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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 _ 016	666 County Monon	galia Di	strict Clay	
Quad Blacksville, WV			eld/Pool Name B	lacksville
Farm name Nancy Kay Bea	ch Davis and Russell C. B	each W	ell Number 4H	
Operator (as registered with th	e OOG) Northeast Natura	Energy LLC		
Address 707 Virginia Stree		arleston	State WV	Zip 25301
As Drilled location NAD 83 Top ho	le Northing 4395284.5	ed plat, profile view, and d Easting	eviation survey g 572663.6	
Landing Point of Cur			572707.1	
Bottom Ho	le Northing 4393303.2	Easting	573815.0	
Elevation (ft) 1361  Permit Type   Deviated		■New □ Existing  ntal 6A □ Vertical		□Interim ■Final □ Deep ■ Shallow
Type of Operation □ Convert		□ Plug Back □ Redrillir	ng 🗆 Rework	■ Stimulate
	□ CBM ■ Gas □ Oil □ Se			orage   Other
Type of Completion ☐ Single	e ■ Multiple Fluids Prod	uced <b>■</b> Brine <b>■</b> Gas	□ NGL □ Oil	□ Other
Drilled with □ Cable ■ R	otary			
Drilling Media Surface hole	Air □ Mud □Fresh W	ater Intermediate hol	e ∄Air □ Mud	□ Fresh Water □ Brine
Production hole □ Air ■ N	/ud □ Fresh Water □ Brir	ne		
Mud Type(s) and Additive(s) Synthetic Based Mud for				
BIO-BASE 365, CALCIUM CHLORIDE POWDER, G-SEAL PLUS,	HRP, LIME, MH WATE (BARITE). MH X II MEDIUM, MEGADRIL P S	YSTEM, MEGADRIL P SYSTEM RENTAL, MEGAMUL, SAF	E-CARB 250, VERSATHIN HF, VERSAW	VET, VG-PLUS, VINSEAL MEDIUM, WALNUT NUT PLUG ME
Date permit issued3-13	3-14 Date drilling com	menced_ 7-23-14	Date drilling	ceased10-17-14
Date completion activities beg	10/7/0011	Date completion activit	ies ceased	12/28/2014
	Date permission grante		Granted by	
verous prugging (1711)	Duite permission gramm			
Please note: Operator is requi	red to submit a plugging appli	cation within 5 days of verb	bal permission to p	olug
Freshwater depth(s) ft	1,206'	Open mine(s) (Y/N) dep	oths	N
Salt water depth(s) ft	1,550'	Void(s) encountered (Y/		N
Coal depth(s) ft	300',800'			N
Is coal being mined in area (Y	/N) N	Cavern(s) encountered (	* Burn	
is coar being mined in area (1	· · · ·	Office of Oil ar	nd Gas	Reviewed by:

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WV Department of Environmental Protection W.S. QQ(05/2015

WR-35 Rev. 8/23/13

ICCV. 0/23/13									
API 47- 061	01666	Farm n	ameNancy Kay E	Beach Davis an	d Russell C	. Beach We	ll number_4	1	<del></del>
CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft		Basket Depth(s)		nent circulate (Y/ N) ide details below*
Conductor	30	24	52'	N		N/A	N/A	1100	Y to surface
Surface	17.5	13 3/8	1,276'	N	<del>                                     </del>	54.5	N/A	<del>                                     </del>	7 50 BBL return
Coal			1,210	-	<del> `</del>		17/7		- 30 BBL return
Intermediate 1	12.25	9 5/8	2,378'	N		40	N/A	<del>                                     </del>	′ 17 BBL return
Intermediate 2	12.20	3 0/0	2,070	- 1	<del> </del>		IVA	+'	17 BBL Tetam
Intermediate 3					+				
Production	8.5	5.5	15,597'	N		20	N/A		N TOC @ 650'
Tubing									9
Packer type and d	epth set		l		1				
Comment Details	All casing and ceme	ent jobs went with out	issue.						
CEMENT DATA	Class/Type of Cement	Number of Sacl			Yield t ³/sks)	Volume (fl.²)	e Cem Top (		WOC (hrs)
Conductor	4,500 psi ready	i			.75	27.27			48
Surface	Class A	1004	15.2	2	1.27	1,271	CT	rs	8
Coal									
Intermediate 1	Class A	807	15.2	2	1.26	1,074	CT	rs	8
Intermediate 2									
Intermediate 3									
Production	50/50 Prem Ne	-1 3005	14.5	5	1.17	3,510	65	50'	48
Tubing									
•	t) 15,624' tion penetrated ocedure			Loggers 7 Plug back					
Kick off depth Check all wire	, ,	□ caliper	□ density □ resistivity		ted/directi a ray		induction temperature	□soni	c
Well cored	Yes B No	Conventi	onal Side	wall	W	ere cutting	gs collected	■ Yes	□ No
Surface: bow spring cent	HE CENTRALI ralizors overy 3rd joint or apro	ox 120°	ENT USED FO	OR EACH C	ASING S	STRING _			
	died spiral centralizers ev		80' from TD to KOP the	n bow spring from	KOP to 9 5/8"	every forth joint	or aprox 140'		
WAS WELL	COMPLETED A	AS SHOT HOL	E □Yes ■	No D	ETAILS		Offi	REC	EIVED Oil and Gas
WAS WELL	COMPLETED (	OPEN HOLE?	□ Yes 🛔 N	lo DET	AILS _				<b>2</b> 20 <u>15</u>
WERE TRAC	ERS USED 🗆	Yes B No	TYPE OF T	RACER(S)	USED _		W\ Enviro	V Depa	artment of tal Protection

API	47- 061 _	01666	Farm name	Nancy Kay Beach Davis and Russell C. Beach	Well number 4H
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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
	4				
		1000			

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)
				1				
			-					
								-
			<u> </u>					
					8.			
			111 112 112 112					
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Please insert additional pages as applicable.

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WR-35 Rev. 8/23/13								Page <u>4</u> of <u>4</u>
API 47- 061	_ 01666	Farm	name Nancy Kay	Beach Davis a	nd Russell C. Bea	ach Well 1	number	4H
PRODUCING	FORMATION(	<u>S)</u>	<u>DEPTHS</u>					
Marcellus			8108.5'	_TVD _	15,624'	MD		
Please insert ac	dditional pages a	as applicable.				_		
GAS TEST	□ Build up □	Drawdown	■ Open Flow	(	OIL TEST 🗆 1	Flow [	Pump	
SHUT-IN PRE	ESSURE Surf	ace 4140	psi Botto	m Hole	psi	DURAT	TION C	OF TEST 48 hrs
OPEN FLOW	Gas 5,688 mcf	Oil pd	NGL bpd		Water bpd			RED BY  ■ Orifice □ Pilot
LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN F MD				RECORD QUANTITYAND ER, BRINE, OIL, GAS, H2S, ETC)
	0		0		See	Attacl	nme	nt
Please insert ac	dditional pages a	s applicable.						
	actor Pioneer 63							
Address 1250 N	NE Loop 410 Suite	1000	City	San Antonio	)	State	TX	Zip_78209
Logging Comr	any Baker Hugh	ies	City	Clarksburg		State	WV	Zip 26301
	mppi i mo	_	City			State	-	RECEIVED
Address 837 Ph								Ott.
Address 837 Pr	mpany Baker Hu	ughes				23.54.5	1407	Office of Oil and
Address 837 Pr	mpany Baker Hu	ughes	City	Clarksburg		State	WV	Zip 2630 fice of Oil and
Address 837 Ph Cementing Co. Address 837 Ph Stimulating Co.	mpany Baker Hu nilippi Pike ompany Schlun	nberger	City	Clarksburg		State		JUN 0 2 2015
Address 837 Ph Cementing Co Address 837 Ph Stimulating Co Address 1080 U	mpany Baker Hu nilippi Pike ompany Schlun JS-33	nberger	City	Clarksburg		State	wv	JUN <b>0 2</b> 2015
Address 837 Ph Cementing Co Address 837 Ph Stimulating Co Address 1080 U	mpany Baker Hu nilippi Pike ompany Schlun	nberger			-			JUN 0 2 2015 Zip 26452 WV Department
Address 837 Ph Cementing Co Address 837 Ph Stimulating Co Address 1080 U	mpany Baker Hu nilippi Pike mpany Schlun JS-33 dditional pages a	nberger	City	Weston	Telephone er - Operations	State	wv	JUN <b>0 2</b> 2015

Beach 4H					
			: :		Describe rock type and record quantity and type of fluid
Lithology/Formation	Top Depth in FT Name TVD	Bottom Depth in FT TVD	lop Deptn in FI	Bottom Depth in FT MD	(rresnwater, brine, oil, gas, H2S, etc)
Sand/Shale	0	50	0		sand/shale
Red Rock	20	142			red rock
Sand/Shale	142	845			sand/shale
Red Rock	845	855			red rock
Sand/Shale	855	1950			sand/shale
Red Rock	1950	1980			red rock
Sand/Shale	1980	2130			sand/shale
Little Lime	2130	2150			limestone
Big Lime	2150	2180			limestone
Sand/Shale	2180	7917			sand/shale
Geneseo	7917	7959	7943	7990	shale
Tully	7959	8005	7990	8028	limestone
Hamilton	8005	8120	8058	8239	shale
Marcellus	8120	8178	8239	8368	shale
Cherry Valley	8178	8180	8368	8382	limestone
Lower Marcellus	8180		8382		shale

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## Hydraulic Fracturing Fluid Product Component Information Disclosure

	וטומו המשכ ועסון ייימוכן ייסומווים
	Total Race Non Water Volume
11,027,335	Total Base Water Volume (gal):
8,147	True Vertical Depth:
ON	Federal/Tribal Well:
NAD83	Datum:
39.70432700	Latitude:
-80.15238800	Longitude:
Beach 4H	Well Name and Number:
Northeast Natural Energy LLC	Operator Name:
47-061-01666-00-00	API Number:
Monongalia	County:
West Virginia	State:
12/28/2014	Job End Date:
12/7/2014	Job Start Date:





SROUNDWATER

PROTECTION COUNCIL

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Comments						1 6						
Maximum Ingredient Concentration in HF Fluid (% by mass)***		86.38252	13.43334	0.10393	0.03719	0.02144	0.01582	0.00170	0.00104	0.00091	0.00035	0.00035
Maximum Maximum Ingredient Concentration in Concentration in Additive HF Fluid (% by mass)**			98.64778	0.76318	0.27309	0.15742	0.11619	0.01245	0.00764	0.00669	0.00258	0.00254
Chemical Abstract Service Number (CAS #)		NA	14808-60-7	7647-01-0	9000-30-0	7783-20-2	38193-60-1	136793-29-8	57-13-6	7727-54-0	6381-77-7	67-56-1
Ingredients		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	Urea	Diammonium peroxidisulphate	Sodium erythorbate	Methanol
Purpose	Corrosion Inhibitor, AntiFoam Agent, Acid, Breaker, Gelling Agent, Friction Reducer, Iron Control Agent, Fluid Loss Additive, Propping											
Supplier	Schlumberger						Off	RE		E!		ED nd Gaಽ
Trade Name	Proppant Transport						W Envii	JU V Do	ep	o s	tn	015 nent of Protection

			Eathy acide tall ail	61790-12-3	D 00177	0.00024
			rally acids, tall-oil		2100.0	
			Sodium sulfate	7757-82-6	0.00178	0.00024
			Thiourea, polymer with formaldehyde and 1-phenylethanone	68527-49-1	0.00146	0.00020
			Alcohols, C14-15, ethoxylated (7EO)	68951-67-7	0.00069	600000
			Propargyl alcohol	107-19-7	0.00046	0.0000
			2-propenamid	1-90-6-1	0.00038	0.00005
			Polypropylene glycol	25322-69-4	0.00035	0.00005
			Tetrasodium ethylenediaminetetraacetate	64-02-8	0.00020	0.00003
			Hexadec-1-ene	629-73-2	0.00015	0.00002
			Dimethyl siloxanes and silicones 63148-62-9	63148-62-9	0.00011	0.00001
			1-Octadecene (C18)	112-88-9	0.00008	0.00001
			Formaldehyde	0-00-09	0.00001	
			Decamethyl cyclopentasiloxane	541-02-6	0.00001	
			Octamethylcyclotetrasiloxane	556-67-2	0.00001	
			Dodecamethylcyclohexasiloxane 540-97-6	9240-97-6		
			Copper(II) sulfate	7758-98-7		
			Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	0.00002	
SC-30 X-	X-Chem	Scale Inhibitor				
			Sodium Polyacrylate	2594-41-5	14.71000	
			Water	7732-18-5	85.29000	
Chlorine Dioxide X-	X-Chem	Microbial Control				
			CIO2	10049-04-4	100.00000	Gas

\* 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%

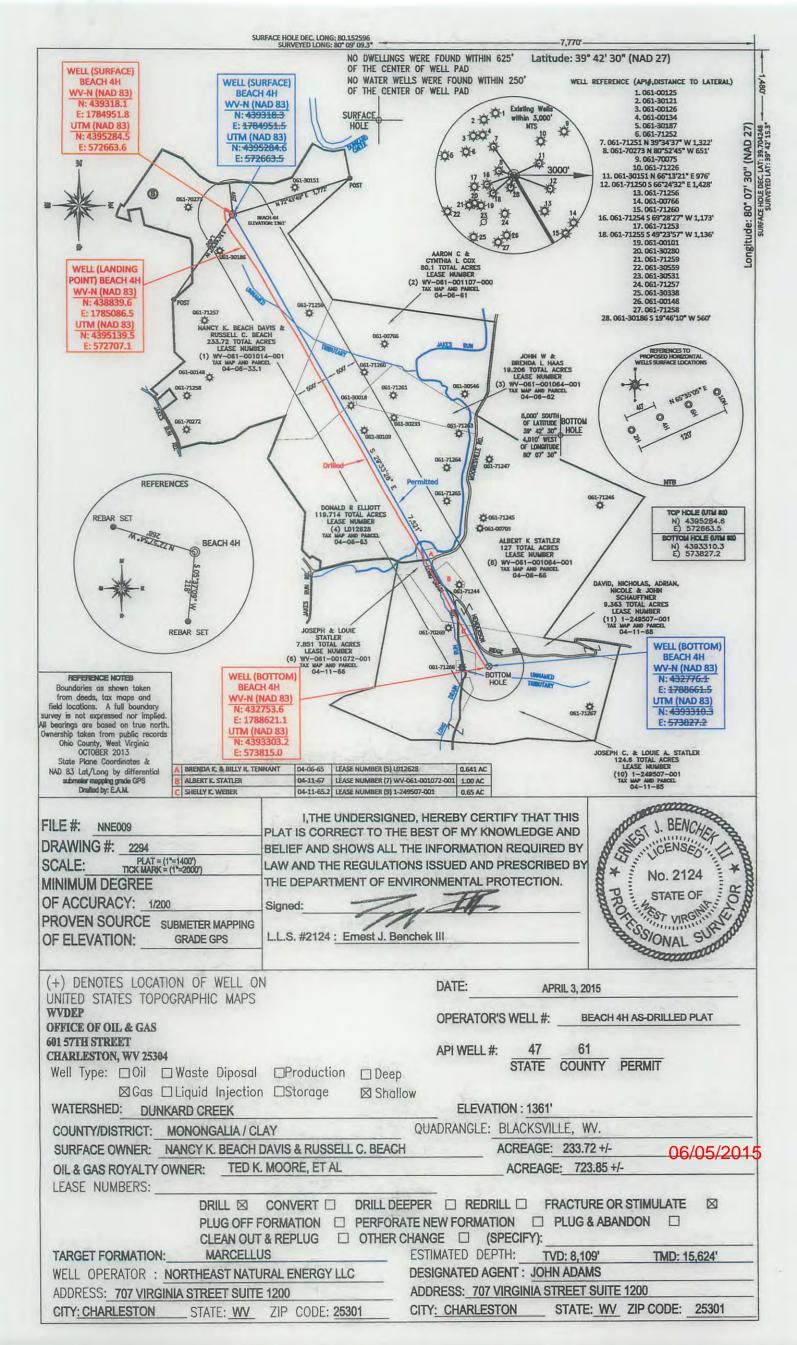
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

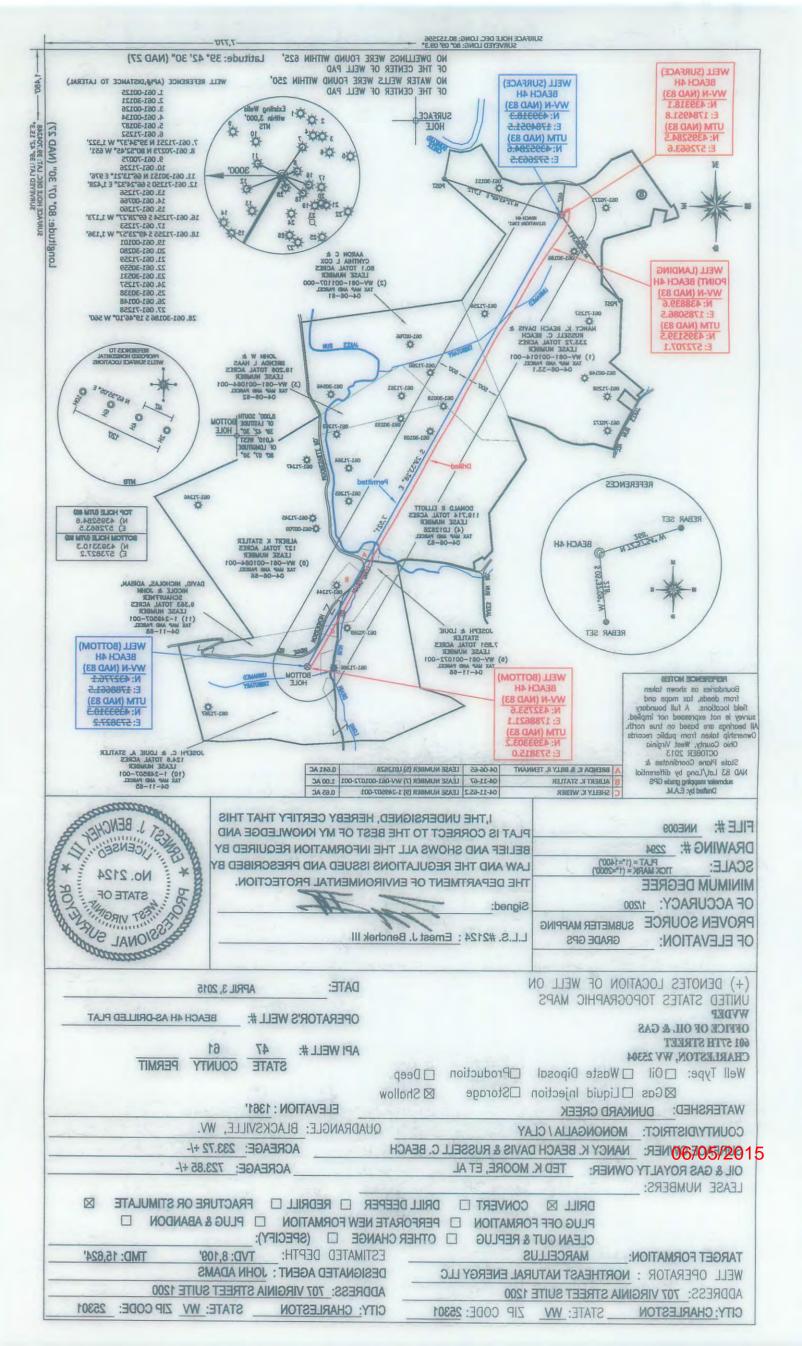
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

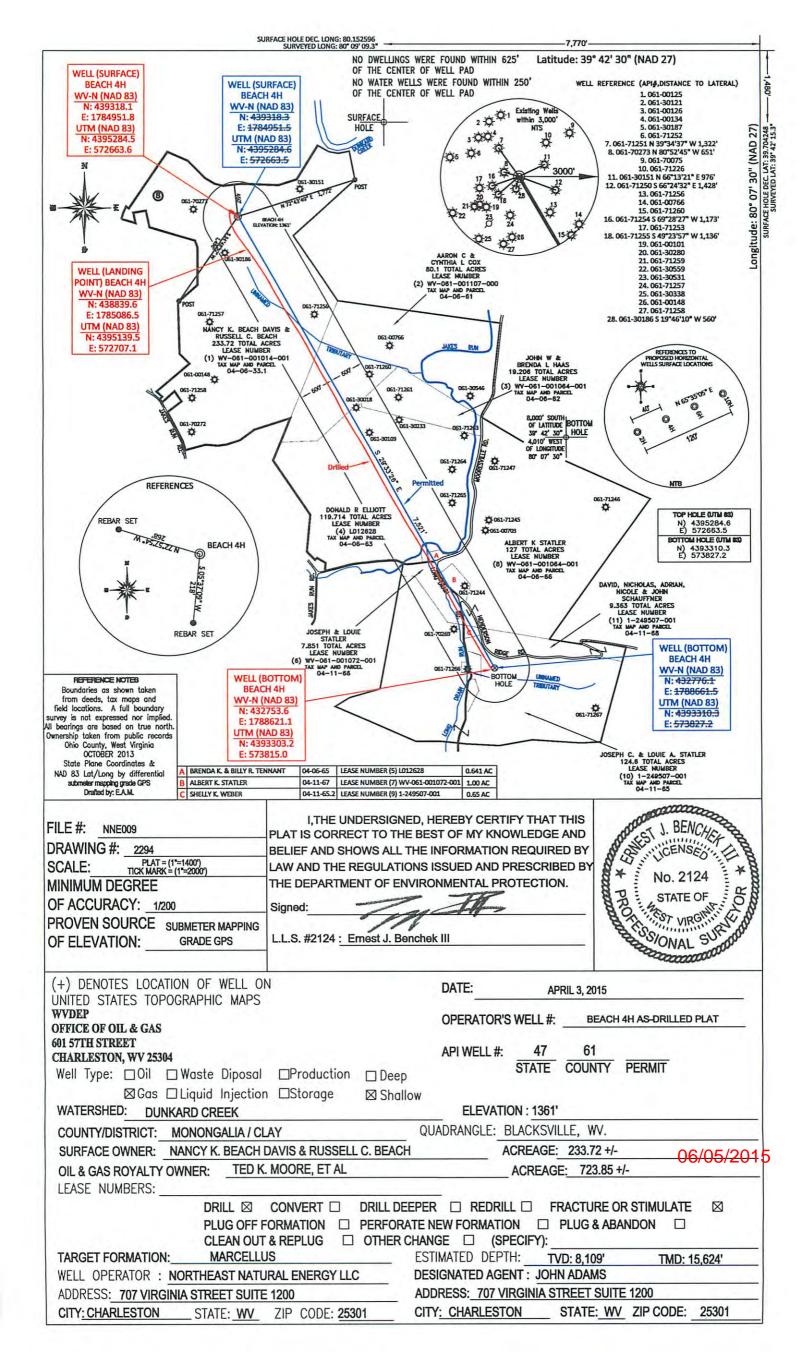
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