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Estimating mass discharge of contaminant plumes downstream of landfills: Benefits of geophysics

Nicola Balbarini¹, Pradip Kumar Maurya², Vinni Rønde¹, Anders Vest Christiansen², Knud Erik Klint³, Poul Logstrup Bjerg¹, Philip John Binning¹

¹ Technical University of Denmark, Denmark

² Aarhus University, Denmark

³ Geological survey of Denmark and Greenland, Denmark

Corresponding Author E-mail: nbal@env.dtu.dk

Abstract: Geophysical methods are increasingly being employed at landfill sites to map waste deposits and leachate plumes. Surface geophysical surveys are particularly useful at large landfill sites, because these methods are able to collect extensive data sets at low cost.

It is important to evaluate the contaminant mass discharge when evaluating the environmental impact of landfills on groundwater. However, mass discharge estimation is currently infeasible at large and

heterogeneous sites because of the cost of the large number of multiple sampling points required to map plumes with sufficient certainty. Here a novel contaminant mass discharge method for large and heterogeneous sources is presented, employing surface geophysical surveys with multiple sampling point data to improve mass discharge estimates and reduce drilling costs.



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南方科技大学 环境科学与工程学院
地址：深圳市南山区学苑大道 1088 号

SUSTech|School of Environment
Address: No 1088,xueyuan Rd., Xili, Nanshan District,
Shenzhen, Guangdong, China

邮编：518055
电话：0755-88010821
传真：0755-88010822
网址：<http://www.sustc.edu.cn/ese>

Postcode: 518055
Tel: 0755-88010821
Fax: 0755-88010822
Web: <http://www.sustc.edu.cn/ese>