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Soil Mixed Constructed Permeable Reactive Barrier for Groundwater Remediation: Field Observation

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Abstract : In-situ remediation of contaminated land with deep mixing can deliver a multi-technique remedial strategy. A field trail includes permeable reactive barrier (PRB) took place at a severely contaminated site in Yorkshire to the north of the UK through the SMiRT (Soil Mix Remediation Technology) project in May 2011. SMiRT involved the execution of the largest research field trials in the UK to provide field validation. Innovative modified bentonite materials in combination with zeolite and organoclay were used to construct six different walls of a hexagonal PRB. Field monitoring, testing and site cores were collected from the PRB twice: once 2 months after the construction and again in March 2014 (almost 34 months later).This paper presents an overview of the results of the PRB materials' relative performance with some initial 3-year time-related assessment. Results from the monitoring program and the site cores are presented. Some good correlations are seen together with some clear difference among the materials' efficiency. These preliminary observations represent a potential for further investigations and highlighted the main lessons learned in a filed scale.

Keywords : in-situ remediation, groundwater, permeable reactive barrier, site cores
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