



*EM31 SURVEY IN CALGARY*

**DMT Geosciences has developed a unique approach to environmental applications of geophysics by selecting the most appropriate method to meet clients needs.**

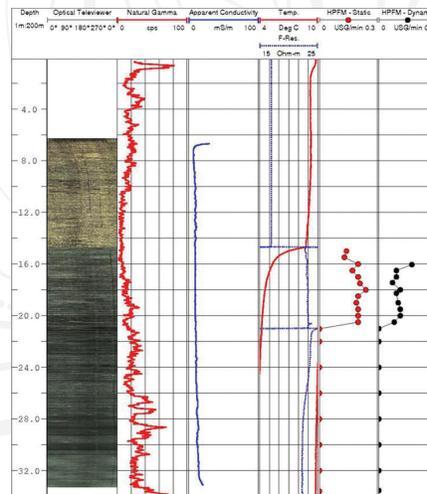
**APPLICATIONS FOR ENVIRONMENTAL GEOPHYSICAL SURVEYS INCLUDE:**

- Groundwater investigations
- Aquifer delineation
- Saltwater intrusion
- Buried utilities detection
- Buried metals detection (UST)
- Void and karst mapping
- Bedrock topography mapping
- Contaminant mapping
- Contaminant migration pathway delineation
- Landfill delineation
- Mapping of underground workings

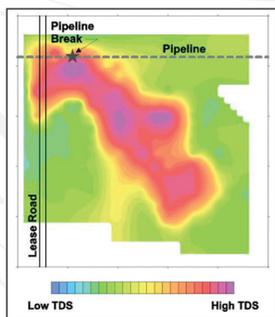
## ENVIRONMENTAL BOREHOLE LOGGING

Geophysical borehole logging is a cost effective way to measure *in situ* groundwater, soil and rock properties. It provides a permanent, oriented record of borehole information, particularly in zones with poor core recovery. This information can include:

- Televiwer Logs: oriented, 3D digital camera and high-resolution acoustic images of borehole walls
- Lithologic & structure mapping
- Fracture mapping and classification
- Delineation of zones of saturated porosity
- Aquifer Storage & Recovery (ASR) parameters



COMPILATION OF LOGS SHOWING HYDROGEOLOGICAL RESPONSE



## CONTAMINATED SOIL MAPPING

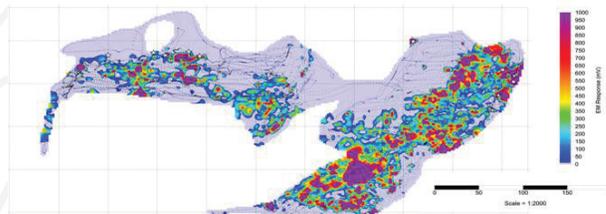
Contaminated soils can result from spills, pipeline breaks or illicit disposal. Shallow electromagnetic or electrical geophysical instruments can be coupled to a GPS system and used to map the extents of contaminated soils.

CONTAMINANT PLUME FROM PIPELINE BREAK MAPPED WITH EM31 (LEFT)

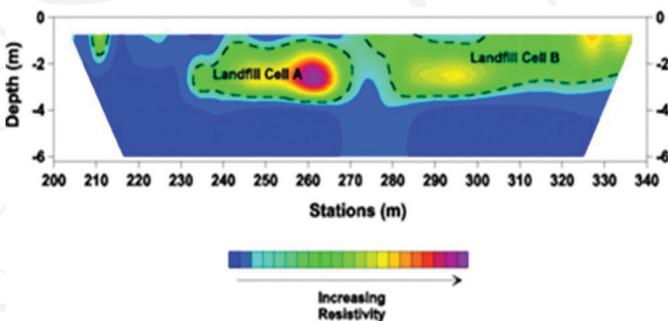
## LANDFILL MAPPING

On landfill sites, the use of geophysics is preferred over drilling or direct sampling because of the toxic or harmful nature of many landfill substances.

No single geophysical method is appropriate to use in all landfill investigations. DMT has the experience to appropriately choose between magnetic, electromagnetic and direct-current resistivity methods.



PLAN MAP OF THE SAME LANDFILL SHOWING EM61 RESPONSE



CROSS-SECTION OF LANDFILL SHOWING RESISTIVITY AND THICKNESS OF DIFFERENT CELLS MAPPED WITH OHMMAPPER

DMT Geosciences specialize in several landfill mapping activities, including:

- Landfill boundary mapping
- Landfill thickness mapping
- Locating of metallic objects within landfills
- Locating fractures or potential contaminant runoff pathways around landfills