



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION

June 9, 2016

**CERTIFIED MAIL NO.** [REDACTED]  
[REDACTED]

Re: Water Supply Request for Investigation DEP Identifier 299917  
Determination of Temporary Impact - 58 Pa. C.S §3218  
Kingsley Township, Forest County

Dear [REDACTED]

The Department has completed its investigation of your water supply at your camp. The Department has determined that the Water Supply was temporarily affected by oil and gas activities.

The Department received the attached proposal from Catalyst regarding the treatment of your Water Supply. The proposal has been reviewed by Licensed Professional Geologists for the Department who find it reasonable and complete, based on the most recent samples obtained on July 21, 2015. The Department agrees that the Water Supply changed throughout the quality monitoring, but has returned to pre-drill conditions. Catalyst has agreed to provide a treatment system for your Water Supply. The reasonable solution offered by Catalyst is expected to treat the levels of iron and manganese listed below.

Date of Complaint	Nature of Complaint (odor, taste, quantity, use, color)	Sample Results Above Statewide Standards or Recommended Levels	Pre-Drill Range	Post-Drill Range
September 13, 2013	Water was affected by drilling activities	Iron (ug/l)	364 - 1,424	1,300 - 2,230
		Manganese (ug/l)	538 - 677	610 - 720

Methane gas was detected in the Water Supply in a pre-drill sample from 2011. Post-drill sample results continue to detect methane gas in low levels within your water supply. These levels never met or exceeded the action level that the Department has set at 7 mg/l for methane gas in the water. Nor did they meet or exceed the action limit of 1.25% for gas in the headspace

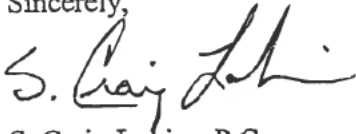
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above the water column in the water well casing. Placing a treatment system involving aeration for explosive gases on this Water Supply would not effectively decrease the methane gas level. Methane is the predominant component of natural gas. Drinking water standard limitations have not been established for methane gas and there are no known associated health risks. The true level of concern begins above 28 mg/l methane, which is what we call the saturation level. At this level, under normal atmospheric pressure, the water cannot hold additional methane. 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. The level of methane gas in your water supply at the time of the last sampling was 4.8 mg/l. It is the Department's recommendation that all water wells should be equipped with a working vent. The placement of a vent is included as a part of the Catalyst proposal.

There were some parameters within the volatile organic analysis results (benzene) which indicated an affect, possibly from crude oil in the locality. These levels have decreased to below the standards which have been set for drinking water aquifers. The carbon filters proposed by Catalyst for the treatment of the water have proven to be highly effective in removing trace amounts of hydrocarbons in water.

It is our desire that you consider the attached proposal. The Department regularly reviews proposals and oversees the complainant water supply restoration process. If you wish to discuss this information, please contact Licensed Professional Geologist Christine Miner at 814.332.6867.

Sincerely,



S. Craig Lobins, P.G.  
District Oil and Gas Manager  
Northwest District Oil and Gas Operations

Enclosures:

Proposal offered by Catalyst Energy  
Fact Sheet associated to interpreting your water analyses

cc: Mr. Frank DiGnazio, P.G.; VP Geology; (w/encl.)  
Brad Bassi, (w/encl.) [REDACTED]  
John Thomas (elec. w/encl.)  
Chad Meyer (elec. w/encl.)  
Christine J. Miner, P.G. (elec. w/encl.)  
File (through Joseph Lichtinger, P.G.) Forest County Complaints, DEP Identifier 299917