Chapter 8
Water Levels

8-1. Measurement Frequency and Coverage

The frequency of water-level measurement is project related. At a minimum, for those projects involving the installation of any monitoring wells, at least one complete set of *static* water-level measurements should be made over a single, consecutive 10-to-12-hour period for all project-related wells, both newly installed and specified existing wells. These measurements should be taken at least 24 hours after development or sampling. Static levels in borings not converted to wells should be included if practical and technically appropriate. This set of measurements should include a notation for the presence of any streams, lakes, and/or open water bodies (natural and man-made) within proximity, e.g., about 90 m (300 ft) of these wells. Elevation measurements of any surface water bodies should be a consideration within the drilling and well installation plan.

8-2. Vertical Control

The depth to groundwater should be measured and reported to the nearest 3 mm (0.01 ft). Measurement should be made from the highest point on the rim of the well casing or riser (not protective casing). This same point on the well casing should be surveyed for vertical control. The surveyed mark on the top of the casing should be permanently marked with a notch cut in the casing to ensure that depth to water is always measured from the same elevation. Surface water levels should be measured at least to the nearest 30 mm (0.1 ft) using an adjacent temporary or permanent survey marker as a datum for current and future reference.

8-3. Reporting and Usage

All water level data should be presented as elevations in tabular form. Where sufficient data points exist, the elevations should be contoured to denote flow directions, gradients, and any hydrological interconnections between aquifers and surface water bodies.

8-4. Methods

Guidance on determining liquid levels in a borehole or monitoring well may be found in ASTM D 4750.