

The invention refers to the treatment of natural underground waters with sulphureted hydrogen content with the object of improving the potable quality thereof and reducing the water aggressiveness upon concrete and metal structures.

The process for sulphureted hydrogen removal from underground waters includes biological treatment thereof in aerobic conditions in a bioreactor by means of sulphur bacteria fixed onto a solid submerged carrier, afterwards the water is subjected to coagulation with the subsequent sedimentation in a decanter of the sulphur bacteria biomass surplus and, partially, of the colloidal sulphur. The final clarification of the water is carried out by removal of the colloidal sulphur in high-rate trickling filters and by final removal of the sulphureted hydrogen by chlorination.

With the aim of realizing the process it is proposed a compact installation containing a bioreactor with plastic charge, having a specific developed surface for fixation of the sulphur bacteria, provided with a system for unboiled water supply, combined with an aeration system with ejectors mounted onto the pipe-lines for unboiled water supply by means of which it is provided the uniform distribution of the air and water mixture under the charge layer, decanters with a built-in vortical flocculence chamber and high-rate trickling filters, placed in a common body.

The result of the invention consists in increasing the efficiency of biological removal of the sulphureted hydrogen, in increasing the removal degree of the suspended materials, in reducing the consumption of chlorine, in increasing the capacity of the installation, as well as in reducing the power consumption required for the realization of the process.