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Sustainable environmental protection

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Permeable reactive barriers (PRBs) offer an alternative as opposed to more cost-intensive active methods for groundwater remediation, e.g. pump-and-treat. Long-term performance of PRBs, however, is crucial for the technology's success. The paper summarises the results of long-term column experiments with elemental iron (Fe₀) and hydroxyapatite (HAP) as reactive materials for the removal of uranium from groundwater. Good removal results have been achieved using elemental iron with possible reaction paths being reductive precipitation and adsorption on to corrosion products of Fe₀.