
Subject: : Conservation

Topic: : Acid Rain and Un-surveyed streams

Re: Acid Rain and Un-surveyed streams

Author: : tomgamber

Date: : 2013/8/25 20:17:44

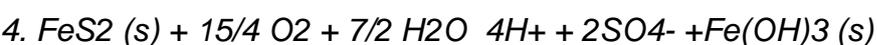
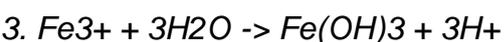
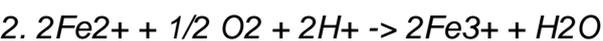
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AMD:

Acid Mine Drainage (AMD) is produced when sulfide-bearing material is exposed to oxygen and water. The production of AMD usually – but not exclusively – occurs in iron sulfide-aggregated rocks. Although this process occurs naturally, mining can promote AMD generation simply through increasing the quantity of sulfides exposed. Naturally-occurring bacteria can accelerate AMD production by assisting in the breakdown of sulfide minerals.

AMD causes:

When mineral deposits that contain sulfides are mined, they have the potential to produce acid mine drainage. This includes the mining of coal, copper, gold, silver, zinc, lead, and uranium. The mineral pyrite, more commonly known as "fool's gold," is iron disulfide (FeS₂). Pyrite is one of the most important sulfides found in the waste rock of mines. When exposed to water and oxygen, it can react to form sulfuric acid (H₂SO₄). The following oxidation and reduction reactions express the breakdown of pyrite that leads to acid mine drainage.



Production of acid mine drainage can occur long after mines have been abandoned if piles of waste rock are in contact with air and water. The red color often seen in streams receiving acid mine drainage is actually a stain on the rocks called "Yellow-Boy," or ferrous hydroxide (Fe(OH)₃) formed during Reaction 3 above.

Acid Rain:

Acidic deposition, or acid rain as it is commonly known, occurs when emissions of sulfur dioxide (SO₂) and Ox-ides of nitrogen (NO_x) react in the atmosphere with water, oxygen, and oxidants to form various acidic compounds. These compounds then fall to the earth in either dry form (such as gas and particles) or wet form (such as rain, snow, and fog). Prevailing winds transport the compounds, sometimes hundreds of miles, across state and national borders.

Acid rain causes:

Power plants, industrial manufacturing, and motor vehicles are all sources of pollutants that are ingredients of acid rain. These pollutants become part of the air masses circulating in the upper atmosphere, which flow predominately into the Northeast. The industrial Midwest is responsible for about half the sulfur dioxide emissions east of the Mississippi. The state of Ohio produces two times more tons of sulfur dioxide than all of New England, New York, and New Jersey put together. It is pollutants from these distant sources that contribute to damages in the Northeast environment.

These excerpts most accurately convey my understanding of these two different problems. I didn't look long...just for "quips" that felt I most agreed with.

So my question is (and I kind of cruised thru most of this thread) what is the question? argument? disagreement here? And just in case Pat answers...give me the short version. I'm just passing thru.