Principles of Environmental Classification of Mineral, Oil and Gas Deposits

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Deposits are potentially dangerous for environment because of their natural polluting potential (NPP) - elements and substances with polluting properties - radioactivity, and toxicity. Important are chemical solubility, and physical stability of ore, dimensions and form of deposit. NPP is becoming active only when deposit is being developed, because pollutants are present in geological environment as a whole. Mined ores, coals, concentrates and other economical half-products need different classifications. Deposits are ranged according to their environmental danger . Extremely dangerous are oils with sulfurous and toxic gases, salt waters and brines, light aromatic oils; uranium oxides, mercury and arsenic sulfides, asbestos Among highly dangerous are any large oil deposits, naphthenic oils, medium heavy oils; brines, sulfurous gases; monolithic sulfide ores of base metals; galogenic non-metals (salts). In ranges from monolithic to disintegrated solids and from thick through thin liquids to gases environmental risk is going lower. Among dangerous one must point out heavy oils, mineralized waters, methane gases; carbonate and silicate ores of metals, phosphate and carbonate non-metals; among disintegrated - only deposits in wastes. Most rich is the class of less or potentially dangerous deposits : bithumens and rock wax, mineralized waters, rare gases; oxide metal ores (bauxite, hematite); phosphorites, carbonates, barite, stones and rocks, among disintegrated -gravel, placers, weathering crusts etc. Among half products less dangerous are phosphates of Eurasia and dangerous - Mediterranean and Florida concentrates, containing uranium and cadmium.