



MUNICIPAL SOLID WASTE LANDFILLING AND TREATMENT OF RESULTING LIQUID EFFLUENTS

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Abstract

Municipal solid waste keeps growing as a result of increasingly wealthy lifestyles and continuing industrial and commercial development in many countries around the world. In this paper, the current status of landfill problems and operation as an ultimate alternative for waste management is reviewed, together with future landfilling trends, including particular aspects of municipal solid waste management in Romania and their disposal in landfills, some of which are closing.

Although integrated waste management has already been evaluated in extensive scientific literature on the collection, storage and suitable treatment of highly contaminated leachates – the main secondary pollutant resulted during landfilling, a lack of information still exists on the generation of heavily polluted leachates, significant variations in the chemical composition, fate, migration and behaviour, in particular in countries without experience in integrated waste management, such as Romania. In order to describe the context of treatment and management of municipal landfill leachate, a general overview on municipal solid waste generation and composition, collection and transport, resource recovery, reuse and disposal options in European framework is first presented with some data specific to the Romanian case.

Since the understanding of leachate composition is critical for making projections on the long-term impact of landfills, a characterization of leachate as an extremely polluted wastewater is provided to estimate its quality indicators. This review combines information from the literature on leachate treatment methodologies and discusses the advantages and drawbacks of the various treatment alternatives and trains.

Key words: environmental impact, leachate, municipal solid waste, treatment process, waste landfill

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