

SCOPE OF WORK

WATER STUDY

HYDROGEOLOGICAL INVESTIGATIONS

GEOPHYSICAL SURVEY

A geophysical survey is the systematic collection of geophysical data for spatial studies. Detection and analysis of the geophysical signals form the core of Geophysical signal processing. The magnetic and gravitational fields emanating from the Earth's interior hold essential information concerning seismic activities and the internal structure. Through the detection and analysis of the electric and Magnetic fields. The surveys in this study are required to scan the underground in search of the best groundwater reservoirs and to pinpoint water-production wells locations and designs.

Geophysical scans must be conducted within a radius of 15 Kilometers around the Al-Hol camp, to determine no less than six (6) locations for potential production well spots. It is preferred to have these six (6) design well locations as close as possible to the Al-Hol Camp. However, the entire 15 Kilometers radius must be scanned and documented.

Geophysical surveying must be done using “Electric resistivity methods”. These methods are “vertical electric sounding (VES)”, “electric profiling”, and “electric imaging”. A minimum of four electrodes are to be used and they must be spaced correctly. The total required scanning depth is 600 meters.

After conducting a series of resistivity surveys (the number of the surveys is to be determined), the 1-dimensional data of the surveys must then be compiled into a two-dimensional (2-D) resistivity profile that highlights the subsurface clearly and in detail. In this way. Figure 1.1 shows an examples of the required profiles.

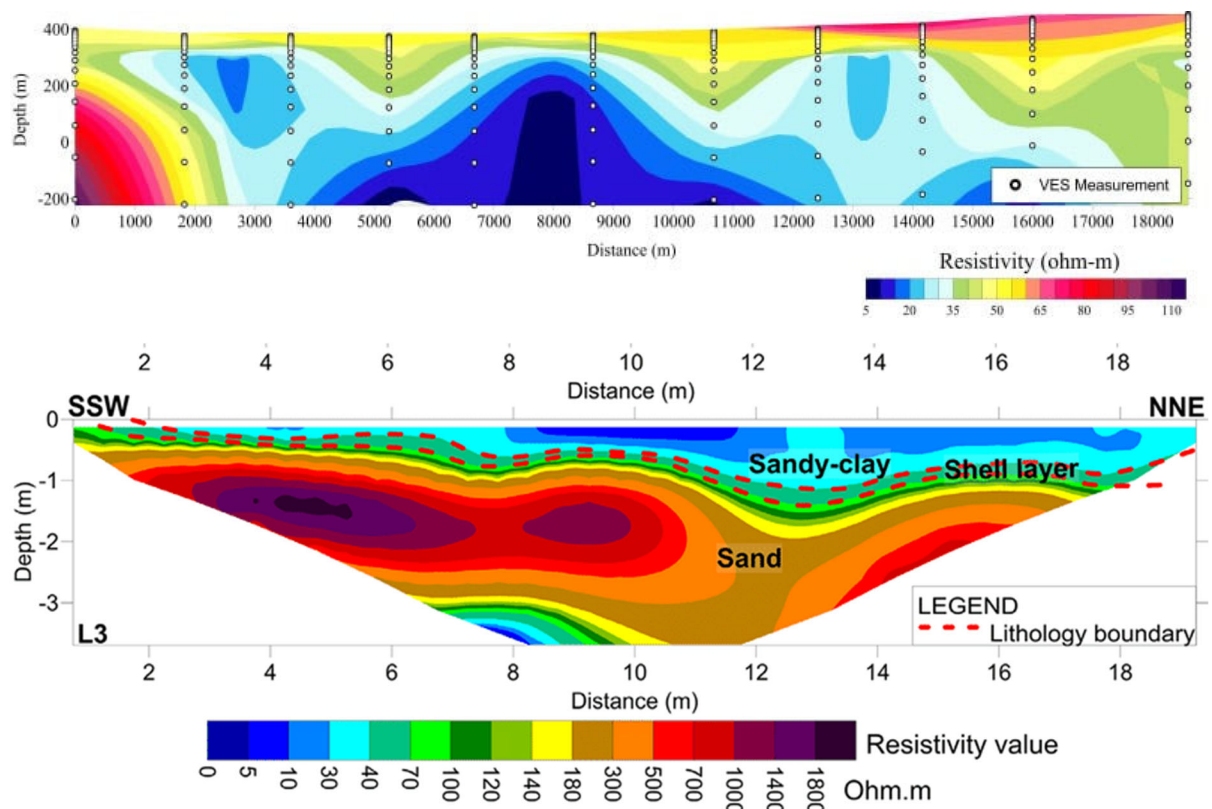


Figure 1.1 – Compiled data sample of the required subsurface cross-section.
(more data are required as stated below)

All compiled data shall then be analyzed by experts and compiled in a comprehensive report which clearly indicates the following:

1. **2-D SUBSURFACE CROSS-SECTIONS:** including all geological/ hydrogeological information: geological formation, depths, aquifer potential, groundwater availability, groundwater quality (Electrical conductivity EC).
2. **WELL DESIGNS:** a complete well design for all six (6) recommended drilling locations including all details: Depths, drilling diameters, casing, casing type, casing thickness, grouting thickness, grouting material, and recommended injection method. Including cross-sections and narrative descriptions.

All six (6) well shall add up to cover the demand of a minimum of 1500 Cubic meters per day.

3. **SUSTAINABILITY STUDY AND EXPERT RECOMMENDATIONS:** Including projections of the predicted lifespan of the designated aquifers and wells.
4. **A scientific narrative including figures, charts...etc.** All details, reports, charts and figures must be high-quality.