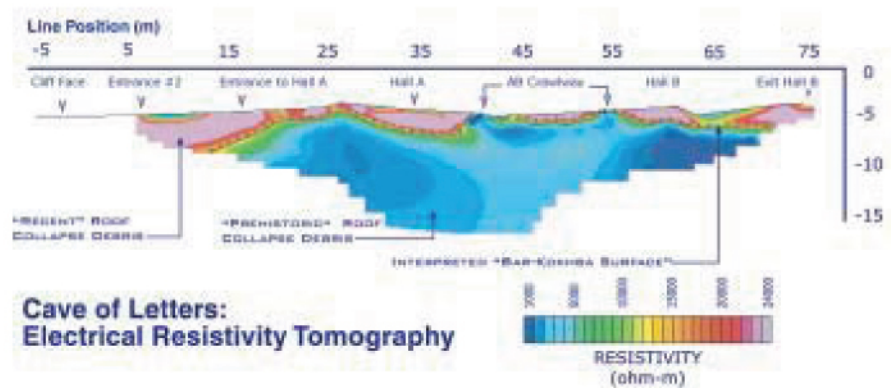


Exploring Our Ancient History

Paul Bauman, an employee of Komex International (www.komex.com), a Calgary-based environmental consulting company, was recently invited to join an archeological expedition in Israel. Led by Dr. Richard Freund of the University of Hartford, the mission was to explore the ancient history of the Dead Sea area. Bauman's role was to apply the latest geophysical instrumentation and Oasis montaj mapping methods.

The first site Bauman mapped, the Cave of Letters, received international attention in 1960, when Yigal Yadin discovered a large collection of papyrus scrolls, dating from 132–135 A.D.

The cave floor is littered with boulders dislodged from the cave roof by earthquakes over the centuries. The litter has hindered exploration and only the recent use of geophysical technology has enabled further investigation.



CROSS-SECTION WITH GEOSOFT GRID SHOWING LITTER AND DEPTH TO ORIGINAL FLOOR.

Bauman performed an initial survey using a handheld EM-61 instrument followed by electronic resistivity tomography. The ERT method led to discovery of the original cave floor beneath the roof litter. Using Oasis montaj, they were then able to create a grid showing the location of the original floor (see above).

He also spent time at other nearby sites. In a cemetery in Qumran, he used the EM-61 to locate two burial sites suspected to contain lead sarcophagi. To receive permission to dig in a cemetery, archeologists must provide "compelling evidence" of unusual burial practices and the EM-61 data will be able to provide this evidence. The archaeologists are hoping that these sites will provide important clues about the authors of the Dead Sea Scrolls.

The third site surveyed was the city of Beitsaida that dates from the first century A.D. This site is now being excavated, and Bauman was asked to see if there was another city buried beneath. Using the ERT method, which worked "spectacularly well", he found evidence of a buried Iron Age city.

These discoveries show the unique contribution of geophysics and software in archeology. Bauman hopes to continue his work next year in the Dead Sea area.