

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

API 47-061-01918 County Monongalia District Clay
Quad Grant Town Pad Name Sullivan Field/Pool Name _____
Farm name Alan Sullivan Well Number 5H
Operator (as registered with the OOG) Northeast Natural Energy LLC
Address 707 Virginia St. E., Suite 1200 City Charleston State WV Zip 25301

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4385292.7 Easting 566683.8
Landing Point of Curve Northing 4385211.6 Easting 566639.0
Bottom Hole Northing 4388326.2 Easting 564491.6

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 2/26/2023 Date drilling ceased 3/15/2023
Date completion activities began 8/29/2023 Date completion activities ceased 10/5/2023
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:

02/23/2024

API 47-061 - 01918 Farm name Alan Sullivan Well number 5H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	30"	24"	128'	N		NA	
Surface	17-1/2"	13-3/8"	1,503'	N	54.5	NA	Y, 3 bbl
Coal							
Intermediate 1	12-1/4"	9-5/8"	2,498'	N	36	NA	Y, 30 bbl
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	20,962'	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%	570	15.6	1.14	647	CTS	8
Coal							
Intermediate 1	Class A + 1%	980	15.6	1.13	1,105	CTS	8
Intermediate 2							
Intermediate 3							
Production	50:50 Class A + Additives	3,995	14.5	1.13	4,496	1,854'	48
Tubing							

Drillers TD (ft) 20,963' Loggers TD (ft) 20,933'
 Deepest formation penetrated Marcellus Plug back to (ft) NA
 Plug back procedure _____

Kick off depth (ft) 7,014' _____

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 _____

Sullivan 5H Stimulation Report

Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
1	8/29/2023	4,850	8,226	9,811	92	501	8,738	299,400	465
2	8/29/2023	5,045	7,484	9,408	92	71	9,570	455,900	484
3	8/30/2023	6,205	7,061	9,811	92	37	9,766	453,800	519
4	8/31/2023	5,078	7,564	9,538	95	376	10,157	457,000	453
5	8/31/2023	5,067	4,344	9,593	94	16	9,618	456,800	458
6	9/1/2023	5,356	7,105	9,660	94	17	9,484	456,600	439
7	9/2/2023	5,500	5,032	9,361	93	50	9,495	456,300	441
8	9/3/2023	5,800	7,532	9,764	94	27	9,434	455,600	436
9	9/3/2023	4,662	7,631	9,479	94	23	9,402	455,600	433
10	9/4/2023	5,500	5,074	9,296	91	39	9,366	455,800	422
11	9/5/2023	4,800	7,494	9,648	94	18	9,408	457,000	410
12	9/5/2023	5,375	4,495	9,479	95	113	9,623	455,400	424
13	9/6/2023	4,876	4,330	9,441	88	77	9,065	455,500	462
14	9/7/2023	5,406	4,433	9,594	94	7	9,321	455,700	459
15	9/8/2023	5,257	4,339	9,321	94	12	9,001	455,600	524
16	9/8/2023	5,329	3,661	9,416	94	38	9,177	455,700	403
17	9/9/2023	5,640	7,250	9,495	93	44	8,702	455,600	388
18	9/9/2023	6,257	7,271	9,552	94	11	8,471	455,200	460
19	9/10/2023	5,543	7,196	9,486	94	37	8,830	456,100	386
20	9/11/2023	5,280	4,428	9,614	94	27	9,065	454,600	469
21	9/11/2023	6,855	6,187	9,321	94	36	8,678	454,600	382
22	9/12/2023	5,413	7,211	9,471	93	9	8,191	455,700	368
23	9/12/2023	5,884	6,835	9,505	94	17	8,509	455,400	374
24	9/13/2023	6,063	6,838	9,205	90	25	9,447	457,500	355
25	9/14/2023	5,278	6,890	9,319	94	21	9,063	455,800	438
26	9/14/2023	5,275	6,366	9,243	94	10	7,617	456,971	414
27	9/15/2023	5,560	7,089	9,356	94	38	8,365	455,100	357
28	9/15/2023	6,071	6,632	9,412	93	4	9,747	454,900	352
29	9/16/2023	5,773	7,082	9,163	94	12	8,287	455,887	395
30	9/16/2023	5,824	6,710	9,114	94	29	8,644	454,700	343
31	9/17/2023	5,541	5,974	8,940	92	11	8,469	455,300	346
32	9/17/2023	5,329	7,119	8,897	94	39	8,310	454,600	332
33	9/18/2023	4,889	6,685	8,970	93	4	8,561	455,700	330
34	9/19/2023	5,133	6,968	8,765	94	15	8,213	454,900	325
35	9/19/2023	5,535	6,427	8,984	94	3	8,473	455,100	320
36	9/19/2023	5,462	6,659	9,159	94	22	8,393	455,800	332
37	9/20/2023	5,772	6,981	8,775	93	8	8,423	454,700	311
38	9/21/2023	5,552	5,448	8,777	95	31	8,221	455,500	309
39	9/22/2023	5,511	6,896	8,391	94	53	8,356	456,800	299
40	9/22/2023	5,772	7,240	8,927	93	30	8,947	456,800	286
41	9/23/2023	5,577	6,863	8,501	94	27	8,133	455,500	299
42	9/23/2023	5,243	7,172	8,594	94	30	8,302	456,700	280
43	9/24/2023	5,003	6,438	8,743	94	5	8,640	455,600	296
44	9/25/2023	5,543	5,862	8,225	93	36	8,312	456,600	268
45	9/25/2023	5,588	4,536	8,451	94	42	8,111	455,500	276

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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	9/26/2023	5,146	6,619	8,230	94	181	8,556	455,800	284
47	9/26/2023	4,858	7,014	8,303	94	28	8,207	456,500	257
48	9/27/2023	4,340	6,973	8,234	95	32	8,040	455,200	255
49	9/27/2023	5,016	7,133	8,097	94	29	7,815	456,800	237
50	9/28/2023	4,400	6,891	7,994	95	21	8,160	454,700	339
51	9/29/2023	5,255	6,927	7,786	94	34	8,321	456,600	235
52	9/29/2023	4,620	4,549	7,911	94	11	8,113	454,800	263
53	9/30/2023	5,111	7,387	7,869	94	32	8,007	456,400	234
54	9/30/2023	5,144	7,105	7,713	94	10	8,115	454,900	288
55	10/1/2023	5,136	7,460	7,429	95	25	8,134	456,900	220
56	10/1/2023	4,915	7,223	7,566	94	24	8,070	457,800	213
57	10/2/2023	5,099	7,007	7,499	94	32	8,138	455,400	268
58	10/2/2023	5,064	7,410	7,578	95	21	7,978	456,700	205
59	10/3/2023	4,842	7,688	7,377	94	26	8,134	455,400	277
60	10/3/2023	5,207	7,663	7,501	94	13	8,136	455,000	330
61	10/4/2023	5,255	7,585	7,521	94	32	8,095	456,800	198
62	10/4/2023	5,232	7,624	7,503	95	19	7,968	454,900	194
63	10/4/2023	5,207	6,553	7,347	94	28	8,233	455,500	186
64	10/5/2023	5,063	7,513	7,473	94	25	8,115	456,700	277

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Sullivan 5H
Perforation Report

Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
1	8/29/2023	36		20,854
2	8/29/2023	40	20,810	20,653
3	8/30/2023	40	20,611	20,453
4	8/31/2023	40	20,412	20,254
5	8/31/2023	40	20,212	20,055
6	9/1/2023	40	20,013	19,856
7	9/2/2023	40	19,814	19,656
8	9/3/2023	40	19,615	19,457
9	9/3/2023	40	19,415	19,258
10	9/4/2023	40	19,216	19,059
11	9/5/2023	40	19,017	18,859
12	9/5/2023	40	18,818	18,660
13	9/6/2023	40	18,618	18,461
14	9/7/2023	40	18,419	18,262
15	9/8/2023	40	18,220	18,062
16	9/8/2023	40	18,021	17,863
17	9/9/2023	40	17,821	17,664
18	9/9/2023	40	17,622	17,465
19	9/10/2023	40	17,423	17,265
20	9/11/2023	40	17,224	17,066
21	9/11/2023	40	17,024	16,867
22	9/12/2023	40	16,825	16,668
23	9/12/2023	40	16,626	16,468
24	9/13/2023	40	16,427	16,269
25	9/14/2023	40	16,227	16,070
26	9/14/2023	40	16,028	15,871
27	9/15/2023	40	15,829	15,671
28	9/15/2023	40	15,630	15,472
29	9/16/2023	40	15,430	15,273
30	9/16/2023	40	15,231	15,074
31	9/17/2023	40	15,032	14,874
32	9/17/2023	40	14,833	14,675
33	9/18/2023	40	14,633	14,476
34	9/19/2023	40	14,434	14,277
35	9/19/2023	40	14,235	14,077
36	9/19/2023	40	14,036	13,878
37	9/20/2023	40	13,836	13,679
38	9/21/2023	40	13,637	13,480
39	9/22/2023	40	13,438	13,280
40	9/22/2023	40	13,239	13,081
41	9/23/2023	40	13,039	12,882
42	9/23/2023	40	12,840	12,683
43	9/24/2023	40	12,641	12,483
44	9/25/2023	40	12,442	12,284
45	9/25/2023	40	12,242	12,085
46	9/26/2023	40	12,043	11,886
47	9/26/2023	40	11,844	11,686

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Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
48	9/27/2023	40	11,645	11,487
49	9/27/2023	40	11,445	11,288
50	9/28/2023	40	11,246	11,089
51	9/29/2023	40	11,047	10,889
52	9/29/2023	40	10,848	10,690
53	9/30/2023	40	10,648	10,491
54	9/30/2023	40	10,449	10,292
55	10/1/2023	40	10,250	10,092
56	10/1/2023	40	10,051	9,893
57	10/2/2023	40	9,851	9,694
58	10/2/2023	40	9,652	9,495
59	10/3/2023	40	9,453	9,295
60	10/3/2023	40	9,254	9,096
61	10/4/2023	40	9,054	8,897
62	10/4/2023	40	8,855	8,698
63	10/4/2023	40	8,656	8,498
64	10/5/2023	40	8,457	8,299

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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/red shale	175	280	Sand/silt 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/siltstone/limestone	1960	2100	Red Rock/siltstone/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/siltstone	3040	3135	Red Rock/siltstone
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

Cement Job Log

<h1 style="margin: 0;">NEXTier</h1>				NexTier Completion Solutions 3990 Rogerdale Rd., Houston, TX 77042 (713)325-6000								
Customer:	NORTHEAST NATURAL ENERGY LLC			Date:	28-Feb-23		Serv. Supervisor:		Adam Pavelchick			
Cust. Rep.:	NEIL			Ticket #:	BPA-2303-0002		Serv. Center:		Black Lick - 1671			
Well Name:	Sullivan 5H			API Well #:	47-061-01918		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						
CUSTOMER SUPPLIED	NEXTier 13 3/8 FLUG CONTAINER			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 PLUG												
6% Gel Spacer	20.0 FPB NEX-020				8.7		4.62	33.66	25.00	-		
1500'-912' Mine 15.6ppg Cement	100% NCM-956 +1.5% NAC-110+0.25 PPS NLM-600			570	15.6	50%	1.14	4.79	115.33	647.55	65	
Fresh Water Displacement					8.33			-	225.70	-		
0'-500' Packer 15.6 ppg Cement	100% NCM-956 +1.5% NAC-110+0.25 PPS NLM-600			950	15.6	30%	1.14	4.79	192.21	1,079.26	108	
Displacement Chemicals:												
OPEN HOLE DATA						TUBULAR DATA						
22 in. O.H. 0 to 650 ft 17.5 in. O.H. 650 to 1,550 ft			13.375 in. 54.5#, (0 to 1,500 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.	13.375" 54.5#	BTC	1503	J-55	12.615	2730	1130
41.0 °F	41.0 °F	57.0 °F										
PREVIOUS CASING DATA				PERFORATED INTERVAL DATA				CASING EQUIPMENT DEPTHS				
				TOP	BTM	6PF	SIZE	SHOE	FLOAT	STAGE	ACP	
								1503	1456.6			
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 LOG (bbl)		
TYPE	DENSITY	VOLUME	TYPE	DENSITY								
REC	8.4 ppg	225.7 bbl	REC	8.4 ppg	551	444	3500	<3000	7	49.0 °F 1200		
Bumped Plug	Final Differential (psi)	Floats Held (Y/N)	PS 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	-	3.00	-	No	3,500.00	No	21.00	No	37	
Comments/Additional Details:												
								<i>Adam Pavelchick</i> <small>Service Supervisor</small>		<i>28-Feb-23</i> <small>Date</small>		

02/23/2024

Cement Job Log



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

Customer: NORTHEAST NATURAL ENERGY LLC		Date: 4-Mar-23	Serv. Supervisor: Drew Forsythe								
Cust. Rep.: Josh		Ticket #: BPA-2303-0004	Serv. Center: Black Lick - 1571								
Well Name: Sullivan 5H		API Well #: 47-061-01918	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								
Supplied by Customer	9.625" Single Plug Container w/ 8 Round Crossover	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 +0.5% NAC-110	980	15.6	30%	1.13	4.82	196.85	1,105.30	112		
Fresh Water Displacement			6.33			-	201.78	-			
0											
Displacement Chemicals:											
OPEN HOLE DATA			TUBULAR DATA								
17.5 in. O.H. 1,475 to 1,520 ft		9.625 in. 36#, (0 to 2,650 ft)		SIZE WEIGHT	THRD	DEPTH (ft)	GRADE	ID (in)	BURST (psi)	COLLAPSE (psi)	
12.375 in. O.H. 1,520 to 2,650 ft				9.625: 36#	STC	2498	J55	8.921	3520	2020	
Ambient Temp.	Bulk Temp.	Slurry 1 Temp.	Slurry 2 Temp.	Slurry 3 Temp.	Slurry 4 Temp.						
48.0 °F		58.0 °F									
PREVIOUS CASING DATA				PERFORATED INTERVAL DATA			CASING EQUIPMENT DEPTHS				
13.375 in. 54.5# (0 to 1,475 ft)				TOP	BTM	SPF	SIZE	SHOE	FLOAT	STAGE	ACP
								2495.9	2451.5		
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)				
Proc. H2O	9.4 ppg	189.7 bbl	Proc. H2O	9.4 ppg	789	941	2500		7	54.0 °F	1200
Bumped Plug	Final Differential (psi)	Floats Held (Y/N)	Psi Left on Casing	Cement to Surface (bbl)	Top of Cement (ft)	Full Ckrs. During Job (Y/N)	Max Pump Pressure (psi)	Casing Rotation	Additional Hrs Charged (hrs)	Casing Reciproaction	Rathole Length (ft)
Yes	1,150.00	Y	-	30.00	-	Yes	1,250.00	No	2.00	No	52
Comments/Additional Details:											
						<i>Drew Forsythe</i>			<i>4-Mar-23</i>		
						Service Supervisor			Date		

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	08/29/2023
Job End Date:	10/05/2023
State:	West Virginia
County:	Monongalia
API Number:	47-061-01918-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Sullivan 5H
Latitude:	39.614794
Longitude:	-80.223143
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8210.11730769231
Total Base Water Volume (gal)*:	24057936
Total Base Non Water Volume:	0



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 corrosion inhibitor					
Clearal 268	Chemstream	Biocide					
Hydrochloric Acid (7.5%)	Universal Pressure Pumping	Acidizing					
Other Chemical(s)	Listed Above	See Trade Name(s)					
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					

02/23/2024

Water	Operator	Carrier Fluid					
Items above are Trade Names. Items below are the individual ingredients.							
			Water	7732-18-5	100.00000	87.16133	None
			Crystalline silica, quartz	14808-60-7	100.00000	11.35597	None
			Crystalline silica, quartz	14808-60-7	100.00000	1.24029	None
			Hydrochloric acid	7647-01-0	15.00000	0.02276	None
			Water	7732-18-5	80.00000	0.01711	
			Water	7732-18-5	70.00000	0.01466	
			Butene Homopolymer	9003-29-6	25.00000	0.01206	
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.01206	None
			Glutaraldehyde	111-30-8	20.00000	0.00428	None
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00209	
			2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1	10.00000	0.00209	None
			Citric Acid	77-92-9	10.00000	0.00209	
			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	0.00007	None
			Glycol Ether EB	111-76-2	45.00000	0.00007	
			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	0.00002	
			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	

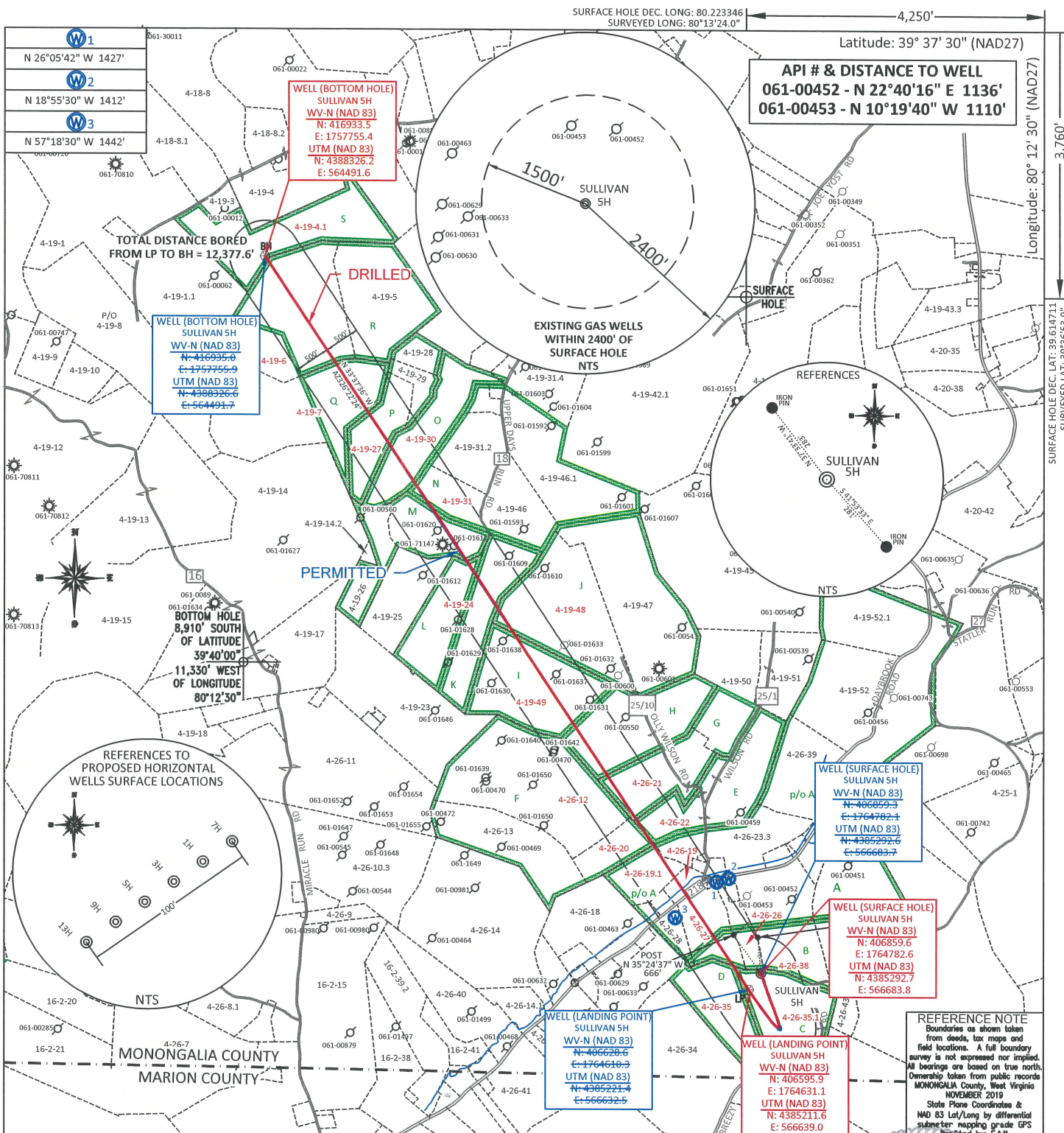
* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** 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)

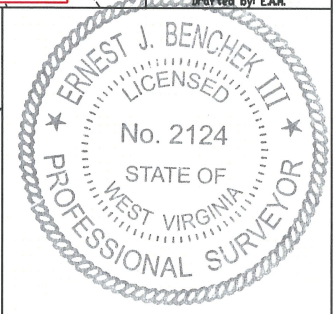
02/23/2024



FILE #: NNE20
 DRAWING #: 3048
 SCALE: PLAT: 1" = 2000'
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: [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: UPPER MONONGAHELA RIVER AS-BUILT ELEVATION: 1,476'

COUNTY/DISTRICT: MONONGALIA / CLAY QUADRANGLE: GRANT TOWN

SURFACE OWNER: ALAN SULLIVAN ACREAGE: 1,124.250 +/-

OIL & GAS ROYALTY OWNER: ALAN SULLIVAN ACREAGE: 25.870 **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): _____

TARGET FORMATION: MARCELLUS DRILLED DEPTH: TVD: 8,172' TMD: 20,963'

WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC DESIGNATED AGENT: JOHN ADAMS
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

4-26-35	RANDY LEE & TRINA TENNANT
4-19-30	BILLIE & JEFFERSON PRICE
4-19-27	JAMES TENNANT
4-19-31	JIMMY R & PAMELA K TENNANT; BILLY RAY & ROXANA CAHILL
4-19-48	JAMES F & LINDA KARUS
4-26-38	ADAM CLAY DARRAH
4-19-49	MICHAEL J LATOCHA
4-26-21	MARVIN L WILSON II
4-26-22	LINDA KAY FOGT
4-26-19	LINDA R PARKER
4-26-19.1	SANDRA L LONG
4-19-24	EDITH L DARRAH
4-26-27	NNE MIDSTREAM LLC
4-26-12	KENNETH W & RUTH E ALBERT
4-26-35.1	ALAN SULLIVAN
4-26-26	NNE MIDSTREAM LLC
4-26-20	KENNETH W & RUTH E ALBERT
4-19-6	JIMMY R & PAMELA K TENNANT; RAY & ROXANA CAHILL
4-19-7	STEPHEN R WILSON, ET AL
4-19-4.1	KEMBLE D TATE

LEASE INDEX			
A	WV-061-000160-001-ACT	K	WV-061-003931-001
B	WV-061-000160-001-ACT	L	WV-061-003931-011
C	WV-061-005448-002	M	WV-061-003931-011
D	WV-061-000160-001-ACT	N	WV-061-006350-001
E	WV-061-000160-001-ACT	O	WV-061-003931-011
F	WV-061-005998-001	P	WV-061-003931-011
G	WV-061-000160-001-ACT	Q	WV-061-005906-004
H	WV-061-000160-001-ACT	R	WV-061-005906-004
I	WV-061-000160-001-ACT	S	WV-061-005876-002
J	WV-061-001851-0014		

02/23/2024

FILE #: NEE20

DRAWING #: 3048

SCALE: N/A

DATE: FEBRUARY 5, 2024

OPERATOR'S WELL #: SULLIVAN 5H AS-DRILLED

API WELL #: 47 61 01918
STATE COUNTY PERMIT