

GLOSSARY OF TERMS

Acre Foot -- a unit for measuring the volume of water and is equal to the quantity of water required to cover one acre to a depth of one foot; a total of 325,858 gallons or 43,560 cubic feet.

Alluvium -- a general term for deposits of clay, sand, gravel, or other particulate material that has been deposited by a stream or other body of running water in a streambed.

Anticline -- a fold that is convex upward; in simple anticlines, the beds are oppositely inclined.

Anticlinorium -- a series of anticlines and synclines so arranged structurally that together they form a general arch or anticline.

Aquiclude -- a formation that, although porous and capable of absorbing water slowly, will not transmit water fast enough to furnish an appreciable supply for a well or spring. Aquicludes are characterized by very low values of "leakage," so that they transmit only minor inter-aquifer flow and have very low rates of yield from compressible storage. Therefore, they often constitute boundaries of aquifer flow systems.

Aquifer -- a geologic formation(s) that is water bearing. A geological formation or structure that stores and/or transmits water, such as to wells and springs. Use of the term is usually restricted to those water-bearing formations capable of yielding water in sufficient quantity to constitute a usable supply for people's uses.

Aquifer (semi-confined) -- an aquifer confined by a low-permeability layer that permits water to slowly flow through it.

Aquifer Test -- a test whereby drawdown and recovery levels are monitored in a well during and after pumping from which the hydraulic characteristics or aquifer parameters of transmissivity and storativity can be calculated.

Aquitard -- a saturated, but poorly permeable bed that impedes groundwater movement and does not yield water freely to wells, but which may transmit appreciable water to or from adjacent aquifers and, where sufficiently thick, may constitute an important groundwater storage unit.

Artesian -- an adjective applied to groundwater, or things connected with groundwater, such as a well or basin, where water is under pressure and will rise to a higher elevation if afforded an opportunity to do so.

Artificial recharge -- any process by which man fosters the transfer of surface water into the groundwater system.

Base Flow -- that part of stream discharge from groundwater seeping into the stream.

Basin -- a hydrogeologic unit consisting of an area underlain by permeable materials that are capable of storing or furnishing a significant water supply; the basin includes both the surface area and the permeable materials beneath it.

Bedrock -- the solid rock beneath the soil and superficial rock. A general term for solid rock that lies beneath soil, loose sediments, or other unconsolidated material.

Cone of depression -- a cone-like depression of the water table or other piezometric surface that has the shape of an inverted cone and is formed near a well by withdrawal of water. The surface area included in the cone is known as the area of influence of the well.

Confined groundwater -- groundwater under pressure whose upper surface is the bottom of an impermeable bed or a bed of distinctly lower permeability than the material in which the confined water occurs. Confined groundwater moves under the control of the difference in head between the intake and discharge areas of the water body.

Conformable -- when beds or strata lying upon one another in unbroken and parallel order, and this arrangement shows that no disturbance or denudation has taken place at the locality while their deposition was going on, they are said to be conformable. But if one set of beds rests upon the eroded or the upturned edges of another, showing a change of conditions or a break between the formations of the two sets of rocks, they are said to be unconformable.

Contact -- the plane or surface where two different kinds of rocks come together.

Deep percolation -- the moisture which penetrates below the depths from which it may be used by plants; it represents that part of the water absorbed which exceeds the field capacity of the soil within the depth of root development. In this report, deep percolation is water, which moves downward from the surface of the ground and reaches the water table.

Dip -- the angle at which a bed or other planar feature is inclined from the horizontal.

Drainage basin (area) -- an area whose runoff is more or less separate from the runoff for adjacent areas, so that it can be considered a distinct hydrogeologic unit or area.

Drainage divide -- the boundary line, along a topographic ridge or along a subsurface geologic formation, separating two adjacent drainage basins (areas).

Drawdown -- a lowering of the ground-water surface caused by pumping.

Driller's log -- a record of the types of earth materials encountered at various depths during the drilling of a well and as recorded by the drilling contractor or his crew.

En echelon -- parallel structural features that are offset like the edges of shingles on a roof when viewed from the side.

Evapotranspiration -- the sum of evaporation and transpiration.

Groundwater -- (1) water that flows or seeps downward and saturates soil or rock, supplying springs and wells. The upper surface of the saturate zone is called the water table. (2) Water stored underground in rock crevices and in the pores of geologic materials that make up the Earth's crust.

Homocline -- a group of inclined beds of the same dip. A structural condition in which the beds dip uniformly in one direction.

Hydraulic conductivity -- describes mathematically the rate at which water can move through a permeable medium.

Hydrograph -- a graphic plot of changes in the flow of water or in elevation of water level against time.

Hydrologic budget -- an accounting of the inflow, outflow, and storage in a basin.

Hydrologic equation -- the water inventory equation: Inflow = [Outflow + Change-in-Storage], which balances the hydrologic



budget and expresses the basic principle that during a given time interval the total inflow to an area must equal the total outflow plus the net change in storage.

Incidental recharge -- groundwater recharge (infiltration) that occurs as a result of human activities unrelated to a recharge project, for example, irrigation and water diversion (unlined canals).

Infiltration -- flow of water from the land surface into the subsurface.

Interference -- a change in the water level of one well caused by the pumping at another well. The condition occurring when the area of influence of a water well comes into contact with or overlaps that of a neighboring well, as when two wells are pumping from the same aquifer or are located near each other.

Isohyet -- a line on the surface of the earth as represented on a map connecting all points of equal precipitation.

Overdraft -- any withdrawal of groundwater more than the safe yield.

Perched water -- water in a relatively small body supported above the main groundwater table.

Percolating groundwater -- underground waters whose course and boundaries are incapable of determination. Waters, which pass through the ground beneath the earth's surface without a definite channel.

Perennial yield -- the amount of usable water of a groundwater basin that can be withdrawn and consumed economically each year for an indefinite period of time. It cannot exceed the sum of the natural recharge, artificial recharge, and incidental recharge, without causing depletion of the basin.

Period -- a specified division or portion of time.

Period, average -- an arithmetical average relating to a period other than a mean period.

Period, base -- a period chosen for detailed hydrologic analysis because prevailing conditions of water supply and climate are approximately equivalent to mean conditions, and because adequate data for such hydrologic analysis are available.

Period, mean -- a period chosen to represent conditions of water supply and climate over a longer series of years.

Period, seasonal -- any 12-month period other than the calendar year. In this study, the runoff year is October 1 through September 30, and the rainfall year is July 1 through June 30.

Permeability -- the capacity of soil, sediment, or porous rock to transmit water.

Phreatophyte -- a plant that habitually obtains its water supply from the zone of saturation, either directly or through the capillary fringe.

Precipitation -- the total measurable supply of water received directly from clouds as rain, snow, hail, and sleet; usually expressed as depth in a day, month, or year, and designated as daily, monthly, or annual precipitation.

Pumping level -- the level as measured from ground surface at which water stands in a well when pumping is in progress.

Radius of influence -- the radial distance from the center of a well bore to the point where there is no lowering of the water table (the edge of its cone of depression).

Recharge -- the downward movement of water through soil to groundwater.

Recovery -- the amount of rising of the water level in a well above the pumping level once the pumping has been terminated.

Return flow -- (1) that part of a diverted flow that is not consumptively used and returned to its original source or another body of water. (2) (Irrigation) Drainage water from irrigated farmlands that re-enters the water system to be used further downstream.

Runoff -- that part of the precipitation or irrigation water that appears in uncontrolled surface streams, rivers, drains, or sewers. Runoff may be classified according to speed of appearance after rainfall as direct runoff or base runoff, and according to source as surface runoff, storm interflow, or groundwater runoff.

Safe yield -- the rate at which water can be pumped from wells year after year without decreasing groundwater in storage to the point where pumping lift would become economically unfeasible or where water of poor quality would begin to intrude into the reservoir. The amount of naturally occurring groundwater that can be economically and legally withdrawn from a basin on a sustained basis without producing an undesired result.

"It should be apparent that safe yield cannot exceed the long-time mean annual water supply to the basin. Withdrawals exceeding this supply must come from storage within the aquifer. Such a permanent depletion is often referred to as mining of groundwater because of its analogy to mining of ores and petroleum. In most basins, the quantity of water in storage is many times the annual recharge or draft; therefore, in any one year, the draft can exceed the recharge without causing permanent depletion. But on a long-term basis, when a series of wet and dry years would tend to average out, the draft becomes an overdraft if the mean supply is exceeded" (adapted from Todd, 1959).

Specific capacity -- an expression of the productivity of a well, obtained by dividing the rate of discharge of water from the well by the drawdown of the water level in the well.

Specific yield -- as applied to water bearing materials, it is the ratio of the volume of water drained by the force of gravity from a saturated material over a reasonably long period of time, expressed as a percentage of the total volume of the saturated material.

Static (or standing) level -- the distance from ground surface to the water level in a nonpumping well, outside the area of influence of any adjacent pumping well.

Storativity -- coefficient of storage. The volume of water released from storage in each vertical column of the aquifer having a base of 1-foot square when the water table or other piezometric surface declines 1 foot. This is approximately equal to the specific yield for non-artesian aquifers.

Subbasin -- a portion of a basin that can be subdivided for hydrologic study purposes. Hydraulically, a sub-basin is interdependent on the basin as a whole, but is locally independent of pumping depressions and recharge effects.



Surface water -- water that is on the Earth's surface, such as in a stream, river, lake, or reservoir.

Syncline -- a fold in rocks in which the strata dip inward from both sides toward the axis.

Transmissivity -- the rate at which water of a prevailing density and viscosity is transmitted through a unit width of an aquifer or confining bed under a unit hydraulic gradient.

Transpiration -- process by which water that is absorbed by plants, usually through the roots, is evaporated into the atmosphere from the plant surface, such as leaf pores.

Unconfined groundwater -- groundwater in an aquifer whose upper water surface (water table) is at atmospheric pressure.

Unconformable -- not succeeding the underlying strata in immediate order of age and in parallel position.

Underflow -- subsurface flow of groundwater associated with a river or stream that occurs as sub-horizontal flow, roughly parallel to and within the near-surface deposits underlying and directly adjacent to the course of the river and/or its tributaries.

Unsaturated zone -- the zone immediately below the land surface where the pores contain both water and air, but are not totally saturated with water. These zones differ from an aquifer, where the pores are saturated with water.

Vadose zone -- see unsaturated zone.

Water balance -- a measure of the amount of water entering and the amount of water leaving a system. Also, see hydrologic budget and hydrologic equation.

Watershed -- the topographic divide separating one drainage basin from another.

Water table -- the top of the water surface in the saturated part of an aquifer.

Withdrawal -- water removed from a groundwater or surface water source for use.

