

Some regions of Pennsylvania have their own special problems. Where farming is common, there may be a problem with fertilizers, pesticides and herbicides (weed and bug killers) sneaking into the groundwater. The pesticides and insecticides usually have toxic chemicals in them, like the hazardous waste mentioned earlier.

## Nitrates

Fertilizer is a little different story. When we put too much fertilizer on a field or garden, excess nitrates (a form of nitrogen used in fertilizers) get into the water system. Nitrates in our water may cause diarrhea in humans and several illnesses in cattle. Nitrates also can cause a disease known as “blue baby” syndrome, which can cause fetuses and infants under three months of age to suffocate.

Animal manure from farms is used as fertilizer for crops. Manure is typically the biggest source of excess nitrogen in water in agricultural areas. The general problem is that animal farms usually produce more manure than the crops need.

## Acid mine drainage

Those areas where coal has been mined have another problem. Coal seams almost always have some pyrite in them. Pyrite is the mineral most of us call “fool’s gold.” Pyrite is made of sulfur and iron. When coal is mined or exposed to air, the pyrite oxidizes (combines with the oxygen) and the sulfur in the pyrite forms sulfuric acid and the iron precipitates (forms). The problems occur when the sulfuric acid drains into our groundwater and streams. The familiar orange color found in streams in coal mining areas is from iron. The problem is called ACID MINE DRAINAGE.

## Radioactive substances

Naturally occurring radioactive substances (called radionuclides) are responsible for another possible groundwater problem in some parts of the state. Groundwater in contact with radionuclides such as uranium, radium and radon will pick up some amount of them just from contact with the rock.

If concentrations are high enough in our groundwater, then the water may no longer be safe to drink.

Small amounts of radioactive wastes are also produced by biological laboratories and hospitals. There’s not much chance that these wastes will be leached out by rainwater, but they do need to be disposed of carefully, too.

