



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DISTRICT OIL AND GAS OPERATIONS

September 9, 2013

[REDACTED]

CERTIFIED MAIL NO. [REDACTED]

Re: 58 Pa.C.S § 3218 Determination
Complaint No. 287198
Elkland Township, Sullivan County

Dear [REDACTED]

The Department has investigated the degradation of your water supply well located at the above address, in response to a 2/27/2012 complaint that gas well drilling activities may have affected your water well. On several occasions, the Department collected samples from your water supply. The samples were submitted to the Department's laboratory in Harrisburg for analysis. The analytical reports for those samples were previously submitted to you. The Department's investigation indicates that your water supply appears to have been temporarily impacted by gas drilling activity. Sampling indicates that water quality has returned to background conditions.

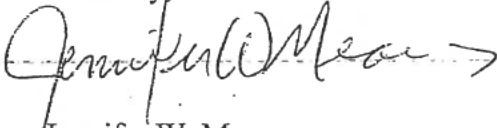
Methane is the predominant component of natural gas. Federal water standard limitations have not been established for methane gas. The level of concern begins above 28 mg/l methane, which is referred to as the saturation level. At this level, under normal atmospheric pressure, the water cannot hold additional 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.

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.

Based on water quality sample results to date, the Department does not anticipate requiring any further action in relation to this matter. Should you have any questions, please feel free to contact Caleb Woolever at 570-327-0546.

Sincerely,

A handwritten signature in cursive script, appearing to read "Jennifer W. Means", written over a horizontal dashed line.

Jennifer W. Means
Environmental Program Manager
District Oil and Gas Operations

cc:

~~Caleb Woolever~~
William J. Kosmer, P.G.
Sharon Steinbacher
Dave Engle
Complaint File 287198