

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

API 47-061-01665 County Monongalia District Clay
Quad Blacksville, WV Pad Name Beach Field/Pool Name Blacksville
Farm name Nancy Kay Beach Davis and Russell C. Beach Well Number 2H
Operator (as registered with the OOG) Northeast Natural Energy LLC
Address 707 Virginia Street 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 4395279.5 Easting 572652.7
Landing Point of Curve Northing 4394858.6 Easting 572597.9
Bottom Hole Northing 4393180.7 Easting 573602.1

Elevation (ft) 1361 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 3-13-14 Date drilling commenced 7-10-14 Date drilling ceased 10-7-14
Date completion activities began 12/5/2014 Date completion activities ceased 12/28/2014
Verbal plugging (Y/N) _____ 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 1,206' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1,550' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 300',800' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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JUN 02 2015
Reviewed by:
AL 8/3/15
W.S. 406/05/2015

API 47-061 - 01665 Farm name Nancy Kay Beach Davis and Russell C. Beach Well number 2H

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	52'	N	N/A	N/A	Y to surface
Surface	17.5	13 3/8	1,282'	N	54.5	N/A	Y 50 BBL return
Coal							
Intermediate 1	12.25	9 5/8	2,538'	N	40	N/A	Y 28 BBL return
Intermediate 2							
Intermediate 3							
Production	8.5	5.5	15,284'	N	20	N/A	N TOC @ 700'
Tubing							
Packer type and depth set							

Comment Details All casing and cement jobs went with out issue.

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 ready mix	36.4		.75	27.27	CTS	48
Surface	Class A	1004	15.2	1.27	1,271	CTS	8
Coal							
Intermediate 1	Class A	852	15.2	1.26	1,074	CTS	8
Intermediate 2							
Intermediate 3							
Production	50/50 Poz Prem Ne	2926	14.5	1.17	3,225	700'	48
Tubing							

Drillers TD (ft) 15,322' Loggers TD (ft) 15,296'

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure _____

Kick off depth (ft) 6,225'

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 aprox 120'

Intermediate: bow spring centralizers every 3rd joint or aprox 120'

Production: Hard bodied spiral centralizers every other joint or aprox 80' from TD to KOP then bow spring from KOP to 9 5/8" every forth joint or aprox 140'

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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Beach 2H

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, H2S, etc)
Sand/Shale	0	1225	0		sand/shale
Red Rock	1225	1235			red rock
Sand/shale	1235	1950			sand/shale
Red Rock	1950	2000			red rock
Maxon	2000	2135			sand
Little Lime	2135	2160			limestone
Big Lime	2160	2200			limestone
Injun	2200	2260			sandstone
Sand/Shale	2260	6061			sand/shale
Geneseo	7898	7946	8148	8221	shale
Tully	7946	7994	8221	8299	limestone
Hamilton	7994	8109	8299	8508	shale
Marcellus	8109	8154	8508	8639	shale
Cherry Valley	8154	8159	8639	8653	limestone
Lower Marcellus	8159		8653		shale

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Perforation Record					
Stage Number	Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	12/6/2014	15,127	15,017	40	Marcellus Shale
2	12/6/2014	14,977	14,887	40	Marcellus Shale
3	12/8/2014	14,827	14,717	40	Marcellus Shale
4	12/7/2014	14,677	14,587	40	Marcellus Shale
5	12/8/2014	14,527	14,417	40	Marcellus Shale
6	12/9/2014	14,377	14,287	40	Marcellus Shale
7	12/9/2014	14,227	14,117	40	Marcellus Shale
8	12/10/2014	14,077	13,987	40	Marcellus Shale
9	12/10/2014	13,927	13,817	40	Marcellus Shale
10	12/11/2014	13,777	13,687	40	Marcellus Shale
11	12/11/2014	13,627	13,517	40	Marcellus Shale
12	12/11/2014	13,477	13,387	40	Marcellus Shale
13	12/12/2014	13,327	13,217	40	Marcellus Shale
14	12/13/2014	13,177	13,087	40	Marcellus Shale
15	12/13/2014	13,027	12,917	40	Marcellus Shale
16	12/13/2014	12,877	12,787	40	Marcellus Shale
17	12/14/2014	12,727	12,617	40	Marcellus Shale
18	12/14/2014	12,577	12,483	40	Marcellus Shale
19	12/15/2014	12,427	12,317	40	Marcellus Shale
20	12/15/2014	12,277	12,187	40	Marcellus Shale
21	12/15/2014	12,127	12,017	40	Marcellus Shale
22	12/15/2014	11,975	11,887	40	Marcellus Shale
23	12/16/2014	11,827	11,717	40	Marcellus Shale
24	12/16/2014	11,677	11,587	40	Marcellus Shale
25	12/17/2014	11,527	11,417	40	Marcellus Shale
26	12/17/2014	11,374	11,287	40	Marcellus Shale
27	12/17/2014	11,227	11,117	40	Marcellus Shale
28	12/17/2014	11,077	10,987	40	Marcellus Shale
29	12/18/2014	10,927	10,817	40	Marcellus Shale
30	12/18/2014	10,777	10,687	40	Marcellus Shale
31	12/18/2014	10,621	10,520	40	Marcellus Shale
32	12/19/2014	10,477	10,387	40	Marcellus Shale
33	12/20/2014	10,327	10,217	40	Marcellus Shale
34	12/21/2014	10,177	10,087	40	Marcellus Shale
35	12/21/2014	10,027	9,918	40	Marcellus Shale
36	12/21/2014	9,877	9,788	40	Marcellus Shale
37	12/22/2014	9,727	9,618	40	Marcellus Shale
38	12/23/2014	9,577	9,488	40	Marcellus Shale
39	12/23/2014	9,427	9,318	40	Marcellus Shale
40	12/26/2014	9,277	9,188	40	Marcellus Shale
41	12/26/2014	9,127	9,018	40	Marcellus Shale
42	12/27/2014	8,977	8,888	40	Marcellus Shale
43	12/27/2014	8,827	8,718	40	Marcellus Shale
44	12/28/2014	8,677	8,588	40	Marcellus Shale

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Stimulation Record							
Stage Number	Date	Average Treating Rate (BPM)	Average Treating Pressure (psi)	Breakdown Pressure (psi)	ISP (psi)	Total Proppant Amount	Total Clean Fluid (Bbls)
1	12/6/2014	69	8,954	7,851	6,153	403,700	8,810
2	12/6/2014	69	8,930	7,830	6,645	405,180	8,727
3	12/8/2014	75	8,833	7,750	6,847	385,580	8,547
4	12/7/2014	76	8,748	7,433	6,589	400,880	7,357
5	12/8/2014	73	9,068	8,315	6,819	398,800	6,388
6	12/9/2014	76	8,857	7,775	5,777	382,840	7,103
7	12/9/2014	76	8,613	6,973	6,125	403,800	7,806
8	12/10/2014	76	8,564	6,527	6,589	401,620	7,682
9	12/10/2014	74	8,780	7,032	6,589	397,900	7,647
10	12/11/2014	80	8,620	6,907	6,386	401,500	7,534
11	12/11/2014	75	8,663	7,647	6,327	407,360	7,479
12	12/11/2014	81	8,597	6,704	6,589	403,800	7,593
13	12/12/2014	54	9,014	8,879	6,877	322,480	11,427
14	12/13/2014	72	8,893	7,487	6,153	402,540	9,237
15	12/13/2014	79	8,618	7,220	6,356	404,180	7,793
16	12/13/2014	82	8,632	6,746	6,551	407,180	8,018
17	12/14/2014	73	8,817	7,984	6,184	377,280	8,613
18	12/14/2014	83	8,704	7,847	1	398,010	7,769
19	12/15/2014	82	8,558	6,995	5,651	401,180	7,705
20	12/15/2014	81	8,851	8,185	5,632	403,540	7,273
21	12/15/2014	86	8,655	8,892	5,873	400,140	7,115
22	12/15/2014	82	8,850	8,337	6,095	401,200	7,296
23	12/16/2014	80	8,659	833	6,213	399,020	7,147
24	12/16/2014	63	9,056	9,308	6,940	406,120	8,643
25	12/17/2014	84	8,904	8,255	5,737	400,640	7,117
26	12/17/2014	87	8,813	8,289	6,542	400,080	7,032
27	12/17/2014	90	8,533	7,389	6,352	400,080	7,914
28	12/17/2014	89	8,753	8,564	6,194	402,780	7,121
29	12/18/2014	79	8,931	8,844	5,876	398,020	8,993
30	12/18/2014	86	8,928	8,038	7,112	403,488	8,958
31	12/18/2014	72	9,098	7,830	6,645	405,180	7,598
32	12/19/2014	80	8,863	7,750	6,847	385,580	8,934
33	12/20/2014	87	8,841	8,381	6,384	395,080	8,848
34	12/21/2014	89	8,817	7,594	6,638	398,280	8,897
35	12/21/2014	87	9,034	7,635	5,592	399,140	6,912
36	12/21/2014	81	8,518	7,028	6,143	384,780	7,250
37	12/22/2014	89	8,952	9,094	5,908	371,180	7,172
38	12/23/2014	81	8,820	7,963	6,510	401,180	8,630
39	12/23/2014	73	8,618	7,969	6,800	316,140	8,908
40	12/26/2014	82	8,841	7,033	6,480	396,500	7,053
41	12/26/2014	82	8,809	8,479	6,893	395,480	7,137
42	12/27/2014	84	8,794	8,307	6,764	358,540	6,776
43	12/27/2014	84	8,555	7,528	6,067	403,420	7,546
44	12/28/2014	87	8,589	8,049	6,651	398,100	7,041

WV Department of Environmental Protection

06/05/2015



northeast

NATURAL ENERGY

May 28, 2015

WV Department of Environmental Protection
Office of Oil and Gas Management
601 57th Street, SE
Charleston, WV 25304-2345

RE: WR-35 Forms for:
API #'s 47-6101665, 47-6101666, 47-6101668, 47-6101669
Clay District, Monongalia County, West Virginia

To Whom It May Concern:

Please find enclosed Northeast Natural Energy LLC's updated Well Operator's Report of Well Work Forms (WR-35) for its' Beach 2H well (API # 47-6101665), Beach 4H well (API #47-6101666), Beach 6H well (API # 47-6101668), and Beach 10H well (API # 47-6101669).

Should you have any questions please feel free to contact me at 304-241-5752 ext. 7108 or by email at hmedley@nne-llc.com.

Sincerely,

Hollie M. Medley
Regulatory Coordinator

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/5/2014
Job End Date:	12/28/2014
State:	West Virginia
County:	Monongalia
API Number:	47-061-01665-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Beach 2H
Longitude:	-80.15251700
Latitude:	39.70428100
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	8,142
Total Base Water Volume (gal):	13,953,486
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
Proppant Transport	Schlumberger	Corrosion Inhibitor, Anti-Foam Agent, Acid Breaker, Gelling Agent, Friction Reducer, Iron Control Agent, Accelerator, Fluid Loss Additive, Propping	Water (Including Mix Water Supplied by Client)* Crystalline silica Hydrochloric acid Guar gum Ammonium sulfate Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt, polymer Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate Diammonium peroxodisulphate Urea Calcium chloride Sodium erythorbate	NA 14808-60-7 7647-01-0 9000-30-0 7783-20-2 38193-60-1 136793-29-8 7727-54-0 57-13-6 10043-52-4 6381-77-7	86.90661 98.63668 0.73463 0.31886 0.15214 0.11229 0.01203 0.00785 0.00739 0.00267 0.00249	12.91498 0.09619 0.04175 0.01992 0.01470 0.00158 0.00103 0.00097 0.00035 0.00033	

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			Methanol	67-56-1	0.00244	0.00032
			Non-crystalline silica (impurity)	7631-86-9	0.00234	0.00031
			Sodium sulfate	7757-82-6	0.00172	0.00023
			Fatty acids, tall-oil	61790-12-3	0.00170	0.00022
			Thiourea, polymer with formaldehyde and 1-phenylethanone	68527-49-1	0.00140	0.00018
			Alcohols, C14-15, ethoxylated (7EO)	68951-67-7	0.00066	0.00009
			Polypropylene glycol	25322-69-4	0.00048	0.00006
			Propargyl alcohol	107-19-7	0.00044	0.00006
			2-propenamid	79-06-1	0.00037	0.00005
			Tetrasodium ethylenediaminetetraacetate	64-02-8	0.00019	0.00003
			Hexadec-1-ene	629-73-2	0.00015	0.00002
			Potassium chloride	7447-40-7	0.00016	0.00002
			1-Octadecene (C18)	112-88-9	0.00007	0.00001
			Sodium chloride	7647-14-5	0.00005	0.00001
			Dimethyl siloxanes and silicones	63148-62-9	0.00011	0.00001
			Formaldehyde	50-00-0	0.00001	
			Decamethyl cyclopentasiloxane	541-02-6	0.00001	
			Dodecamethylcyclohexasiloxane	540-97-6		
			Copper(II) sulfate	7758-98-7		
			Octamethylcyclotetrasiloxane	556-67-2	0.00001	
			Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	0.00001	
SC-30	X-Chem	Scale Inhibitor				
			Sodium Polyacrylate	2594-41-5	14.71000	
			Water	7732-18-5	85.29000	
Chlorine Dioxide	X-Chem	Microbial Control				
			ClO2	10049-04-4	100.00000	Gas

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.

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

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

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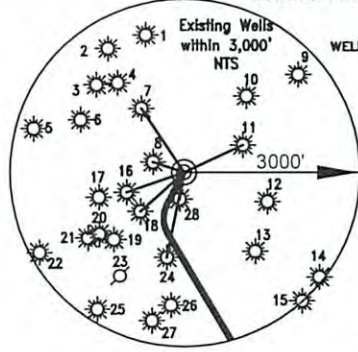
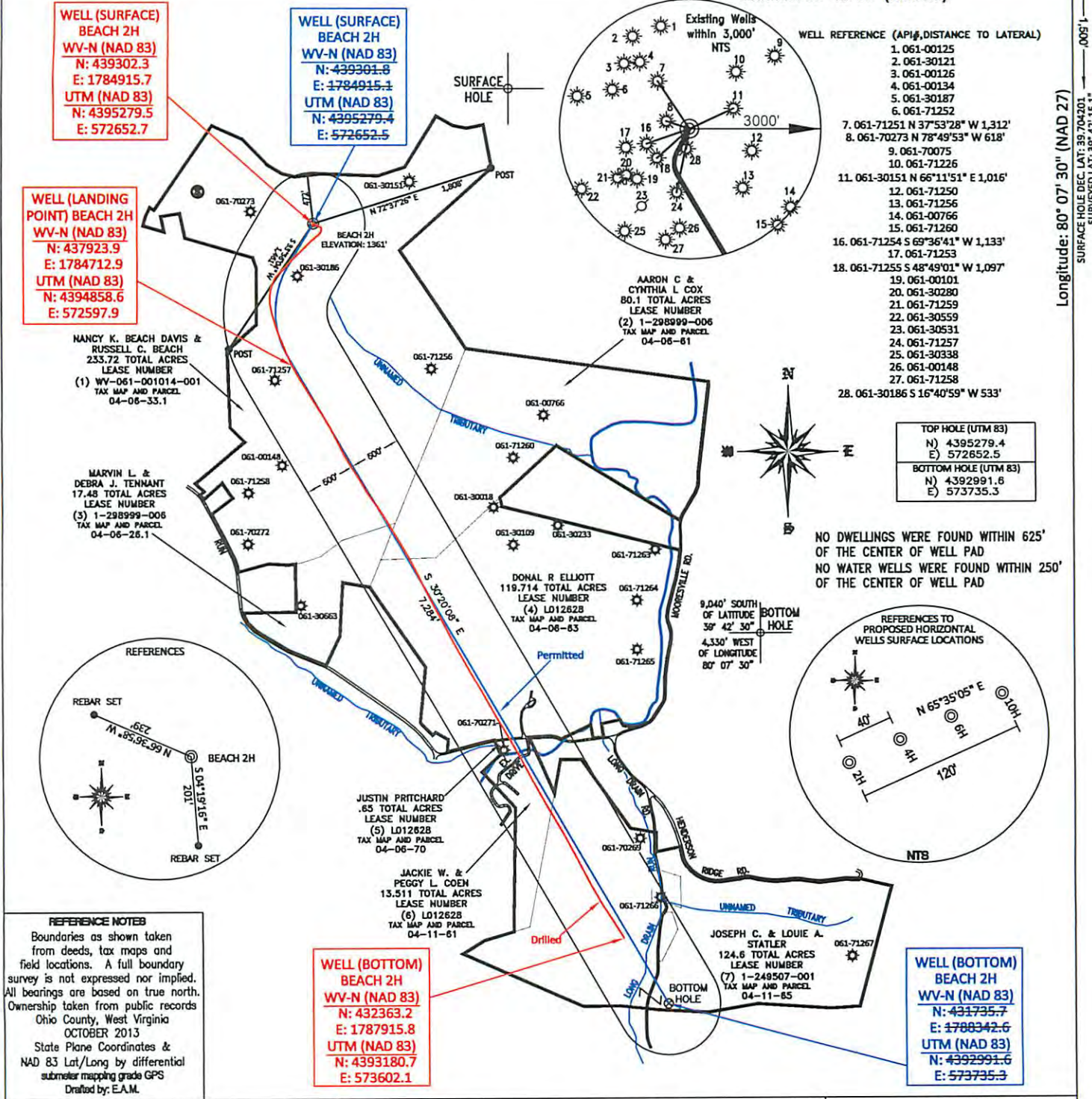
**WELL (SURFACE)
BEACH 2H
WV-N (NAD 83)
N: 439302.3
E: 1784915.7
UTM (NAD 83)
N: 4395279.5
E: 572652.7**

**WELL (SURFACE)
BEACH 2H
WV-N (NAD 83)
N: 439301.8
E: 1784915.1
UTM (NAD 83)
N: 4395279.4
E: 572652.5**

**WELL (LANDING
POINT) BEACH 2H
WV-N (NAD 83)
N: 437923.9
E: 1784712.9
UTM (NAD 83)
N: 4394858.6
E: 572597.9**

**WELL (BOTTOM)
BEACH 2H
WV-N (NAD 83)
N: 432363.2
E: 1787915.8
UTM (NAD 83)
N: 4393180.7
E: 573602.1**

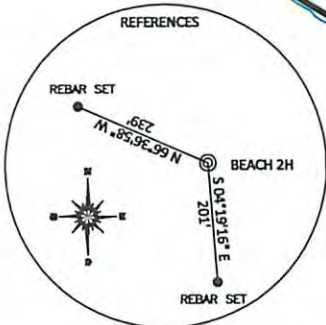
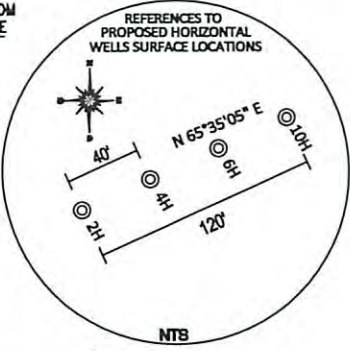
**WELL (BOTTOM)
BEACH 2H
WV-N (NAD 83)
N: 431735.7
E: 1788342.6
UTM (NAD 83)
N: 4392991.6
E: 573735.3**



- WELL REFERENCE (API#, DISTANCE TO LATERAL)**
- 061-00125
 - 061-30121
 - 061-00126
 - 061-00134
 - 061-30187
 - 061-71252
 - 061-71251 N 37°53'28" W 1,312'
 - 061-70273 N 78°49'53" W 618'
 - 061-70075
 - 061-71226
 - 061-30151 N 66°11'51" E 1,016'
 - 061-71250
 - 061-71256
 - 061-00766
 - 061-71260
 - 061-71254 S 69°36'41" W 1,133'
 - 061-71253
 - 061-71255 S 48°49'01" W 1,097'
 - 061-00101
 - 061-30280
 - 061-71259
 - 061-30559
 - 061-30531
 - 061-71257
 - 061-30338
 - 061-00148
 - 061-71258
 - 061-30186 S 16°40'59" W 533'

**TOP HOLE (UTM 83)
N) 4395279.4
E) 572652.5**
**BOTTOM HOLE (UTM 83)
N) 4392991.6
E) 573735.3**

NO DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF WELL PAD
NO WATER WELLS WERE FOUND WITHIN 250' OF THE CENTER OF WELL PAD



REFERENCE NOTES
Boundaries as shown taken from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records Ohio County, West Virginia OCTOBER 2013 State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS
Drafted by: E.A.M.

FILE #: NNE009
DRAWING #: 2293
SCALE: PLAT = (1"=1400')
TICK MARK = (1"=2000')
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

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



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304
Well Type: Oil Waste Diposal Production Deep
 Gas Liquid Injection Storage Shallow
WATERSHED: DUNKARD CREEK
COUNTY/DISTRICT: MONONGALIA / CLAY
SURFACE OWNER: NANCY K. BEACH DAVIS & RUSSELL C. BEACH
OIL & GAS ROYALTY OWNER: TED K. MOORE, ET AL
LEASE NUMBERS:

DATE: APRIL 3, 2015
OPERATOR'S WELL #: BEACH 2H AS-DRILLED PLAT
API WELL #: 47 61
STATE COUNTY PERMIT
ELEVATION: 1361'
QUADRANGLE: BLACKSVILLE, WV.
ACREAGE: 233.72 +/-
ACREAGE: 589.77 +/-
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: 8,111' TMD: 15,322'
WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC
DESIGNATED AGENT: JOHN ADAMS
ADDRESS: 707 VIRGINIA STREET SUITE 1200
CITY: CHARLESTON STATE: WV ZIP CODE: 25301

06/05/2015