Geoprobe Systems®
DIRECT IMAGE®

E-SPECS

Geoprobe® HPT (Hydraulic Profiling Tool)

The Hydraulic Profiling Tool (HPT) allows the user to create fast, continuous, real-time profiles of soil hydraulic properties in both fine- and coarse-grained material. The HPT uses a sensitive, downhole transducer to measure the pressure response of the soil to injection of water.

HPT Features:

- Fast, continuous, real-time profiling of soil hydraulic properties
- Use in both fine- and coarse-grained material
- Use in both saturated and unsaturated conditions
- Built to withstand percussion driving
- Collects static water level data
- Provides a simultaneous log of electrical conductivity with integrated Wenner array
- Sensitive downhole transducer measures pressure response of soil to injection of water
- Parameters are displayed and stored on the Field Instrument for future analysis

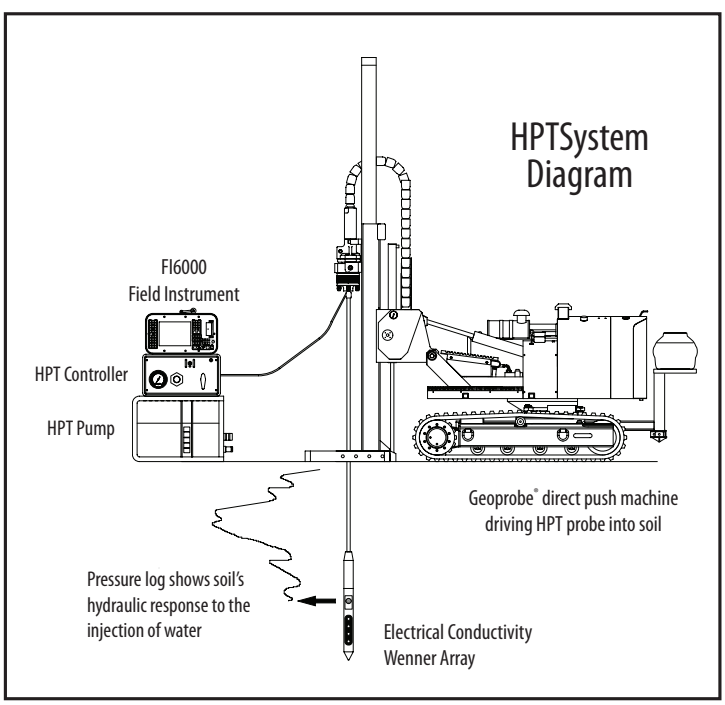
HPT SPECFICATIONS

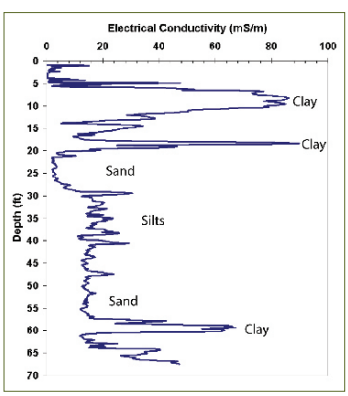
Data Aquisition Rate .....5 Hz
Recommended Probing Rate.....2 cm/sec
Conductivity Array.....Wenner
Working Depth (max)..... 120 feet ... 36.6m below groundwater

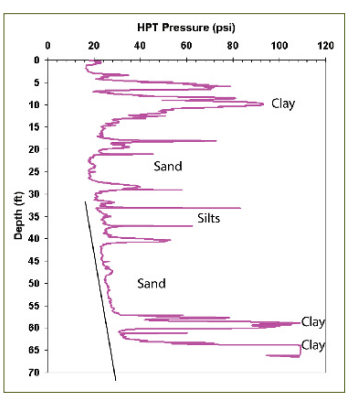
Pressure Transducer
Operating Pressure.....0-101 psia
Maximum Overpressure ..... 400 psia
Full Scale Accuracy .....2.5 percent

Flow Meter
Flow Rate (max)..... 0-1 Lpm
Pressure (max) ..... 500 psig
Full Scale Accuracy ..... +/- 1 percent
Full Scale Repeatability..... +/- 0.2 percent

Flow Controller
Maximum Flow Rate ..... 0-1 Lpm
Maximum Pressure ..... 500 psig
Stability of Setpoint ..... 2 percent +/- 0.5 percent
Repeatability.....0.3 percent







Plots of EC (left) and HPT pressure (right) collected concurrently. Both the HPT pressure and the EC data confirm that clays predominate the upper 20 feet, which is underlain by ~35 ft. of silts and sands, followed by ~10 ft. of clays. Static water level was calculated to be at 31 ft. The HPT log was made to characterize potential contaminant migration pathways at the site. The line drawn on the HPT pressure plot shows the hydrostatic increase as the probe gets deeper below the static water level.

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