Dinosaur Geopark. These sites are important geological patrimonial resources that are able to generate tourist, cultural and scientific activities.

Geochemical characteristics of natural waters contaminated by hexavalent chromium, in Eastern Sterea Hellas, Greece

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The chemistry of the groundwater in Eastern Sterea Hellas (central Euboea and Asopos valley), central Greece, has revealed high concentrations of hexavalent chromium in groundwater systems exceeding, sometimes, the Greek and the EU drinking water maximum acceptable level for total chromium. The environmental impact of hexavalent chromium is a controversial issue critical to the protection of groundwater resources. By using the GFAAS for total chromium, diphenylcarbazide-Cr(VI) complex colorimetric method for hexavalent chromium, and flame-AAS and ICP-MS for other toxic elements, their concentrations were investigated in several groundwater samples. According to the results of this analytical work, the geochemical differences of those waters and the origin of the hexavalent chromium are discussed. The contamination of water by hexavalent chromium in central Euboea is mainly linked to natural processes, but there are cases that it is associated with anthropogenic activities. In Asopos valley the hexavalent chromium pollution is associated with the industrial wastes.

Morphogenetic types of ore bodies, ore textures and crystallization mechanisms in the hydrothermal madan deposits, central Rhodopes

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In the Madan Pb-Zn deposits three morphogenetic types of ore bodies are recognized: (i) steep simple veins; (ii) complex disseminated stockworks and (iii) gently sloping marble-hosted skarn-ore bodies. Their formation is structurally controlled by the fault systems, and lithological variety of the host Rhodope metamorphic complex. The replacement ore bodies reveal complex morphology according to the number, thickness and position of the host marble layers, shifts along the fault structures and local physicochemical parameters. Among the well presented morphological types – bed-like, mushroom-like, columnar or irregular, single or multilayered replacement bodies occur. The varied sulphide textures are formed by crystallization in open space or metasomatic growth in solid state. Infill ore textures like cutting veinlets, layered textures, druses, crustifications and breccias are indicative for crystallization in open space. Typical for the vein and stockwork mineralization, they are observed as well in the dissolution cavities formed by “hydrothermal karst” in the replacement ore bodies. In the latter, characteristic are the textural varieties inherited by the primary skarns in the processes of alteration and overprinting. Radiate and spherulitic, concentric, conical, massive, porous, rhythmic-banded textures typically occur. Ore impregnations and nests, pseudomorphs and interstitial formations complete the textural diversity. Certain zonal distribution in the mineral and textural characteristics is determined. The main mechanisms of ore deposition include boiling, intensive fluid/rock interaction, retrograde alteration of skarns, performed generally by convection and diffusion.