A4

Glossary

Adsorption — A process of adhesion to the surface of a material.

Alluvium — Soil or sediments deposited by a river or other running water comprising gravel, sand, silt and mud.

Aeolian sand — Material which has been transported by the wind and as a consequence is worn and deposited as small, rounded particles.

Aquifer — A formation of rock or sediment that contains quantities of water that can be released in usable quantities.

Aquitard — A formation of rock or sediment with a low permeability that stores groundwater but delays its flow elsewhere.

Arid — Relates to climates or regions with an average annual rainfall of less than 200mm.

Biofouling — Bacterial slime of algae and micro organisms which grows on immersed equipment such as well-points and pipe work. Excessive accumulation creates blockages of screen apertures and pipe work.

Caisson — A concrete or brick structure on the bed of a river constructed for abstracting water.

Clasts	Clastic sedimentary rocks are rocks composed predominantly of broken pieces or 'clasts' of older weathered and eroded rocks.
Collector well	A vertical well shaft incorporating one or more horizontal screens that allows groundwater to infiltrate from riverbed sediment, the base of the river channel or from a gravel or sand bed.
Compaction	The process of granular material becoming more closely packed together.
Confined aquifer	An aquifer that is bounded above and below by formations of lower permeability. The aquifer itself is not in direct connection with the atmosphere and does not have a free water-table.
Contaminant	A chemical or biological suspension that is detrimental to water quality and reduces its usability for drinking, food preparation or washing.
Dryland	Land that may have vegetation suitable for grazing livestock but is too arid for crop farming.
Endogenous river	A regularly flowing river or stream that originates within arid lands. Such rivers often do not reach the sea but drain into inland basins where the water evaporates and is lost in the ground.
Ephemeral river	A stream or river which does not flow at all times of the year.
Erosion	Wearing away of rock and land surface largely by the actions of material carried by water or wind.
Evaporation	The loss of water due to a change from liquid to vapour phases, made worse by high temperatures and wind.

Evapo-transpiration	The total loss of moisture from the soil and open water through evaporation and by transpiration from growing plants in the form of water vapour.
Exogenous river	A perennial river flowing through a dryland area with a source outside the arid zone.
Flood plain	Flat land alongside a river that consists of alluvium deposited by the river when in flood.
Groundwater	Water that occurs beneath the land surface and which fills the voids of the alluvium, soil, or rock formation in which it is situated.
Gravelbed	A deposit of rounded stones between 2mm and 80mm diameter that were formed by the action of moving water, usually mixed with finer materials such as sand or clay and typically the surface will be vegetated.
Hafir	A lined or unlined artificial reservoir collecting water from a river channel or rainfall from surface run-off.
Headworks	Infrastructure around a pump, generally concrete work, intended to keep the pump surrounds clean and drained.
Hydraulic head	Potential energy contained in a mass of water due to differences in elevation and atmospheric pressure.
Infiltration	The flow of water downward from the land surface into and through the upper soil layers.
Infiltration gallery	One or more horizontal screens placed adjacent to or directly beneath a shallow source of water to increase the supply.

Jetting	A process of installing a well-point into sediment using a jet of water.
Manifold	A chamber with one or more inlets that reduces the velocity of water through a supply system.
Mineral salts	Salts released from rocks that are dissolved in water. Fast draining aquifers tend to contain few salts, slow draining aquifers may be more saline.
Offset *(false well)*	A well adjacent to a river with water artificially supplied from river alluvium.
Open surface	A water surface open to evaporation.
Paleo river channel *(fossil riverbed)*	A river channel that occurred at a time when the climate of a region was wetter than at present and no longer has a flow of water.
Permeability	A measure of the ability of rocks or sediments to allow the flow of water, measured in metres per unit time.
Perched aquifer	An aquifer that is not connected with the main body of groundwater due to an underlying layer of impermeable material.
Perennial river	A stream or river with continuous flow.
Persian Wheel	A vertical wheel with buckets for lifting water from a depth approximately the radius of the wheel, usually animal-powered.
Porosity	The ratio of the voids or open spaces in alluvium (and rocks) to the total volume of the alluvium or rock mass.
Potable water	Water of sufficient quality to serve as drinking water that does not contain disease producing vectors or pathogens and whose chemistry does not cause long-term health problems.

Qanat *(karez or foggara)*	An underground tunnel constructed into a hillside to access an aquifer. The tunnels gently rise to the aquifer to allow the water to drain under the influence of gravity.
Run-off	Water moving over a land surface which is not absorbed into the soil.
Safe water	Water that is not harmful for human beings or contaminated to the extent of being unhealthy.
Sand-abstraction	The process of taking water from the saturated sediment of sand rivers.
Sandbed	**A** layer of sediment whose grain size is between 0,06mm and 2mm (finer than a gravel bed).
Sand well *(scoop well)*	A seasonal unlined well excavated in river channel sediment to access saturated sediment.
Saturated sediment	Sediment in which all pores, voids and interconnected openings are filled with water.
Seasonal river	River or stream that flows only during and following rainfall and is dry at all other times.
Sediment	Layers of coarse to fine grained rock particles deposited by flowing water or by wind action.
Seepage	A diffuse flow of water from an aquifer.
Self jetting well-point	A well-point incorporating a valve to allow direct installation by jetting. When pumping commences the valve closes forcing water to enter the well-point through a screen.
Semi-arid	Relates to climates or regions with an average annual rainfall of less than 600 mm.

Specific yield	The ratio of the volume of water in a soil or rock, that will flow by gravity drainage, to the total volume of the material.
Shadoof	A hand device used to raise water by way of a counter-balanced pole, with a bucket at one end and a weight on the other.
Transmissivity	A measure of the volume of water that can move horizontally through the entire saturated thickness of an aquifer, measured in metres squared per unit time and used to determine the potential yield of a well or well-point.
Unconfined aquifer	An aquifer which is not bounded on top by an aquitard, the upper surface of which is the water-table.
Wadi	A dry riverbed in an arid zone that contains water only during times of heavy rain. As flow is often the result of an intense localized storm a wadi typically has no source or outlet.
Water-table	Level in the ground below which rock strata are saturated with water.
Weathering	Breakdown of rocks resulting from the action of wind, rain, temperature change, plants and other organisms.
Well-point	A pipe or screen with openings large enough to allow water to enter and small enough to exclude most of the water-bearing sediment. The size of openings in the well-point is determined by analysis of the size of particles in the alluvium.
Well-screen	A holed or slotted mechanism for separating water from sediment, see well-point.