



March 26, 2024

CERTIFIED MAIL NO. [REDACTED]

[REDACTED]

Re: Water Supply Request for Investigation #355977
25 Pa. Code § 78a.51(c) Determination
Franklin Township, Susquehanna 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 April 14, 2021 regarding turbid water. Based on the sample results and other information obtained to date, the Department has determined that the Water Supply was temporarily affected by oil and gas related activities but has returned to background conditions. The information upon which this determination is based is summarized below.

Summary of Investigation

Samples were collected from your Water Supply and analyzed by the Department’s laboratory in Harrisburg. The analytical reports for the most recent samples from your well were previously provided to you but have been summarized in the attached table for your convenience. An additional document is provided to assist you with interpreting the results.

On April 5, 2021, SWN Production Company, LLC (SWNPC) notified the Department of its discovery of a produced water release from buried utilities connected to the Hollenbeck Pad. This discovery led to SWNPC mobilizing crews to remediate the potentially contaminated soils. These events correlate with the appearance of turbid water in your Water Supply.

Field measurements of turbidity and analytical results collected before, during, and after the start of excavation on the northern side of Fork Hill Road indicate that your Water Supply was temporarily affected by the remedial excavation, rather than the release, itself. The act of excavation likely redirected recharge in the vicinity of the downgradient Water Supply well, causing the elevated aluminum, iron, manganese, and turbidity observed above pre-drill concentrations. These elevated concentrations significantly decreased once soil remediation and soil stabilization concluded.

The laboratory results of the samples collected from your Water Supply show no evidence that the high chloride levels characteristic of produced fluid ever reached your Water Supply. Regarding the released produced water, remedial excavation followed by comprehensive sampling and extended monitoring conducted by SWNPC resulted in an effective spill remediation consistent with Department standards.

While the Department determined that the water quality of your Water Supply has since returned to background levels, please do note that iron levels in your Water Supply are somewhat elevated. To address the concentrations of iron in your water supply, you may consider treatment. An additional document by the Penn State Extension is provided with additional information on iron removal in water supplies for further reading.

Please contact John R. Salinkas, P.G. at (570) 346-5532 if you have any questions about the Department's determination regarding the Water Supply.

Sincerely,



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

Enclosures:

Results Table
Iron and Manganese in Private Water Systems – Penn State Extension
Fact Sheet – Interpreting Water Supply Results

cc: Michael O'Donnell (email)
Briana Cunningham (email)
John Salinkas, P.G. (email)

Complaint File #: 355977

Table 1- Water Supply Well Laboratory Analytical Results

Results in mg/L unless otherwise noted.	11/5/2010 (PreDrill)	4/7/2021 (SWNPC)	4/14/2021 (SWNPC)	4/14/2021 (PADEP)	5/17/2021 (PADEP)	6/9/2021 (SWNPC)	7/19/2021 (SWNPC)	3/23/20 (SWNF)
Dissolved Gas								
Methane	<0.0010	~	~	<0.0116	<0.0116	~	~	~
Ethane	<0.0015	~	~	<0.0124	<0.0124	~	~	~
Propane	~	~	~	<0.0142	<0.0142	~	~	~
946 - General Chemistry and Metals								
Alkalinity	87	94.2	114	113.4	87.6	93.9	98.8	99.7
Aluminum	~	<0.010	0.523	0.368	0.0359	<0.010	<0.100	<0.10
Arsenic	<0.0100	<0.010	0.0008	<0.00300	<0.00300	<0.010	<0.00800	<0.008
Barium	0.0543	0.062	0.083	0.073	0.055	0.068	0.061	0.068
Bromide	~	<0.150	<0.150	<0.2	<0.2	<0.100	<0.362	<0.36
Calcium	18.5	23.5	23.3	23.63	24.12	24.4	27.1	23
Hardness	68	89.6	86	92	93	92.3	103	91.1
Iron	0.074	0.235	1.15	1.099	0.528	0.376	0.271	<0.20
Lithium	7.2	0.026	0.02	<0.0250	<0.0250	<0.012	0.0104	<0.010
Magnesium	6.97	7.53	8.08	8.01	7.96	7.62	8.65	8.15
Manganese	0.0006	0.007	0.052	0.045	0.015	0.031	<0.0200	<0.020
pH (units)	~	~	~	8	7.3	~	~	~
Potassium	0.916	0.997	1.42	1.37	<1.00	1.05	1.06	1.06
Selenium	~	<0.006	<0.002	<0.00700	<0.00700	<0.006	<0.0200	<0.010
Sodium	8.5	11.9	18.4	18.72	10.49	11.1	12.8	12.5
SPC (uS/cm)	~	210	246	258	218	225	235	233
Strontium	80.1	0.113	0.197	0.198	0.096	0.112	0.123	0.110
Total Chloride	4.05	4.55	5.62	5.02	4.8	5.04	<10.0	15.1
TDS	109	130	123	158	120	103	138	76
Total Sulfate	17.6	13.9	17.7	16.85	13.94	15	14.1	15.1
TSS	34.4	<5	13	10	<5	<5	<1.60	15.6
Turbidity (NTU)	~	2.20	16.00	12.40	4.88	3.10	1.96	~
Zinc	~	0.018	0.013	<0.0300	<0.0300	<0.010	<0.0200	<0.020

~ = Not analyzed * Denotes Primary MCL < Indicates analyte was not detected above the laboratory reporting limit.

** 7 mg/L represents the Department's official action level for dissolved methane in groundwater.

Exceeds applicable standard