

MORE DATA PER BOREHOLE

MIHPT



WHAT IS THE MIHPT?

The MIHPT is the combination of the Membrane Interface Probe, Hydraulic Profiling Tool, and an electrical conductivity probe. The simultaneous collection of data from these systems during tooling advancement generates significant value by providing the relative concentrations of volatile organic compounds (VOCs), the relative permeability of the subsurface, and an approximation of the soil grain size, all versus depth in real-time. It is the most common high resolution site characterization (HRSC) tool used for the delineation of VOCs, whether they are in the form of petroleum hydrocarbons or chlorinated solvents.

CAPABILITIES

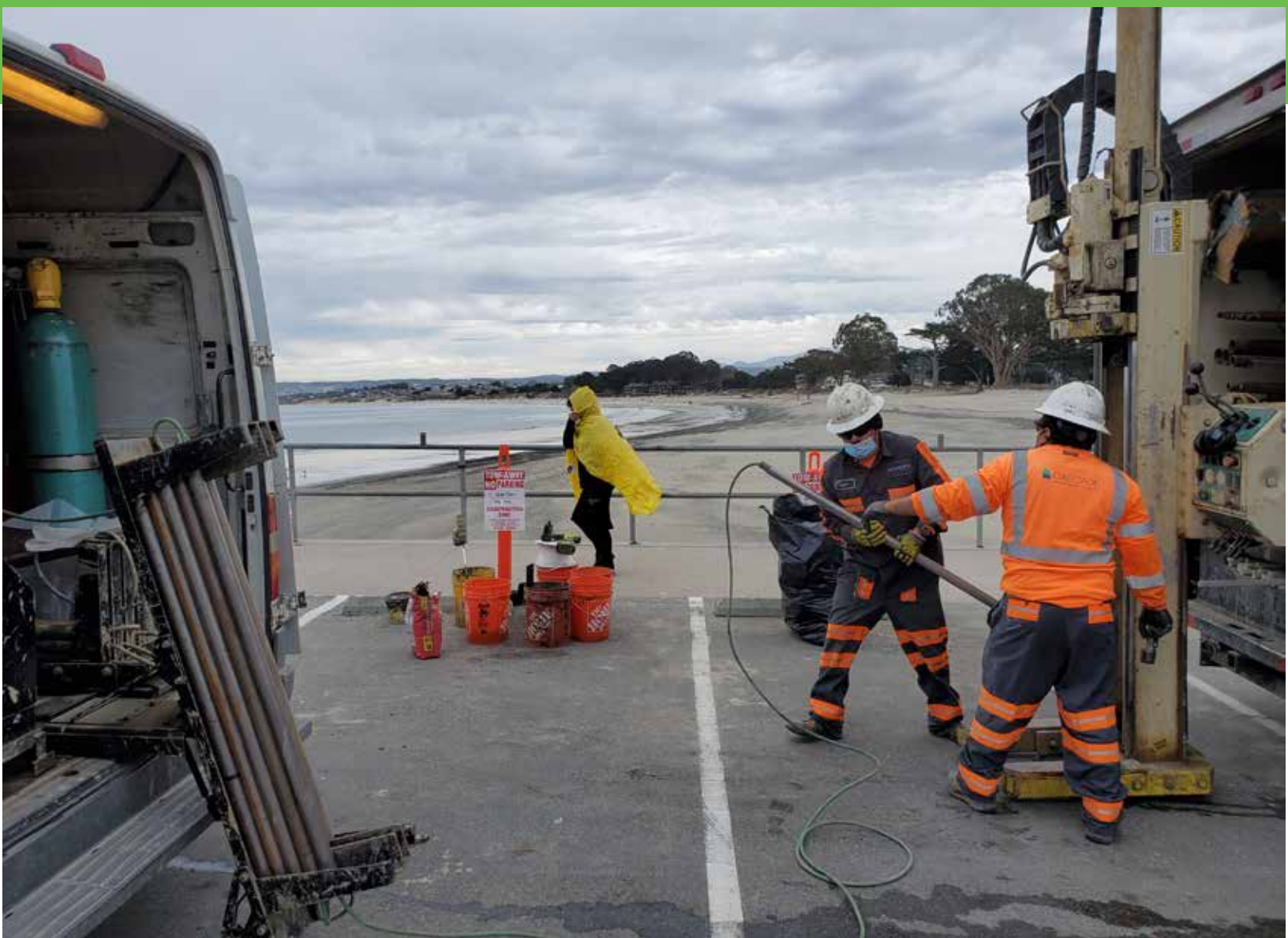
Real-time logs of depth v. VOCs concentrations and hydrogeology

Multiple VOCs detectors enable differentiation of compound families

Identifies components of VOCs mass in high-and low-K zones for more effective remedial alternative design

Identifies VOCs mass in soil and groundwater simultaneously, unrestricted by sampling flow rates

Multiple configurations to meet characterization needs

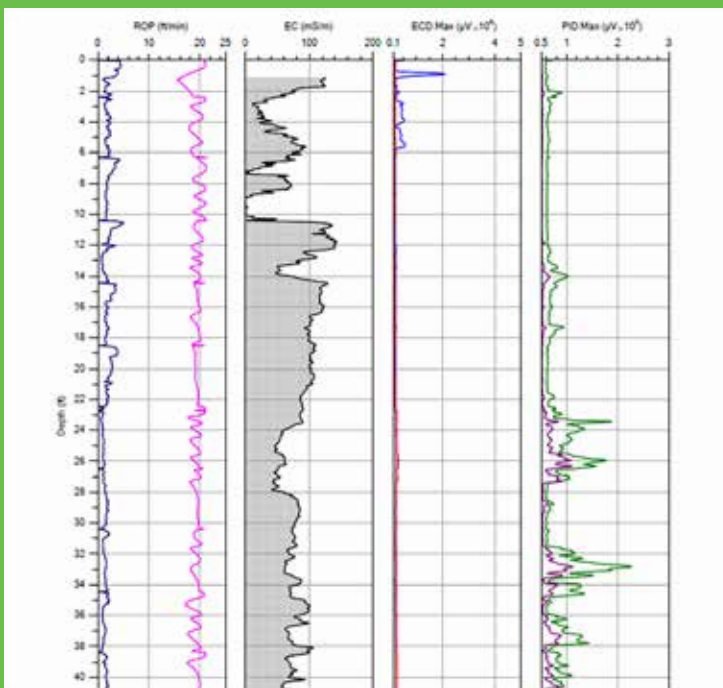


MEMBRANE INTERFACE PROBE

The Membrane Interface Probe (MIP) is commonly used for quickly determining the locations of VOC source zones and plumes. The MIP is most valuable in terms of its ability to provide “spatial correspondence”, meaning that where the MIP detector responses show peaks, there is likely to be elevated soil and groundwater concentrations. The MIP can also be used to provide extremely valuable data to streamline subsequent investigative tasks and improve the overall efficiency and accuracy of the site investigation. Vertical profiles, cross-sectional views and three-dimensional images of contaminant distribution can all be produced from the electronic data generated by the MIP logs. The capability of providing reliable, real-time information allows for informed and timely decision making in the field.

HYDRAULIC PROFILE TOOL

The hydraulic profiling tool (HPT) creates a log of the relative formation permeability versus depth in real time as the probe is advanced into the subsurface. It operates by injecting clean water at a constant flow rate from an aboveground reservoir through the direct push rods and out into the surrounding soil via an injection port on the side of the probe. Simultaneously, sensors record the flow rate, the back pressure required by the pump to maintain that flow rate, and the current depth of the probe. These measurements are collected by the onboard software and an estimated hydraulic conductivity (estimated K) value is calculated and plotted alongside the other measurements in real time.



HOW DOES IT WORK?

The MIP works by heating the soils and groundwater adjacent to the probe to 120 degrees Celsius. This volatilizes the VOCs and allows them to transfer through a Teflon membrane via a combination of concentration and pressure gradients. These VOC are then swept into a nitrogen gas loop that carries them to a series of detectors housed at ground surface. Continuous response profiles are generated from each hole. The electrical conductivity of the soil is also measured, and these logs can be compared to the chemical logs to better understand the relationship between the lithology and the contaminant distribution.



**Ready to get results with the MIHPT?
We're ready to help.**
Call or email us to get started.



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