

November 2, 2021

CERTIFIED MAIL NO. [REDACTED]

Re: Water Supply Request for Investigation ID: 356598  
58 Pa.C.S. § 3218 Determination  
Delmar Township, Tioga County

Dear [REDACTED]

The Department of Environmental Protection (Department) has completed its investigation of your water supply located at the above referenced address ("Water Supply"), in response to a complaint received on May 10, 2021 that oil and gas activities may have resulted in excessive rust and the need to change water filters more frequently in the Water Supply. The Department's investigation has determined that the Water Supply was adversely affected by oil and gas activities, including but not limited to the drilling, alteration, or operation of an oil or gas well. The information upon which this determination is based is summarized below.

#### Summary of Investigation

The Department received a complaint that the Water Supply was experiencing excessive rust, the water had an oily feel, filter changes are required more frequently than normal, and a family member's skin is breaking out. The complaint alleged that these problems had been ongoing since March of 2021. On May 12, 2021, Department staff conducted a site visit and collected samples from the Water Supply. The samples were submitted to the Department's laboratory in Harrisburg for analysis. Those samples and a summary of the sample results were provided to you in a letter dated June 8, 2021. A summary table of water quality exceedances from the Department sample collected on May 12, 2021 is provided below. A summary table of pre-drill and post-drill water quality results is also provided with this letter.

Parameters	Unit	Statewide Standards or Recommended Levels	Your Highest Sample Results in Department Samples that were Detected Above Statewide Standards/Levels
Turbidity	NTU	1	5.4
Manganese	mg/L	0.05	0.755
Iron	mg/L	0.3	1.806
pH	pH Units	6.5-8.5	5.7

The Department's site visit and samples confirmed the presence of reddish brown sediment causing turbidity in the Water Supply. Comparison of pre-drill sample results to post-drill samples results confirmed that turbidity increased from less than 1 NTU to 5.4 NTU. The documented turbidity and iron increase coincided with ongoing oil and gas activity in the area. The oil and gas activity included active drilling operations through the same geologic formations in which the Water Supply is situated. In order

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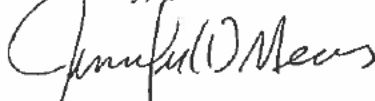
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to protect fresh groundwater, oil and gas operators are required to install well casing, known as surface casing. Once installed, surface casing mitigates risk to fresh groundwater and area water supplies; however, the disturbance created by actively drilling through an aquifer in order to install the surface casing may cause impacts such as turbidity in nearby water supplies.

The Department is continuing to work to permanently resolve this issue. Should you have any questions regarding the investigation, please contact Caleb Woolever at 570.327.0546.

Sincerely,



Jennifer W. Means  
Program Manager  
Eastern Oil and Gas District

Enclosures:  
Sample Results Table  
Fact Sheet

cc:  
Stephanie Wharton  
Caleb Woolever  
Matt Nuss  
Complaint File # 356598