



## Key projects

### Tameside Metropolitan Borough Council, Denton, UK

A multi-technique approach using resistivity imaging, ground penetrating radar and electromagnetic ground conductivity data was used to delineate the edge of a closed landfill adjacent to a residential housing estate.

### Somerset County Council, South Bristol Link Road, UK

Resistivity imaging and an electromagnetic survey were used to pinpoint the locations of former waste sites along the route of a proposed road.

### MJCA, Hoddesdon, UK

Mapping of the depth and extent of a closed landfill was required to inform future development of the site.

## Geophysical techniques available include

- Electrical resistivity
- Electromagnetic (EM) mapping
- Ground penetrating radar (GPR)
- Magnetic gradiometry
- Seismic refraction ground stiffness
- Full land surveys for urban and greenfield sites



EM31 data collection

## Geophysics Applications: Landfill mapping

The UK has about 8000 operational and closed landfill sites, many of which are not engineered and are open to the environment. Even newer landfill sites based on the principal of engineered containment are at risk of leachate leaking through the base and sides to contaminate surrounding land and groundwater, and have potentially serious consequences for drinking water resources.

Geophysical surveys are often the only practical method of investigating landfills, as they do not involve penetration of the cap or liner or exposure of waste. Geophysics can be used for landfill applications ranging from determining the location and geometry of old landfills through to aiding the investigation of groundwater pollution and migration pathways in the subsurface, essential for demonstrating compliance with IPPC requirements.

RSK offers survey options ranging from a quick reconnaissance survey to map the lateral extent of waste to more detailed studies to provide 3D models of pollution plumes and the base of the waste. We use the latest geophysical and surveying equipment and global positioning systems (GPS) to rapidly acquire survey data. Qualified geophysicists and surveyors undertake all our surveying. Senior chartered staff sign off our survey designs and interpretative results.

## Key benefits of a geophysical survey

- Environmental: non-invasive with minimal ground disturbance and no cap penetration
- Minimal disruption to clients and residents
- Rapid data acquisition and coverage of large sites
- Potentially lower engineering costs and optimisation of borehole and trial-pit investigation programmes



Resistivity profiles across a closed landfill site

For further information, visit us at [www.rsk.co.uk](http://www.rsk.co.uk) or contact:

George Tuckwell: [gtuckwell@rsk.co.uk](mailto:gtuckwell@rsk.co.uk) (Tel: +44 (0)1442 416656)

RSK Group plc has achieved certification to the ISO 9001, ISO 14001 and OHSAS 18001 standards for quality, environmental and health and safety management.

