

Evaluation of Water FLUTE™ System Technology in Multi-Level Monitoring of Fractured Bedrock Groundwater

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Vertical characterization of contaminated groundwater in fractured bedrock systems is difficult and costly. A matrix based comparison was conducted among the Water FLUTE™, Westbay MP38™, and Solinst Waterloo™ systems. As a result of the comparison, the FLUTE™ technology was selected for a project site in northern New Jersey. This technology provides an efficient and cost effective tool for measuring the vertical profile of groundwater characteristics from a single borehole.

The FLUTE™ multi-level groundwater sampling system was installed in an open bedrock borehole in the fractured Passaic Formation of the Newark Basin. The system was designed with six sampling ports throughout the 400-foot vertical bedrock sequence. The effectiveness of the FLUTE™ system was evaluated based on design, installation, sample collection, eventual abandonment and life cycle costs. The completed system is being used to collect water level measurements and groundwater samples for laboratory analysis and to confirm upgradient conditions at the project site.