

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

Farm Name: Kenneth Meadows, ET AL Operator Well No: NORM-1D-HS

LOCATION: Normantown Elevation: 810.00 Quadrangle: Normantown 1

District: Center County: GILMER  
Latitude: \_\_\_\_\_ Feet South of Deg. Min. Sec. 38° 56' 56.23"  
Longitude: \_\_\_\_\_ Feet South of Deg. Min. Sec. 80° 56' 44.32"

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	61.0	61.0	Cemented in
Agent: Bill Hendershot	13 3/8	471.0	471.0	Cemented w/ 492 sxs (100 bbls) to surface
Inspector: Steven Haught	9 5/8	5,834.0	5,834.0	Cemented w/2295 sxs (558 bbls) to surface
Date Permit Issued: 7/25/2012 ✓	5 1/2	11,306.0	11,306.0	Cemented w/ 1246 sxs (302 bbls)
Date Well Work Commenced: 11/8/2012				
Date Well Work Completed: 8/10/2013				
Verbal Plugging:				
Date Permission granted on: 11/8/2012				
Rotary Cable Rig X				
Total Vertical Depth (ft): 5885.4				
Total Measured Depth (ft): 11,319.0				
Fresh Water Depth (ft): 192'				
Salt Water Depth (ft): 1482'				
Is coal being mined in the area (N/Y)? N				
Coal Depths (ft.): 332'				
Void(s) encountered (N/Y) Depth(s)				

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

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

Dee S. 10/28/13  
Signature Date

11/08/2013

Were core samples taken? Yes\_\_ No\_x\_\_

Were cuttings caught during drilling? Yes\_x\_ No\_\_

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

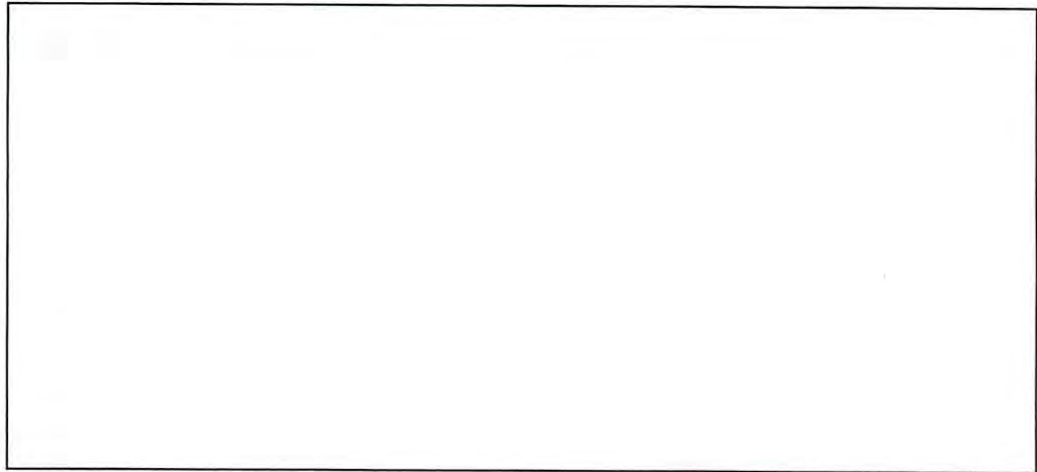
NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL 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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Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid	Source
Sandstone and Shale, Undif.	0	472	0	472		MWD
Shale	472	533	472	533		MWD
Sandstone	533	656	533	656		MWD
Shale	656	723	656	723		MWD
Sandstone	723	769	723	770		MWD
Shale	769	788	770	789		MWD
Sandstone	788	906	789	907		MWD
Shale	906	955	907	956		MWD
Sandstone	955	989	956	991		MWD
Shale	989	1105	991	1107		MWD
Sandstone	1105	1150	1107	1152		MWD
Shale	1150	1270	1152	1273		MWD
Sandstone	1270	1305	1273	1308		MWD
Shale	1305	1463	1308	1467		MWD
Big Lime	1463	1720	1467	1726		MWD
Shale	1720	1910	1726	1917		MWD
Weir	1910	1962	1917	1969		MWD
Upper Devonian Undif.	1962	3197	1969	3209		MWD
Lower Huron	3197	4346	3209	4365		elog
Benson	4346	4366	4365	4653		elog
Angola	4632	4703	4653	4724		elog
Alexander	4703	4797	4724	4921		elog
Rheinstreet	4899	5496	4921	5537		elog
Sycamore	5496	5528	5537	5573		elog
Cashqua	5528	5762	5573	5944		elog
Middlesex	5762	5804	5944	6037		elog
West River	5804	5869	6037	6180		elog
Burkett	5869	5895	6180	6278		elog
Tully Limestone	5895	5897	6278	6289		elog
Hamilton	5897	5899	6289	6300		elog
Marcellus	5899	5947	6300	not encountered	Gas	elog
Onondaga	5947	5952	not encountered	not encountered		elog
Huntersville	5952	not encountered	not encountered	not encountered		elog

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Date	Stage #	Top Perf	Bottom Perf	# of Perfs	BD Press (psi)	ATP (psi)	Avg Rate (bpm)	ISIP (psi)	Frac	Sand (lbs)	Acid (gals)	Water (gals)
7/12/2013	1	10,948	11,212	48	5,599	8,052	75.4	4,969	1.27	389,811	6,000	473,951
7/13/2013	2	10,702	10,902	40	5,864	7,684	79.9	5,038	1.29	330,560	3,000	351,847
7/14/2013	3	10,500	10,652	40	5,453	8,372	71.6	5,200	1.31	296,835	3,000	417,525
7/14/2013	4	10,201	10,452	40	5,443	7,439	81.1	5,747	1.41	369,759	3,000	397,251
7/14/2013	5	9,901	10,152	40	5,100	7,240	81.5	4,951	1.27	438,598	3,000	421,459
7/14/2013	6	9,601	9,852	40	5,636	7,563	82.6	3,565	1.04	437,631	3,000	412,457
12:00 AM	7	9,301	9,552	40	5,943	7,196	80.9	2,712	0.89	438,686	3,000	407,280
7/15/2013	8	9,001	9,252	40	5,508	7,858	83.0	3,433	1.01	438,203	3,000	490,825
7/18/2013	9	8,701	8,952	40	6,201	7,217	82.8	3,007	0.94	434,541	3,000	419,314
7/19/2013	10	8,452	8,652	40	5,843	7,334	81.2	2,655	0.88	364,342	3,000	354,328
7/20/2013	11	8,202	8,402	40	6,305	7,351	80.0	2,816	0.91	301,546	3,000	353,498
7/21/2013	12	7,952	8,152	40	5,520	7,783	66.1	5,444	1.36	248,644	3,000	485,787
7/21/2013	12RP	7,974	8,064	40	6,123	7,692	80.7	5,321	1.33	164,870	3,000	225,828
7/21/2013	13	7,702	7,902	40	6,017	7,728	87.6	5,382	1.34	265,879	3,000	313,175
7/22/2013	14	7,401	7,652	40	5,382	7,034	80.1	2,823	0.91	439,642	3,000	407,087
7/22/2013	15	7,101	7,352	40	5,896	7,380	79.8	5,582	1.38	434,998	3,000	419,141
7/22/2013	16	6,801	7,052	40	5,176	7,300	79.5	5,791	1.41	359,188	3,000	381,397
7/23/2013	17	6,552	6,752	40	5,539	7,330	80.5	5,768	1.41	368,131	3,000	359,181
7/23/2013	18	6,302	6,502	40	5,503	7,641	61.1	7,494	1.70	254,721	6,000	421,474

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Stage #	Plug Type	Plug Depth
1	No Plug	No Plug
2	Composite Flow Throug Plug	10,925
3	Composite Flow Throug Plug	10,675
4	Composite Flow Throug Plug	10,475
5	Composite Flow Throug Plug	10,175
6	Composite Flow Throug Plug	9,875
7	Composite Flow Throug Plug	9,575
8	Composite Flow Throug Plug	9,275
9	Composite Flow Throug Plug	8,975
10	Composite Flow Throug Plug	8,675
11	Composite Flow Throug Plug	8,425
12, 12RP	Composite Flow Throug Plug	8,175
13	Composite Flow Throug Plug	7,925
14	Composite Flow Throug Plug	7,675
15	Composite Flow Throug Plug	7,375
16	Composite Flow Throug Plug	7,075
17	Composite Flow Throug Plug	6,775
18	Composite Flow Throug Plug	6,525

PBTD: 11,212'

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**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	89.30235	Density = 8.340
SAND - PREMIUM WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	5.51798	
SAND - COMMON WHITE	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	4.25433	
HYDROCHLORIC ACID 5-10%	Halliburton	Solvent					
			Hydrochloric acid	7647-01-0	10.00000	0.07769	
SP BREAKER	Halliburton	Breaker					
			Sodium persulfate	7775-27-1	100.00000	0.01839	
FR-66	Halliburton	Friction Reducer					
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01779	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive					
			Acetic anhydride	108-24-7	100.00000	0.00402	
			Acetic acid	64-19-7	60.00000	0.00241	
BE-9	Halliburton	Biocide					
			Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00402	
Scalechek® LP-65 Scale Inhibitor	Halliburton	Scale Inhibitor					
			Ammonium chloride	12125-02-9	10.00000	0.00238	
LoSurf-300D	Halliburton	Non-ionic Surfactant					
			Ethanol	64-17-5	60.00000	0.00081	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00041	
			Poly(oxy-1,2-ethanedyl), alpha- (4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00007	
			Naphthalene	91-20-3	5.00000	0.00007	
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00001	
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
			Guar gum	9000-30-0	100.00000	0.00079	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
			Methanol	67-56-1	60.00000	0.00000	
			Propargyl alcohol	107-19-7	10.00000	0.00000	
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			
		Other Ingredient(s)					
			Polyacrylamide copolymer	Confidential			
		Other Ingredient(s)					
			Organic phosphonate	Confidential		0.01426	

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	Other Ingredient(s)				
		Alcohols, C12-16, ethoxylated	68551-12-2		0.00297
	Other Ingredient(s)				
		Sodium chloride	7647-14-5		0.00297
	Other Ingredient(s)				
		Fatty acid tall oil amide	Confidential		0.00297
	Other Ingredient(s)				
		Ammonium chloride	12125-02-9		0.00297
	Other Ingredient(s)				
		Sorbitan monooleate polyoxyethylene derivative	9005-85-6		0.00059
	Other Ingredient(s)				
		Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00059
	Other Ingredient(s)				
		Oxyalkylated phenolic resin	Confidential		0.00041
	Other Ingredient(s)				
		Formaldehyde	50-00-0		0.00024
	Other Ingredient(s)				
		Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		0.00020
	Other Ingredient(s)				
		Fatty acids, tall oil	Confidential		0.00020
	Other Ingredient(s)				
		Alcohols, C14-C15, ethoxylated	68951-67-7		0.00020
	Other Ingredient(s)				
		Oxyalkylated phenolic resin	Confidential		0.00014
	Other Ingredient(s)				
		Bentonite, benzyl(hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4		0.00004
	Other Ingredient(s)				
		Olefins	Confidential		0.00003
	Other Ingredient(s)				
		Olefins	Confidential		0.00002
	Other Ingredient(s)				
		Sodium sulfate	7757-82-6		0.00002
	Other Ingredient(s)				
		Surfactant mixture	Confidential		
	Other Ingredient(s)				

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			Surfactant mixture	Confidential		0.00001	
		Other Ingredient(s)					
			Silica gel	112928-00-8		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	

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