

Important Terms of Underground Mining
Some Examples for Underground Mining

Important Terms of Surface Mining
Some Examples for Surface Mining

Mining Terms

Types of Mining

Types of Mining

Surface Mining:

Open Pit Mining: Massive stock-work deposits –gold, copper

Strip Mining: Bedded deposits –coal, phosphates

Quarry Mining: aggregates, marble, granite

Placer Mining: minerals in alluvium –Gold, Titanium

Solution Mining For any mineral that is in or may be transported in a liquid state – oil,
copper, sulphur, uranium, salt

Underground Mining

Conventional Mining: Large veins or massive deposits

Continuous Mining: Vein & Bedded Deposits

Some Examples for Surface Mining

Open Cast Mining

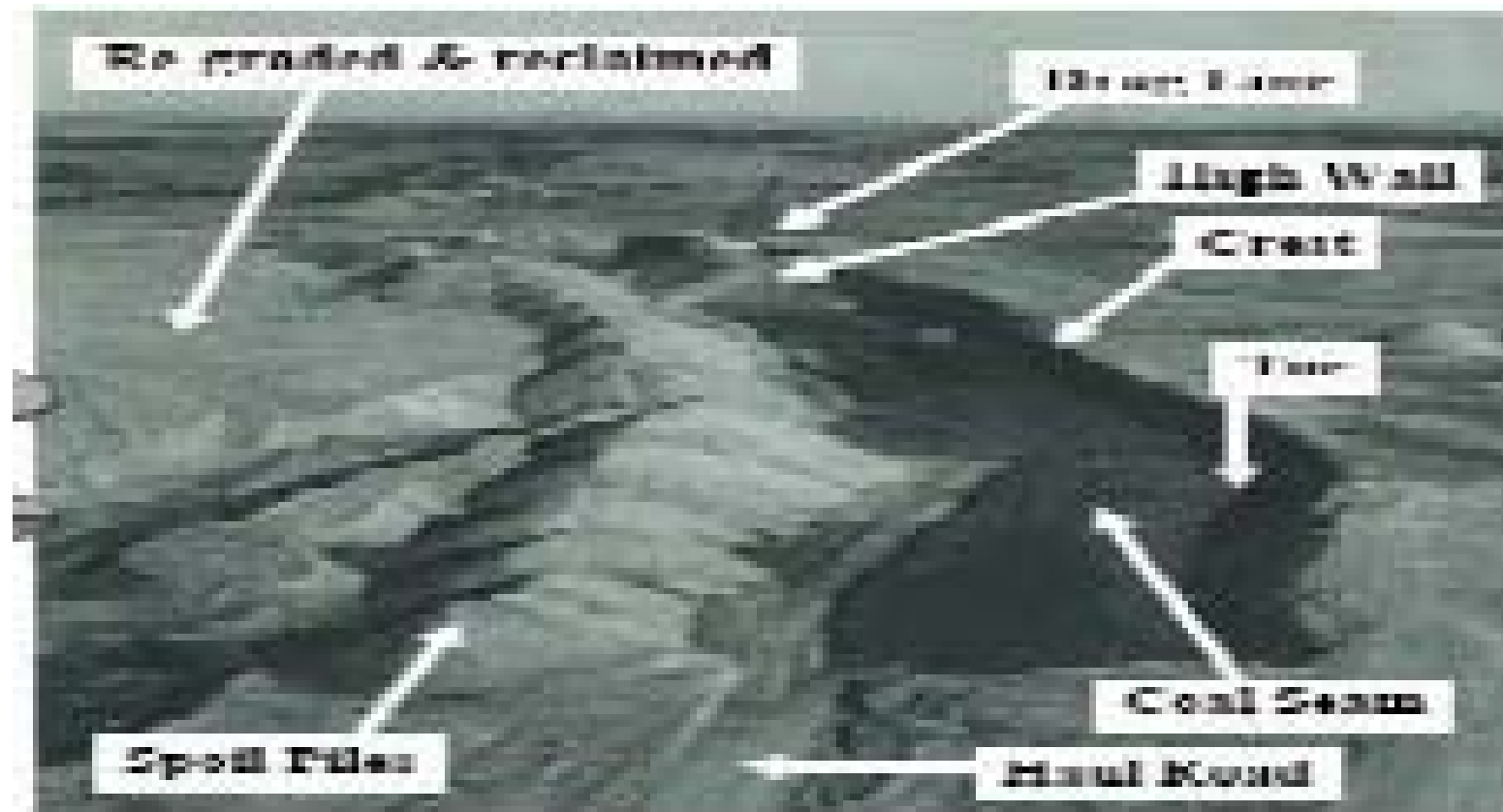


Open Pit Mining

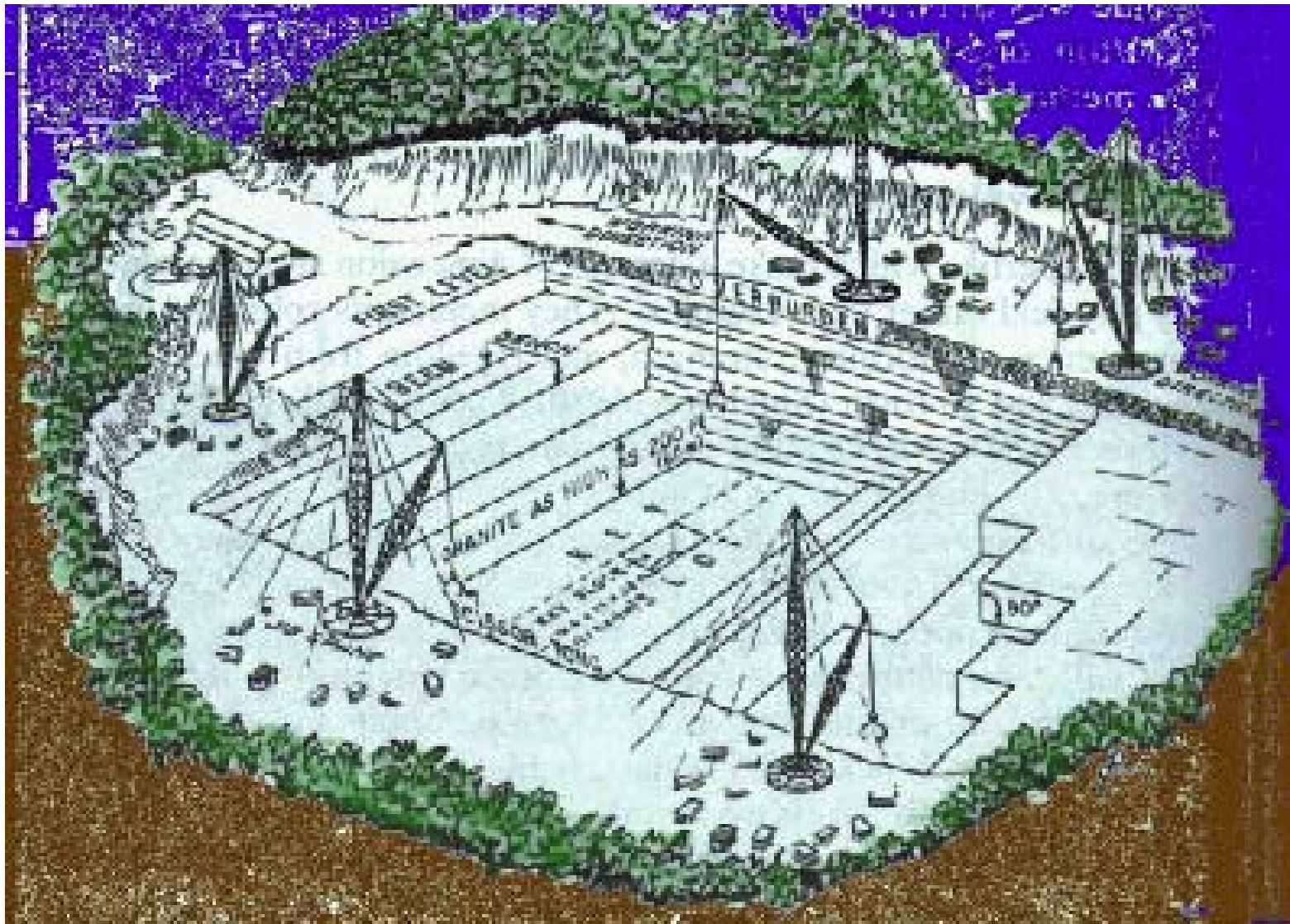




Strip Mining

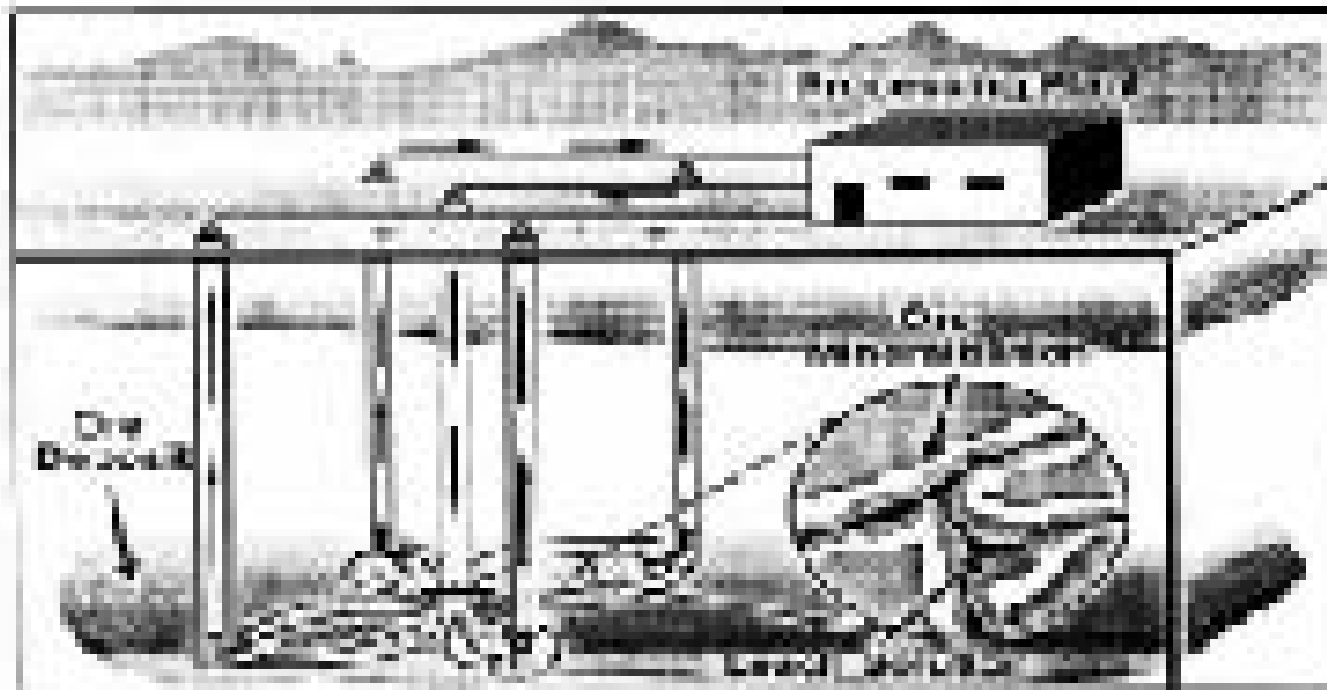


Quarry Mining



Placer Mining

Solution Mining



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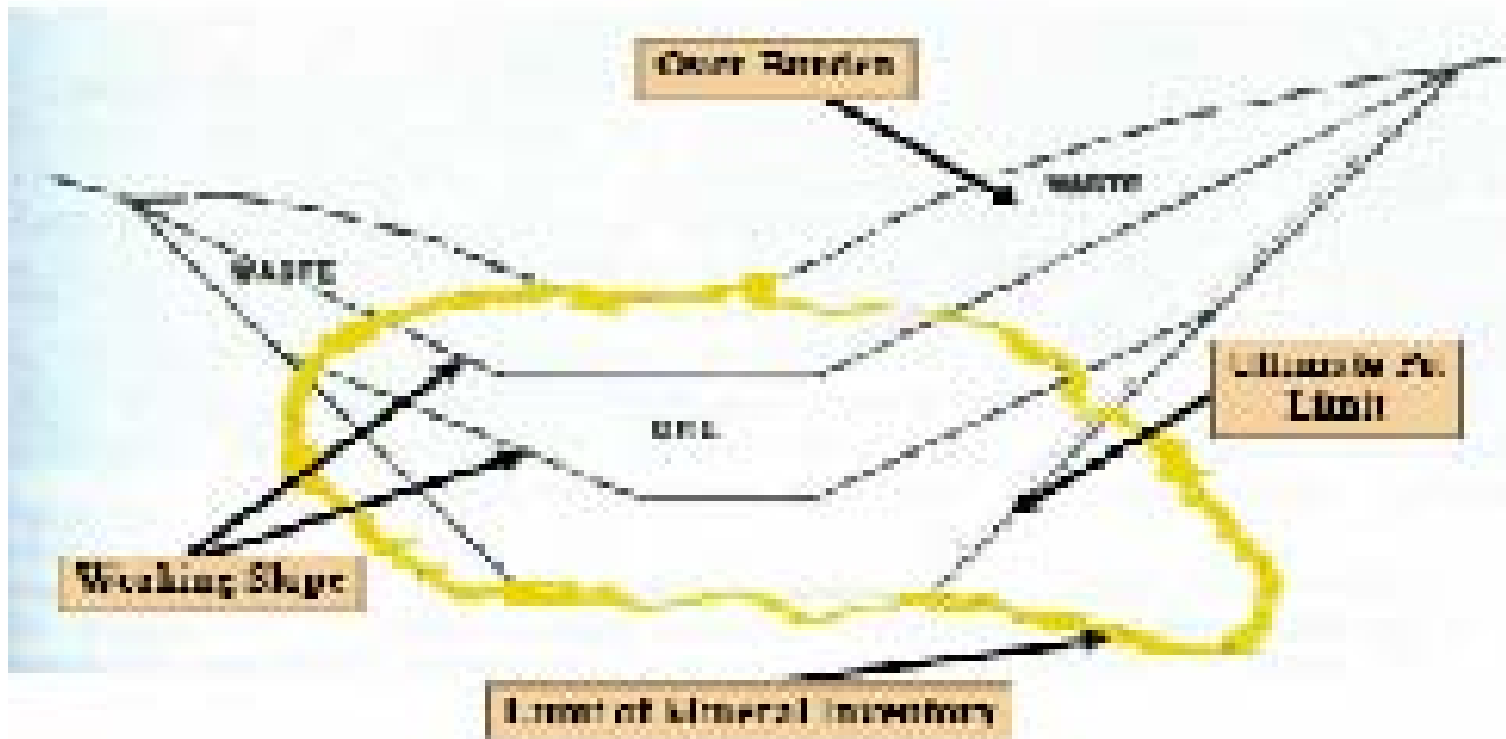
Eimco Dash Two Continuous Miner



Important Terms for Surface Mining

Open Pit Mine (metals)

Important Surface Mining Terms



Bench: is a ledge which forms a single level of operation where ore and waste are excavated.

Berm: is a horizontal shelf or ledge built in to a sloping wall of an open pit or quarry for protection under level.

High Wall: is an unexcavated face or slope of rock between benches.

Overburden: is non-valuable minerals above ore which must be removed to extract the ore.

Pit Limit: is the maximum vertical and lateral extent which may be excavated economically in an open pit mine.

Pit Slope: is the angle from the horizontal which the wall of a open pit stands as measured from crest to toe.

Spoil: is the overburden or non-ore material removed in gaining access to the ore.

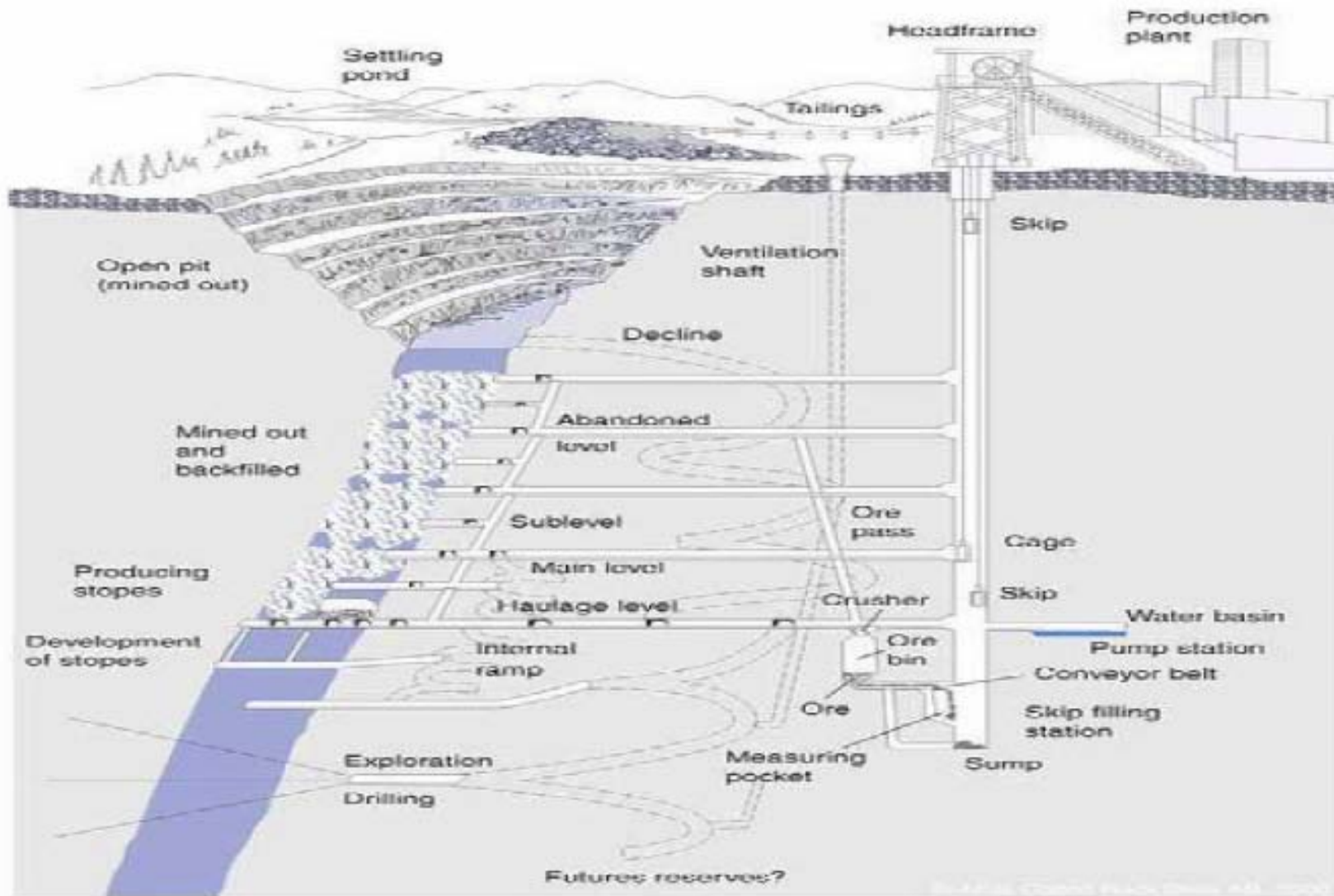
Stripping: is the removal of overburden.

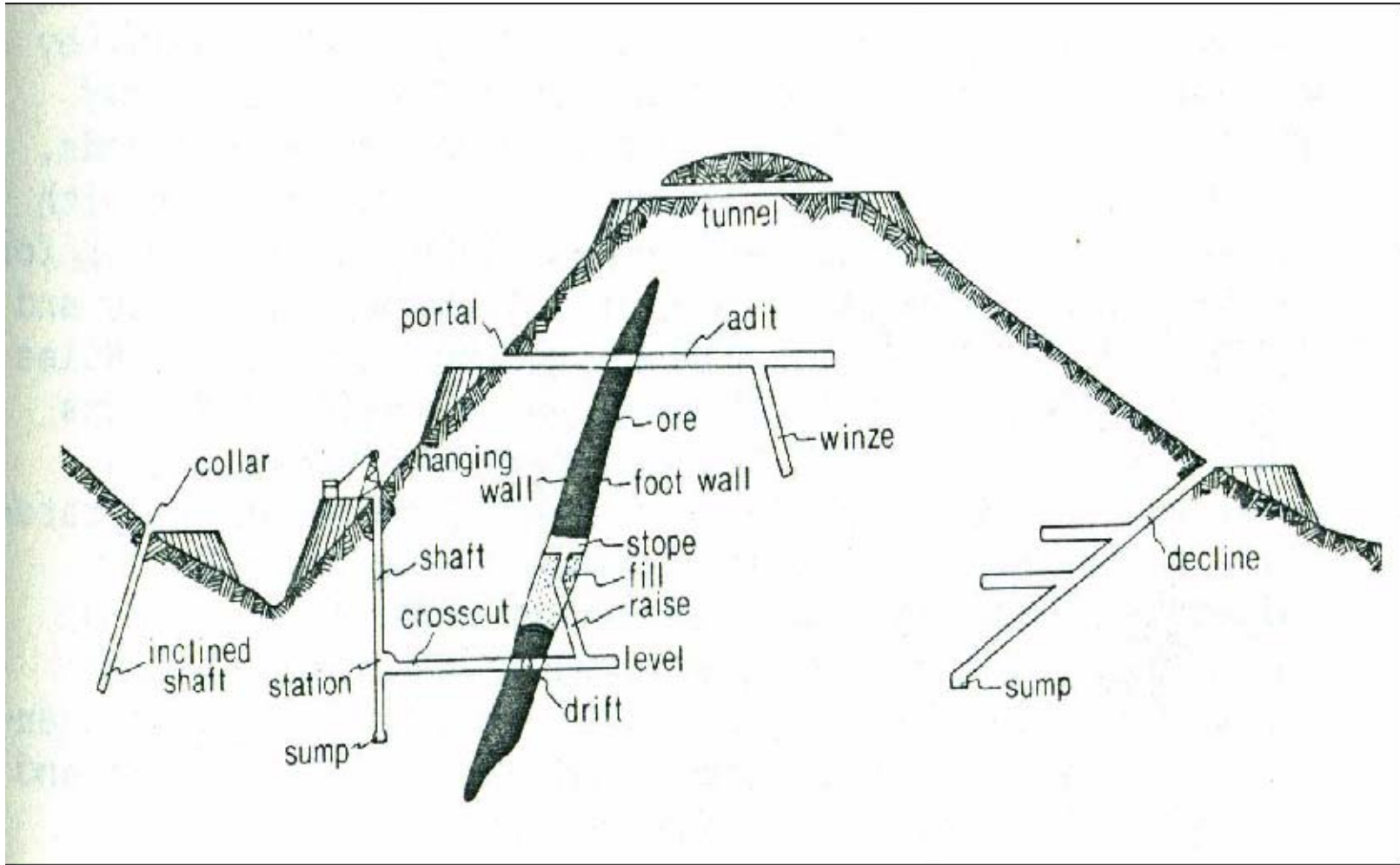
Stripping Ratio: is the ratio of a unit of waste material removed per similar unit of ore material removed.

Toe: is the base of a bank bench or a slope.

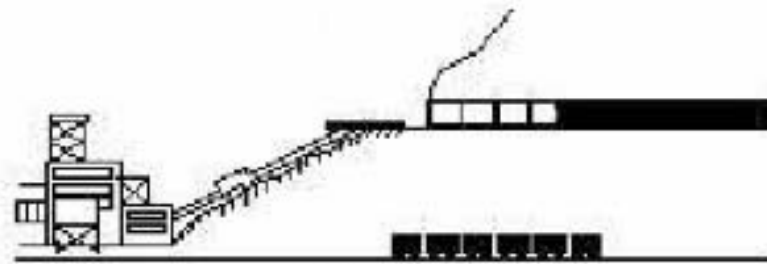
Waste Dump: is a place where waste materials are piled.

Important Terms for Underground Mining

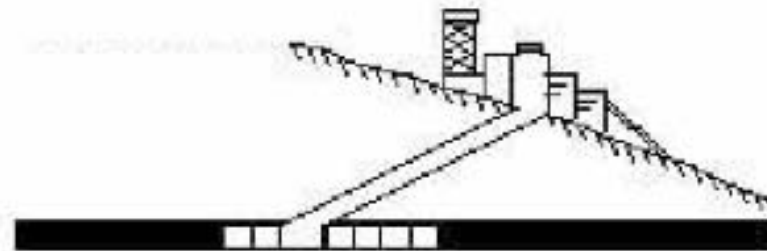




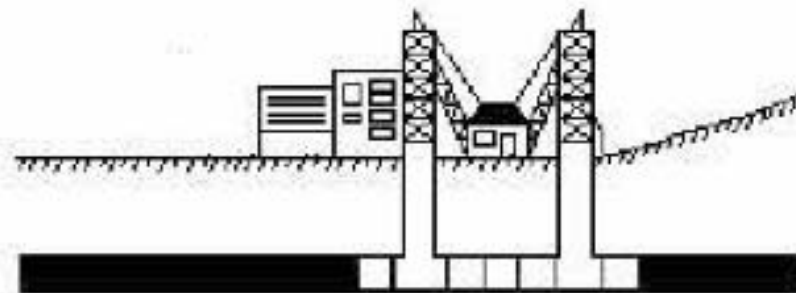
Types of Underground Coal Mining by Access



Slope Mine



Drift Mine



Shaft Mine

Adit: A horizontal or nearly horizontal passage driven into a hill or mountain. It does not go completely through the hill or mountain.

Apex: The upper most terminal edge of the vein on the surface or its nearest point to the surface.

Collar: The support devices around the opening or top of a shaft.

Country Rock: Rock in which the ore deposit is enclosed.

Crosscut: A horizontal opening driven across the course of a vein structure.

Decline: A slightly inclined opening which usually starts at the surface. It may be traveled by foot or rubber wheeled vehicle.

Draw Point: A rock loading station which is at the bottom of a vertical or sub-vertical opening.

Drift: A horizontal opening which starts from another horizontal opening such as a adit or tunnel.

Dump: A pile of waste rock from a mine.

Entry: A horizontal opening in a bedded mineral deposit (ex. coal).

Face: The rock surface which excavation techniques are being preformed upon to advance a horizontal opening.

Float: Loose pieces of ore which have weathered and moved from an outcrop.

Foot Wall: The wall rock under a vein or bedded deposit. This applies to a non-vertical vein.

Gangue: Non-valuable minerals which are associated with the valuable minerals. The ore is made up of both of these.

Hanging Wall: The wall rock on the upper side of an inclined vein or bedded deposit.

Head frame: A structure above a shaft used to house cable guiding systems and rock transferring systems.

Level: All of the horizontal openings which connect to a shaft at a specific point.

Outcrop: The part of a mineral deposit which intercepts the surface.

Pillar: A mass of ore or waste not excavated for the purpose of ground support.

Portal: The supporting structures at the entry point of a tunnel, adit or decline.

Raise: A vertical or inclined opening driven upward from a level or other horizontal openings.

Ramp: An inclined rubber wheeled access opening between horizontal openings at different elevations.

Shaft: A vertical or steeply inclined excavation extending downward from the surface.

Shoot: A device for loading ore and waste rock into a haulage device from a vertical opening.

Stope: An underground opening from which ore has been excavated.

Sub-Level: A set of horizontal openings immediately above the main horizontal access openings.

Sump: An excavation for the purpose of collecting water so that it may be transferred to a pump. This often is the bottom most portion of a shaft.

Tailings: Any material that has been through a mineral processing plant and has been rejected as waste.

Tunnel: A horizontal or nearly horizontal opening which intercepts the surface at two points.

Vein: A mineralized zone having a tabular form. Its depth and length are much greater than its width. Often the zone is steeply dipping.

Waste: The barren rock in a mine which is too low grade to be of economic value.

Winze: A vertical or sub-vertical opening that is driven downward from a horizontal opening.