

Quarries and Water Supplies – Frequently Asked Questions

Surface noncoal mine operators have a legal obligation to protect water supplies near their mines. According to state law, if a water supply is affected by mining, the operator must restore or replace the supply to meet the needs of the user. This fact sheet answers commonly asked questions about mining and water supplies and explains the rights and responsibilities of the noncoal mine operator and the water supply owner.

How are quarries regulated in Pennsylvania?

The Pennsylvania Department of Environmental Protection (DEP) regulates all mining in the state. Pennsylvania's noncoal mining regulations are found under Title 25, Chapter 77 in the Pa. Code (accessible at www.pacode.com or inquire at the local DEP District Mining Office). Those regulations are based on the Noncoal Surface Mining Conservation and Reclamation Act (Pennsylvania Environmental Statutes, Title 52, Sections 3301-3326). The regulations and statutes authorize DEP to protect public health and safety and the environment.

What happens before a new quarry permit is approved?

As part of an application to mine, quarry operators are required to collect information about pre-mining groundwater conditions and uses and identify water supplies that may be susceptible to the effects of the proposed mining.

Operators are required to document the quantity and quality of water delivered by a private supply. The documentation can include data obtained by measuring water levels and/or volumes, collecting water samples, and conducting pumping tests on existing or monitoring wells to characterize the aquifer(s) and determine the potential effects from proposed mining.

Based on the data collected, a plan is developed to regularly monitor groundwater to track any effects from mining. This plan is included as part of the mine application. This application is available at the District Mining Office where the permit application is under review or at a local location specified in the application public notice.

If a resident has information regarding the local groundwater conditions or other concerns about the proposed mine, they may provide that information to DEP during the public comment period, or at a public meeting or conference that may be requested prior to permit issuance/denial.

How can a quarry affect water supplies?

Quarry operations are long-term land uses that progress in width and depth over time. When the mining proceeds below the water table, the operator must begin pumping the inflow of groundwater out of the quarry to continue mining. This pumping can lower the groundwater levels in areas around the permit and is called *drawdown*. Lowering the groundwater table may cause surrounding well levels to drop and decrease volume of wells or springs.

Drawdown is greatest nearest the quarry and is generally less with distance from the quarry, forming a cone-like shape with the quarry at the center. The areal extent of this shape is called the zone of influence. The zone of influence is not fixed and is affected by pumping at the mine, geological factors, and the amount of precipitation and other recharge (water input) to the aquifer. A mathematical model may have been constructed as part of the application information to predict the extent of drawdown at different stages of mining. This model is only an approximation and other variables can affect the drawdown at a specific point (including a neighbor's pumping well).

Private water supplies may be within the quarry's pumping zone of influence and may be affected to the degree that the property owner will notice a change in the quality or quantity of the water supply. Under Pennsylvania laws regarding groundwater, it is not illegal for the quarry activity to affect residents' water, but it is illegal if the quarry fails to restore a water supply to its intended use.

If a resident feels the effects of blasting at their home, does it affect their well?

Regulations establish strict limits for blasting that are designed to fracture only the rock within the quarry and prevent damage to homes and other structures beyond the permit boundary. Residents may feel blast vibrations, but these vibrations rarely affect water supplies. Blasting may cause cloudy water or slightly lowered the water level in some water supplies, but these effects are generally temporary and do not indicate physical damage to the water supply. However, if these conditions persist, contact DEP.

What happens if a resident suspects their water supply has been impacted by mining?

A water supply owner or user who suspects that mining activity has caused or contributed to a problem with a water supply can contact the mining company who may respond independently. Or they may file a complaint with DEP. If a complaint is filed, an inspector and/or a geologist from the local District Mining Office will investigate and determine whether mining caused the problem. The water supply owner or user is expected to supply details of the problem and agree to inspection or testing of the water supply by DEP or the mining company. If requested, DEP will keep the complaint confidential for as long as possible. However, certain actions to test and or replace the supply will require the confidentiality to be lifted.

Bacteriological contamination is rarely caused by mining activity. Mining activities do not introduce bacteria into the aquifer, and it is highly unusual for blasting to fracture the ground, pipes or well seal to allow bacteria into the well. Bacteria is more likely caused by a poor water supply location (such as near a septic system), shallow well depth that does not allow for natural filtering, faulty construction of a seal or casing, or deterioration of the well.

Experienced DEP personnel will try to complete an investigation as soon as possible. If a resident is without water and there is potential that the mining company is responsible, DEP may require the operator to provide a temporary source of water. An investigation may take several weeks or more because DEP must base its decisions on scientific fact and solid evidence.

Who pays for water supply restoration or replacement?

If mining activity is determined to have caused contamination, diminution or interruption of a water supply, the mine operator must bear the cost of restoring or replacing the water supply. The restored or replaced water supply must be of adequate quantity and quality for the purposes served and any reasonably foreseeable uses. DEP will take appropriate action to assure that the mine operator complies with its legal obligations to restore or replace the supply.

If a restored or replacement water supply has operation and maintenance costs that exceed the costs associated with the original supply, the mining company is responsible to provide permanent payment of the increased costs. For example, if the new supply is a connection to a public source, the mining company pays the hookup fee and water bill for the amount over which it cost the resident to use the previous well as the supply.

If the mining company is not found to be responsible, the individual owner of the water supply bears responsibility for restoration or replacement.

What if a resident has replaced their well and later believes that the mining company may have been responsible?

Reimbursement for these costs may not be easy to obtain from the mining company. DEP may be able to establish responsibility for the loss if adequate information can be documented from the homeowner and a hydrological connection can be made to the mining activity. The operator may dispute the costs paid by the homeowner if the costs are higher than an average well replacement for the area. Residents who suspect that a mining activity affected their water supply should contact DEP as soon as possible, keep accurate records, and retain all documentation, such as receipts and multiple estimates for well replacement if obtained.

To report any complaint related to a mining operation, contact the appropriate DEP District Mining Office.

Knox District Mining Office

White Memorial Building
P.O. Box 669
Knox, PA 16232-0669
Phone: 814-797-1191
Fax: 814-797-2706

Moshannon District Mining Office

186 Enterprise Drive
Philipsburg, PA 16866
Phone: 814-342-8200
Fax: 814-342-8216

Pottsville District Mining Office

5 West Laurel Boulevard
Pottsville, PA 17901-2522
Phone: 570-621-3118
Fax: 570-621-3110

New Stanton District Mining Office

131 Broadview Road
New Stanton, PA 15672
Phone: 724-925-5500
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Cambria District Mining Office

286 Industrial Park Road
Ebensburg, PA 15931
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For more information, visit www.dep.pa.gov.