

PIEZOMETER LOG

FOR DRAINAGE INVESTIGATIONS

Property _____ Date _____

Piezometer No. _____ Elevation _____

Location _____ Land Use _____

Surface Soil _____ Elevation _____

Physiography _____ Relief _____

Length of Piezometer _____ Feet

Height of Piezometer above Ground Surface _____ Feet

Depth of Piezometer in the Ground _____ Feet

	DRIVING RESISTANCE H ___ Hard M ___ Moderate E ___ Easy	PUNCHING RIVET FROM END OF PIEZOMETER (Resistance)
		Hard Moderate Easy <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		SOIL CONDITION AT END OF PIEZOMETER (Soil on End of Punch Rod)
		Dry Moist Wet Soupy Water <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		SOIL TEXTURE (Determined from Flushing Effluent)
		Clays Silts Loams Fine Sands Coarse Sands <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		RATE OF WATER SURFACE DROP IN PIEZOMETER (Following Flushing)
		Artesian Back Pressure Slow Moderate Rapid <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		REMARKS

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FEET

PIEZOMETER LOG

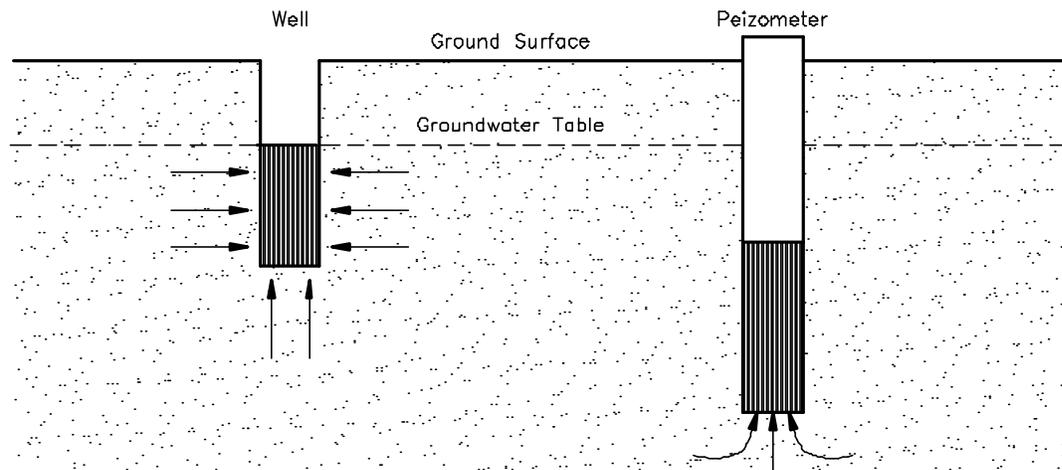
FOR DRAINAGE INVESTIGATIONS

Practically all studies of drainage problems necessitate a determination of water table levels and fluctuations. A groundwater survey provides essential information on the position of the water table at various points in the problem area, in the various soil strata and on the extent and degree of severity of the drainage problem.

There are various tools and methods used to determine groundwater levels and movement. The most widely used are the observation well and piezometer.

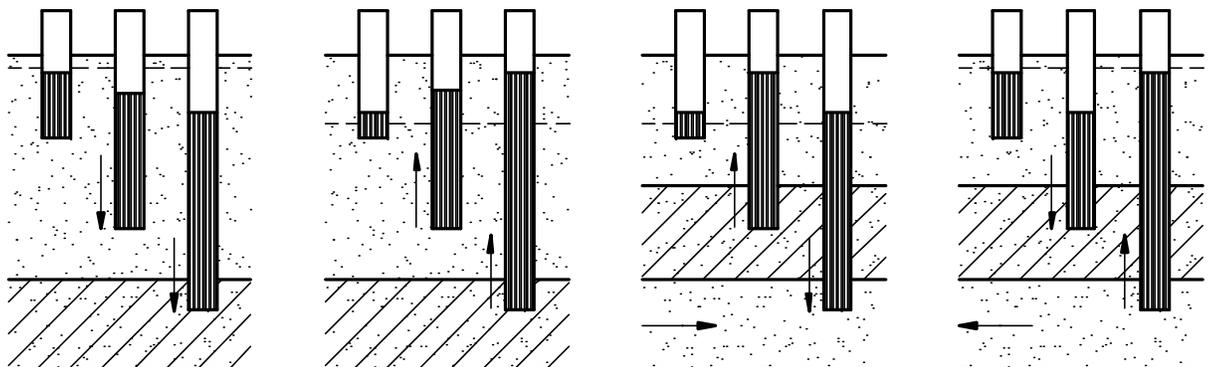
WELL: The observation well is used to determine the free groundwater table. The kind, size and depth of observation well and the type of casing depend largely on the type of investigation being made. For a reconnaissance, auger holes are usually sufficient, for a valley-wide drainage survey, observation wells of a semi-permanent type should be installed. Semi-permanent observation wells are generally installed by placing a small quantity of gravel in the bottom of the auger hole and placing the casing on the gravel and backfilling with gravel to the groundwater table level. Casing can be made of pipe, tin downspouting or heavy cardboard waxed mailing tubes.

PIEZOMETER: The piezometer is a small (1/4 to 1 inch) unperforated pipe so driven that there is no leakage down the outside of the pipe and the groundwater can enter it only at the bottom end. The piezometer then registers the hydrostatic pressure of the groundwater at the bottom of the pipe rather than the free groundwater table.



The piezometer opens up a wide range of possibilities in drainage investigation. Since underground water moves from a point of high hydrostatic pressure to one of a lower pressure, the movement tendency of groundwater can be charted if the hydrostatic pressures are measured. With sets of piezometers spaced at intervals, the hydrostatic pressure at different points in a profile may be determined and seepage movement detected.

The following examples show how piezometers may be used to detect directions of groundwater movement.



The piezometers indicate that the ground water is going down and that there is some natural drainage.

The piezometers indicate hydrostatic pressure or that there is water coming up from a deeper strata.

The piezometers indicate hydrostatic pressure in a stratum, and that water is being forced both up and down from the stratum.

The piezometers indicate that the ground water is moving into a stratum and going out of the area.