

Abandonment plan

See closure plan.

Acid Mine Drainage (AMD)

The outflow of acidic water from metal mines. After being exposed to air and water, oxidation of metal sulfides (often pyrite, which is iron-sulfide) within the surrounding rock and overburden generates acidity.

Acid Rock Drainage (ARD)

See Acid Mine Drainage.

Acute exposure

A single exposure to a toxic substance which may result in severe biological harm or death; acute exposures are usually characterized as lasting no longer than a day.

Aggregate

Coarse material in the earth, such as sand, gravel, and limestone, that is mined for use in the construction industry.

Alluvium

Relatively recent deposits of sedimentary material laid down in river beds, floodplains, lakes, or at the base of mountain slopes (adj. alluvial).

Assay

A chemical test performed on a sample of ores or minerals to determine the amount of valuable metals contained.

Backfill

Mine waste or rock used to refill voids in mined areas, including open-pit and underground mines.

Base metal

Any non-precious metal (e.g., copper, lead, zinc, nickel).

Basic rocks

Igneous rocks that are relatively low in silica and composed mostly of dark-colored minerals.

Beneficiation

The concentrating or enriching of the valuable minerals in an ore.

Borehole

A vertical shaft drilled in ground, usually for the purpose of collecting soil samples, groundwater samples, or rock cores,

Chronic exposure

Continuous exposure to a toxin over an extended period of time, often measured in months or years.

Closure plan

Set of measures designed to ensure that mining operations are developed and operated with a sound strategy and the financial resources necessary for the eventual closure of the operation. A closure plan must include a guide to deactivate, stabilize, and perform long-term surveillance of waste management units or facilities.

Contamination

Action of introducing hazardous substances (or excessive amounts of substances not usually hazardous) to the environment, causing negative environmental impacts.

Contingency plan

A strategy and set of actions for responding to a specific situation in which something goes wrong (spill, fire, natural disaster, and other emergencies). Contingency plans prepare companies to respond to all possible worst-case scenarios.

Cyanide

Any chemical compound that contains the cyano group (CN), which consists of a carbon atom triple-bonded to a nitrogen atom. Inorganic cyanides are generally salts of the anion CN^- . There are many cyanide compounds - some are gases and others are solids or liquids. Those that can release the cyanide ion CN^- are highly toxic.

Cyanidation

Extracting exposed gold or silver grains from crushed or ground ore by dissolving it in a weak cyanide solution (in tanks inside a mill or in heaps of ore, outdoors).

Degradation

Reduction or loss of the overall environmental quality, or of one environmental component (e.g., water quality).

Deposit

A natural occurrence of a useful mineral ore in sufficient extent and concentration to be profitably mined.

Dry Tailings Disposal

A method for the disposal of tailings in which tailings are first dewatered and then disposed of on land as a paste in a landfill or as backfill.

Effluent

The discharge of a pollutant from a facility or industrial process in a liquid form (also called liquid waste).

Emission

The act of emitting, releasing, or discharging a substance to the natural environment (e.g., air pollutant emissions from a stationary or mobile source).

Extraction

The process of mining and removal of ore from a mine.

Fugitive emission

Unintended or irregular releases of gases, vapors, or dust, not from a discrete point source.

Groundwater Drawdown

The lowering of the groundwater level as a result of the overuse (over abstraction) of groundwater.

Habitat

The natural physical environment that surrounds, influences, and is utilized by a species.

Hazardous material

Harmful solids, liquids, or gases that impact people, other living organisms, property, or the environment (e.g., materials which are explosive, poisonous, chemically active (including acids and other corrosives), radioactive, or biologically active (including medical wastes)).

Heap Leach Pad

A lined, relatively flat, constructed area with solution containment features, on which ore is loaded and then leached with a solution to dissolve and recover minerals.

Heavy metal

Elements that exhibit metallic properties. Many different definitions have been proposed – some based on density, some on atomic number or atomic weight, and some on chemical properties or toxicity. The term heavy metal has been called a “misinterpretation” by the International Union of Pure and Applied Chemistry (IUPAC), due to the contradictory definitions and its lack of a “coherent scientific basis.” There is an alternative term “toxic metal,” for which there is also no consensus on a definition.

Hydrometallurgical

Referring to a process or method in which metals are extracted or purified from their source using water-based chemicals.

Impact

Change (positive or negative) in the natural or human environment, as a direct or indirect result of an action or proposal.

In situ

In mining, in situ refers to the extraction of minerals from ore that is left in place in the ground.

Kinetic Testing

In mining, a chemical test in which a sample is examined for its potential to cause Acid Mine Drainage by subjecting the sample to conditions (e.g., humidity and exposure to air) that approximate natural weathering of the sample.

Leaching

In mining, the use of cyanide in water, or other chemical, that is applied on top of finely crushed ore to dissolve and extract the desired metal (typically gold or copper).

Metal

Chemical element, compound, or alloy characterized by high electrical conductivity. Metal is a good conductor of heat and forms cations and ionic bonds with non-metals.

Mineral

An inorganic compound occurring naturally in the earth's crust, with a distinctive set of physical properties, and a definite chemical composition.

Mitigation measure

Measures considered necessary to prevent, reduce and, where possible, remedy or offset any significant adverse impact on the environment.

Monitoring plan

Set of measures designed to continuously or repeatedly collect comparative information or measurements in the environment, to evaluate whether the performance of a mining project adheres to required standards and does not adversely impact the environment.

Operator

Company or group conducting a project's activities. The operator could be the owner or one of the owners in a collective business project.

Open pit

A mine pit that is entirely open to the surface. Also referred to as open-cut or open-cast mine.

Ore

The naturally occurring material from which a mineral or minerals can be extracted. The term is generally used to refer to metallic material, and is often modified by the names of the valuable constituent (e.g., iron ore).

Overburden

Layers of soil and rock covering an ore deposit. Overburden is removed prior to surface mining and should be replaced after the metallic ore is taken from the ground.

Placer

A deposit of sand and gravel containing valuable metals such as gold, tin, or diamonds.

Pyrometallurgical

Referring to a process or method in which metals are extracted or purified from their source using very high temperatures (e.g., smelting or roasting).

Reclamation

The reconstruction of the landscape in which a mine operated in order to make it possible for the landscape to be once again safely used for other purposes.

Rehabilitation

Cleanup process to return an area to acceptable conditions, but not necessarily to the original condition.

Restoration

The act of repairing damage to a site caused by human activity, industry, or natural disasters. The ideal environmental restoration is to restore the site as closely as possible to its natural condition before it was disturbed.

Sampling (mineral)

Cutting a representative part of an ore deposit, which should truly represent its average value.

Shaft

A primary vertical or non-vertical opening through mine strata used for ventilation or drainage and/or for hoisting of personnel or materials; connects the surface with underground workings.

Static Testing

In mining, a chemical test in which a sample is examined for its potential to cause Acid Mine Drainage by accounting for the ratio of acid and alkaline components in the sample.

Suspended Solids

When referring to water quality, very small solid particles that remain suspended in the water. Excessive levels of suspended solids impair the drinkability and suitability of water for aquatic life.

Stripping ratio

The unit amount of overburden that must be removed to gain access to a similar unit amount of mineral material.

Surface mine

A mine in which the ore lies near the surface and can be extracted by removing the covering layers of rock and soil.

Tailings

Material rejected from a mill after most of the recoverable valuable minerals have been extracted.

Tailings pond

A low-lying depression used to confine tailings from the mine operation, the prime function of which is to allow enough time for heavy metals to settle out or for cyanide to be destroyed before water is either recycled back into the mill operation or treated before discharge into the local watershed.

Toxicity

The degree to which a substance is able to damage an exposed organism. Toxicity can refer to the effect on a whole organism, such as an animal, bacterium, or plant, as well as the effect on a substructure of the organism, such as a cell (cytotoxicity) or an organ (organotoxicity), such as the liver (hepatotoxicity).

Underground mine

Also known as a “deep” mine. Usually located several hundred feet below the earth’s surface. An underground mine’s ore is removed mechanically and transferred by shuttle car or conveyor to the surface.

Waste

Barren rock or mineralized material that is too low in grade to be economically processed.

Water Balance

The net sum of liquid inflows and outflows for a given system.