



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISTRICT OIL AND GAS OPERATIONS

April 24, 2013

CERTIFIED MAIL # 7012 3050 0001 4216 0365

Ms.

Re: 58 Pa. C.S. § 3218 Determination
Complaint No.
Franklin Twp., Susquehanna County

Dear Ms.

The Department has investigated the possible degradation of your water supply well located at ~~Franklin Twp.~~ Franklin Twp., Susquehanna County, in response to a 12/20/2011 complaint that recent gas well drilling activities may have affected your water supply well. The Department has since been conducting an investigation which included evaluating the integrity of nearby gas wells and the collection of samples from your home water supply on 12/22/2011 and 3/6/2012. The samples were submitted to the Department's laboratory in Harrisburg for analysis, and the analytical reports for the samples were previously submitted to you.

As previously shared with you, the sample results showed several compounds elevated above Department standards. Barium was present at 5.405 and 5.228 mg/L which exceeds the primary maximum contaminant level (MCL) of 2 mg/L, and Iron, Manganese, Total Dissolved Solids (TDS) and Chloride exceeded secondary MCLs. Primary MCLs are intended to reflect potential dangers to human health, while secondary MCLs reflect the aesthetics of the water (i.e. taste, smell, etc.). Additionally, the sample results showed methane is present at 38.9 and 58.4 mg/L in your water supply. The presence of dissolved methane in your water supply, and all other compounds exceeding primary MCLs and/or secondary MCLs, appear to be related to background conditions. Further, the Department did not document any naturally occurring phenomenon that could have caused the surging of water from the well or the claim of air in the water lines. At this time, the Department's investigation does not indicate that gas well drilling has impacted your water supply.

Methane is the predominant component of natural gas. Federal water standard limitations have not been established for methane gas. The level of concern begins above 28 mg/l methane, which is referred to as the saturation level. At this level, under normal atmospheric pressure, the water cannot hold additional methane in solution. This may allow the gas to come out of the water and concentrate in the air space of your home or building. There is a physical danger of fire or explosion due to the migration of natural gas into water wells or through soils into dwellings where it could be ignited by sources that are present in most homes/buildings. Natural gas can also cause a threat of asphyxiation; although this is extremely rare.

208 West Third Street | Suite 101 | Williamsport, PA 17701-6448

570.327.3636 | Fax 570.327.3565

www.depweb.state.pa.us

4/24/2013

When the Department is made aware of methane levels greater than 7 mg/l, we notify the water supply owner of the hazards associated with methane in their water supply. Please be aware however, that the methane levels can fluctuate. This means that even with a relatively low level of methane, you should be vigilant of changes in your water that could indicate an increase in methane concentration.

It is the Department's recommendation that all water wells should be equipped with a working vent. This will help alleviate the possibility of concentrating these gases in areas where ignition would pose a threat to life or property. Please note that it is not possible to completely eliminate the hazards of having natural gas in your water supply by simply venting your well.

Should you have any questions concerning this matter, please feel free to contact Eric Rooney, P.G. at 570-346-5543.

Sincerely,



Jennifer W. Means
Environmental Program Manager
Oil and Gas Management

cc:

Marc B. Cooley
Eric Rooney, P.G.
Michael O'Donnell
William Kosmer, P.G.
Sharon Steinbacher
Geoffrey Ayers
Complaint File #286492
Attorney Dubanevich, on behalf of Robert Lee

Sample Date 2/19/2012
 pH (Field Measured) 9.89
 Conductivity (Field Measured) 2121 μ S/cm
 Total Dissolved Solids (calculated) 1068 mg/L

Address:

Franklin Forks PA 13801

Sample Description: house well

Elemental Analyses of Water

43490.476

	Chloride	Bromide	Nitrate	Sulfate	Alkalinity (HCO ₃)	Calcium	Magnesium	Strontium	Sodium	Iron	Barium	Manganese	Silica
Unit ⁽²⁾	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Primary Standard ⁽³⁾			45.5								2		
Secondary Standard ⁽⁴⁾	250			250						0.3		0.05	
Sample Result		4.9	nd < 1		123	26	4	3.7	117	0.1	4.8	0.03	0.09
	Lithium	Boron	Aluminum	Vanadium	Chromium	Cobalt	Nickel	Copper	Zinc	Arsenic	Selenium	Molybdenum	
Unit ⁽²⁾	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	
Primary Standard ⁽³⁾					100			1300		10	50		
Secondary Standard ⁽⁴⁾			50					5000					
Sample Result	609.5	221.8	47.7	6.3	16.0	nd < 5	0.4	4.1	31.6	1.2	6.3	0.2	
	Silver	Cadmium	Antimony	Lead	Thorium	Uranium		Radium- 226	Radium- 228				
Unit ⁽²⁾	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)	(μ g/L)		(pCi/L)	(pCi/L)				
Primary Standard ⁽³⁾		5	6	5	2	30		5 (combined 226 + 228)					
Secondary Standard ⁽⁴⁾	100												
Sample Result	nd < 1	nd < 1	nd < 1	0.7	nd < 1	nd < 1		NA	NA				

Analyses of Dissolved Gas in Water

	Methane	$\delta^{13}\text{C-CH}_4$	$\delta\text{D-CH}_4$	Ethane	Ethylene	Propane	Iso-Butane	N-Butane	Iso-Pentane	N-Pentane	Hexanes
Unit ⁽²⁾	(mg/L)	‰	‰	(Mole %)	(Mole %)	(Mole %)	(Mole %)	(Mole %)	(Mole %)	(Mole %)	(Mole %)
Action level ⁽⁵⁾	7.0										
Sample Result	81.3	-45.0	-238.2	0.6	nd	0.002	nd	nd	nd	nd	nd

Notes:

(1) Analyses are qualitative only

(2) Concentrations are reported as mg/L (parts per million), μ g/L (parts per billion) or mole percent as indicated.

(3) U.S. EPA Primary Standard. Legally enforceable and designed to protect the public health. If blank, there is currently no EPA recommended standard.

(4) U.S. EPA Secondary Standard. Non-enforceable guidelines designed to protect against cosmetic or aesthetic impacts on drinking water. If blank no EPA recommended standard.

(5) PA DEP recommended action level

NA = Not Analyzed as of the date of this report, na = not analyzed; nd = non detect

<5 = less than the reporting limit (limit is indicated)

Highlighted in yellow = exceeds secondary drinking water standard

Highlighted in red = exceeds primary drinking water standard