Horizontal Directional Drilling for Soil Sampling and Small Site Remediation Applications

Horizontal/directional drilling (HDD) has been utilized in the environmental industry for the installation of monitor wells and remediation systems since the late 1980's. Refinements in drilling equipment, steering/locating methodology, and sampling tooling have given consultants, regulators, site owners, and drillers the ability to use the technology to obtain soil samples using HDD methods.

The specific tooling includes a variety of soil samplers for use in multiple types of geologic conditions. The tooling is typically utilized with small (less than 25,000 lb. capacity) rigs requiring a limited surface operating footprint.

Benefits of the method include:

- Accessing areas under obstructions which limit/prevent the use of vertical drilling equipment.
- Steerable drilling assembly allows for multiple samples from one borehole/rig up location.
- Reduce crew risk by moving the drilling equipment from hazardous locations; busy roadways, ponds, and manufacturing-operating units.

A recent project detailing the effectiveness of horizontal/directional soil sampling in a complex urban environment will be detailed in the presentation.

The presentation will also explore the use of HDD for small site remediation applications such as UST sites and dry cleaners.

Biographical Sketch

David Bardsley, PG, has over 40 years of geotechnical, water supply and environmental drilling experience working in a variety of settings across the United States. He started his career as a drill rig helper in Houston, advancing through various technical and managerial positions in both small and large drilling companies. He was an early leader in the use of horizontal directional drilling and well installation methods to solve complex environmental and water supply challenges. David has been responsible for thirteen horizontal well projects in Texas with a total installed length of over 30,000'.

Mr. Bardsley has a B.S. in Geology & Geophysics along with a Communications Minor (1984) from the University of Missouri-Rolla. He is a licensed well driller in Texas, Arizona and Louisiana and holds RG/PG certifications in TX, MO, LA, and TN.