

## Cone Penetrometer Support: Operation, Maintenance, and R&D Activity Conducted on the OTD Cone Penetrometer Vehicle (TechID 243)

The cone penetrometer truck (CPT) hydraulically pushes steel rods with a variety of sensor tips into unconsolidated soils. Numerous CPT sensors and samplers have been developed, including the Ribbon NAPL Sampler, the Spectral Gamma Probe, and the Membrane Interface Probe. This project conducts rigorous independent evaluations of these new sensors and samplers using the DOE-owned Site Characterization and Analysis Penetrometer System (SCAPS). Such field testing is needed to develop reliable, comparative cost and performance data in a variety of hydrogeologic settings. Results collected during field evaluations are documented and frequently lead to deployment of the technology at that site.



### Developers:

- US DOE, Savannah River Tech Center, and several sensor developers

### Applications:

- Lower per-sample cost allows greater data density for improved site characterization
- Real-time measurement of chemical and physical properties in unconsolidated soils allows on-site decision-making during subsurface characterization
- Various CPT sensors demonstrated and deployed at numerous locations using SCAPS during FY98 and FY99; see TSSs for individual sensors and samplers

### Benefits:

- Reduces time required to characterize the site
- More information can be gotten in a single push with multiple sensors
- Reduces exposure of workers to hazardous materials

### Status:

- CPT and related direct push system services and sensors available commercially from several sources, including Applied Research Associates ([www.vertek.ara.com](http://www.vertek.ara.com)), Fugro Geosciences ([www.fugro.com](http://www.fugro.com)), FLUTe ([www.flut.com](http://www.flut.com)), and GeoProbe Systems ([www.geoprobessystems.com](http://www.geoprobessystems.com))
- Related OST technology ID numbers include 7, 69, 140, 381, 489, 1686, 2122, 2237, 2238, 2239, 2364, 2365, 2399, 2944, 2949, 2950
- Innovative Technology Summary Report Available ([www.cmst.org](http://www.cmst.org))