LEAKS, SPILLS, AND ACCIDENTS
Mining waste products—typically containing sodium cyanide, calcium oxide, and potassium amyl xanthate—regularly escape into the environment. A recent study of gold mines in the U.S. found that 100% of the mines studied—representing 93% of gold produced in the United States in 2013—experienced an accidental release of hazardous materials.

Recent examples of hazardous releases and accidents include the following:
• The Haile Gold Mine in South Carolina has multiple water quality violations including releasing excessive amounts of thallium, a toxic metal, into a nearby creek in 2020. The mine did not self-report the pollution until years after its operations began.
• In 2015, an accident at a wastewater pond in Colorado released more than 3 million gallons of gold mining waste into the Animas River watershed, a primary source of drinking water for Colorado, New Mexico, Utah, and the Navajo Nation.
• Accidents also threaten the health and safety of mine employees. In the U.S. in 2020, there were at least 797 injuries from accidents at metal mines.

ACID MINE DRAINAGE
Open-pit waste dumps can contain pyrite and other sulfides that are unearthed during the mining process. Rainwater oxidizes these compounds, which acidifies the waste. Acid mine drainage occurs when acidic waste escapes into the surrounding environment through runoff or infrastructure failures. As it travels downstream, acid mine drainage leaches toxic metals from rocks into surface and groundwater resources, thereby posing a serious threat to human health and the environment.

In Prince William County, Virginia, acidic drainage from an abandoned pyrite mine was found to have leached dangerously high levels of cadmium, copper, lead and zinc. Each of these toxic metals accumulate in fish and, if ingested in excess quantities, are hazardous to human health:
• Cadmium and copper can damage the lungs and kidneys and irritate the digestive tract.
• Lead damages the brain and kidneys and can cause reproductive harm.
• Zinc damages the pancreas and may cause anemia.

AIRBORNE POLLUTANTS
Gold mining generates dust and airborne pollutants that are carried by wind into surrounding communities. Soil contaminated with toxic metals poses a substantial risk to small children, who are more likely to accidentally ingest soil through crawling and playing, and who are physiologically more vulnerable to metal poisoning. In addition, toxic metals present in soil may bioaccumulate in crops.

Exposure to small-particle pollutants, which travel much greater distances and are more harmful to human health than large-particle pollutants, has been linked to:
• Heart attacks;
• Asthma;
• Decreased lung function;
• Respiratory symptoms, such as coughing or difficulty breathing; and
• Premature death in individuals with heart and lung disease.
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