Environmental Engineering and Management Journal *June 2016, Vol.15, No. 6, 1419-1425*
http://omicron.ch.tuiasi.ro/EEMJ/

"Gheorghe Asachi" Technical University of Iasi, Romania

DECONTAMINATION OF SOILS POLLUTED WITH PETROLEUM PRODUCTS BY BIOREMEDIATION

Paula Cojocaru*, Dorin Cotiusca Zauca, Gabriela Biali

"Gheorghe Asachi" Technical University of Iasi, Faculty of Hydrotechnics, Geodesy and Environmental Engineering, Department of Land Improvement and Environmental Protection, 63-65 Prof. dr. docent Dimitrie Mangeron Street, 700050, Iasi, Romania

Abstract

The paper presents step by step the technological stages, measurements and results of effective decontamination of a soil located within a storage facility for petroleum products. The chosen method for decontamination was bioremediation using bacteria selected specifically for such type of pollution. The process monitoring was carried out at different periods of time by soil sampling from 13 previously set sampling point, not only from the initial area but also from the decontamination platform. After 3 months, the Total Petroleum Hydrocarbon (TPH) concentration in the soil dropped 14 to 78 times, as the efficiency of the TPH removal from the soil was minimum 92.65% in the soil sample P10 and maximum 98.72% in the soil sample P1, respectively. At the end of the decontamination process the soil in all its points recorded TPH levels under the alert limit provided by the Romanian law.

Key words: bioremediation, decontamination, mineral oils, soil

Received: August, 2015; Revised final: March, 2016; Accepted: April, 2016

* Author to whom all correspondence should be addressed: e-mail: paula.cojocaru@yahoo.com; Phone: 0040743036895