

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

API 47 - 061 - 01832 County Monongalia District Clay  
Quad Blacksville, WV Pad Name Matteo Field/Pool Name \_\_\_\_\_  
Farm name Samuel W. & Stacey L. Matteo Well Number 6H  
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 4389910.9 Easting 568703.5  
Landing Point of Curve Northing 4390206.1 Easting 569232.5  
Bottom Hole Northing 4387527.7 Easting 571357.7

Elevation (ft) 1,492' 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 2/27/2019 Date drilling commenced 5/14/2019 Date drilling ceased 8/5/2019  
Date completion activities began 10/11/2019 Date completion activities ceased 11/13/2019  
Verbal plugging (Y/N) N Date permission granted NA Granted by NA

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

Freshwater depth(s) ft 915', 1,050' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 2,308' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 710', 984' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:  
\_\_\_\_\_

API 47-061 - 01832 Farm name Samuel W. & Stacey L. Matteo Well number 6H

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"	40'	N	NA	NA	Y
Surface	17.5"	13.375"	1,205'	N	54.5	NA	Y, 15 bbl
Coal							
Intermediate 1	12.25"	9.63"	2,747'	N	40	NA	Y, 50 bbl
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	20,386'	N	20	NA	N
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	4500 psi ready mix	36		.75	27	CTS	48
Surface	Class A	235	15.6	1.21	1,125	CTS	8
Coal							
Intermediate 1	Class A	1035	15.2	1.19	1,095	CTS	8
Intermediate 2							
Intermediate 3							
Production	Class A	3,710	14.5	1.16	4,306	2,087'	48
Tubing							

Drillers TD (ft) 20,435' Loggers TD (ft) 20,405'

Deepest formation penetrated Marcellus Plug back to (ft) NA

Plug back procedure NA

Kick off depth (ft) 5,612'

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 \_\_\_\_\_





## Matteo 6H Stimulation Information

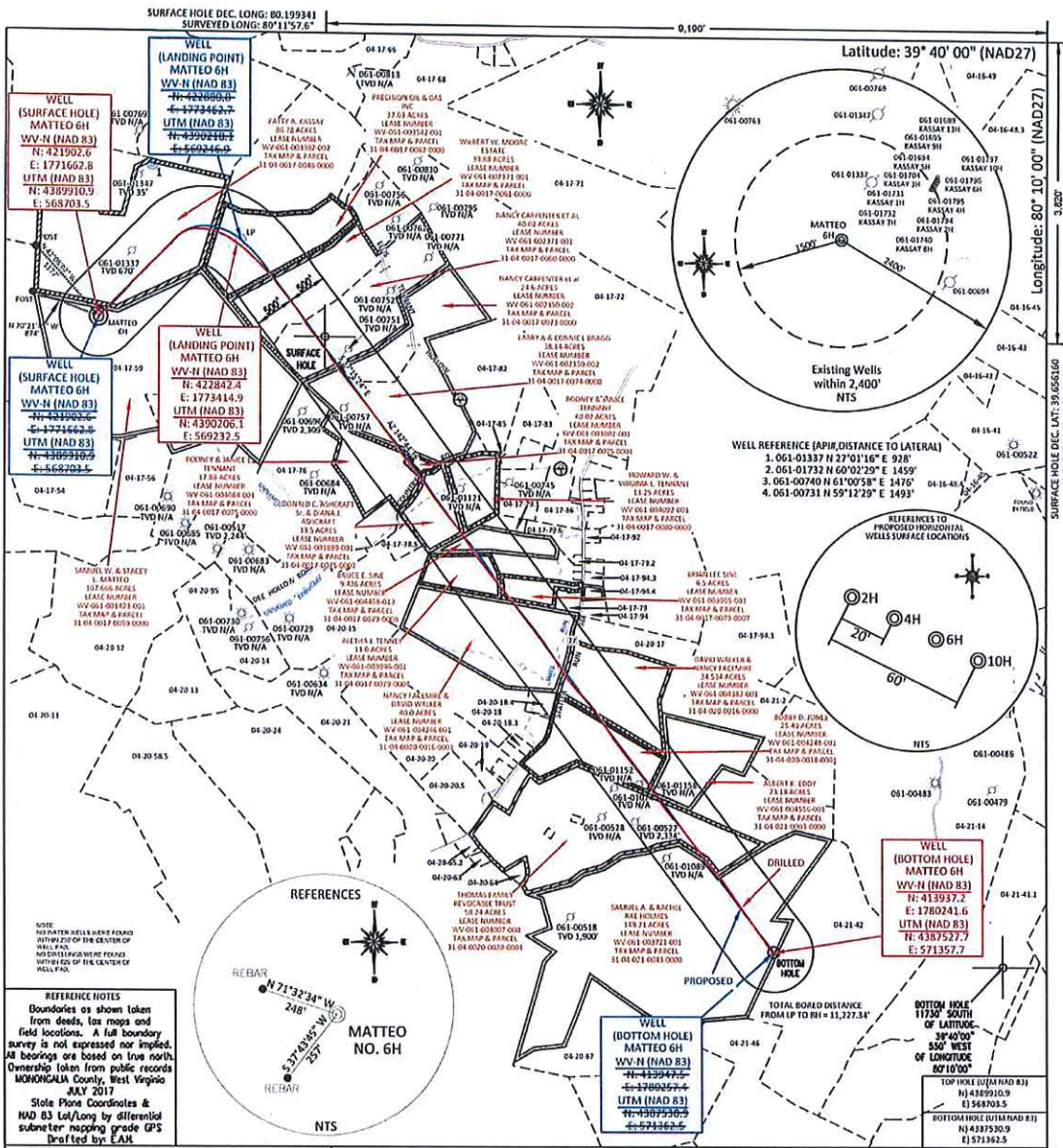
Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
1	10/23/19	5,940	0	8,694	87	1,065	7,251	300,300	451
2	10/23/19	5,248	7,357	9,090	86	363	8,753	402,940	448
3	10/24/19	5,690	6,559	9,415	87	68	8,453	399,400	444
4	10/24/19	5,946	6,594	9,140	84	99	8,273	400,320	437
5	10/24/19	5,538	6,166	9,410	90	43	8,149	400,620	435
6	10/25/19	5,572	6,478	9,210	86	27	8,359	400,420	426
7	10/25/19	6,019	7,077	9,188	87	106	8,124	400,440	425
8	10/26/19	6,353	6,416	8,904	83	62	8,140	400,680	420
9	10/26/19	5,587	6,133	8,769	81	216	7,319	400,460	418
10	10/27/19	5,176	6,117	8,988	81	48	7,688	387,450	465
11	10/27/19	5,623	6,202	9,033	83	75	7,811	401,480	420
12	10/28/19	5,741	6,204	9,018	86	47	7,893	399,200	402
13	10/28/19	5,986	6,436	9,014	88	92	7,963	400,140	398
14	10/29/19	5,712	6,806	8,939	84	61	8,062	400,700	393
15	10/29/19	5,342	6,830	9,004	86	55	7,780	400,750	391
16	10/30/19	5,885	6,814	8,872	84	63	7,967	400,920	386
17	10/30/19	5,522	6,755	8,755	86	37	7,795	400,760	384
18	10/31/19	5,671	7,104	8,735	84	56	7,774	401,080	377
19	10/31/19	5,887	7,216	8,964	86	31	7,845	400,400	374
20	10/31/19	5,238	7,583	9,081	84	92	7,837	399,440	370
21	11/1/19	6,138	7,747	8,274	77	52	8,618	400,140	364
22	11/1/19	5,458	7,507	8,746	84	67	7,794	401,960	360
23	11/2/19	5,618	8,517	9,329	85	39	7,750	400,580	356
24	11/2/19	5,293	7,122	9,002	88	35	7,733	400,640	352
25	11/3/19	5,335	7,591	9,060	88	38	7,740	400,680	347
26	11/3/19	5,876	8,360	9,111	88	56	7,688	400,760	342
27	11/3/19	5,446	6,542	8,798	87	36	7,697	405,980	338
28	11/4/19	6,213	7,203	8,868	88	85	7,753	400,400	334
29	11/4/19	5,297	7,090	8,747	87	51	7,707	400,540	330
30	11/5/19	5,941	7,304	8,732	87	34	7,682	401,140	325
31	11/5/19	5,763	6,907	8,680	87	61	7,725	400,740	322
32	11/5/19	5,487	6,894	8,695	87	49	7,641	400,700	316
33	11/6/19	5,265	7,125	8,414	84	52	8,426	389,000	362
34	11/6/19	6,205	7,121	8,562	88	42	7,658	400,840	310
35	11/6/19	5,704	7,236	8,717	84	45	7,776	400,470	303
36	11/7/19	5,951	7,387	8,767	89	36	7,762	401,360	300
37	11/7/19	6,100	7,124	8,711	87	44	7,709	402,020	295
38	11/8/19	6,564	6,873	8,488	84	137	7,784	400,680	300
39	11/8/19	6,630	6,710	8,496	86	34	7,789	405,040	286
40	11/8/19	6,408	6,797	8,434	85	38	8,607	400,720	284
41	11/9/19	5,720	6,462	8,481	78	82	7,103	308,800	326
42	11/9/19	5,956	6,622	8,431	85	117	7,164	328,330	376
43	11/9/19	5,852	7,072	8,223	82	63	7,902	400,100	273
44	11/10/19	6,200	7,550	8,755	87	50	7,759	400,200	265
45	11/10/19	6,077	8,299	8,560	87	37	7,683	397,000	260
46	11/10/19	5,765	7,555	8,693	85	26	7,653	405,640	263
47	11/10/19	6,093	7,344	8,549	88	51	7,643	400,850	252
48	11/11/19	4,207	7,682	8,429	87	64	7,602	401,144	246
49	11/11/19	6,131	7,503	8,314	87	40	7,682	401,000	242
50	11/11/19	6,547	7,670	8,744	88	24	7,622	400,340	237
51	11/11/19	6,317	5,646	8,531	87	74	7,631	400,520	235
52	11/12/19	6,440	5,903	8,669	92	83	7,634	400,360	230
53	11/12/19	6,273	7,139	8,609	86	51	7,669	400,400	225
54	11/12/19	6,202	6,662	8,726	94	37	7,614	400,540	230
55	11/13/19	6,303	6,876	8,397	87	64	7,672	399,920	215
56	11/13/19	6,799	7,067	8,416	87	25	7,375	367,500	212

**Matteo 6H Perforation Information**

Stage Number	Report Date	Cluster 5 Bottom TD	Cluster 1 Top TD	Total Shots
1	10/23/19	20,238	0	0
2	10/23/19	20,038	20,194	40
3	10/24/19	19,839	19,996	40
4	10/24/19	19,641	19,798	40
5	10/24/19	19,443	19,600	40
6	10/25/19	19,245	19,401	40
7	10/25/19	19,046	19,203	40
8	10/26/19	18,848	19,005	40
9	10/26/19	18,650	18,807	40
10	10/27/19	18,452	18,608	40
11	10/27/19	18,253	18,410	40
12	10/28/19	18,055	18,212	40
13	10/28/19	17,857	18,013	40
14	10/29/19	17,659	17,815	40
15	10/29/19	17,460	17,617	40
16	10/30/19	17,262	17,419	40
17	10/30/19	17,064	17,220	40
18	10/31/19	16,866	17,022	40
19	10/31/19	16,667	16,824	40
20	10/31/19	16,469	16,626	40
21	11/1/19	16,271	16,427	40
22	11/1/19	16,073	16,229	40
23	11/2/19	15,874	16,031	40
24	11/2/19	15,676	15,833	40
25	11/3/19	15,478	15,634	40
26	11/3/19	15,280	15,436	40
27	11/3/19	15,081	15,238	40
28	11/4/19	14,883	15,040	40
29	11/4/19	14,685	14,841	40
30	11/5/19	14,486	14,643	40
31	11/5/19	14,288	14,445	40
32	11/5/19	14,090	14,247	40
33	11/6/19	13,892	14,048	40
34	11/6/19	13,693	13,850	40
35	11/6/19	13,495	13,652	40
36	11/7/19	13,297	13,454	40
37	11/7/19	13,099	13,255	40
38	11/8/19	12,900	13,057	40
39	11/8/19	12,702	12,859	40
40	11/8/19	12,504	12,660	40
41	11/9/19	12,306	12,462	40
42	11/9/19	12,107	12,264	40
43	11/9/19	11,909	12,066	40
44	11/10/19	11,711	11,867	40
45	11/10/19	11,513	11,669	40
46	11/10/19	11,314	11,471	40
47	11/10/19	11,116	11,273	40
48	11/11/19	10,918	11,074	40
49	11/11/19	10,720	10,876	40
50	11/11/19	10,521	10,678	40
51	11/11/19	10,323	10,480	40
52	11/12/19	10,125	10,281	40
53	11/12/19	9,926	10,083	40
54	11/12/19	9,728	9,885	40
55	11/13/19	9,530	9,687	40
56	11/13/19	9,332	9,488	40

### Matteo 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
siltstone/sandstone	590	630	siltstone/sandstone
coal	630	634	coal
siltstone/sandstone	634	650	siltstone/sandstone
sandstone	650	680	sandstone
siltstone/sandstone	680	710	siltstone/sandstone
coal	710	715	coal
sandstone/siltstone	715	767	sandstone/siltstone
coal	767	769	coal
sandstone/limestone	769	800	sandstone/limestone
Limestone/sandstone/shale	800	870	Limestone/sandstone/shale
Limestone/siltstone	870	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	1550	Limestone/siltstone
Big Injun	1550	1610	Big Injun
sandstone/siltstone	1610	1820	sandstone/siltstone
sandstone	1820	1860	sandstone
sand/shale	1860	2100	sand/shale
Red Rock/siltstone/limestone	2100	2125	Red Rock/siltstone/limestone
sand/shale	2125	2390	sand/shale
Sand/shale	2390	5560	Sand/shale
gray shale/siltstone	5560	7705	gray shale/siltstone
Middlesex	7705	7754	Middlesex
Burkett	7754	7931	Burkett
Geneseo	7931	7978	Geneseo
Tully	7978	8022	Tully
Hamilton	8022	8122	Hamilton
Marcellus	8122	TD	Marcellus



FILE #: NNE15  
 DRAWING #: 2871  
 PLAN: 1" = 1800'  
 TYP: 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 WYDEP  
 OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304

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

WATERSHED: DUNKARD CREEK  
 COUNTY/DISTRICT: MONONGALIA / CLAY  
 SURFACE OWNER: SAMUEL W. & STACEY L. MATTEO  
 OIL & GAS ROYALTY OWNER: LULA HAZE TENNANT JONES, et al  
 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

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

DATE: FEBRUARY 4, 2020

OPERATOR'S WELL #: MATTEO 6H

API WELL #: 47 61 01832  
 STATE COUNTY PERMIT

AS-BUILT ELEVATION: 1,492.50'

QUADRANGLE: BLACKSVILLE

ACREAGE: 107.666 +/-  
 ACREAGE: 811.826 +/-

ESTIMATED DEPTH: TVD: 7,993' TMD: 20,435'  
 DESIGNATED AGENT: JOHN ADAMS  
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200  
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301





Ticket #: 0

Remit to:  
 Lightning Energy Services  
 104 Heliport Loop Road  
 Bridgeport, WV 26330

Job Times				
	On Loc:	Job Start:	Job End:	Off Loc:
Date:	05/16/19	05/17/19	05/17/19	05/17/19
Time:	9:00 PM	5:00 AM	10:00 AM	12:00PM

Customer and Well Information					
Customer: NORTHEAST		Well Name: MOTTEO		Well #: 6H	
Well Type: GAS		Well #: 6H		Well Type: GAS	
County: MON	State: WV	AFE #/API #:	PO #/Permit #:	Well Class:	
Field:		Lease: MATTEO	Rig Name/# : HIGHLAND RIG 8		
Wellbore Information					
Bit Size (Inches): 17.5	Well MD (ft):	Well TVD (ft): 1275	BHST (F°):	BHCT (F°):	Deviation (°):
Drilling Fluid Type:	Drilling Fluid Density (ppg):	Packer Depth (ft):	Treating Down:		
Previous Casing/Liner					
Size (Inches): 24	Weight (lb/ft):	Thread:	Grade:	Total Footage (ft): 40	
Casing/Liner/Tubing					
Size (Inches): 13.625	Weight (lb/ft): 54.5	Thread:	Grade: J55 LTC	Total Footage (ft): 1205	
Job					
Job Type: Intermediate		Connection to Well: YES		Top Plug: YES	
Lift Pressure (PSI): 480	Max Annulus Pressure (PSI):	Mix Water Temp (F°):		Bottom Plug: No	
Casing/Tubing Secured : YES	Pipe Rotated: No	Cement Return to Surface (bbl): 15	Top Job (bbl): 50		
Pipe Reciprocated : No	Circulation Lost: No	Job Completed: YES			

## Data Tracking Report for northeast

Prepared by **DANNY GUM**

### Job Summary

Contact	Date	<b>May 30, 2019</b>
Email	Start Time	<b>7:02:11 AM</b>
Phone	End Time	<b>9:12:31 AM</b>
Well	Notes	pump 185 kcl 25 gel 10 h20 244 cement #1161 sks PUMP 208 DISP FLOATS HELD 50 BBL CEMENT TO SURFACE
Stage		
State		
Formation		

### Job Details

#### Pressure

Breakdown  
Average  
Maximum  
Displacement

#### Volume

Load and Bkdn  
Treatment  
Pad  
Displ  
Total Volume

#### Average Rates

Treating  
Displ  
Overall

#### Chemicals

Propel  
Chem1  
Chem2

#### Shut-In Pressure

Instant  
5-Min  
10-Min  
15-Min

#### Hydraulic Horsepower

Used

### Event Log

Time									Description of Stage or Event
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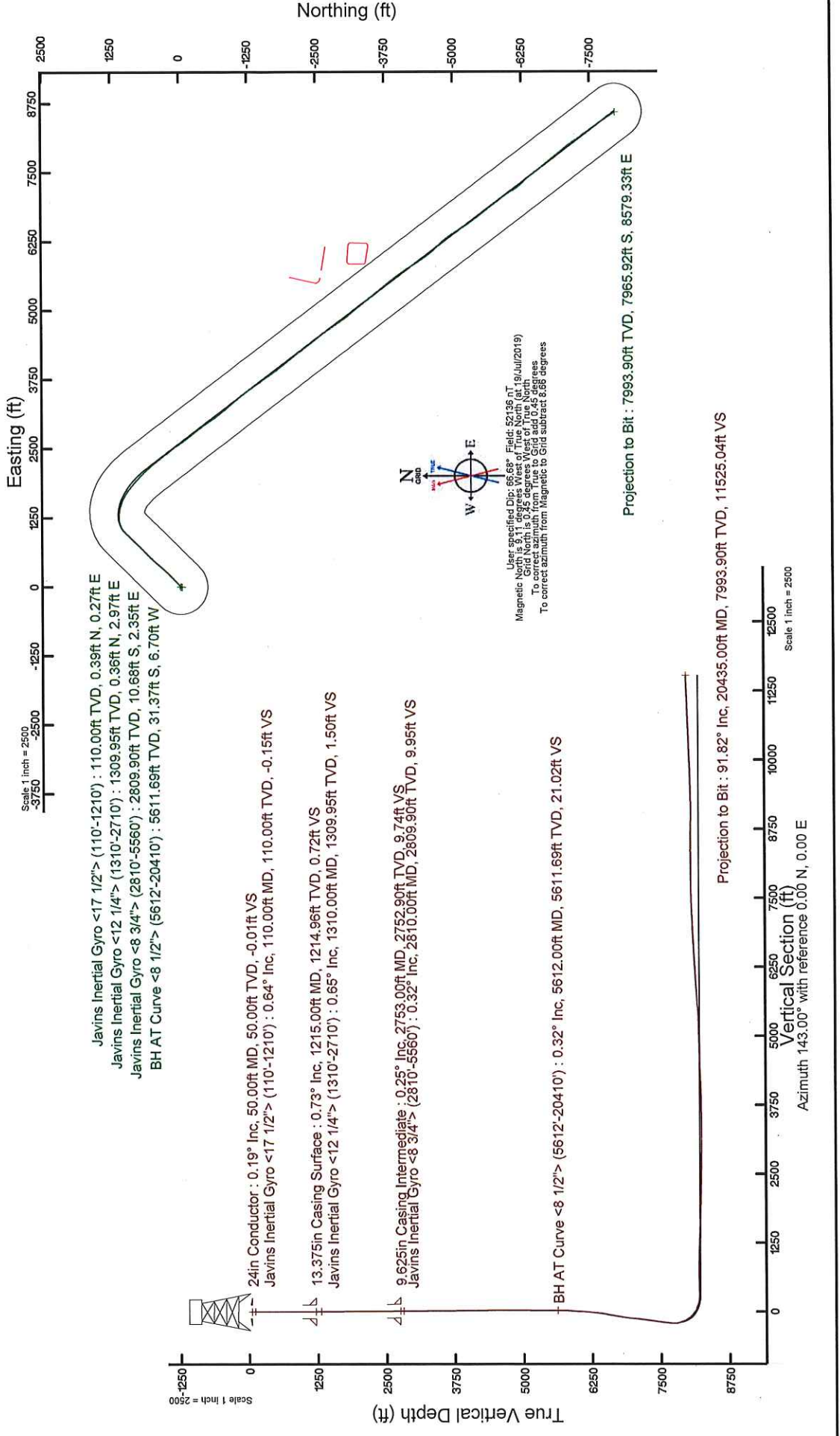
# NORTHEAST NATURAL ENERGY, LLC

Location: Monongalia County, WV  
 Field: Monongalia  
 Facility: Matteo Pad  
 Slot: Slot 6H  
 Well: Matteo 6H  
 Wellbore: Matteo 6H PWB



Plot reference wellpath is Matteo 6H PWB Rev-C.0	Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet
True vertical depths are referenced to Patterson 334 (KB)	North Reference: Grid north
Measured depths are referenced to Patterson 334 (KB)	Scale: True distance
Patterson 334 (KB) to Mean Sea Level: 1517.5 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot, Slot 6H): -1492.5 feet	Created by: atarajan on 2019-06-06
Coordinates are in feet referenced to Slot	Database: WA_MPL_EASTERNUS_Dein

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Matteo Pad	1771627.000	421920.400	80°11'57.351"W
Local N (ft)	Grid East (US ft)	Grid North (US ft)	Latitude
-17.80	1771662.800	421902.600	39°39'22.466"N
Slot 6H	35.80	421902.600	80°11'56.891"W
Patterson 334 (KB) to Ground level (At Slot, Slot 6H)	25ft		
Mean Sea Level to Ground level (At Slot, Slot 6H)	-1492.5ft		
Patterson 334 (KB) to Mean Sea Level	1517.5ft		
Comments			
API: 47-061-01832-0000			
BH Job #: 109909957			
Rig: Patterson 334			
Duration: 07/21/2019 - 07/30/2019			



State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Discharge Monitoring Report  
Oil and Gas General Permit

Company Name: Northeast Natural Energy LLC  
API No: 47-061-01832 County: Monongalia  
District: Clay Well No: Matteo 6H  
Farm Name: Samuel W. & Stacey L. Matteo

Discharge Date/s From:(MMDDYY) NA To: (MMDDYY) NA  
Discharge Times. From: \_\_\_\_\_ To: \_\_\_\_\_

Total Volume to be Disposed from this facility (gallons): \_\_\_\_\_

Disposal Option(s) Utilized (write volumes in gallons):

- (1) Land Application: \_\_\_\_\_ (Include a topographical map of the Area.)
- (2) UIC: \_\_\_\_\_ Permit No. \_\_\_\_\_
- (3) Offsite Disposal: \_\_\_\_\_ Site Location: \_\_\_\_\_
- (4) Reuse: \_\_\_\_\_ Alternate Permit Number: \_\_\_\_\_
- (5) Centralized Facility: \_\_\_\_\_ Permit No. \_\_\_\_\_
- (6) Other method: \_\_\_\_\_ (Include an explanation)

Follow Instructions below to determine your treatment category:

Optional Pretreatment test: \_\_\_\_\_ Cl- mg/l \_\_\_\_\_ DO mg/l

1. Do you have permission to use expedited treatment from the Director or his representative?  
(Y/N) \_\_\_\_\_ If yes, who? \_\_\_\_\_ and place a four (4) on line 7.  
If not go to line 2
2. Was Frac Fluid or flowback put into the pit? (Y/N) \_\_\_\_\_ If yes, go to line 5. If not, go to line 3.
3. Do you have a chloride value pretreatment (see above)? (Y/N) \_\_\_\_\_ If yes, go to line 4  
If not, go to line 5.
4. Is the Chloride level less than 5000 mg/l? (Y/N) \_\_\_\_\_ If yes, then enter a one (1) on line 7.
5. Do you have a pretreatment value for DO? (See above) (Y/N) \_\_\_\_\_ If yes, go to line 6  
If not, enter a three (3) in line 7.
6. Is the DO level greater than 2.5 mg/l?(Y/N) \_\_\_\_\_ If yes, enter a two (2) on line 7. If not, enter a three (3) on line 7.
7. \_\_\_\_\_ is the category of your pit. Use the Appropriate section.
8. Comments on Pit condition: Utilized a closed loop system

Name of Principal Exec. Officer: Hollie Medley

Title of Officer: Regulatory Manager

Date Completed: 2/6/2020

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Signature of a Principal Exec. Officer or Authorized agent.

Category 1  
Sampling Results  
API No : \_\_\_\_\_

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	5	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl	5,000	_____	5,000	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**			Monitor	_____	mg/l
Oil and Grease			Monitor	_____	mg/l
Total Al***			Monitor	_____	mg/l
TSS			Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume			Monitor	_____	Gal
Flow			Monitor	_____	Gal/min
Disposal Area			Monitor	_____	Acres

\*\*\* Al is only reported if the pH is above 9.0

Category 2  
Sampling Results  
API No : \_\_\_\_\_

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	10	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**			Monitor	_____	mg/l
Oil and Grease			Monitor	_____	mg/l
Total Al***			Monitor	_____	mg/l
TSS			Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume			Monitor	_____	Gal
Flow			Monitor	_____	Gal/min
Disposal Area			Monitor	_____	Acres

\* Can be 25,000 with inspector's approval,

(Inspector's signature): \_\_\_\_\_

Date: \_\_\_\_\_

\*\* Include a description of your aeration technique.

Aeration Code: \_\_\_\_\_

\*\*\* Al is only reported if the pH is above 9.0

Category 3  
Sampling Results

API No : \_\_\_\_\_

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	20	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**			Monitor	_____	mg/l
Oil and Grease			Monitor	_____	mg/l
Total Al***			Monitor	_____	mg/l
TSS			Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume			Monitor	_____	Gal
Flow			Monitor	_____	Gal/min
Disposal Area			Monitor	_____	Acres

\* Can be 25,000 with inspector's approval,

(Inspector's signature): \_\_\_\_\_

Date: \_\_\_\_\_

\*\* Include a description of your aeration technique.

Aeration Code: \_\_\_\_\_

\*\*\* Al is only reported if the pH is above 9.0.

Category 4  
Sampling Results

API No: \_\_\_\_\_

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	1	_____	N/A	N/A	Days
Fe	Monitor	_____	Monitor	_____	mg/l
D.O.	Monitor	_____	Monitor	_____	mg/l
Settleable Sol.	Monitor	_____	Monitor	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**			Monitor	_____	mg/l
Oil and Grease			Monitor	_____	mg/l
TSS			Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume			Monitor	_____	Gal
Flow			Monitor	_____	Gal/min
Activated Carbon (0.175)			N/A	N/A	lb/bl
Date Site Reclaimed	N/A	N/A			10 days from dis.
Disposal Area			Monitor	_____	Acres

\* Can be 25,000 with inspector's approval,

(Inspector's signature): \_\_\_\_\_

Date: \_\_\_\_\_

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	10/23/2019
Job End Date:	11/13/2019
State:	West Virginia
County:	Monongalia
API Number:	47-061-01832-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Matteo 6H
Latitude:	39.65624100
Longitude:	-80.19913700
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,238
Total Base Water Volume (gal):	19,079,796
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
Sand (100 Mesh Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	56.98845	None
Water	Northeast Natural Energy	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	24.53332	None
Sand (40/70 White Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	18.40281	None
Hydrochloric Acid (7.5%)	PVS	Acidizing					
			Water	7732-18-5	85.00000	0.04590	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	36.00000	0.01944	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Butene, homopolymer	9003-29-6	25.00000	0.00305	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.00305	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00037	None
StimSTREAM SC-398	ChemStream	Scale Inhibitor					
			Non-hazardous substances	Proprietary	100.00000	0.00506	None



			Bis(HexaMethylene Triamine Penta(Methylene Phosphonic Acid) (BHMT)	34690-00-1	10.00000	0.00051	None
Clearal 268	ChemStream	Biocide					
			Non-hazardous substances	Proprietary	90.00000	0.00347	None
			Glutaraldehyde	111-30-8	20.00000	0.00077	None
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00012	None
			Alkyl dimethyl benzyl ammonium chloride	68391-01-5	3.00000	0.00012	None
ProFE 105	ProFrac	Iron Control					
			Citric Acid	77-92-9	50.50000	0.00009	None
			Water	7732-18-5	49.50000	0.00009	None
ProHib 100	ProFrac	Acid Inhibitor					
			Methyl alcohol	67-56-1	45.00000	0.00006	None
			Ethylene glycol	107-21-1	20.00000	0.00002	None
			Isoquinoline	119-65-3	15.00000	0.00002	None
			N,N-Dimethylformamide	68-12-2	10.00000	0.00001	None
			Water	7732-18-5	10.00000	0.00001	None
			2-Butoxyethanol	111-76-2	5.00000	0.00001	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	0.04590	
			Non-hazardous substances	Proprietary	100.00000	0.00506	
			Non-hazardous substances	Proprietary	90.00000	0.00347	
			Butene, homopolymer	9003-29-6	25.00000	0.00305	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00037	
			Alkyl dimethyl benzyl ammonium chloride	68391-01-5	3.00000	0.00012	
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00012	
			Water	7732-18-5	49.50000	0.00009	
			Ethylene glycol	107-21-1	20.00000	0.00002	
			Isoquinoline	119-65-3	15.00000	0.00002	
			N,N-Dimethylformamide	68-12-2	10.00000	0.00001	
			Water	7732-18-5	10.00000	0.00001	
			2-Butoxyethanol	111-76-2	5.00000	0.00001	

\* 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)