ENVIRONMENTAL/ENGINEERING GEOLOGISTS

HGS ENVIRONMENTAL/ENGINEERING COMMITTEE LUNCH & DINNER MEETINGS—DECEMBER 9, 1992

LUNCHEON:

Place: Houston Community College
Lecture Room 221, San Jacinto Bldg.
1300 Holman at San Jacinto

Time: 12:00 - 12:15 Social
12:15-1:15 Program

DINNER:

Place: Italian Market and Cafeteria
2615 Ella Blvd.
(Located behind NW Memorial Hospital just south of 610 North Loop)

Time: 6:00 - 6:30 Social
6:30 - 7:30 Program

After the Dinner meeting the Career Change Networking Group will meet for 30 minutes or less.

DR. JAMES PRITCHARD-Biographical Sketch

Dr. James Pritchard, the innovator of 3DR Images and its predecessors, as used for environmental evaluations, has performed tests, demonstrations, and services using EM geophysical techniques on more than 50 sites over the past six years. This past year, he developed an application of an EM-gradiometer to map resistivity anomalies due to the collective effects of metal features, hydrocarbon plumes, saline solution plumes, and major lithologic changes occurring in the soil overburden, the vadose zone, and at and below the water table. The EM gradiometer can use local power lines as sources of signal in most environmental sites. On such sites, the technique is very useful and cost effective in Phase I Environmental Assessments. It works everywhere outside man-made structures.

Dr. Pritchard has been a consultant, research scientist, professor, and businessman in geophysical technology for mre than forty years. His broad background includes projects in the natural resource fields (oil & gas, geothermal, mining, and potable water) in addition to the engineering-environmental fields. Problem solving through the implementation of geophysical surveys is his specialty. His expertise in electrical and electromagnetic geophysical techniques is recognized internationally.

THREE-DIMENSIONAL RESISTIVITY (3DR) IMAGES
As Applied to The Environmental Industry: A Cost- and Time-Saving Alternative

The **3DR IMAGE** technique, an adaptation of the Electromagnetic Offset Induction Log (EOL) of the mining industry, can significantly reduce the number of bore holes and monitor wells needed to characterize environmental sites. One bore hole or monitor well can be used to remotely view resistivity changes in the subsurface (to total well depth) over an area of at least four acres.

The 3-D resistivity image derived from a log-location grid of 40 logs/acre generally gives, at a minimum, qualitative evidence of and intelligence about contamination sources. Contamination plumes, and/or geology of a site. This intelligence indicates optimum locations for soil borings and monitor wells. The intelligence gained from these borings and wells integrated with the 3DR Image intelligence leads to a well planned Remedial Action Plan (RAP) with impressive cost savings.

The presentation will give a rudimentary introduction into Geophysical Induction Techniques, their applications to environmental investigations, and case history examples of results. The 3DR case histories will be displayed on a Silicon Graphics Workstation.