



Pennsylvania
**Department of
Environmental Protection**

April 16, 2025

CERTIFIED MAIL NO. 9589 0710 5270 2523 8904 48

Re: Request for Investigation 365138
Stray Gas Migrating into Water Supply – Positive Determination Source Not Found
East Brady Borough, Clarion County

Dear [REDACTED]

The Pennsylvania Department of Environmental Protection (“Department”) has investigated the venting of natural gas from the abandoned water supply listed in Exhibit A (“Abandoned Water Supply”), in response to a complaint received on June 28, 2022. The Department’s investigation has determined that the Abandoned Water Supply is likely being adversely affected by oil and gas activities, including but not limited to the drilling, alteration, or operation of an oil or gas well and/or an associated pipeline; however, a specific source was not found. The case information is summarized below.

CASE INFORMATION:

Date of Complaint	Nature of Complaint (odor, taste, quantity, use, color)	Pollution
June 28, 2022	Natural gas venting from an abandoned water supply	Natural gas in an abandoned water supply

INVESTIGATION SUMMARY:

On June 28, 2022, National Fuel Gas (“NFG”) notified the Department of an abandoned water well venting natural gas at [REDACTED]. The water well was initially buried with a small diameter pipe sticking above ground venting gas. NFG checked their facilities in the immediate area and found no leaks. The water well was uncovered, and a camera was run into the well. The depth of the well was found to be 102.3 feet below the top of the casing (btoc) and the static water level in the well was 80 feet btoc. No bubbling or gas was observed during the camera run and it is believed that the gas is coming into the well between the top of the static water and the ground surface. One local resident communicated that the abandoned water well has been flared on an intermittent basis as far back as the 1950s.

There are five oil and gas wells identified on the Department's oil and gas mapping within 2,500 feet of the complaint. Four wells are located across the Allegheny River in Armstrong County, and one well is located in Brady Township, Clarion County. Three of the four wells in Armstrong County are active and were inspected during the investigation and the fourth well is listed as plugged and could not be located. The well located in Brady Township was registered during the investigation and is located approximately 2,240 feet from the complaint. Well registration records indicate that the active oil and gas wells are producing from the Fourth Sand of the Venango Group.

Historical documents and local residents suggest that several additional oil and gas wells were drilled in and around East Brady Borough. The locations of three of these wells were reported to be on the hillside above and within 800 feet of the Abandoned Water Supply. Multiple attempts were made to locate the historic oil and gas wells; however, no physical evidence was observed at the identified surface locations.

Four gas samples were collected and submitted to Isotech Laboratories Inc. for complete gas composition and isotopic analysis of methane, ethane, and propane. Gas samples were collected from the nearby oil and gas well in Brady Township (production and annular), the NFG pipeline station EBC-26, and from the abandoned water well at [REDACTED]. Each sample contained sufficient amounts of methane, ethane, and propane for isotopic analysis. The plots of the air-free gas composition, the $\delta^{13}\text{C}$ (‰) and δD (‰) values of methane, and the $\delta^{13}\text{C}$ of methane versus gas wetness (C_2^+ %) indicate that each of the samples are mature thermogenic gas formed with oil. The gas from the Abandoned Water Supply and the gas collected from the nearby oil and gas well are isotopically similar indicating an oil and gas well or gas pipeline may be the source of the stray gas venting from the abandoned water well.

In addition to the Abandoned Water Supply located at [REDACTED], two abandoned water wells located on adjacent properties were monitored for combustible gas during the investigation. No gas was detected in either of the two additional water wells except on one occasion when a small amount of gas (0.2% gas by volume) was detected in the water well located 1,150 feet east northeast of the abandoned water well venting gas.

The oil and gas well located in the Brady Township is a potential source of stray gas. Gas samples from the Abandoned Water Supply and those from the oil and gas well are isotopically similar; however, this is insufficient evidence to conclude that the oil and gas well is the source of gas. Conversely, the annular and production gas samples collected from the oil and gas well do show similarities, which suggests that the production gas is making its way into the well annulus and indicates that there may be a problem with the well. In addition, low levels of gas were detected in the soils surrounding the oil and gas well, which may also indicate a problem with the well. Based on these observations, additional testing is recommended to determine the integrity of the well. The Department will pursue the integrity of the oil and gas well as a separate matter.

The active oil wells located in Armstrong County and within 2,500 feet of the complaint are also a potential source of stray gas. However, based on indications that the gas is coming into the Abandoned Water Supply above the static water level at 80 feet btoc, and the elevations of the oil wells located in Armstrong County (~850 feet amsl), it is possible, but unlikely that these wells are contributing to the stray gas found in the Abandoned Water Supply.

Based on the review of oil and gas mapping, geologic mapping, water and gas sample results, homeowner interviews, field surveys, and the monitoring of nearby abandoned water wells, the Department determines that the Abandoned Water Supply is likely being impacted by historic oil and gas activities; however, a specific source of gas could not be found. It is likely that an undocumented historic oil and gas well is impacting the Abandoned Water Supply.

The Department recommends that the Abandoned Water Supply continue to be vented. 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 a water supply by simply venting the well. Please refer to the enclosed Fact Sheet: Methane Gas and Water Wells for additional information on venting water wells.

Please be aware that methane levels in water supplies can fluctuate. Changing conditions can allow gas to migrate to basements and crawlspaces. Consequently, 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. Please refer to the enclosed Fact Sheet: Methane Migration into Occupied Buildings for additional details on methane migration.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board) pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street
P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984.

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

A Notice of Appeal form and the Board's rules of practice and procedure may be obtained online at www.ehb.pa.gov or by contacting the Secretary to the Board at 717-787-3483. The Notice of

Appeal form and the Board's rules are also available in braille and on audiotape from the Secretary to the Board.

IMPORTANT LEGAL RIGHTS ARE AT STAKE. YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD AT 717-787-3483 FOR MORE INFORMATION. YOU DO NOT NEED A LAWYER TO FILE A NOTICE OF APPEAL WITH THE BOARD.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

This letter formally closes the complaint. If you have any questions, please contact Aaron O'Hara by phone at 814.308.3118 or by email at aaohara@pa.gov.

Sincerely,

Scott M. Dudzic

Scott M. Dudzic
Northwest District Oil and Gas Manager
District Oil and Gas Operations

Enclosures:

Exhibit A
DEP Fact Sheet: Methane Migration into Occupied Buildings
DEP Fact Sheet: Methane Gas and Water Wells

c: Joe Lichtinger (elec. w/encl.)
Dave Adams (elec. w/encl.)
Adam Hartle (elec. w/encl.)
Johnathan Frederick (elec. w/encl.)
Jennifer McDonough, OCC (elec. w/encl.)
Paul Strobel, OCC (elec. w/encl.)

Exhibit A

