

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

API 47 - 061 - 01833 County Monongalia District Clay
Quad Blacksville, WV Pad Name Matteo Field/Pool Name _____
Farm name Samuel W. & Stacey L. Matteo Well Number 10H
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 4389908.3 Easting 568709.0
Landing Point of Curve Northing 4390392.9 Easting 569455.5
Bottom Hole Northing 4387799.1 Easting 571440.4

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 5/18/2019 Date drilling ceased 9/8/2019
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 - 01833 Farm name Samuel W. & Stacey L. Matteo Well number 10H

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"	1,078	N	54.5	NA	Y, 20 bbl
Coal							
Intermediate 1	12.25"	9.63"	2,757'	N	40	NA	Y, 5 bbl
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	20,948'	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 ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	4500 psi ready mix	36		.75	27	CTS	48
Surface	Class A	755	15.6	1.21	1,030	CTS	8
Coal							
Intermediate 1	Class A	963	15.2	1.19	1,195	CTS	8
Intermediate 2							
Intermediate 3							
Production	Class A	3,795	14.5	1.16	4,405	2,557'	48
Tubing							

Drillers TD (ft) 20,984' Loggers TD (ft) 20,954'

Deepest formation penetrated Marcellus Plug back to (ft) NA

Plug back procedure Marcellus

Kick off depth (ft) 6,033'

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 10H Stimulation Information

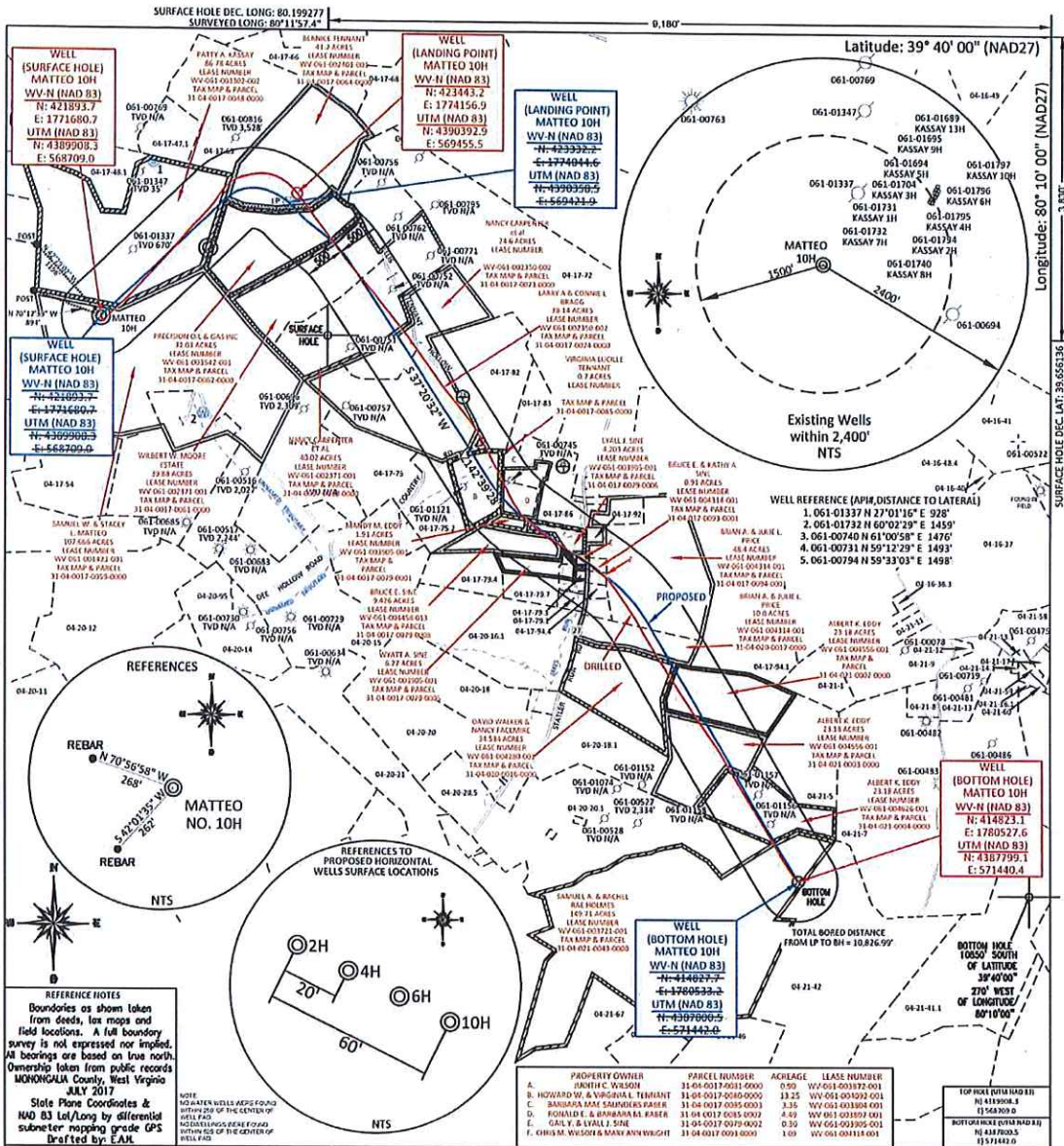
Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
1	10/24/19	5,045	0	8,697	89	532	6,885	300,360	552
2	10/25/19	5,315	5,732	9,155	84	33	9,387	399,960	459
3	10/25/19	5,694	6,185	9,362	85	38	7,964	400,260	455
4	10/25/19	6,065	6,357	9,232	84	65	8,056	400,500	451
5	10/26/19	5,819	6,118	9,088	84	55	8,441	400,690	446
6	10/26/19	6,361	6,069	8,919	81	76	7,732	404,420	441
7	10/27/19	6,040	6,267	9,235	85	107	8,187	400,770	436
8	10/27/19	6,686	6,184	9,189	85	62	7,873	401,060	433
9	10/28/19	5,910	6,035	9,147	85	54	8,028	400,940	429
10	10/28/19	5,490	6,306	9,165	88	178	7,570	400,940	424
11	10/29/19	6,152	6,149	9,022	87	143	7,486	401,060	418
12	10/29/19	5,410	6,054	8,979	84	55	7,873	398,950	416
13	10/30/19	6,136	6,371	9,117	86	45	7,808	400,760	410
14	10/30/19	5,197	6,342	9,038	85	32	7,736	401,020	435
15	10/31/19	6,076	6,265	8,911	86	98	8,000	400,980	402
16	10/31/19	6,076	6,224	9,107	87	39	7,586	400,820	398
17	10/31/19	6,122	6,237	9,214	85	219	7,713	368,920	408
18	11/1/19	6,189	6,091	8,913	89	72	7,803	400,550	390
19	11/1/19	5,187	6,216	9,035	89	46	7,746	400,200	384
20	11/2/19	5,819	6,540	8,719	84	44	7,651	388,800	382
21	11/2/19	5,451	6,177	8,811	82	75	7,885	400,620	377
22	11/3/19	4,894	6,766	9,053	83	28	7,804	400,700	372
23	11/3/19	5,977	6,607	9,025	87	49	7,806	400,340	368
24	11/3/19	5,149	5,387	8,748	86	44	7,800	400,360	363
25	11/4/19	6,285	6,333	8,551	89	46	7,740	400,700	360
26	11/4/19	5,482	6,447	8,476	81	30	8,661	401,740	354
27	11/5/19	6,217	6,178	8,387	85	62	7,810	400,600	350
28	11/5/19	6,211	6,319	8,513	86	46	7,794	400,040	346
29	11/5/19	5,887	6,317	8,367	86	57	7,756	400,500	340
30	11/6/19	6,141	6,614	8,392	87	50	7,740	403,440	367
31	11/6/19	6,184	6,518	8,461	87	45	7,720	401,140	333
32	11/7/19	6,142	6,447	8,636	90	59	8,895	406,180	328
33	11/8/19	6,709	6,425	8,538	88	59	8,493	398,960	323
34	11/9/19	6,773	6,833	8,363	88	115	7,802	401,300	322
35	11/8/19	6,021	6,649	8,605	87	49	7,585	402,040	315
36	11/9/17	6,783	6,799	8,545	89	52	7,743	400,100	310
37	11/9/19	5,544	6,760	8,748	82	73	7,824	403,230	310
38	11/10/19	6,363	6,684	8,709	85	30	7,757	404,060	306
39	11/10/19	6,661	6,916	8,610	88	50	7,659	403,060	298
40	11/10/19	5,830	6,937	8,562	88	30	7,828	400,920	292
41	11/10/19	5,707	6,802	8,433	88	32	7,651	400,870	286
42	11/11/19	6,041	6,845	8,495	86	25	7,321	400,960	306
43	11/11/19	7,051	6,565	8,513	88	25	7,613	398,480	280
44	11/11/19	6,860	6,560	8,391	88	36	7,682	400,680	275
45	11/11/19	6,431	6,706	8,572	87	37	7,595	400,360	276
46	11/11/19	6,438	7,775	8,767	93	57	7,579	400,600	265
47	11/12/19	6,387	6,501	8,427	87	48	7,667	400,380	276
48	11/12/19	5,972	6,935	8,482	89	35	7,674	400,960	257
49	11/12/19	6,088	7,672	8,787	89	220	7,897	400,300	252
50	11/13/19	6,136	7,359	8,620	88	35	7,667	404,900	250
51	11/13/19	6,183	7,111	8,449	89	38	7,751	419,840	255
52	11/13/19	6,052	6,894	8,289	90	98	8,047	431,080	245

Matteo 10H Perforation Information

Stage Number	Report Date	Cluster 5 Bottom TD	Cluster 1 Top TD	Total Shots
1	10/24/19	20,801	0	0
2	10/25/19	20,599	20,757	40
3	10/25/19	20,399	20,557	40
4	10/25/19	20,199	20,357	40
5	10/26/19	19,999	20,157	40
6	10/26/19	19,799	19,957	40
7	10/27/19	19,599	19,757	40
8	10/27/19	19,399	19,557	40
9	10/28/19	19,199	19,357	40
10	10/28/19	18,999	19,157	40
11	10/29/19	18,799	18,957	40
12	10/29/19	18,600	18,758	40
13	10/30/19	18,400	18,558	40
14	10/30/19	18,200	18,358	40
15	10/31/19	18,000	18,158	40
16	10/31/19	17,800	17,958	40
17	10/31/19	17,600	17,758	40
18	11/1/19	17,400	17,558	40
19	11/1/19	17,200	17,358	40
20	11/2/19	17,000	17,158	40
21	11/2/19	16,800	16,958	40
22	11/3/19	16,600	16,758	40
23	11/3/19	16,400	16,558	40
24	11/3/19	16,200	16,358	40
25	11/4/19	16,000	16,158	40
26	11/4/19	15,800	15,958	40
27	11/5/19	15,600	15,758	40
28	11/5/19	15,401	15,558	40
29	11/5/19	15,201	15,359	40
30	11/6/19	15,001	15,159	40
31	11/6/19	14,801	14,959	40
32	11/7/19	14,601	14,759	40
33	11/8/19	14,401	14,559	40
34	11/9/19	14,201	14,359	40
35	11/8/19	14,001	14,159	40
36	11/9/17	13,801	13,959	40
37	11/9/19	13,601	13,759	40
38	11/10/19	13,401	13,559	40
39	11/10/19	13,201	13,359	40
40	11/10/19	13,001	13,159	40
41	11/10/19	12,801	12,959	40
42	11/11/19	12,601	12,759	40
43	11/11/19	12,401	12,559	40
44	11/11/19	12,201	12,359	40
45	11/11/19	12,002	12,159	40
46	11/11/19	11,802	11,960	40
47	11/12/19	11,602	11,760	40
48	11/12/19	11,402	11,560	40
49	11/12/19	11,202	11,360	40
50	11/13/19	11,002	11,160	40
51	11/13/19	10,802	10,960	40
52	11/13/19	10,602	10,760	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 #: 2872
 SCALE: PLAT: 1" = 1800'
 TICKS: 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 Dipsol Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: DUNKARD CREEK AS-BUILT ELEVATION: 1,492.50'
 COUNTY/DISTRICT: MONONGALIA / CLAY QUADRANGLE: BLACKSVILLE
 SURFACE OWNER: SAMUEL W. & STACEY L. MATTEO ACREAGE: 107.666 +/-
 OIL & GAS ROYALTY OWNER: LULA HAZE TENNANT JONES, et al ACREAGE: 769.309 +/-
 LEASE NUMBERS:

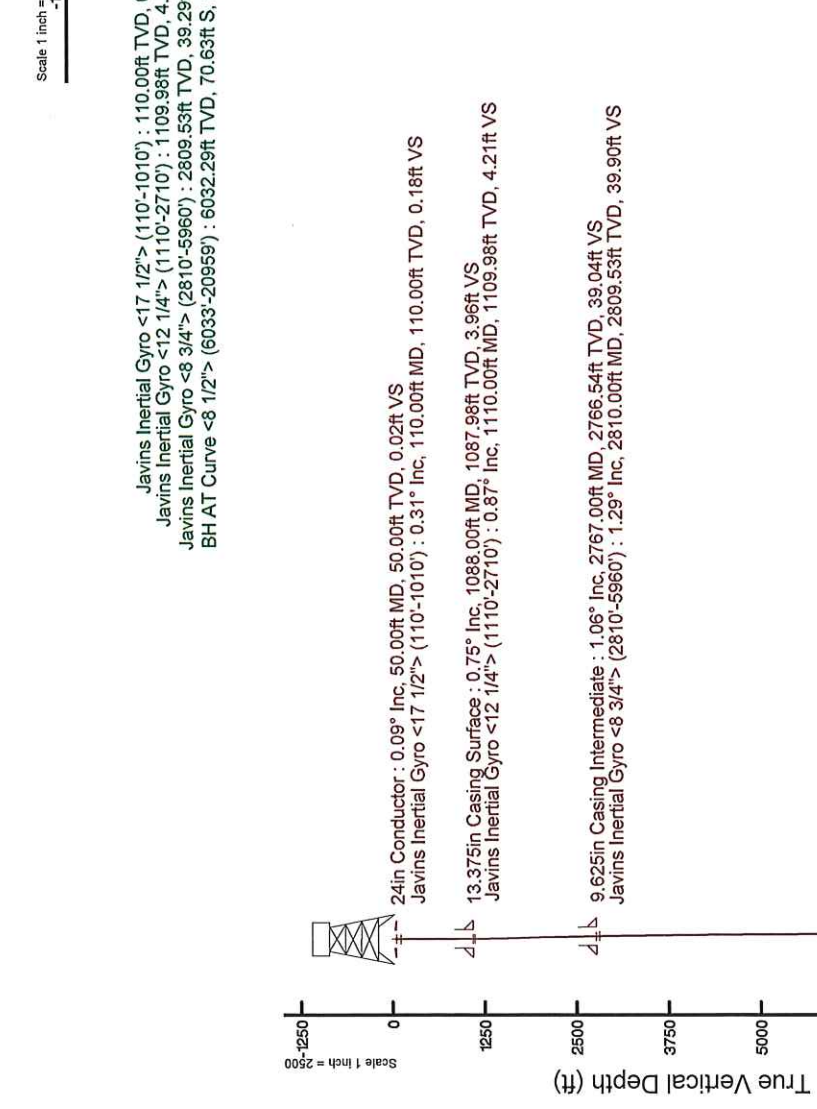
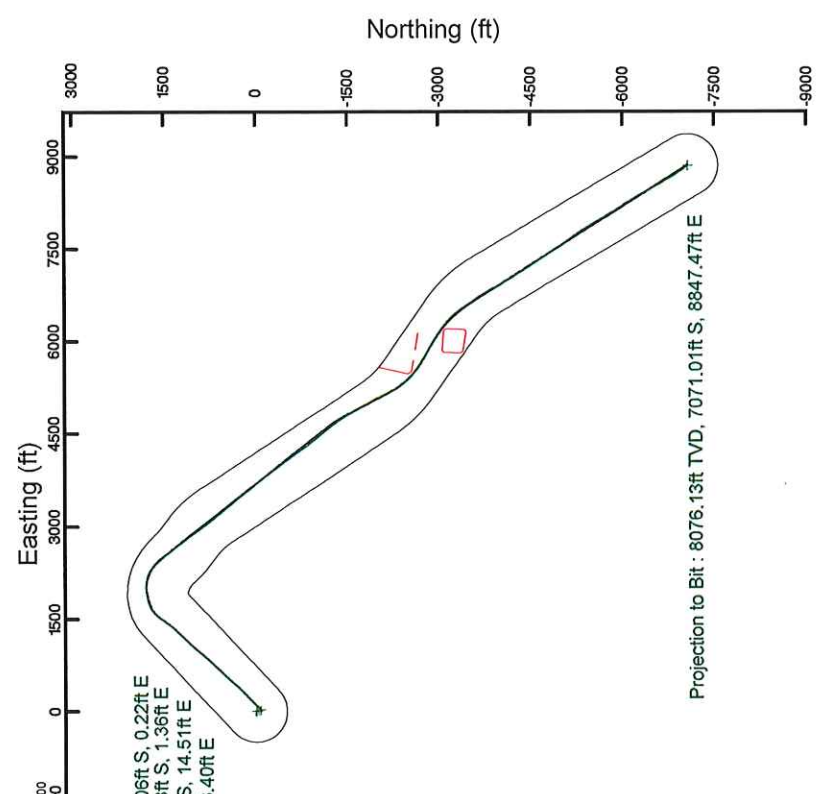
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 8,076' TMD: 20,984'
 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

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Matteo Pad	1771627.000	421920.400	80°11'57.351"W
Slot	Local N (ft)	Local E (ft)	Latitude
Slot 10H	-26.70	53.70	39°39'22.380"N
Patterson 334 (KB) to Ground level (At Slot: Slot 10H)	1771680.700	421893.700	80°11'56.661"W
Mean Sea Level to Ground level (At Slot: Slot 10H)		25ft	
Patterson 334 (KB) to Mean Sea Level		-1492.5ft	
		1517.5ft	
Comments			
API: 47-061-01833-0000			
BH Job #: 1099408844			
Rig: Patterson 334			
Duration: 08/26/2019 - 09/05/2019			



NORTHEAST NATURAL ENERGY, LLC	
Location: Monongalia County, WV	Slot: Slot 10H
Field: Monongalia	Well: Matteo 10H
Facility: Matteo Pad	Wellbore: Matteo 10H PWB
Grid System: NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet	North Reference: Grid north
True vertical depths are referenced to Patterson 334 (KB)	Scale: True distance
Measured depths are referenced to Patterson 334 (KB)	Depths are in feet
Patterson 334 (KB) to Mean Sea Level: 1517.5 feet	Created by: atenjan on 2019-09-05
Mean Sea Level to Ground level (At Slot: Slot 10H): -1492.5 feet	Database: WA_MPL_EASTERNUS_Dcfn
Coordinates are in feet referenced to Slot	



Projection to Bit : 8076.13ft TVD, 7071.01ft S, 8847.47ft E

Javins Inertial Gyro <17 1/2"> (110°-10'10") : 110.00ft TVD, 0.06ft S, 0.22ft E
 Javins Inertial Gyro <12 1/4"> (1110°-27'10") : 1109.98ft TVD, 4.28ft S, 1.36ft E
 Javins Inertial Gyro <8 3/4"> (2810°-59'60") : 2809.53ft TVD, 39.29ft S, 14.51ft E
 BH AT Curve <8 1/2"> (6033°-20'959") : 6032.29ft TVD, 70.63ft S, 28.40ft E

24in Conductor : 0.09° Inc, 50.00ft MD, 50.00ft TVD, 0.02ft VS
 Javins Inertial Gyro <17 1/2"> (110°-10'10") : 0.31° Inc, 110.00ft MD, 110.00ft TVD, 0.18ft VS

13.375in Casing Surface : 0.75° Inc, 1088.00ft MD, 1087.98ft TVD, 3.96ft VS
 Javins Inertial Gyro <12 1/4"> (1110°-27'10") : 0.87° Inc, 1110.00ft MD, 1109.98ft TVD, 4.21ft VS

9.625in Casing Intermediate : 1.06° Inc, 2767.00ft MD, 2766.54ft TVD, 39.04ft VS
 Javins Inertial Gyro <8 3/4"> (2810°-59'60") : 1.29° Inc, 2810.00ft MD, 2809.53ft TVD, 39.90ft VS

BH AT Curve <8 1/2"> (6033°-20'959") : 0.63° Inc, 6033.00ft MD, 6032.29ft TVD, 73.14ft VS

Projection to Bit : 90.43° Inc, 20984.00ft MD, 8076.13ft TVD, 11019.08ft VS
 5.5in Casing Production : 90.43° Inc, 20984.00ft MD, 8076.13ft TVD, 11019.08ft VS

Scale 1 inch = 2500

Vertical Section (ft)

Projection to Bit : 90.43° with reference 0.00 N, 0.00 E

Scale 1 inch = 2500

Projection to Bit : 90.43° Inc, 20984.00ft MD, 8076.13ft TVD, 11019.08ft VS
 5.5in Casing Production : 90.43° Inc, 20984.00ft MD, 8076.13ft TVD, 11019.08ft VS

Vertical Section (ft)

Projection to Bit : 90.43° Inc, 20984.00ft MD, 8076.13ft TVD, 11019.08ft VS
 5.5in Casing Production : 90.43° Inc, 20984.00ft MD, 8076.13ft TVD, 11019.08ft VS

Vertical Section (ft)

Projection to Bit : 90.43° with reference 0.00 N, 0.00 E

Scale 1 inch = 2500

User specified Dip: 66.66° Field: 52125 nT
 Magnetic North is 5.11 degrees West of True North (at 26/Aug/2019)
 To correct azimuth from Magnetic to True North add 0.45 degrees
 To correct azimuth from Magnetic to Grid subtract 6.66 degrees

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: 47-061-01833 County: Monongalia
District: Clay Well No: Matteo 10H
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

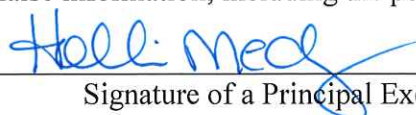
1. Do you have permission to use expedited treatment from the Director or his representative?
(Y/N) _____ If yes, who? _____ and place a four (4) on line 7.
If not go to line 2
2. Was Frac Fluid or flowback put into the pit? (Y/N) _____ If yes, go to line 5. If not, go to line 3.
3. Do you have a chloride 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/B1
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:	10/24/2019
Job End Date:	11/15/2019
State:	West Virginia
County:	Monongalia
API Number:	47-061-01833-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Matteo 10H
Latitude:	39.65621700
Longitude:	-80.19907300
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8,297
Total Base Water Volume (gal):	17,911,166
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	56.37663	None
Water	Northeast Natural Energy	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	24.53994	None
Sand (40/70 White Proppant)	ProFrac	Proppant					
			Silica Substrate	14808-60-7	100.00000	19.00829	None
Hydrochloric Acid (7.5%)	PVS	Acidizing					
			Water	7732-18-5	85.00000	0.04227	None
			Hydrochloric Acid (Hydrogen Chloride)	7647-01-0	36.00000	0.01790	None
StimSTREAM FR 9800	ChemStream	Friction Reducer					
			Butene, homopolymer	9003-29-6	25.00000	0.00302	None
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.00302	None
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00036	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	0.00345	None
			Glutaraldehyde	111-30-8	20.00000	0.00077	None
			Alkyl dimethyl benzyl ammonium chloride	68391-01-5	3.00000	0.00012	None
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00012	None
Calcium Chloride	Solvey	Freezing-point depression					
			Calcium chloride	10043-52-4	100.00000	0.00418	None
ProFE 105	ProFrac	Iron Control					
			Citric Acid	77-92-9	50.50000	0.00008	None
			Water	7732-18-5	49.50000	0.00008	None
ProHib 100	ProFrac	Acid Inhibitor					
			Methyl alcohol	67-56-1	45.00000	0.00005	None
			Ethylene glycol	107-21-1	20.00000	0.00002	None
			Isoquinoline	119-65-3	15.00000	0.00002	None
			Water	7732-18-5	10.00000	0.00001	None
			N,N-Dimethylformamide	68-12-2	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	0.04227	
			Non-hazardous substances	Proprietary	100.00000	0.00506	
			Non-hazardous substances	Proprietary	90.00000	0.00345	
			Butene, homopolymer	9003-29-6	25.00000	0.00302	
			Ethoxylated alcohols (C12-18)	68213-23-0	3.00000	0.00036	
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00012	
			Alkyl dimethyl benzyl ammonium chloride	68391-01-5	3.00000	0.00012	
			Water	7732-18-5	49.50000	0.00008	
			Ethylene glycol	107-21-1	20.00000	0.00002	
			Isoquinoline	119-65-3	15.00000	0.00002	
			Water	7732-18-5	10.00000	0.00001	
			N,N-Dimethylformamide	68-12-2	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)

