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In Situ Regeneration of Granular Activated Carbon (GAC) Using Fenton's Reagents

Abstract

Fenton-dependent regeneration of granular activated carbon (GAC) initially saturated with one of several chlorinated aliphatic contaminants was studied in batch and continuous-flow reactors. Homogeneous and heterogeneous experiments were designed to investigate the effects of various parameters on GAC regeneration, including reductant and electron shuttle reagents, copper, pH, chloride ion, and radical scavengers. Two mathematical models were developed to optimize Fenton-driven degradation of organic compounds in solution or adsorbed to GAC. A pilot-scale reactor was designed for use in a field demonstration. The field site, the Park-Euclid site, is among those on Arizona's Superfund list. Primary contaminants at that site include trichloroethylene, perchloroethylene, and a mixture of volatile and semi-volatile hydrocarbons.

Products

Arnold, R.G., W.P. Ela, A.E. Saez, and C.L. De Las Casas. [In Situ Regeneration of Granular Activated Carbon \(GAC\) Using Fenton's Reagents \(PDF\)](#) (162 pp, 4.14 MB) (EPA/600/R-07/008) November 2007 | [Abstract](#)

De Las Casas, C., K. Bishop, L. Bercik, M. Johnson, M. Potzler, W. Ela, A.E. Sáez, S. Huling, and R. Arnold. (2006). "In-Place Regeneration of GAC using Fenton's Reagents." In: *Innovative Approaches for the Remediation of Subsurface-Contaminated Hazardous Waste Sites: Bridging Flask and Field Scales*. Edited by C. Clark and A. Lindner. ACS Symposium Series 940, pp. 43–65.

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