

## JULY 2011 MEETING

Wednesday, July 13, 2011 (1.0 PDH)

### TECHNICAL PROGRAM

#### PRESENTATION (1.0 PDH)

##### Environmental Geophysical Case Studies in Texas

**Speaker:** [Mustafa Saribudak](#), Ph.D., P.G., [Environmental Geophysics Associates](#), 2000 Cullen Avenue, Suite 7, Austin, TX 78757, Tel. No. (512) 206-0070

Mustafa Saribudak is currently the principal geophysicist-geologist of Environmental Geophysics Associates. His responsibilities include designing and performing field surveys and interpretation and reporting of the results. He earned the following degrees from Istanbul University of Turkey: M.Sc. Geological Engineering & Ph.D. Geophysics. He also attended University of Houston and earned Visiting Geoscientist. He has applied majority geophysical techniques in a variety of terrains and is intimately familiar with each applicable, up-to-date technique available to the industry.

#### PRESENTATION SUMMARY

To an audience of about 60 at the HESS Club, Dr. Saribudak presented information related to investigating and identifying subsurface soil conditions through a variety of geophysical testing methods and procedures. These methods include Ground Penetrating Radar (GPR) and Natural-Potential (NP) method. Subsurface or geophysical surveys provide a rapid and generally non-intrusive method of characterizing deeper or underlying conditions such as soil types, groundwater pathways, and geologic features such as faults, fractures, caves and conduits. In contrast, surface testing might be described as the typical soil testing provided for many slab on grade designs.

Dr. Saribudak demonstrated how the use of geophysics can help effectively and accurately interpret near-surface and subsurface conditions in a rapid and cost-effective manner.

Geophysical methods allow soil features to be located, mapped, and characterized by making measurements that respond to a physical, electrical, or chemical property. The methods employed measure and document conditions from several inches to hundreds of feet below the surface.

Dr. Saribudak presented a number of interesting case studies involving sites that have experienced environmental and/or geotechnical problems: The case studies revealed a number of faults in the greater Houston area including active faults near Hockley, Tomball, Longpoint, and Pearland. Additional case studies presented included:

- Foundation problems in residential and commercial buildings in Houston, San Antonio and Austin.
- Locating voids and sinkholes causing foundation problems in Dallas and Austin.
- Locating pipes, USTs and any other utility lines including an unknown abandoned sewer main below a building.
- A study of subsurface conditions below and around Barton Springs in Austin that attempts to trace the source of water feeding the pool.

A variety of excellent slides were shown and much technical data and handouts were available for the attendees. A copy of the presentation slides may be viewed by [clicking here](#)

