WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: NJ1181

Title: Vapor phase UV Destruction of organic contaminants

Focus Categories: Groundwater, Water Quality

Keywords: (PTO), photo-thermal oxidation, organic contaminants, (PCR), photo-chemical remediation, remediation, (PCE), tetrachloroethylene, subsurface contamination

Start Date: 03/01/2001

End Date: 02/28/2002

Federal Funds: $2,500

Non-Federal Matching Funds: $5,275

Congressional District: 6

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Abstract

Subsurface contamination, a major problem in the United States and around the world, is present at Rutgers University Busch Campus in the form of tetrachloroethylene (PCE) on a contaminated site that requires substantial remediation. A new method for destruction of organic contaminants, photo-chemical remediation (PCR) technology, will provide an efficient process for destroying organic contaminants in the vapor phase.

For groundwater treatment, the organic contaminants can be easily stripped from the aqueous phase to the vapor phase using a mobile, field-scale PCR reactor system based on this technology for laboratory research and for field demonstration of subsurface remediation.

The system proposed to be constructed, based on photo-thermal oxidation (PTO), will rapidly and efficiently destroy hazardous substances, such as VOCs', PAHs, halogenated hydrocarbons, etc.

The process can be used to treat multiple pollutants, large gas quantities at moderate temperatures, with no fuel and expensive sorbents to be disposed of.