The natural and artificial barriers for the cleaning of contaminated zones

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The elaboration of the theoretical principles of the nomenclature of geochemical, mineralogical and biological barriers allows it effective usage for the contaminated zones cleaning. The investigations carried out on a system level showed that the most effective artificial geochemical barriers permitting the cleaning of pollution zones are as follow: (1).Oxygen, (2). Alcaline, (3). Acidic, (4). Hydrosulphuric and sulphidic ones on which many metals (including U) concentrations are realized. The complex combined geochemical barriers are studied. Artificial alcaline barriers for the struggle with technogenic copper, oil etc. pollution on the base of utilization of calcium carbonate are analysed. Systematic studying of ionexchange properties of nature minerals (zeolite, hydromicas, clayes, astrophyllite, magnetic natural and synthetic ferrum, sorbents based on phosphate-cellulose compositions) has shown that these minerals have a selective chooseness towards large cations of alkaline-earth and ^{137}Cs and ^{90}Sr. Nature minerals and new types of mineral raw materials (menilite shales, argillites, glauconite, etc.) can be used as selective ionites for metal and ammonium extraction from technological solutions, threw waters and for the decontamination of water as well as for improvement of polluted soils in agriculture. In addition to this it is possible to clean gas from nitrogen oxide and sulphur dioxide using coal (brown and anthracite) as filtrative matter. A new system for biocleaning the polluted zones from radionucklides wastes is proposed on the base of biological barriers.