

The problem is the contamination of PCBs (polychlorinated biphenyls) in groundwater in the area of former asphalt bituminous rubble company Construction of roads and railways in Rožmitál pod Třemšínem. Corrective measures against the spread of PCBs were made in this location. Currently the monitoring and verifying of the effectiveness of methods of using nanoiron is being implemented in this locality, i.e. its effect on the destruction of PCBs (residual contamination from outside sealed area).

The thesis describes PCBs as a dangerous substance in the natural environment, nanotechnology - nanoiron, and primarily about the usage of nanoiron to dechlorination polychlorinated biphenyls. The thesis summarizes all information found on this problem. The main task was to monitor, to process and to evaluate of the in-situ pilot test, which was done on site July 14, 2010, including a complex evaluation of the tracer test and long-term monitor of the effectiveness of injected nanoiron. It was also carried out a complex evaluate the results of all previously made pilot tests in-situ decontamination of chemical reduction with elemental iron nanoparticles (2007 - 2009) on the locality in the Rožmitál pod Třemšínem. In conclusion there is a complex evaluation of all phases of the project and recommendations.