West Virginia
County:	Monongalia
API Number:	47-061-01917-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Sullivan 1H
Latitude:	39.614857
Longitude:	-80.223026
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8239.16576923077
Total Base Water Volume (gal)*:	24622920
Total Base Non Water Volume:	0

FracFocus Chemical Disclosure Registry

Water Source	Percent
Groundwater, < 1000TDS	100.00%

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
CIA-12	Universal Pressure Pumping	Acid corrision inhibitor					
Clearal 268	Chemstream	Biocide					
Hydrochloric Acid (7.5%)	Universal Pressure Pumping	Acidizing					
Sand (100 Mesh Proppant)	Universal Pressure Pumping	Proppant					
Sand (40/70 White Proppant)	Universal Pressure Pumping	Proppant					
StimStream FR 9800	Chemstream	Friction Reducer					
StimStream SC 405	Chemstream	Scale Control					
Water	Operator	Carrier Fluid					

Items above are Trade Names. Items below are the individual ingredients.

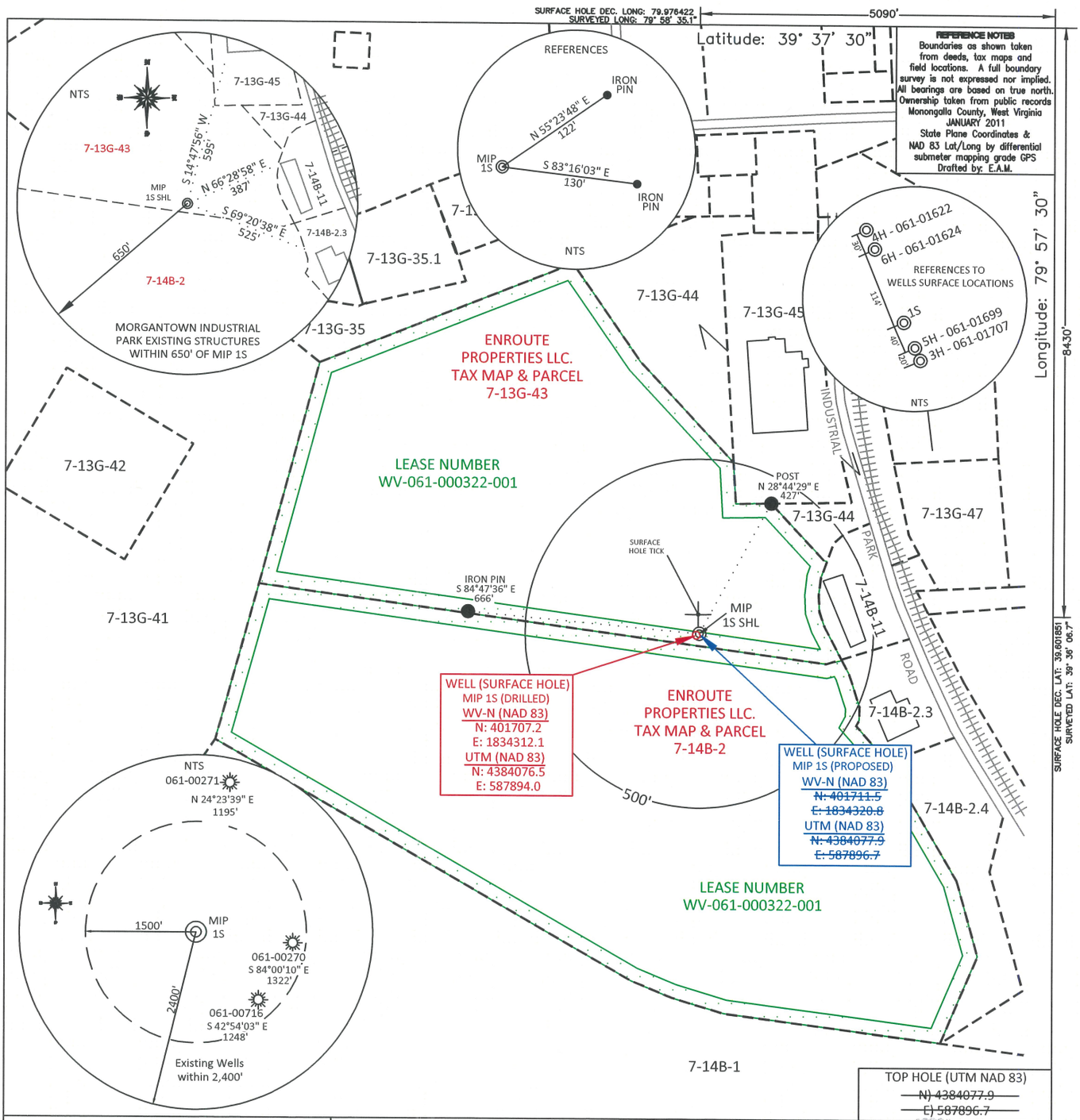
02/23/2024

			Water	7732-18-5	100.00000	87.22898	None
			Crystalline silica, quartz	14808-60-7	100.00000	11.27488	None
			Crystalline silica, quartz	14808-60-7	100.00000	1.23924	None
			Hydrochloric acid	7647-01-0	15.00000	0.02498	None
			Water	7732-18-5	80.00000	0.01702	
			Water	7732-18-5	70.00000	0.01433	
			Butene Homopolymer	9003-29-6	25.00000	0.01210	
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.01210	None
			Glutaraldehyde	111-30-8	20.00000	0.00426	None
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00205	
			2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1	10.00000	0.00205	None
			Citric Acid	77-92-9	10.00000	0.00205	
			alcohols, C12-18, ethoxylated	68213-23-0	3.00000	0.00145	
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00064	
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00064	
			Ethanol	64-17-5	1.50000	0.00032	
			Ethylene glycol	107-21-1	45.00000	0.00008	None
			Glycol Ether EB	111-76-2	45.00000	0.00008	
			N,N-Dimethylformamide	68-12-2	20.00000	0.00003	
			Tar bases,quinoline derivs.,benzyl chloride-quaternized	72480-70-7	20.00000	0.00003	
			Water	7732-18-5	15.00000	0.00003	
			Cinnamaldehyde	104-55-2	10.00000	0.00002	
			Nonylphenol ethoxylated	127087-87-0	10.00000	0.00002	
			Alcohols, C6-12	68603-15-6	10.00000	0.00002	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

02/23/2024



FILE #: NNE004
DRAWING #: 1419
SCALE: PLAT: 1"=400' TICK: 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:

L.L.S. #2124 : Ernest J. Benchek III

ERNEST J. BENCHEK III LICENSED No. 2124 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: MARCH 1, 2024

OPERATOR'S WELL #: MIP 1S

API WELL #: 47 (STATE) 61 (COUNTY) PERMIT

Well Type: ☐ Oil ☐ Waste Diposal ☐ Production ☒ Deep ☒ Geothermal Test
☐ Gas ☐ Liquid Injection ☐ Storage ☐ Shallow

WATERSHED: DUNKARD

AS-BUILT ELEVATION : 1,057.55'

COUNTY/DISTRICT: MONONGALIA/GRANT

QUADRANGLE: MORGANTOWN SOUTH

SURFACE OWNER: ENROUTE PROPERTIES LLC.

ACREAGE: 25.998 +/-

OIL & GAS ROYALTY OWNER: ENROUTE PROPERTIES LLC.

ACREAGE: 65.796 +/-

02/23/2024

LEASE NUMBERS:

DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☐
PLUG OFF FORMATION ☐ PERFORATE NEW FORMATION ☐ PLUG & ABANDON ☐
CLEAN OUT & REPLUG ☐ OTHER CHANGE ☒ (SPECIFY): CORING FOR SCIENCE

TARGET FORMATION: POINT PLEASANT

DRILLED DEPTH: TVD: 10,535'

WELL OPERATOR : NORTHEAST NATURAL ENERGY

DESIGNATED AGENT : JOHN ADAMS

ADDRESS: 707 VIRGINIA STREET – SUITE 1200

ADDRESS: 707 VIRGINIA STREET – SUITE 1200

CITY: CHARLESTON STATE: WV ZIP CODE: 25301

CITY: CHARLESTON STATE: WV ZIP CODE: 25301