

## ***Innovative Screening Technologies Allow Cost-Effective Accelerated Site Assessments***

by Victor T. Jones, Ph.D., President, Exploration Technologies, Inc. (ETI)

There is no question that Accelerated Site Characterization (ASC) can provide quicker, more cost-effective evaluations using Direct Push (DP) or Cone Penetrometer Testing (CPT) technologies to collect geological and geochemical samples for lateral and vertical site characterizations. Undisturbed, essentially continuous soil cores can be obtained with great rapidity as compared to coring during monitor well drilling.

Although this new technology provides tremendous savings in the time required to collect soil cores and discrete water samples, it is still limited by the quality of the analytical screening data and, even more important, the selection of appropriate

samples for analysis to delineate both the "detect" and "non-detect" zones in the geologic column.

When placed at random, the only advantage DP or CPT have over monitor wells is in the number of samples obtained and the shorter time required for collection, versus assessment by the progressive installation of numerous monitor wells. Soil vapor techniques still provide the fastest and most cost-effective method available for rapid collection and analysis of anomalous zones, whether taken vertically down a borehole or horizontally in a gridded survey. Extensive field work (particularly at larger sites) has demonstrated the utility of using soil gas information as the first step for direct-

ing the placement of either DP or CPT sampling locations.

Procedures and equipment for manually collecting 4-, 7-, and 12-foot-deep soil vapor samples will be shown in addition to a Direct Push Device (utilizing Geoprobe tools) to sample vapor, soil, product, or groundwater to depths of up to 100 feet. Innovative new field screening methods that allow real-time analysis of soil vapors for methane and carbon dioxide and for TPH and BTEX from soil cores (15 minutes per sample for this pair) will also be described and illustrated by appropriate examples.

### **Biographical Sketch**

**Victor T. Jones** earned a Ph.D. in physics (1960) from Texas A&M University. Dr. Jones is currently President of Exploration Technologies, Inc. (ETI). While employed by the Gulf Oil Company, and subsequently since the formation of ETI, Dr. Jones has performed more than 200 environmental impact evaluations that involved both the detection and demarcation of contaminant releases at industrial sites, refineries, gas service stations, and landfills. As Director of Geochemical Applications for Gulf Research and Development Co., Dr. Jones has experience in the design, execution, and interpretation of major oil and gas geochemical exploration programs throughout the world in more than one hundred onshore and offshore basins in the United States, Latin America, Africa, and the Far East.

During his twenty-five-year career in geochemistry, Dr. Jones has written numerous technical papers and taught courses in geochemistry at several universities. He is a member of HGS, AAPG, ACS, Association of Petroleum Geochemical Explorationists, European Association of Organic Geochemists, National Water Well Association, and the Texas Water Well Association. ■