

Effect of Naameh Landfill (Lebanon) on Groundwater Quality of the Surrounding Area

Authors : Rana Sawaya, Jalal Halwani, Isam Bashour, Nada Nehme

Abstract : Mismanagement of municipal solid wastes in Lebanon might lead to serious environmental problems, especially that a big portion of mixed wastes including putrescible is transferred to Naameh landfill. One of the consequences of municipal solid waste deposition is the production of landfill leachate, which if improperly treated will threaten the main crucial matrices such as soil, water, and air. The main aim of this one of a kind study is to assess the risk posed to groundwater as a result of leachate infiltration on off-site wells especially after stoppage of Naameh landfill's operation end of the year 2016 and initiation of the capping process which is still ongoing and will be finalized in December 2019. For this purpose, nine representative points around the landfill were selected to undergo physicochemical and microbial analysis on a seasonal basis (every three months). The study extended from the year 2014 until the end of the year 2016 (closure of Naameh landfill). The preliminary data obtained are statistically analyzed using the Statistical Package for Social Sciences (SPSS) and was found in conformity with international and Lebanese norms. Thus, the study will be extended an additional year, especially after the finalization of capping and the results obtained, will enable us to propose new techniques and tools (treatment systems) in water resources management depending on the direction of its usage (domestic, irrigation, drinking).

Keywords : contamination, groundwater, leachate, Lebanon, solid waste

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