



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002LA5B

Title: Groundwater Contaminant Transport Following Flooding Events: Impacts of Model Size, Resolution, and Complexity

Project Type: Research

Focus Categories: Groundwater, Models, Water Quality

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Abstract

In spite of numerous safeguards and precautions, there exists a potential for accidental release of contaminants during and following flood events. Sources for contamination include ruptured or damaged pipelines, storage tanks and water/wastewater treatment facilities. While some of the contaminant is expected to be transported by the surface water during the event, a portion of the release may enter the subsurface through infiltration, or if the chemical is denser than water, it may sink directly into the ground. This contaminated groundwater can potentially impact the natural habitat, water wells, or surface water bodies.

Numerical modeling of groundwater flow and solute transport is constrained by the required computational time and available data. In addition, risk or dose assessments require the simulation of many contaminants under multiple scenarios. Thus, choices must be made concerning the model domain, mesh resolution, and model complexity. The overall objective of this research is to develop a better understanding of these issues in scenarios where a release has occurred following a flooding event that results in subsurface contamination.