

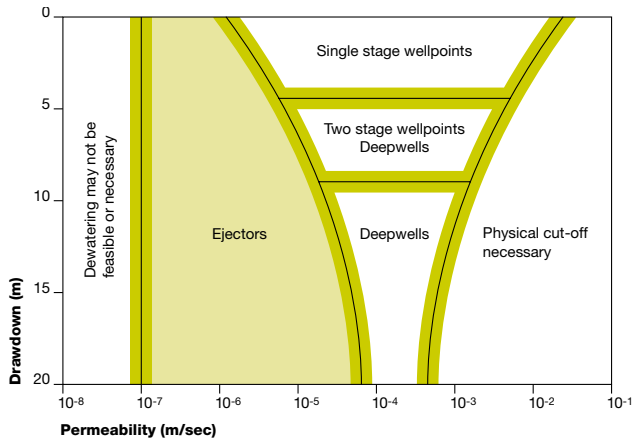
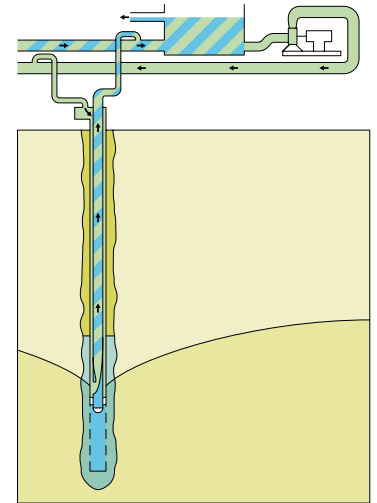


Ejector dewatering systems are employed to control pore pressures and to lower groundwater levels to provide stable working conditions in excavations. The technique may also be used to recover contaminated groundwater from depth. WJ's comprehensive sub-contract service covers the design, provision of equipment, installation and operation of ejector systems for any purpose.

Application

Ejector systems are able to extract groundwater and generate a high vacuum at the base of wells up to 30 m deep and of as little as 50 mm diameter. Vacuum drainage can provide dramatic improvement in the stability of silty fine sands and laminated silts and clays by the control of excess pore pressures. Ejector wells have been successfully installed in raking boreholes to dewater beneath inaccessible areas such as railway lines and canals. Ejector systems have a number of operational advantages over other dewatering techniques: they are flexible in level and layout, stable in operation and able to run dry without damage.

t +44(0)20 8950 7256
w www.wjgl.com



Principles of ejector systems

Supply pumps at ground level feed high pressure water to each ejector well head via a supply main. The supply flow passes down the well and through a nozzle and venturi in the ejector. The flow of water through the nozzle generates a vacuum in the well and draws in groundwater. The supply flow and extracted groundwater mix, return to the surface and feed back to the pumping station via a return main. The return flow is used to prime the supply pumps and the excess water extracted is discharged by overflow from the priming tank. A single pumping station can be used to operate up to about 75 ejector wells installed in an appropriate array around the works.

Equipment specification

- Ejector nozzle: low flow, standard, high flow
- Well diameter: 50 mm minimum
- Well depth: up to 30 m
- Pumping station: 1 to 75 ejectors
- Headermains: 100 mm, 150 mm
- Electrical control: starters, protection, alarms
- Automatic mains failure systems

Installation methods

- Jetting tube
- Hydraulic auger
- Hole puncher with hammer action
- Cable percussion drill
- Rotary drill

Design capability

WJ has a proven record of innovative design solutions based on many years of practical and technical experience of small and large scale projects. The service includes assessment of site investigation data, followed by provision of layout drawings, method statements and design calculations as requested.