MIGRATION OF RADIONUCLIDES THROUGH BENTONITE LAYERS

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A concept for the storage of radioactive and other wastes envisages the use of bentonite layer as buffer material in deep geological disposal. The condition of this application of bentonites is the understanding of the migration processes of radionuclides in bentonite and surrounding geological environment as well. In this presentation the rigorous mathematical solution of the general migration equation is shown for linear radionuclide transport, spatial transport in isotropic and anisotropic medium. All solutions can formally be reduced to the Fick's second law. The adsorption of the radionuclides is also included.

The migration equation for linear transport is checked by migration of Cl–36, Cs–137, and Sr–85 isotopes through bentonite layers.