

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: 9/16/2013  
API: 47-021-05749

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

LOCATION: Normantown Elevation: 810.00 Quadrangle: Normantown 1

PM

District: Center County: GILMER  
Latitude: \_\_\_\_\_ Feet South of \_\_\_\_\_ Deg. Min. Sec. 38.84876700  
Longitude: \_\_\_\_\_ Feet South of \_\_\_\_\_ Deg. Min. Sec. -80.94575100

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	40.0	40.0	Cemented in
Agent: Steven Haught	13 3/8	472.4	472.4	Cemented w/ 495 sxs (108 bbbls) to surface
Inspector: Bill Hendershot	9 5/8	5,756.0	5,756.0	Cemented w/ 1057 sxs (268 bbbls) to surface
Date Permit Issued: 7/25/2012	5 1/2	10,779.0	10,779.0	Cemented w/ 1675 sxs (423 bbbls) Cement
Date Well Work Commenced: 11/4/2012				
Date Well Work Completed: 11/21/2013				
Verbal Plugging:				
Date Permission granted on: 11/4/2012				
Rotary Cable Rig X				
Total Vertical Depth (ft): 5,941.4				
Total Measured Depth (ft): 10,802.0				
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) N				

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

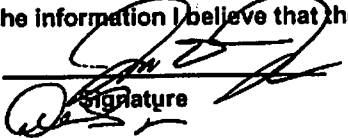
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Second producing formation \_\_\_\_\_ Pay zone depth (ft) \_\_\_\_\_  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial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

WV Department of  
Environmental Protection

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 \_\_\_\_\_ Date 3/7/14  
1-29-14

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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

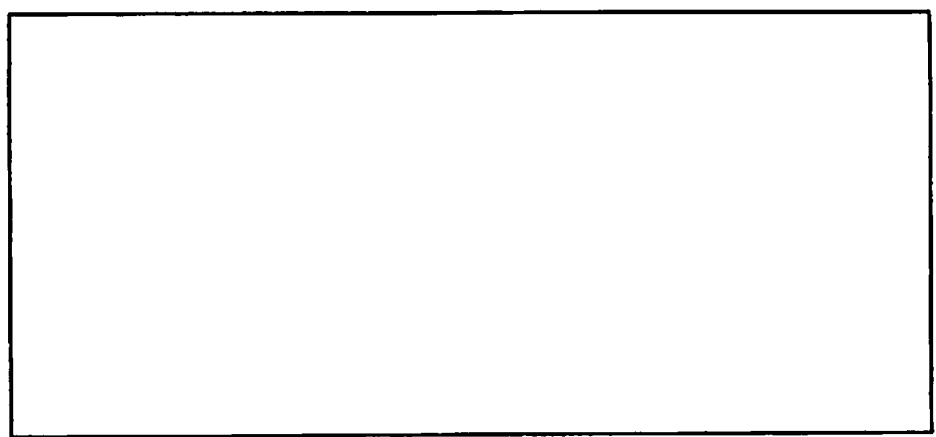
**NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL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



\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NRM 1E

Date	Stage #	Top Perf	Bottom Perf	# of Perfs	BD Press (psi)	ATP (psi)	Avg Rate (bpm)	ISIP (psi)	Frac Gradient	Sand (lbs)	Acid (gals)	Water (gals)
7/12/2013	1	10,425	10,635	48	5,862	6,891	61.0	4,199	1.14	223,581	3,486	342,594
7/13/2013	1C	10,126	10,377	40	5,953	8,042	78.0	5,249	1.32	351,505	2,982	442,176
7/14/2013	2	9,877	10,077	40	6,550	7,478	79.0	5,118	1.30	374,516	3,066	363,762
7/14/2013	3	9,576	9,827	40	5,894	7,122	77.0	3,437	1.01	435,134	3,402	467,334
7/14/2013	4	9,323	9,527	40	6,627	7,774	80.0	5,084	1.29	369,313	3,066	353,934
7/14/2013	5	9,077	9,277	40	6,535	7,792	84.0	4,967	1.27	367,447	2,982	350,364
7/14/2013	6	8,781	9,027	40	6,283	7,543	89.0	3,316	0.99	447,433	2,982	402,276
7/15/2013	7A	8,476	8,727	40	7,420	8,044	41.0	5,832	1.42	2,761	6,846	151,872
7/18/2013	7B	8,498	8,710	40	5,874	7,863	76.0	5,379	1.34	447,970	2,940	523,656
7/19/2013	8	8,176	8,421	40	6,183	7,360	88.0	2,960	0.93	447,407	3,066	411,978
7/20/2013	9	7,876	8,127	40	6,883	7,299	87.0	2,829	0.91	448,449	3,318	407,568
7/21/2013	10	7,627	7,827	40	7,242	7,528	65	3,228	0.98	382,723	3,066	449,232
7/21/2013	11	7,377	7,577	40	6,398	7,507	81	3,568	1.04	367,683	3,780	332,892
7/21/2013	12	7,076	7,327	40	6,336	7,536	87	3,387	1.01	440,798	2,982	390,936
7/22/2013	13	6,776	7,027	40	6,434	8,062	79	4,928	1.27	365,015	1,974	412,272
7/22/2013	14	6,476	6,727	40	5,682	8,377	65	5,134	1.30	332,340	3,150	415,296
7/22/2013	15	6,176	6,425	40	6,460	7,002	80	5,691	1.39	445,355	3,696	398,118

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Stage #	Plug Type	Plug Depth
1A & 1C	No Plug	No Plug
2	Composite Flow Throug Plug	10,100
3	Composite Flow Throug Plug	9,850
4	Composite Flow Throug Plug	9,550
5	Composite Flow Throug Plug	9,300
6	Composite Flow Throug Plug	9,050
7A & 7B	Composite Flow Throug Plug	8,750
8	Composite Flow Throug Plug	8,450
9	Composite Flow Throug Plug	8,145
10	Composite Flow Throug Plug	7,850
11	Composite Flow Throug Plug	7,600
12	Composite Flow Throug Plug	7,350
13	Composite Flow Throug Plug	7,050
14	Composite Flow Throug Plug	6,750
15	Composite Flow Throug Plug	6,450

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Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Sandstone and Shale, Undif.	0	472	0	472	
Shale	472	533	472	533	
Sandstone	533	656	533	656	
Shale	656	723	656	723	
Sandstone	723	769	723	769	
Shale	769	788	769	789	
Sandstone	788	906	789	907	
Shale	906	955	907	956	
Sandstone	955	989	956	991	
Shale	989	1105	991	1107	
Sandstone	1105	1150	1107	1152	
Shale	1150	1270	1152	1273	
Sandstone	1270	1305	1273	1308	
Shale	1305	1463	1308	1466	
Big Lime	1463	1720	1466	1724	
Shale	1720	1910	1724	1914	
Weir	1910	1962	1914	1966	
Upper Devonian Undif.	1962	3197	1966	3203	
Lower Huron	3197	4346	3203	4352	
Benson	4346	4366	4352	4638	
Angola	4632	4703	4638	4709	
Alexander	4703	4797	4709	4905	
Rheinstreet	4899	5496	4905	5527	
Sycamore	5496	5528	5527	5564	
Cashaqua	5528	5762	5564	5877	
Middlesex	5762	5804	5877	5946	
West River	5804	5869	5946	6280	
Burkett	5869	5895	6280	6493	
Tully Limestone	5895	5897	6493	6515	
Hamilton	5897	5899	6515	6539	
Marcellus	5899	5947	6539	not encountered	Gas
Onondaga	5947	5952	not encountered	not encountered	
Huntersville	5952	not encountered	not encountered	not encountered	

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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)**
Water	Operator	Base Carrier Fluid				
			Water	7732-18-5	100	89.14975
Sand	Operator	Proppants				
			Silicon Dioxide	14808-60-7	100	9.84847
15% Hydrochloric Acid	Reagent	Scale Dissolver				
			Water	7732-18-5	85	0.70209
			36% Hydrochloric Acid	7647-01-0	15	0.1239
FR900	Nalco	Friction Reducers				
			Proprietary	Proprietary	100	0.10588
Bio-Clear 5000	Clearwater International LLC	Biocides				
			Proprietary	Proprietary	95	0.03342
			2,2-dibromo-3-nitriopropionamide	10222-01-2	5	0.00176
MSI-7	National Petrochem	Scale Inhibitors				
			Hydrogen Chloride	7647-01-0	100	0.02266
BIO-CLEAR 200	Clearwater International, LLC	Iron Control				
			Polyethylene Glycol Mixture	25322-68-3	60	0.00468
			2,2-Dibromo-3-Nitropropionamide	10222-01-2	20	0.00156
FE-4	Chemplex, L.C.	Iron Control				
			Water	7732-18-5	55	0.0015
			Citric Acid Anhydrous	77-92-9	55	0.0015
I-22	Nalco	Corrosion Inhibitors				
			Formic Acid	64-18-6	60	0.0005
			Quaternary ammonium compound	Proprietary	30	0.00025
			Aromatic aldehyde	Proprietary	30	0.00025
			Oxyalkylated Fatty Acid Derivative	Proprietary	30	0.00025
			Isopropanol	67-63-0	10	0.00008
			Cyclic alkanes	Proprietary	5	0.00004
			Methanol	67-56-1	5	0.00004
			2-Mercaptoethyl Alcohol	60-24-2	5	0.00004
			Quaternary ammonium compound	Proprietary	5	0.00004
MNE-N34	CESI	Emulsifiers				
			Petroleum Distillates	64741-68-0	75	0.00052
			Isopropanol	67-63-0	25	0.00017