

## Hydrogeology



The core of the research programme in Hydrogeology is concerned with identifying and quantifying the physical and chemical processes governing the movement and fate of contaminants in groundwater systems.

Two vital aspects of this research are:

- The identification of these processes through existing and new data collection technologies and strategies
- The representation of the processes in quantitative modelling tools and procedures

The group's aim is to know how to predict contaminant fluxes in the subsurface at all spatial and temporal scales relevant to decision making.

The research of the group is building on recent successes in attracting European Community, NERC and EPSRC awards as well as industrial and Environment Agency funding. Through ongoing projects and through planned initiatives, the group's staff and students will address two complementary research areas:

- The quantification of flow pathways and properties within fractured-permeable formations.
- The quantification of micro-scale geochemical variations within and between lithologies and their impact on large-scale rock/fluid/solute interactions.

We expect that the fundamental progress being made in these areas will enable the next major advances in the development of predictive tools of groundwater-mediated chemical transport to take place.

### Hydrogeology projects

- [Bacterial reduction of radionuclides and metals \(PDF 46KB\) \(/Documents/college-les/gees/hydrogeologymicrobialreduction.pdf\)](#)
- [Natural attenuation of chromate in the hyporheic zone \(PDF 63KB\) \(/Documents/college-les/gees/hydrogeologychromate.pdf\)](#)
- [Use of longitudinal streamtube-based monitoring approaches to determine contaminant fate within the SABRE intra-source/plume test cell \(PDF 560KB\) \(/Documents/college-les/gees/hydrogeologystreamtube.pdf\)](#)