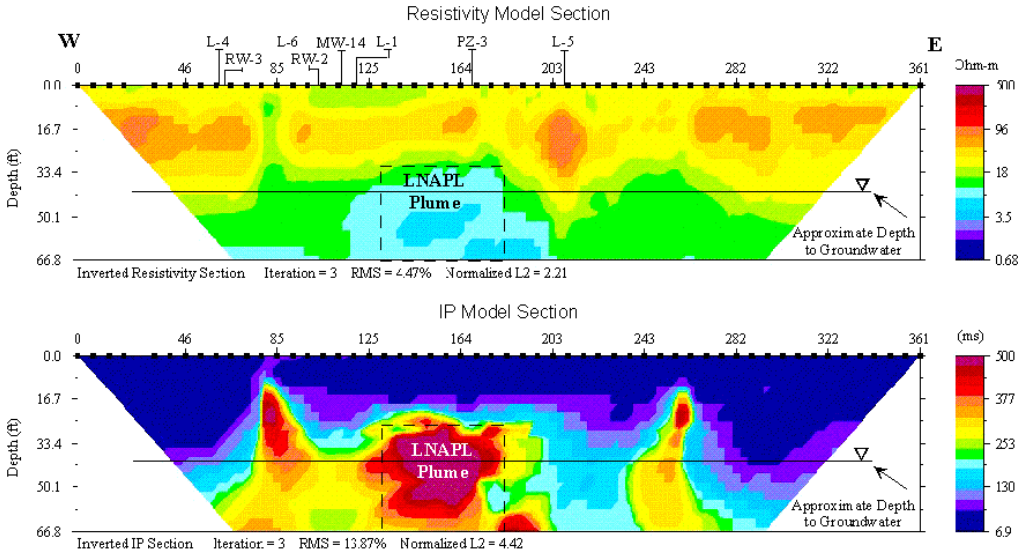
LNAPL Plume Delineation – Resistivity – MESQUITE, NEVADA

A geophysical investigation was conducted at a former truck stop in Mesquite, Nevada to delineate and further characterize an existing shallow diesel fuel plume, as well as to identify areas where free product was likely to be present on the groundwater surface. Previous groundwater wells and piezometers placed at the Site had led the Client to believe that the plume might exist in discrete lenses in the subsurface. The area of investigation contained numerous subsurface utilities and other above-ground cultural sources of electrical interference, such that there was some doubt from the Client as to the ability of geophysics to detect the LNAPL plume.

Spectrum collected 6 transects of electrical resistivity and IP data using a Schlumberger array and AGI's SuperSting meter. These model sections represent the resistivity (top) and IP (bottom) data collected along one of the transects. The low resistivity (blue) and high IP (red) anomaly running from Stations 135 to 184 at about 45 feet below ground surface was interpreted to be associated with free product on the groundwater surface. A subsequent piezometer (PZ-3) placed at Station 170 yielded 4 feet of free product on the groundwater surface. Additional areas of free product were identified and others confirmed using the electrical resistivity and IP data. Despite the presence of sources of cultural interference, Spectrum successfully delineated the lateral extent of the LNAPL plume. In addition, our data confirmed that the plume existed in discrete, apparently disconnected lenses in the subsurface.



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