

U

Ubiquitous Hydrophytes — Plant species that grow either in wetland or on upland areas — e.g., red maple (*Acer rubrum*) as opposed to *Obligate Hydrophytes*, which are plant species that are found only in wetlands — e.g., cattail (*Typha latifolia*).

Ubiquitous Organisms — Organisms that can tolerate a wide range of environmental conditions or variations. Also, organisms that are so active or so numerous as to seem to be present or existent in all types of environments.

UDI — See *Ground Water Under the Direct Influence (UDI) of Surface Water*.

Udometer — A *Rain Gauge*.

Ultrafiltration — Filtration through a medium (as a semipermeable capillary wall) which allows small molecules (as of water) to pass but holds back larger ones (as of protein).

Ultraviolet Radiation (UV) — Light waves shorter than the visible blue-violet waves of the spectrum, i.e., below 3900 Angstroms (Å). UV can be used for the disinfection of water.

Unbiased Sample — (Statistics) A sample is said to be unbiased if its behavior and characteristics are representative of the total *Population*.

Unconfined — Conditions in which the upper surface of the *Zone of Saturation* forms a water table under atmospheric pressure.

Unconfined Aquifer — An aquifer containing water that is not under pressure; the water level in a well is the same as the water table outside the well. An unconfined aquifer made up of loose material, such as sand or gravel, that has not undergone lithification (settling). In an unconfined aquifer the upper boundary is the top of the *Zone of Saturation* (water table).

Unconsolidated Deposits (Sediment) — Sediment not cemented together; may consist of sand, silt, clay, and organic material.

Unconsolidated Formation — Natural earth formations that have not been turned to stone, such as alluvium, soil, gravel, clay, sand and overburden.

Undercurrent — A current, as of air or water, below another current or beneath the surface.

Underflow — (1) (Surface and Groundwater) The downstream flow of water through the permeable deposits underlying a stream. (2) (Water Quality) The slurry of concentrated solids or *Sludge* that is removed from the bottom of a *Settling Tank*, *Clarifier*, or *Thickener*. (3) Submerged gravity-driven flows which occur when inflows to a water body are denser than the ambient water. The inflow subsequently plunges and continues as a distinct flow which can be envisioned as a submerged stream. Underflows, also called *Density Current*, are known to form intermittently on coastal continental shelves, in reservoirs and at effluent discharge sites.

Underdrain — A drain that carries away water from prepared beds or agricultural fields to which water or wastewater has been applied.

Underground Injection Control (UIC) — A program required in each state by a provision of the *Safe Drinking Water Act (SDWA)* for the regulation of *Injection Wells*, including a permit system. An applicant must demonstrate that the well has no reasonable chance of adversely affecting the quality of an underground source of drinking water before a permit is issued.

Underground Source of Drinking Water (USDW) — An aquifer that is currently being used as a source of drinking water or those potentially capable of supplying a public water system. They have a total dissolved solids content of 10,000 milligrams per liter or less, and are not *Exempted Aquifers*.

Underground Storage Tank — (Water Quality) (1) Any one or combination of underground tanks and any connecting underground pipes used to contain an accumulation of regulated substances. (2) A tank located at least partially underground and designed to hold gasoline or other petroleum products or chemicals.

Underground Water — Water below the surface of the ground. Also referred to as *Groundwater*, *Ground Water*, *Subsurface Water*, and *Subterranean Water*.

Understory — Plants growing beneath the canopy of other plants. Usually refers to grasses, forbs, and low shrubs under a tree or shrub overstory.

Unimpaired Flow — The flow past a specified point on a natural stream that is unaffected by stream diversion,

storage, import, export, return flow, or change in use caused by modifications in land use.

Unit Density — A density of one gram per cubic centimeter or one gram per milliliter; the density of water at 4°C (39.2°F).

United States Army Corps of Engineers (COE) — See (*United States Army Corps of Engineers (COE)*). [See Appendix E-2 for the U.S. Army Corps of Engineers' organizational structure and primary missions and objectives.]

United States Bureau of Indian Affairs (BIA) — See (*United States Bureau of Indian Affairs (BIA)*).

United States Bureau of Land Management (BLM) — See (*United States Bureau of Land Management (BLM)*).

United States Bureau of Reclamation (USBR) — See (*United States Bureau of Reclamation (USBR)*).

United States Department of the Interior (USDI) — See (*United States Department of the Interior (USDI)*).

United States Environmental Protection Agency (EPA) — See (*United States Environmental Protection Agency (EPA)*). [See Appendix E-1 for a more complete description of the organizational structure of the U.S. Environmental Protection Agency.]

United States Fish and Wildlife Service (USFWS) — See (*United States Fish and Wildlife Service (USFWS)*).

United States Forest Service (USFS) — See (*United States Forest Service (USFS)*).

United States Geological Survey (USGS) — See (*United States Geological Survey (USGS)*).

United States Natural Resources Conservation Service (NRCS) — See (*United States Natural Resources Conservation Service (NRCS)*). Formerly known as the *Soil Conservation Service (SCS)*

United States Soil Conservation Service (SCS) — Former name of the (*United States Natural Resources Conservation Service (NRCS)*).

Unit Hydrograph — (1) The *Hydrograph* of direct runoff from a storm uniformly distributed over the drainage basin during a specified unit of time; the hydrograph is reduced in vertical scale to correspond to a volume of runoff from the drainage basin of one inch. (2) The hydrograph of surface runoff (not including groundwater runoff) on a given basin due to an effective rain falling for a unit of time.

Unit Period — The time duration of a unit storm. See *Unit Storm*, below.

Unit Storm — A net rainfall one-inch deep which occurs over all parts of a drainage area at a uniform rate during a specified unit period of time.

Unmeasured Sediment Discharge — The difference between *Total Sediment Discharge* and measured *Suspended-Sediment Discharge*.

Unravel — To loosen material from the edges of a revetment.

Unsaturation Flow — Movement of water in a porous medium in which the pore spaces are not filled with water and the direction of flow is from the wetter zone of higher potential to one of lower potential.

Unsaturation Zone — (1) The portion of the soil profile which contains both air and water. Water in this zone cannot enter a well. (2) The subsurface zone between the water table (*Zone of Saturation*) and the land surface where some of the spaces between the soil particles are filled with air. It includes the root zone, intermediate zone, and capillary fringe. The pore spaces contain water, as well as air and other gases at less than atmospheric pressure. Saturated bodies, such as *Perched Ground Water*, may exist in the unsaturated zone, and water pressure within these bodies may be greater than atmospheric. Also referred to as the *Vadose Zone* or, less frequently, the *Zone of Aeration*.

Unsteady Flow — Flow that is changing with respect to time.

Upgradient Well — A groundwater monitoring well, such as those required at facilities that treat, store, or dispose of hazardous waste using surface impoundments or landfills, that allows sampling and analysis of groundwater that is upstream from the facility, before the groundwater is possibly affected by any escaping contaminants. The results of the analyses are used for comparison to the results of groundwater sampled from *Downgradient Wells*.

Uplands — (1) The ground above a floodplain; that zone sufficiently above and/or away from transported waters as to be dependent upon local precipitation for its water supplies. (2) Land which is neither a *Wetland* nor covered with water.

Uplift — (Hydraulics) The upward pressure of water on the base of a structure or the upward pressure in the pores of a material, i.e., *Interstitial Pressure*.

Upper Basin States [Colorado River Basin] — Colorado, New Mexico, Utah, and Wyoming. Also see *Colorado River Compact* and *Lower Basin States*.

Upstream — Toward the source or upper part of a stream; against the current. In relation to water rights, the term refers to water uses or locations that affect water quality or quantity of downstream water uses or locations.

Upstream Blanket — An impervious layer placed on the reservoir floor upstream of a dam. In the case of an *Embankment Dam*, the blanket may be connected to the impermeable element of the dam.

Upstream Control — Control structure adjustments based on information from upstream. The required information

is measured by a sensing device located upstream, or based on the upstream water schedule established by the watermaster.

Upstream Slope (of a Dam) — The part of the dam that is in contact with the reservoir water. On *Earthen Dams* the upstream slope must be protected from the erosive action of waves by rock *Rip Rap*, concrete, or some other material.

Uptime — (Irrigation) The total time that a system is available for service.

Upwelling — (1) The appearance of water from the deep ocean at the surface. This usually occurs along the coasts of continents (such as the coast of Peru along the west coast of South America) where the prevailing winds tend to push the surface waters away from the land area, allowing waters from the deep ocean to rise to the surface. The deep waters carry a significant input of plant nutrients to the surface, causing an elevated level of primary production and abundant fish populations. (2) The process or an instance of rising or appearing to rise to the surface and flowing outward; especially the process of upward movement to the surface of marine often nutrient-rich lower waters particularly along some shores due to the offshore drift of surface water (as from the action of winds and the *Coriolis Effect*).

Urban Equilibrium (of a Channel) — A term used to describe a channel that has changed from its natural or original shape but has finished adjusting to the urban influences affecting it so that it is relatively stable in its planform and meander and has achieved a new balanced in its bankfull width and depth, so that it is neither excessively eroding nor depositing and has healthy riparian growth.

Urban Flooding — Nuisance flooding of streets, underpasses, basements and other low-lying urban areas. Should not be confused with flash flooding. Usually due to poor drainage, or limited drainage capacity of urban systems. The amount and rate of precipitation that causes urban or *Small Stream Flooding* is usually constant for a specific community. In general, 0.5–1.0 inch (1.3–2.5 cm) of precipitation in one hour will cause at least minor urban/small stream flooding in most urbanized areas. Over one inch of rainfall in an hour will cause general urban flood problems, and may cause flash flooding.

Urban Runoff — Storm water from city streets and gutters that usually contains a great deal of litter and organic and bacterial wastes into the sewer systems and receiving waters.

Urban Water Use — The use of water for urban purposes, including residential, commercial, industrial, recreation, military, and institutional classes. The term is applied in the sense that it is a kind of use rather than a place of use.

Urban Water Use per Capita — A unit of water use which encompasses all urban uses of water in a service area. Generally measured in gallons per capita per day (gpcd).

Usable Storage Capacity — The available storage capacity plus the remaining ground water storage within a reasonable pump lift. Specific yield of the sediments is used in calculating estimates of usable storage capacity.

Use (Water) — This term, when referring specifically to water use, is normally preceded by one of the following descriptive terms:

- [1] **Conjunction Water** — The integrated use of surface and subsurface water supplies and facilities, normally involving storage of surplus waters when available, for use during periods when water supplies are deficient.
- [2] **Consumptive Water** — The quantity of water discharged to the atmosphere or incorporated in the products in the process of vegetative growth, food processing, industrial processes, or other uses.
- [3] **Consumption Irrigation** — The quantity of water that is absorbed by the crop and transpired or used directly in the building of plant tissue together with that evaporated from the cropped area.
- [4] **Multiple** — The conscientious management of the various renewable resources such as water, wood, forage, wildlife, and recreation resources, to obtain sustained yield of products and services in the combination that will best meet the needs of the public now and in the future.

Also see *Consumptive Use* and *Nonconsumptive Use*.

USGS — See *United States Geological Survey*.

USGS (Test-Well) Site Identification — The standard *U.S. Geological Survey (USGS)* site identification is based on the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude; the next seven digits denote degrees, minutes, and seconds of longitude; and the last two digits (assigned sequentially) identify the sites within a 1-second grid. For example, site 365227114554401 is at 36°52'27" latitude and 114°55'44" longitude, and it is the first site recorded in that 1-second grid. The assigned number is retained as a permanent identifier even if a more precise latitude and longitude are later determined. Also see *Local (Test-Well) Site Designation [Nevada]*.

U-Shaped Valleys — U-shaped valleys are characteristic of glacial erosion; valleys eroded by stream action are typically *V-Shaped*. Also referred to as *Glaciated Valleys*.

Usufruct, also Usufructuary — (Legal–Civil Law) The right of enjoying a thing, the property of which is vested in another, and to draw from the same all the profit, utility, and advantage which it may produce, provided it be without altering the substance of the thing. For example, in Nevada, the state’s water belongs to the people, but is permitted, through the water rights permitting process, to be used beneficially by other individuals or entities.

Usufructuary (Water) Right — (1) A right to use rather than own the property of another, such as the state’s water. (2) A water right holder’s authority to divert and use a certain amount of water. See *Usufruct*.

Utility Water Use — Water supplied from a *Public Water Supply System* and used for such purposes as firefighting, street washing, and municipal parks and swimming pools. Public water use also includes system water losses (water lost to leakage) and brine water discharged from desalination facilities. Also referred to as *Public Water Use*.