

Dewatering for dry, stable excavations

Temporary lowering of groundwater with sumps, wellpoints or deep wells so work can proceed in the dry.

CAN BE CONSIDERED WHERE

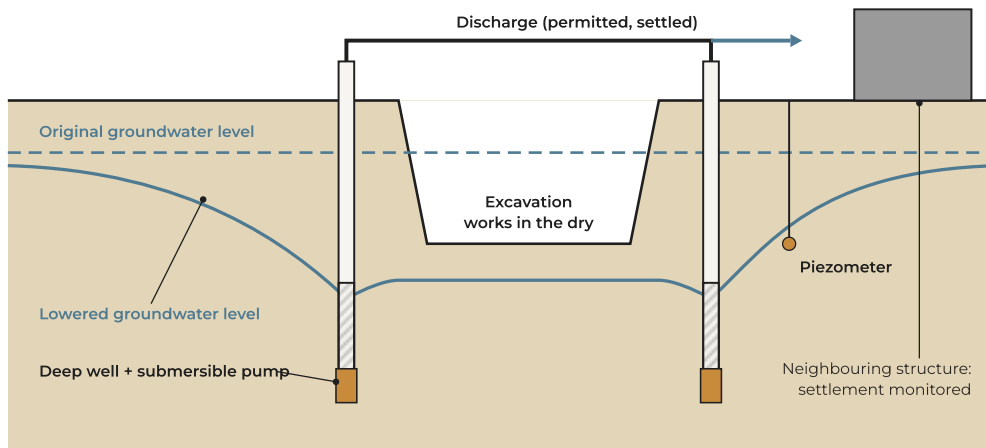
- Excavations below groundwater for basements, pipelines, pump stations and foundations.
- Preventing base heave or piping in excavations.
- Keeping formation levels stable during construction.

LIMITATIONS

- Lowering groundwater can cause settlement of nearby structures, which is assessed and monitored.
- Discharge must be permitted and managed for sediment and salinity.
- Fine soils drain slowly and may need other methods.

HOW IT WORKS

Sumps collect water inside the excavation for shallow, low-flow conditions. Wellpoints (closely spaced small wells connected to a suction header) suit sandy soils at moderate depth. Because they work by suction, the drawdown from one stage is limited; deeper excavations need more than one stage or deep wells.



Schematic, not to scale.

DESIGN INPUTS

- Site investigation: soil permeability and groundwater levels.
- Excavation depth and required drawdown.
- Duration of dewatering.
- Adjacent structures and settlement limits.
- Discharge location and permits.

EXECUTION CONTROLS

- Groundwater levels in piezometers.
- Flow rates and discharge quality.
- Pump running hours and standby checks.
- Daily records.

VERIFICATION AND ACCEPTANCE

Design intent: What is required

Target groundwater level below formation agreed with the consultant.

Production control: What was done

Piezometer levels and flow records.

Acceptance: What was proven

Confirmed drawdown before excavation; settlement monitoring of neighbouring structures.

DELIVERABLES

Method statement and risk assessment · Dewatering design and layout drawings · Pumping test report · Monitoring records · Discharge records