

REMEDIATION OF A LEACHATE POND BY ON-SITE TREATMENT METHODS

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ABSTRACT

As a common practice and state environmental policy in most countries of the Baltic Sea Region, municipal dumps are being closed and rehabilitated. In this paper, works on cleaning up a pond of oily leachate, at the Laguja landfill, Estonia, is described.

Laguja municipal landfill is situated in a groundwater inflow area in South Estonia in Tartu County. Municipal and industrial waste was disposed of to the dump from early 70s. The lowermost section of the dump site has become a pond since bottom sediments of fuel tanks, bilge water and other kind of waste oils and waters were dumped into the pond from 1974 to 1993. Leachate from the landfill also outflows to the pond. The surface area of the pond was 9800 m². Both water and sediments in the pond were contaminated with oil. In 2001, it was decided to close the landfill and remediate the pond.

The pond was divided into 3 sections by dams, made of inert construction waste. Section by section, water was pumped out and purified on site. Two-step system of sedimentation ponds accomplished by oil-and grease filter, and activated coal filter, was used. The effluent water was infiltrated into the ground nearby on specially prepared area. Monitoring wells were established for groundwater quality control.

After the removal of the water, the contaminated bottom sediments were removed and composted on site. The selected technology for remediation of the site and treatment of leachate proved to be efficient and cost-effective. In the final stage of the project, the biggest section of the pond will be constructed as wetland for biological leachate treatment.