

Lecture1

TABLE 1.1 Classification of Mineral Deposits by Usage

Type	Minerals
Metallic	Native Pt, Au, Ag, Cu, chalcopyrite, sphalerite, galena, hematite, magnetite, pyrite, pyrrhotite, bauxite
Noble	Gold, silver, platinum, palladium
Industrial	Quartz, garnet, phosphate, asbestos, barite
Gemstones	Amethyst, aquamarine, diamond, emerald, garnet, opal, ruby, sapphire, topaz, zircon
Rock	Granite, marble, limestone, salt
Bulk/aggregate	Sand, gravel, mud, clay
Mineral fuel	Coal, crude oil, gas
Strategic	Uraninite, pitchblende, thorionite, wolframite
Life essential	Natural water
Rare earth	Lanthanum (La), cerium (Ce), neodymium (Nd), promethium (Pm)
Ocean	Polymetallic nodules, coral, common salt, potassium

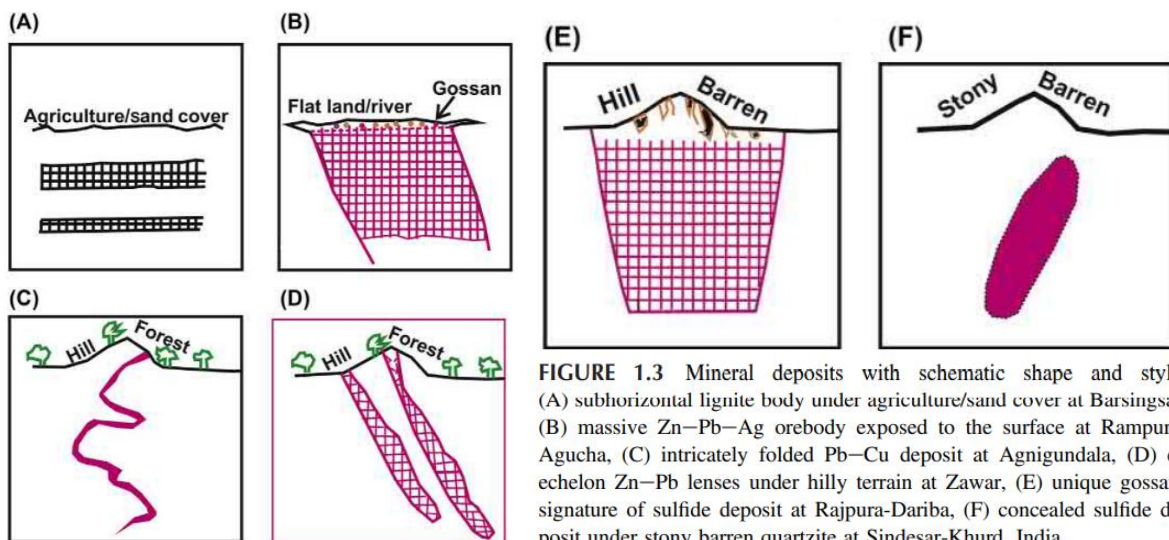


FIGURE 1.3 Mineral deposits with schematic shape and style: (A) subhorizontal lignite body under agriculture/sand cover at Barsingsar, (B) massive Zn–Pb–Ag orebody exposed to the surface at Rampura–Agucha, (C) intricately folded Pb–Cu deposit at Agnigundala, (D) en echelon Zn–Pb lenses under hilly terrain at Zawar, (E) unique gossans signature of sulfide deposit at Rajpura–Dariba, (F) concealed sulfide deposit under stony barren quartzite at Sindesar–Khurd, India.

Quartz	SiO ₂
Barite	BaSO ₄
Calcite	CaCO ₃
Clay minerals	All types
Dolomite	CaMg(CO ₃) ₂
Feldspar	All types
Garnet	All types
Gypsum	CaSO ₄ ·2H ₂ O
Mica	All types
Pyrite	FeS ₂
Pyrrhotite	Fe _n ·S _(n+1)