

## Chapter 16 Section 2 Notes

### Mineral Exploration

- the first step in finding an ore deposit is exploring rock formations for mineralization
- mineral exploration is a process used by mining companies to identify areas where there may be valuable mineral resources

### Subsurface Mining

- Longwall Mining
  - longwall – the wall of a coal seam
- Room and pillar mining
  - rooms – a network of entries in coal mines
  - serious hazard of coal mining is and underground mine fire
- Solution Mining
  - typically used for mining potash, salt, and sulfur

### Surface Mining – mining method used when shallow ore deposits are located close to Earth's surface

- Surface Coal Mining
  - overburden – rocks that cover coal seams near the surface
  - 1<sup>st</sup> step in surface coal mining – remove and set aside the soil that covers the area to be mined
  - when soil is removed from a surface mine plant life, soil nutrients, and animal habitats are affected
- Quarrying (also called open pit mining)
  - open pit used to mine materials near the surface
  - open pit mining is a mining method used for large ore deposits near the surface that are mined downward
  - aggregates – sand, gravel, and crushed rock
- Solar Evaporation
  - about 30% of the world's salt comes from the solar evaporation process
  - practical in order to obtain salt from sea water in climates where rainfall is exceeded by evaporation

### Placer Mining (mined by dredging)

- placer deposits are surface deposits concentrated by movement of wind and water
- stream placers often occur at bends in rivers
- dredge – a floating barge on which buckets fixed on a conveyor excavate sediments
- dredging streambeds is an effective technique for mining gold
- hydraulic mining – the mining method used to recover gold from ancient riverbeds

### Smelting – process by which crushed ore is melted at high temperatures to separate impurities from molten metal

- flux – a material that bonds with impurities and separates them from molten metal during smelting
- slag – a layer of impurities that forms atop molten metal during smelting

### Undersea Mining

- has been largely unsuccessful to date because deposits at great water depths are difficult to work