

3D Modelling of Near Surface Problems

– Some Examples from EMIGMA

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EMIGMA is a versatile tool for
imaging, modelling and inverting
near surface geophysical data including:

Resistivity

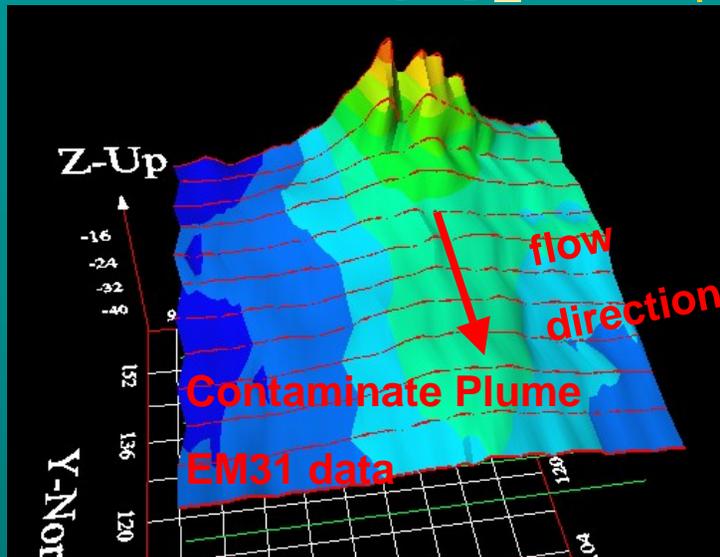
FEM

Magnetics

IP

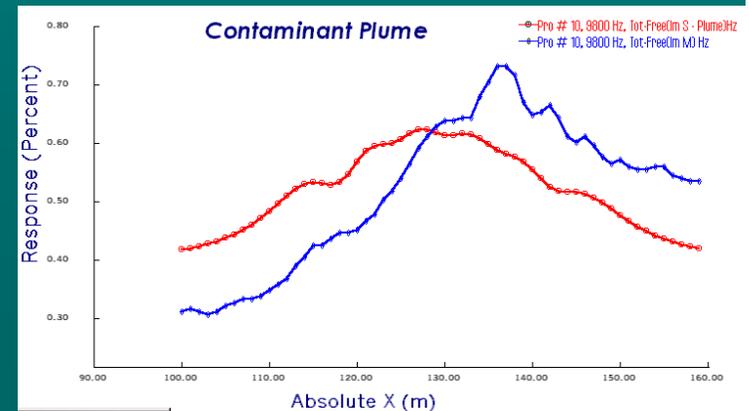
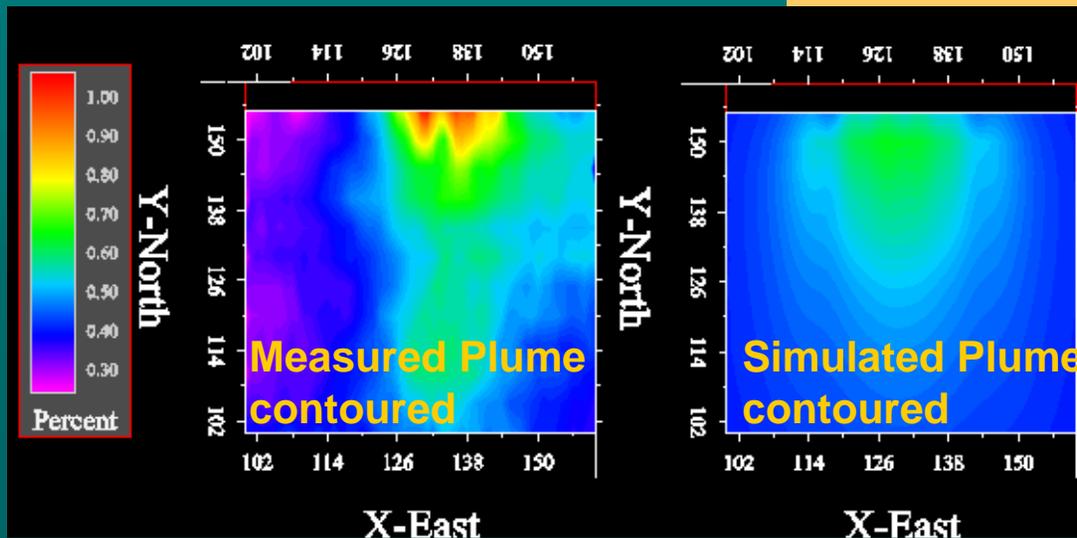


Contaminant Plume Modelling



EM31 survey over a contaminant plume moving South from a landfill

Data matched reasonably well with a simple prism body 25, 70, 10, strike 7 degrees, dip 10 degrees



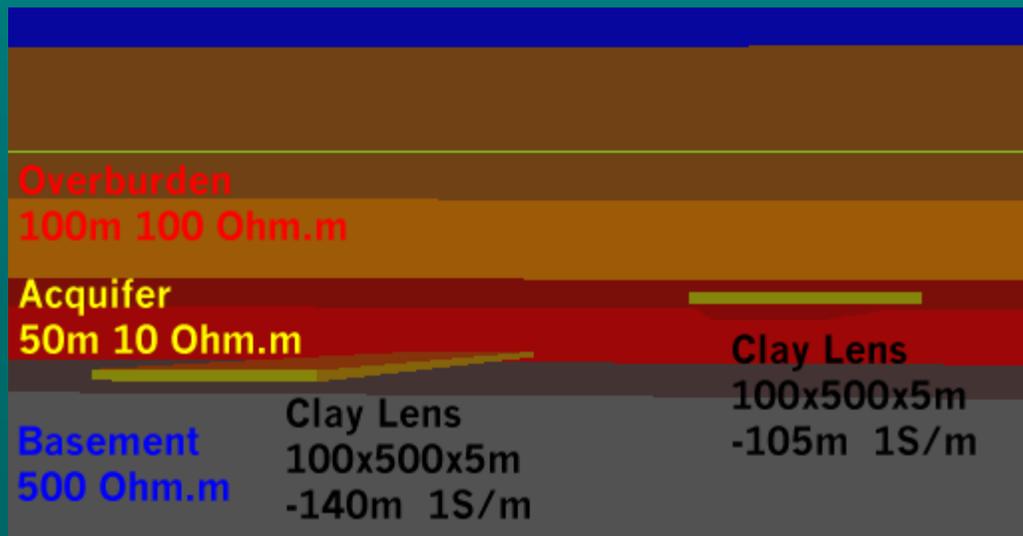


Clay Lenses Modelling for Aquifer Pumping Study

Problem: determining Acquifer Volume when clay lenses occur

IP/Resistivity Survey: 50 m antennas, n=6

Model: 2 clay lenses 100x500x5m, depth -105 m and -140 m, conductivity 1 S/m

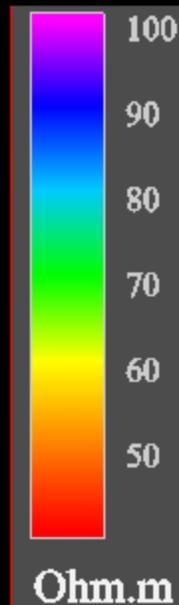
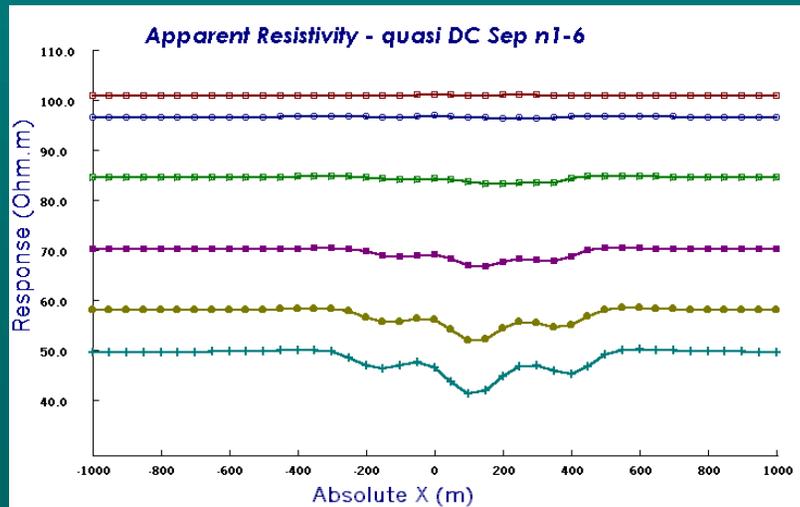
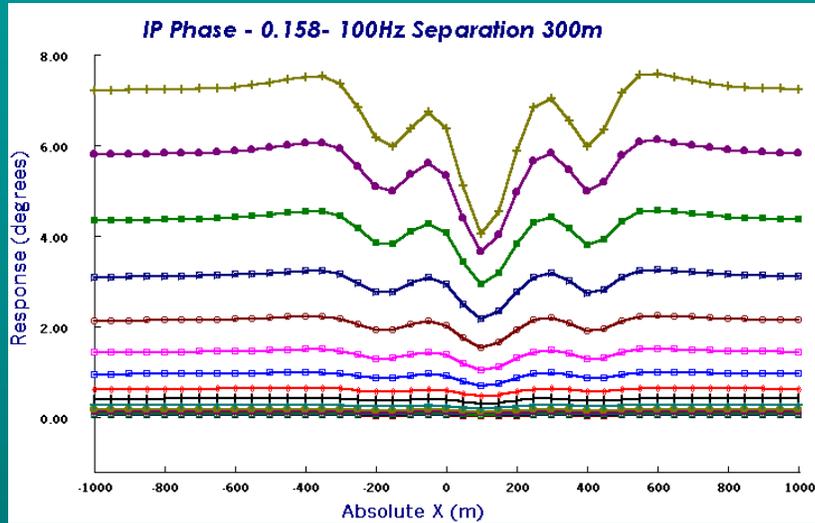




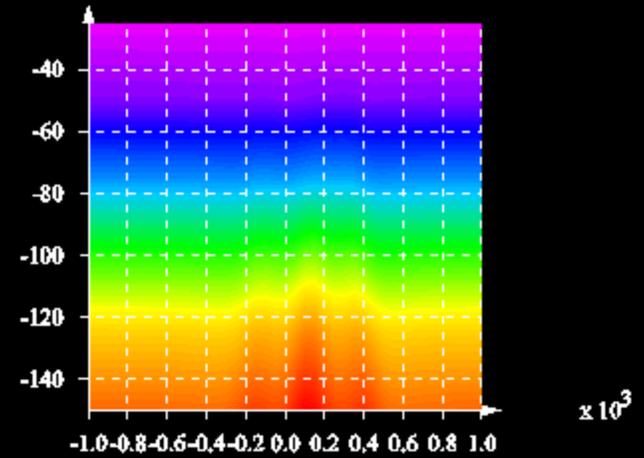
Clay Lenses in Aquifer (cont)

IP Resistivity Survey

50 m antennas, n=6



Depth.m

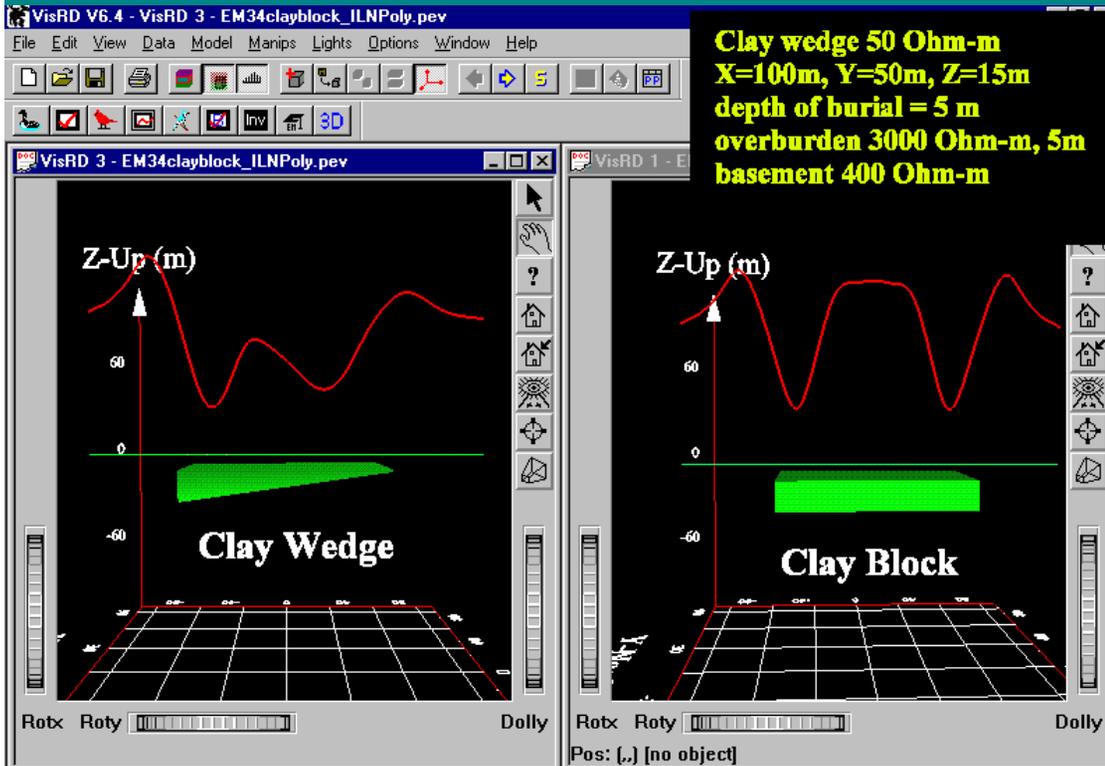


Location, m



Clay Wedge vs Clay Block

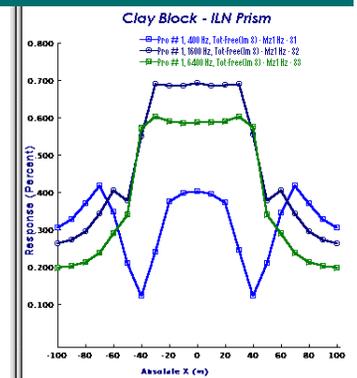
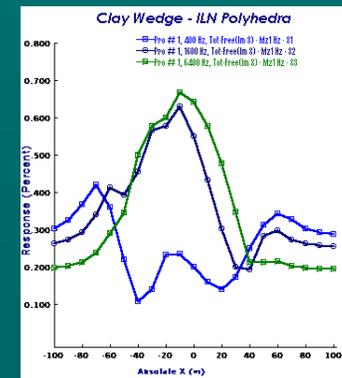
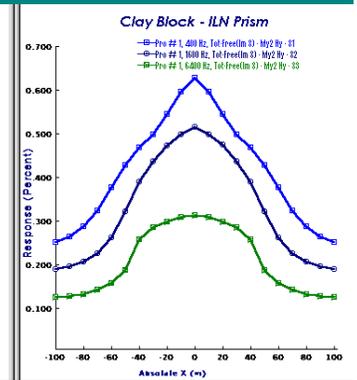
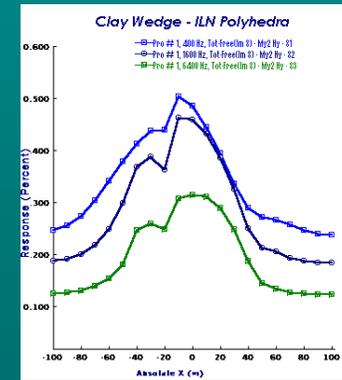
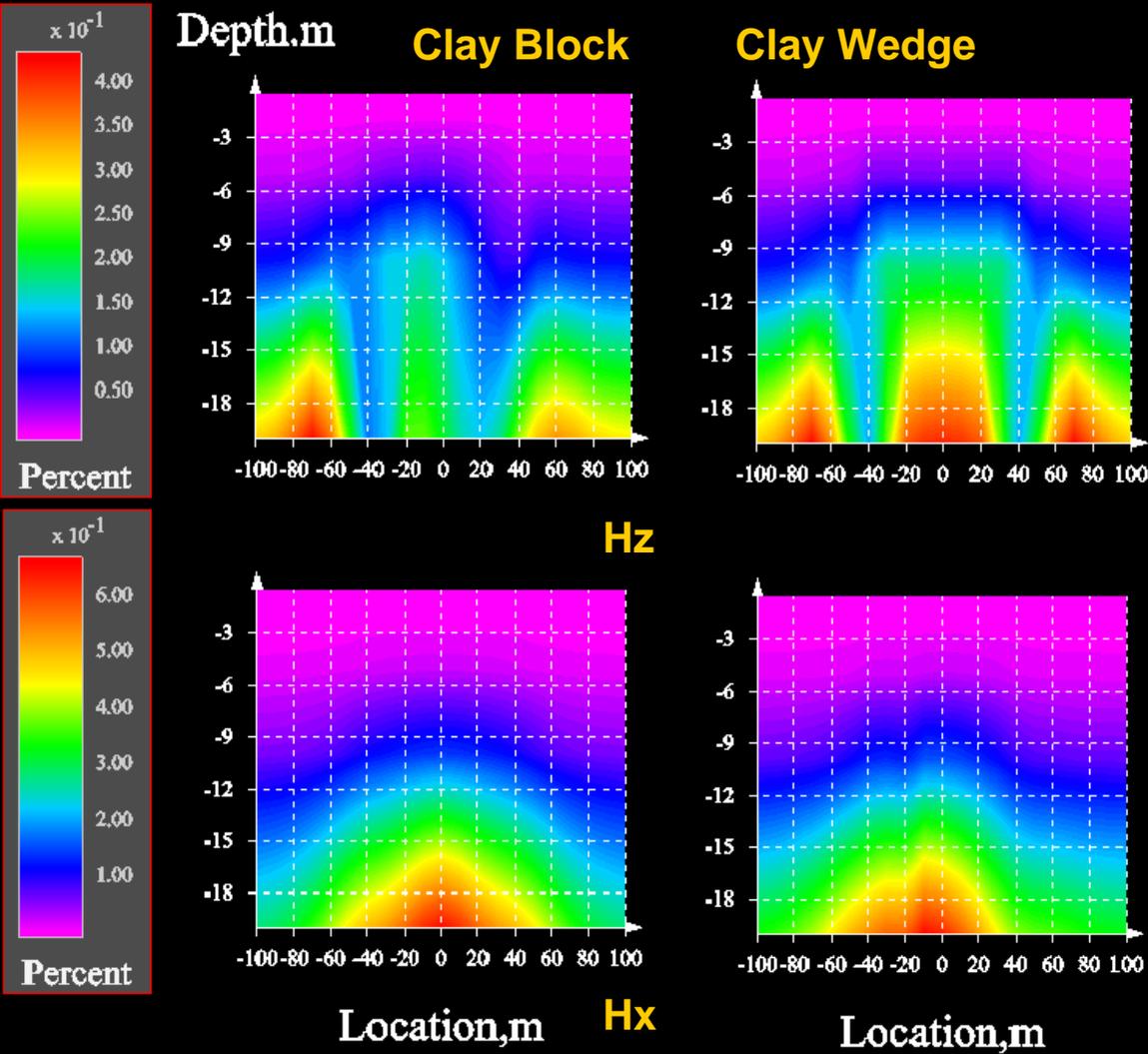
Use EMIGMA to delineate the shape of your target. Here a clay wedge, pinching out is compared to a block of clay. Complex shapes can be modelled with EMIGMA's polyhedra algorithm.





Clay Wedge vs Clay Block

Contour your data as depth sections or plot as XY plots to study the effects of separation





Close

EMIGMA

Practical geophysical software for
Near Surface problems

EiKon Technologies

www.petroseikon.com