

JK

WR-35
Rev (9-11)

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

Date: 3/21/2014
API: 47-017-06002

Farm Name: Kiley, Joseph & Jacqueline Operator Well No: OXFD-1C-HS

LOCATION: Oxford 1 Elevation: 1,112.77 Quadrangle: Oxford

District: West Union County: DODDRIDGE
Latitude: _____ Feet South of _____ Deg. _____ Min. _____ Sec. 39.24249400
Longitude: _____ Feet South of _____ Deg. _____ Min. _____ Sec. -80.82559500

Company: CNX Gas Company LLC	Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. Ft.
Address: 200 Evergreene Drive Waynesburg, PA 15370	20	60	60	Cemented In
Agent: Steven Green	13 3/8	658	658	562 sxs (119 bbls) 45 bbls return
Inspector: Bill Hendershot	9 5/8	2604	2604	870 sxs (216 bbls) 44 bbls return
Date Permit Issued: 5/26/2011	5 1/2	14014	14014	2477 sxs (645 bbls)
Date Well Work Commenced: 6/23/2013				
Date Well Work Completed: 3/16/2014				
Verbal Plugging:				
Date Permission granted on: 6/23/2013				
Rotary Cable Rig X				
Total Vertical Depth (ft): Original Hole - 6,563.4				
Total Measured Depth (ft): 14,025.0				
Fresh Water Depth (ft): 30' & 580'				
Salt Water Depth (ft): None				
Is coal being mined in the area (N/Y)? N				
Coal Depths (ft.): None Present				
Void(s) encountered (N/Y) Depth(s): NA				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) 7115

Gas: Initial open flow NA MCF/d Oil: Initial open flow NA Bbl/d
Final open flow NA MCF/d Final open flow NA Bbl/d
Time of open flow between initial and final tests NA Hours
Static rock Pressure NA psig (surface pressure) after NA Hours

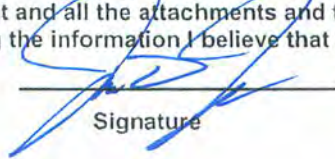
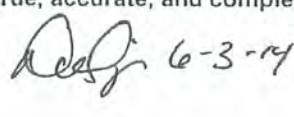
Second producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

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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.

 Signature
6/3/14 Date


06/13/2014

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Were core samples taken? Yes__ No_x_

Were cuttings caught during drilling? Yes_x_ No__

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list: Bond Log, Gamma Ray Log

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing or Stimulating: Please See Attached

Plug Back Details including Plug Type and Depth(s): Please See Attached

Surface:

Formations Encountered: Please See Attached

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Stimulation Summary

Date	Stage #	Formation	Frac Type	Top Perf	Bottom Perf	# of Perfs	BD Press (psi)	ATP (psi)	Avg Rate (bpm)	ISIP (psi)	Frac Gradient	Sand (lbs)	Acid (gals)	Water (gals)
1/13/2014	1	Marcellus	Slickwater	13,726	13,913	48	6,396	8,050	69.4	3,153	0.91	419,603	6,000	536,081
1/14/2014	2	Marcellus	Slickwater	13,575	13,677	40	6,098	8,025	72.9	3,902		242,311	6,000	283,583
1/14/2014	3	Marcellus	Slickwater	13,425	13,527	40	5,685	7,779	67.2	5,685	1.11	250,832	6,000	290,324
1/15/2014	4	Marcellus	Slickwater	13,275	13,377	40	5,985	7,649	69.2	4,793	1.16	249,195	6,000	273,100
1/15/2014	5	Marcellus	Slickwater	13,125	13,227	40	5,939	7,856	77.9	4,504	1.12	250,901	3,000	297,510
1/15/2014	6	Marcellus	Slickwater	12,975	13,077	40	5,834	7,800	76.9	5,258	1.24	247,544	3,000	284,983
1/16/2014	7	Marcellus	Slickwater	12,825	12,927	40	5,468	7,711	74.2	4,471	1.12	244,539	3,000	262,489
1/16/2014	8	Marcellus	Slickwater	12,675	12,777	40	5,696	7,916	76.1	5,259	1.24	259,843	3,000	276,695
1/17/2014	9	Marcellus	Slickwater	12,525	12,627	40	5,590	7,856	75.9	4,871	1.18	249,118	3,000	271,411
1/17/2014	10	Marcellus	Slickwater	12,375	12,477	40	5,583	7,908	78.5	4,972	1.19	253,556	3,000	256,609
1/17/2014	11	Marcellus	Slickwater	12,227	12,327	40	5,321	8,081	89.5	4,963	1.19	247,658	3,000	263,596
1/18/2014	12	Marcellus	Slickwater	12,075	12,177	40	5,567	7,383	77.5	4,044	1.05	247,802	3,000	261,638
1/18/2014	13	Marcellus	Slickwater	11,925	12,027	40	5,448	7,872	87.7	5,302	1.24	246,363	3,000	265,481
1/19/2014	14	Marcellus	Slickwater	11,780	11,877	40	5,967	7,652	78.4	5,749	1.31	246,803	3,000	265,197
1/19/2014	15	Marcellus	Slickwater	11,625	11,727	40	5,475	7,960	88.9	5,088	1.21	248,720	3,000	261,178
1/20/2014	16	Marcellus	Slickwater	11,475	11,577	40	5,191	7,761	89.0	4,402	1.11	248,071	3,000	257,603
1/20/2014	17	Marcellus	Slickwater	11,350	11,427	40	5,995	7,938	82.8	5,029	1.20	241,344	3,000	299,890
1/20/2014	18	Marcellus	Slickwater	11,175	11,277	40	5,271	7,674	88.8	5,288	1.24	251,824	3,000	261,482
1/21/2014	19	Marcellus	Slickwater	11,025	11,127	40	2,324	7,899	86.2	5,314	1.24	250,506	3,000	273,249
1/22/2014	20	Marcellus	Slickwater	10,875	10,977	40	5,625	7,762	86.7	3,462	0.96	252,029	3,000	260,960
1/23/2014	21	Marcellus	Slickwater	10,725	10,827	40	5,734	8,085	85.3	4,518	1.12	245,572	3,000	339,572
1/23/2014	22	Marcellus	Slickwater	10,575	10,677	40	5,593	7,658	89.4	3,626	0.99	249,446	3,000	251,780
1/24/2014	23	Marcellus	Slickwater	10,425	10,527	40	5,287	7,561	88.7	4,266	1.08	249,560	3,000	261,258
1/25/2014	24	Marcellus	Slickwater	10,275	10,377	40	5,178	7,689	88.9	4,312	1.09	245,513	3,000	261,482
1/25/2014	25	Marcellus	Slickwater	10,125	10,227	40	5,240	7,338	89.4	4,609	1.14	246,425	3,000	238,468
1/25/2014	26	Marcellus	Slickwater	9,975	10,077	40	5,838	7,435	89.8	4,497	1.12	246,256	3,000	249,078
1/26/2014	27	Marcellus	Slickwater	9,825	9,927	40	5,810	7,595	89.5	4,314	1.09	249,730	3,000	237,612
1/27/2014	28	Marcellus	Slickwater	9,675	9,777	40	5,657	7,461	89.9	3,595	0.98	247,315	3,000	261,485
1/27/2014	29	Marcellus	Slickwater	9,525	9,627	40	5,625	7,732	89.3	3,498	0.97	252,378	3,000	246,351
1/27/2014	30	Marcellus	Slickwater	9,375	9,477	40	5,738	7,927	88.9	3,965	1.04	241,367	3,000	251,522
1/28/2014	31	Marcellus	Slickwater	9,225	9,327	40	5,567	7,822	89.9	4,533	1.12	245,374	3,000	247,319
1/29/2014	32	Marcellus	Slickwater	9,075	9,177	40	5,076	7,901	87.9	3,947	1.03	247,625	3,000	264,614
1/29/2014	33	Marcellus	Slickwater	8,925	9,027	40	5,676	7,713	89.5	4,475	1.11	249,378	3,000	264,381
1/30/2014	34	Marcellus	Slickwater	8,775	8,877	40	5,904	7,793	90.1	5,436	1.26	246,883	3,000	242,956
1/31/2014	35	Marcellus	Slickwater	8,625	8,727	40	5,790	7,910	88.6	4,908	1.18	245,319	3,000	287,313
1/31/2014	36	Marcellus	Slickwater	8,475	8,577	40	5,214	7,730	90.1	5,075	1.20	247,663	3,000	250,190

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2/1/2014	37	Marcellus	Slickwater	8,325	8,427	40	5,521	7,481	89.6	4,334	1.09	250,975	3,000	257,240
2/1/2014	38	Marcellus	Slickwater	8,175	8,277	40	5,952	7,805	90.4	4,529	1.12	248,160	3,000	246,880
2/2/2014	39	Marcellus	Slickwater	8,025	8,127	40	5,755	7,756	83.0	5,240	1.23	214,300	3,000	234,990
2/2/2014	40	Marcellus	Slickwater	7,875	7,977	40	5,591	7,238	90.0	5,630	0.94	249,650	3,000	246,880
2/5/2014	41	Marcellus	Slickwater	7,725	7,827	40	5,025	7,120	89.6	4,763	1.16	248,440	3,000	275,220
2/5/2014	42	Marcellus	Slickwater	7,575	7,677	40	5,562	7,097	90.6	4,696	1.14	248,400	3,000	251,760
2/5/2014	43	Marcellus	Slickwater	7,425	7,527	40	5,797	7,496	89.9	5,152	1.21	251,840	3,000	252,560
2/6/2014	44	Marcellus	Slickwater	7,275	7,377	40	7,040	7,337	89.8	5,919	1.33	253,880	3,000	246,880

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Stage #	Plug Type	Plug Depth
1	No plug	No plug
2	Composite Frac Plug	13,700
3	Composite Frac Plug	13,550
4	Composite Frac Plug	13,400
5	Composite Frac Plug	13,250
6	Composite Frac Plug	13,100
7	Composite Frac Plug	12,950
8	Composite Frac Plug	12,796
9	Composite Frac Plug	12,650
10	Composite Frac Plug	12,500
11	Composite Frac Plug	12,358
12	Composite Frac Plug	12,200
13	Composite Frac Plug	12,025
14	Composite Frac Plug	11,906
15	Composite Frac Plug	11,750
16	Composite Frac Plug	11,600
17	Composite Frac Plug	11,450
18	Composite Frac Plug	11,300
19	Composite Frac Plug	11,150
20	Composite Frac Plug	11,000
21	Composite Frac Plug	10,850
22	Composite Frac Plug	10,700
23	Composite Frac Plug	10,550
24	Composite Frac Plug	10,400
25	Composite Frac Plug	10,250
26	Composite Frac Plug	10,100
27	Composite Frac Plug	9,950
28	Composite Frac Plug	9,800
29	Composite Frac Plug	9,650
30	Composite Frac Plug	9,500
31	Composite Frac Plug	9,350
32	Composite Frac Plug	9,200
33	Composite Frac Plug	9,050
34	Composite Frac Plug	8,900
35	Composite Frac Plug	8,750
36	Composite Frac Plug	8,600
37	Composite Frac Plug	8,450
38	Composite Frac Plug	8,300
39	Composite Frac Plug	8,150
40	Composite Frac Plug	8,000
41	Composite Frac Plug	7,850
42	Composite Frac Plug	7,700
43	Composite Frac Plug	7,550
44	Composite Frac Plug	7,400
	Bridge Plug	6,540

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Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Sandstone and Shale, Undif.	0	1937	0	1937	
Maxton	1937	1967	1937	1980	
Greenbrier Group	1980	2040	1980	2040	
Big Injun (Grnbr)	2040	2120	2040	2277	
Weir	2277	2308	2277	2515	
Berea Ss	2515	2520	2515	2690	
Fourth	2690	2714	2690	2944	
Bayard	2944	2985	2944	3341	
Speechley	3340	3398	3341	3930	
Balltown A	3904	3930	3930	4152	
Balltown B	4112	4185	4152	4484	
Riley	4422	4443	4484	5087	
Benson	4952	5000	5087	5371	
Alexander	5196	5280	5371	6629	
Cashaqua Sh	6278	6399	6629	6789	
Middlesex Sh	6399	6448	6789	6866	
West River	6448	6524	6866	7017	
Geneseo Sh	6524	6554	7017	7090	
Tully Ls	6554	6573	7090	7144	
Hamilton	6573	6581	7144	7172	
Marcellus	6581	6636	7172	7346	Gas
Cherry Valley	6618	6620	7346	not encountered	
Onondaga	6636	6647	not encountered	not encountered	
Huntersville	6647	not encountered	not encountered	not encountered	

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/13/2014
Job End Date:	2/6/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06002-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	OXF1 C
Longitude:	-80.82559500
Latitude:	39.24249400
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,563
Total Base Water Volume (gal):	11,870,523
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
Fresh Water	Operator	Base Fluid					
			Fresh Water	7732-18-5	100.00000	88.99033	Density = 8.340
SAND - PREMIUM WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	7.83233	
SAND - COMMON WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	1.97633	
HYDROCHLORIC ACID 5-10%	Halliburton	Solvent					
			Hydrochloric acid	7647-01-0	10.00000	0.10512	
FR-66	Halliburton	Friction Reducer					
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02093	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive					
			Acetic anhydride	108-24-7	100.00000	0.00545	
			Acetic acid	64-19-7	60.00000	0.00327	
BE-9W	Halliburton	Biocide					
			Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00391	
LP-65 MC	Halliburton	Scale Inhibitor					

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			Ammonium chloride	12125-02-9	10.00000	0.00237
FDP-S1078-12	Halliburton	Friction Reducer				
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.00117
			Alcohols, C12-16, ethoxylated	68551-12-2	10.00000	0.00039
			Ammonium chloride	12125-02-9	10.00000	0.00039
			9-Octadecenamide, n,n-bis-2 (hydroxy-ethyl)-, (Z)	93-83-4	5.00000	0.00020
LoSurf-300D	Halliburton	Non-ionic Surfactant				
			Ethanol	64-17-5	60.00000	0.00110
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00055
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00009
			Naphthalene	91-20-3	5.00000	0.00009
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00002
WG-36 GELLING AGENT	Halliburton	Gelling Agent				
			Guar gum	9000-30-0	100.00000	0.00113
HAI-05 ACID INHIBITOR	Halliburton	Corrosion Inhibitor				
			Methanol	67-56-1	60.00000	0.00054
			Propargyl alcohol	107-19-7	10.00000	0.00009
SP BREAKER	Halliburton	Breaker				
			Sodium persulfate	7775-27-1	100.00000	0.00005
Ingredients shown above are subject to 29 CFR 1910.1200(l) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.						
		Other Ingredient(s)				
			Water	7732-18-5		1.14883
		Other Ingredient(s)				
			Polyacrylamide copolymer	Confidential		0.02093
		Other Ingredient(s)				
			Organic phosphonate	Confidential		0.01425
		Other Ingredient(s)				
			Ammonium chloride	12125-02-9		0.00349
		Other Ingredient(s)				
			Sodium chloride	7647-14-5		0.00349
		Other Ingredient(s)				
			Alcohols, C12-16, ethoxylated	68551-12-2		0.00349
		Other Ingredient(s)				
			Fatty acid tall oil amide	Confidential		0.00349
		Other Ingredient(s)				
			Polyacrylate	Confidential		0.00117
		Other Ingredient(s)				
			Inorganic salt	Confidential		0.00117
		Other Ingredient(s)				
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00070

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	Other Ingredient(s)					
		Sorbitan monooleate polyoxyethylene derivative	9005-65-6			0.00070
	Other Ingredient(s)					
		Oxyalkylated phenolic resin	Confidential			0.00055
	Other Ingredient(s)					
		Fatty acids, tall oil	Confidential			0.00027
	Other Ingredient(s)					
		Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1			0.00027
	Other Ingredient(s)					
		Alcohols, C14-C15, ethoxylated	68951-67-7			0.00027
	Other Ingredient(s)					
		Formaldehyde	50-00-0			0.00024
	Other Ingredient(s)					
		Fatty acid ester	Confidential			0.00020
	Other Ingredient(s)					
		Oxyalkylated phenolic resin	Confidential			0.00018
	Other Ingredient(s)					
		Bentonite, benzyl(hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4			0.00006
	Other Ingredient(s)					
		Olefins	Confidential			0.00005
	Other Ingredient(s)					
		Olefins	Confidential			0.00005
	Other Ingredient(s)					
		Surfactant mixture	Confidential			0.00001
	Other Ingredient(s)					
		Surfactant mixture	Confidential			0.00001
	Other Ingredient(s)					
		Silica gel	112926-00-8			0.00001
	Other Ingredient(s)					
		Olefins	Confidential			0.00001
	Other Ingredient(s)					
		Olefins	Confidential			0.00001
	Other Ingredient(s)					
		Crystalline Silica, Quartz	14808-60-7			0.00000
	Other Ingredient(s)					
		Sodium sulfate	7757-82-6			0.00000

* 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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