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“Critical Evaluation of Leachate Clogging Potential in Gravity Collection Systems and Management Solutions”

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ABSTRACT OF DISSERTATION
Critical Evaluation of Leachate Clogging Potential in Gravity Collection Systems and Management Solutions

Leachate clogging in the Leachate Collection System (LCS) due to chemical precipitations and biofilms produced by microbial activities is a common phenomenon in any Municipal Solid Waste (MSW) landfill. This study focuses on quantifying the factors that impact the micro-environment of leachate; and microbial activities that help the precipitates to form and attach to the LCS. It also evaluates the performance of operational changes that have been implemented or the potential alternatives and recommends the possible measures to reduce the severity of clogging. A field scale side-by-side pipe network, and several laboratory setups were used in this study. Calcite is identified to be the predominant phase present in the precipitates using XRD/XRF analysis which, concur with the previous studies. Microbial growth and activities enhance the precipitation of CaCO₃ in LCS. Clogging in LCS pipes can be controlled if not eliminated by continuous monitoring along with frequent cleaning with physiochemical processes.

BIOGRAPHICAL SKETCH
Born in Bangladesh
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CONCERNING PERIOD OF PREPARATION & QUALIFYING EXAMINATION
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Published Papers:


