

THE RED WATERFALL

Demonstrating acid mine drainage

The water here is acid and iron-rich, coming up to the surface from underground mines, staining the rocks rust-red. Acid mine drainage (AMD) is a major source of water pollution and the cause of extensive stream degradation and environmental damage.

Where does this mine water come from?

The Ocean Coal Company, a subsidiary of Berwind-White Coal Company of Philadelphia, PA, established several mines in this region including, in 1900, Ocean No. 2. It is purported that drainage from Ocean No. 2 is the chief cause of the Red Waterfall.

Why is it acidic and full of iron?

Hundreds of millions of years ago, the massive Pittsburgh Coal Seam formed underneath parts of Pennsylvania, West Virginia, and Ohio from ancient swamp plants. Sand, silts, shells, and other matter were deposited and made a rock seal over the carbon-rich vegetation. This rock contained the mineral "pyrite," made of iron and sulfur.

Coal mining exposes pyrite to oxygen and ground water causing the formation of sulfuric acid and a number of red, orange, and yellow compounds. AMD occurs when this mine water seeps, or in this case, bursts out into streams. The yellow sulfur can be seen in the shale near coal seams.



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Acid mine drainage mars the landscape and impacts water quality.