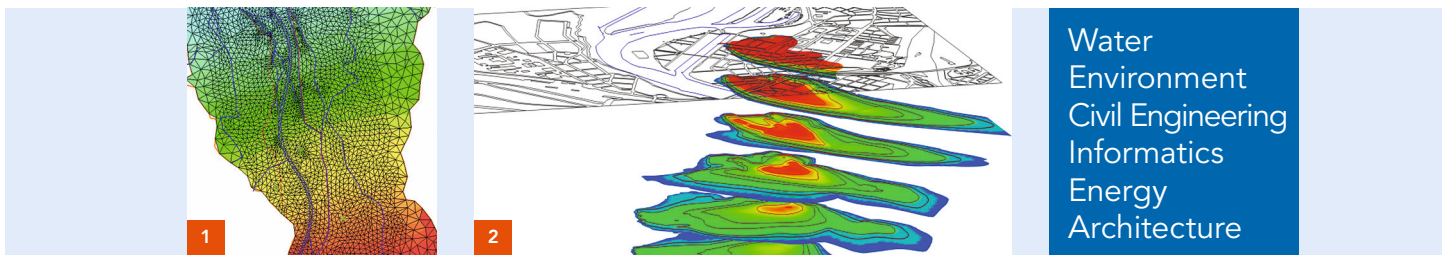


Groundwater Modeling



In dealing with a wide variety of issues in the field of groundwater hydraulics, groundwater management and the issue of contaminated sites, numerical models represent the means of choice. We combine many years of experience in the field of groundwater modeling with state-of-the-art tools: these include various calculation modules for finite differences and finite elements as well as diverse pre- and post-processing tools.

The GIS-supported creation and interpretation of groundwater models are among our strengths as much as are the coupling of groundwater models to hydrological and hydrodynamic models. The use of different simulation programs – software developed in-house as well as commercially available programs – enables problem-solving that is individually adjusted to the task at hand.

In addition to groundwater flow, our modeling spectrum also includes transport calculations, density flow, permeability of unsaturated zones as well as coupled groundwater-surface water simulations.

The close connection maintained between numerical modeling and the other departments in all project phases, from data acquisition for, and creation of, a hydrogeological model to the planning of implementation measures, allows us to conduct the work in a target-oriented and efficient way, even for the most complex problems.

Services

- Finite Difference and Finite Element Methods
- 3D-Flow-Models (saturated and / or unsaturated)
- Hydrological models
- Pathlines (steady state / transient)
- Transport modeling (including density dependent and reactive transport)
- Heat transport
- Coupled surface-subsurface flow
- GIS-based modeling workflow
- Visualisation

Modeling software used

- Modflow / MT3D
- Modflow USG
- Modflow-SURFACT / MODHMS
- Groundwater Vistas
- Visual Modflow
- Groundwater Modeling System (GMS)
- FEFLOW

1 FE modeling

Groundwater extraction

2 Transport modeling

Remediation and protection of resources