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## IMPACT OF LANDFILL LEACHATE ON SOIL QUALITY IN IASI COUNTY

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### Abstract

Waste management hierarchy has as priorities waste recycling and energy recovery. Unfortunately, Romania is in the situation so as the waste landfilling is still considered as a suitable solution for waste management. European Union imposed a number of regulations and programs in the field of waste treatment and management that Romania must comply.

The paper describes some aspects regarding characterization of the leachate originating from the Tomesti landfill (situated in Iasi County, Romania) as well as quality assessment on the local environment considering the results of this research.

One of the most important problems with designing and maintaining a landfill is managing the leachate that is generated when water passes through the waste. Tests performed on the old landfill in Iasi County have shown that the organic components and heavy metals present in the leachate that penetrates through infiltrations in soil induce impacts and risks in environment, so that European norms which have to be applied for the new landfill need to solve this problem.

The experimental results showed that most of the parameters examined in the leachate samples such as colour, BOD, pH, heavy metals concentration were found at high levels. Therefore, the storage of any waste material in the landfill poses environmental problems. It was found that the chemical quality of leachate varies as a function of a number of factors including the original nature of the buried waste materials and the various chemical and biochemical reactions that may occur as the waste materials decompose, seasonal evolution etc. The impact the leachate induced in the environmental components was assessed and the results showed that contamination of soil, groundwater and surface water that may occur as leachate produced by water or liquid wastes moving into, through and out of the landfill, migrates into adjacent areas can affect in a major degree the site characteristics as well as the environmental health.

These data were considered when the new landfill was decided to be designed and built according EU norms.

*Key words:* groundwater, impact, landfill, leachate, risk, waste

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