**STATE OF UTAH WATER RIGHT DEFINITIONS**

<http://www.waterrights.utah.gov/wrinfo/glossary.asp>

**ABANDONED WELL**. A well whose purpose and use have been permanently discontinued, or is in such disrepair that it cannot be used.

**ABANDONMENT**. When a water right has been voluntarily unused for seven or more years.

**ABUTMENT**. Valley side against which a dam is constructed. Right or left abutments are as viewed when looking downstream.

**ABSTRACT OF TITLE**. A summary of the conveyance, transfers, and other facts appearing of record and relied upon as evidence of title to real property.

**ACCRETION**. Process of accumulation by flowing water; gradual increase in the flow of a stream due to influent seepage.

**ACIDIC**. Condition of water or soil that contains a sufficient amount of acid substances to lower the pH below 7.0.

**ACRE**. Measure of area equal to 43,560 square feet (640 acres in a Section).

**ACRE-FOOT (AF).** Unit commonly used to measure volume of water; equal to 43,560 cubic feet, or 325,851 gallons (will cover one acre one foot deep).

**ACTIVE STORAGE CAPACITY**. Amount of reservoir storage that can be released by gravity flow when the reservoir is not spilling.

[**ADJUDICATION**](http://waterrights.utah.gov/adjdinfo/default.asp). Refers to a judicial process whereby water rights are determined or decreed by a court of law.

**ADVERSE USE**. Establishing a water right by hostile means against all other water rights in a drainage basin. Not legal after 1939.

**ADVERTISE**. To provide notice, usually by publication of a legal notice in one of more newspapers, of a proposed appropriation of water, change of use of water, or an extension of time in which to submit proof of appropriation.

**AFFLUENT STREAM**. Stream that flows into another stream, a lake; a tributary stream.

**AGGRADATION.** Process by which stream beds, flood plains and the bottoms of other water bodies are raised in elevation by the deposition of material eroded and transported from other areas.

**AIR INJECTION**. Pumping of compressed air into the soil to move water in the unsaturated zone down to the saturated zone.

**ALKALI**. 1) Any strongly basic substance capable of neutralizing an acid that is soluble in water. 2) Refers to soluble salts in soil, surface or ground water.

**ALLUVIAL**. Adjective referring to soil or earth material that has been deposited by running water.

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| [[http://www.waterrights.utah.gov/images/staff/glossary/alluvial_fan_sm.jpg](http://www.waterrights.utah.gov/images/staff/glossary/alluvial_fan.jpg)](http://www.waterrights.utah.gov/images/staff/glossary/alluvial_fan.jpg) |
| *Alluvial fan* |

**ALLUVIAL FAN**. Fan-shaped deposit of generally course material created where a stream flows out onto a gentle plain.

**ALLUVIAL STREAM**. 1) S-shaped channel pattern that is free to meander in a valley. 2) Bed materials of silt, clay, sand and gravel are conveyed from upstream.

**ANISOTROPY**. Having physical characteristics which vary in different directions.

**ANNUAL FLOOD**. Highest peak discharge of a stream in a water year.

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| [[http://www.waterrights.utah.gov/images/staff/glossary/alluvial_stream_sm.jpg](http://www.waterrights.utah.gov/images/staff/glossary/alluvial_stream.jpg)](http://www.waterrights.utah.gov/images/staff/glossary/alluvial_stream.jpg) |
| *Alluvial stream* |

**ANNULUS**. In a well, the space between the well casing and the outer wall of the borehole.

[**APPLICATION**](http://waterrights.utah.gov/wrinfo/forms/default.asp). An official written request to the State Engineer for permission to initiate a water right, alter an existing water right, or alter a natural stream channel.

**APPLICATION FOR APPORTIONMENT OF BENEFICIAL USE AMOUNTS.** An application requesting that the State Engineer apportion the Beneficial Uses of a Water Use Group among the supplemental water rights that make up the Water Use Group.

**APPROPRIATE**. To initiate a water right by requesting and receiving permission to beneficially use public Waters.

**APPROVAL**. The granting of an application made to the State Engineer. Upon approval, the water right becomes appurtenant to its place of use.

**APPURTENANT**. Belonging to.

**APPURTENANT STRUCTURE**. Outlet works, spillway, access structure, bridges and other related structures to a dam.

**APPURTENANT TO PLACE OF USE**. A characteristic of a water right such that when the land served is sold, the water right is automatically included in the sale, unless specifically exempted in the deed.

**AQUACULTURE**. Science and business of cultivating food fish or shellfish for commercial purposes or for sport.

**AQUEDUCT**. Pipe, conduit or channel designed to transport water from a remote source.

**AQUIFE**R. A layer of soil or rock that stores and/or transmits water. A CONFINED AQUIFER is bounded above and below by layers of less permeable material where the saturated thickness is bounded by the both layers. An UNCONFINED AQUIFER is similar, but the saturated thickness is not bounded by an upper layer.

**ARABLE LAND**. Capable of being cultivated and suitable for crop production.

**AREA-CAPACITY CURVE**. Graph showing the relation between the surface area of the water in a reservoir, the corresponding volume, and elevation.

**ARID**. Region where precipitation is so deficient that agriculture is impracticable without irrigation.

**ARTESIAN**. An aquifer in which the static water level in a well stands above the top of the aquifer.

**ARTESIAN WELL**. A well which taps an artesian aquifer.

**ARTIFICIAL RECHARGE**. Addition of water to the ground-water reservoir by activities of man.

**[A.S.C.E.](http://www.asce.org)** American Society of Civil Engineers.

**ASSESSMENT**. Amount of money a shareholder in a mutual irrigation company pays to the company to cover his portion of the costs of company operations.

**ASSIGN**. To transfer all of an interest in personal property.

**ASSIGNMENT**. Transfer of an unperfected water right from one person or entity to another.

**ASSIMILATION**. Ability of a body of water to purify itself of pollutants.

**ATTENUATION**. Term used to describe the slowing, modification or diversion of the flow of water.

**[A.W.R.A.](http://www.awra.org/)** American Water Resources Association.

**[A.W.W.A.](http://www.awwa.org/)** American Water Works Association.

**AXIS OF DAM**. The vertical plane which traces the centerline of the crest of a dam.

**BACKFLOW**. Backing up of water in the direction opposite to normal flow.

**BACKWATER**. In stream gauging, a rise in stage produced by a temporary obstruction or by the flooding of the stream below.

**BAFFLE**. Flat board, deflector or similar device constructed or placed in flowing water to reduce turbulence and cause more uniform flow velocities.

**BANK.** Slope of land adjoining a body of water. With respect to flowing waters, banks are right or left as viewed facing in the direction of the flow.

**BASE FLOW**. Fair-weather or sustained flow of streams.

**BASELINE DATA**. Quantitative level or value from which other data and observations of a comparable nature are referenced.

**BASIN**. Geographic area drained by a single major stream--also referred to as DRAINAGE BASIN.

**BED**. Bottom of a body of water.

**BEDLOAD**. Material in movement along a stream bottom, or the surface, if by wind.

**BEDROCK**. Solid rock that lies beneath soil, loose sediments or other unconsolidated material.

**BENCHMARK**. 1) Data used as a base for comparative purposes with comparable data. 2) A permanent physical mark of known horizontal coordinates and elevation.

**BENEFICIAL USE**. The purpose to which water diverted under a water right is applied and the amount of that Beneficial Use. Examples include but are not limited to irrigation (amounts measured in acres); stock watering (amounts measured in numbers of equivalent livestock units); domestic (indoor residential - amounts measured in numbers of equivalent domestic units); and commercial, industrial, municipal (amounts measured in acre-feet).

**BENEFICIAL USE AMOUNT**. The amount of Beneficial Use a water right contributes to a Water Use Group that includes the subject water right.

**BERM**. Narrow ledge or shelf along or extending into a stream channel.

**[B.I.A.](http://www.doi.gov/bia/)** U.S. Bureau of Indian Affairs.

**[B.L.M.](http://www.blm.gov/)** U.S. Bureau of Land Management.

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| [[http://www.waterrights.utah.gov/images/staff/glossary/braided_stream_sm.jpg](http://www.waterrights.utah.gov/images/staff/glossary/braided_stream.jpg)](http://www.waterrights.utah.gov/images/staff/glossary/braided_stream.jpg) |
| *Braided stream bed* |

**BRAIDED STREAM**. Complex tangle of converging and diverging stream channels separated by sandbars or islands.

**BREACH**. Opening or a breakthrough in a dam or dike.

**BRINE**. Water saturated with or containing large amounts of a salt in excess of 35,000 mg/l.

**BROOK**. Natural stream of water, smaller than a river or creek.

**CALIBRATED WATERSHED**. Watershed with sufficient precipitation and streamflow measuring devices and records to allow for computations of the relationships between precipitation and streamflow.

**CAMBER**. Additional material placed on the dam crest to protect design freeboard from anticipated settlement.

**CANAL**. Constructed open channel for transporting water.

**CAPACITY**. 1) Maximum volume that can be stored in a reservoir below the primary spillway level. 2) The flow of water a well is able to produce per foot of water level drawdown in the well casing. 3) The flow of water a natural stream channel is able to carry in non-flood conditions.

**CAPTURE**. Decrease in discharge from an aquifer plus the increase in recharge.

**CASING**. Tubular structure that is installed in the borehole to maintain a well opening.

**CATCHMENT AREA.** 1) intake area of an aquifer. 2) reservoir or basin developed for flood control or water management for livestock or wildlife.

**CATHODIC PROTECTION**. A method of protecting well casings from corrosion.

**CAVITATION**. 1) process of erosion in a stream channel or conduit caused by sudden collapse of vapor bubbles against the channel wall. 2) wear on a hydraulic structure where a high hydraulic gradient is present.

**CEASE AND DESIST ORDER**. A formal written order from the State Engineer to refrain from the continued performance of an illegal act.

**CERTIFICATE**. Official document that serves as evidence of a perfected water right, which is recorded with the local County Recorder.

**CHAIN**. Surveyor's measure equal to 66 feet.

**CHAIN OF TITLE.** A chronological list of documents comprising the record history of title to a specific parcel of real property.

**CHANGE**. Process by which a water right is altered with respect to point of diversion, period, place or nature of use.

**CHANGE APPLICATION**. An application for permanent or temporary change of a water right as defined in Section 73-3-3.

**CHANNEL.** Natural or artificial open conduit that periodically or continuously contains moving water, or that forms a connecting link between two bodies of water.

**CHANNELIZATION**. Straightening and deepening a stream so water will move faster.

**CHECK DAM**. Small dam constructed in a gully or small watercourse to decrease the streamflow velocity or to divert water from a channel.

**[CIPOLETTI WEIR](http://www.waterrights.utah.gov/images/staff/glossary/types_of_weirs.gif)**. A weir of trapezoidal design for the measurement of open channel flow.

**CLOSED BASIN**. Basin without a surface outlet.

**[C.O.E.](http://www.usace.army.mil/)** U.S. Army Corps of Engineers.

**COFFERDAM**. Temporary watertight enclosure that is pumped dry to expose the bottom of a body of water.

**COLLECTION PIPE**. Conduit used to collect seepage waters from drainage blankets and drains and convey the water to a point downstream of the dam.

[**COLORADO RIVER COMPACT**](http://le.utah.gov/%7Ecode/TITLE73/73_12a.htm). A 1922 agreement among seven states (Arizona, California, Colorado, Nevada, New Mexico, Wyoming and Utah) as to the general allocation of the waters of the Colorado River.

**COMPACT.** Agreement between states, ratified by Congress, providing for the division and apportionment of waters of an interstate river, aquifer or body of water.

**CONDUIT**. 1) Natural or artificial channel, either open or closed, through which water may be conveyed. 2) Closed channel to convey water through, under or around a dam.

**CONE OF DEPRESSION**. Cone-like depression of the water table formed in the vicinity of a well by withdrawal of water.

**CONFLUENCE**. Meeting or junction of two or more streams.

**CONJUNCTIVE USE**. Combined use of surface and ground water systems to optimize resource use and minimize adverse effects of using a single source.

**CONSOLIDATED AQUIFER**. Aquifer made up of consolidated rock.

**CONSUMPTIVE USE**. Portion of water withdrawn from a surface or groundwater source that is consumed by particular use(s) and does not return to a natural water source or another body of water.

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| [[http://www.waterrights.utah.gov/images/staff/glossary/contour_lines_sm.jpg](http://www.waterrights.utah.gov/images/staff/glossary/contour_lines.jpg)](http://www.waterrights.utah.gov/images/staff/glossary/contour_lines.jpg) |
| *Contour lines overlaid on an aerial photo* |

**CONTOUR LINE**. Line of constant elevation on a map or drawing.

**CONTROL SECTION.** Section where flow passes through critical depth.

**CONVEYANCE LOSS**. Loss of water from a conduit due to leakage, seepage, evaporation or evapotranspiration.

**COURSE**. Route or path taken by flowing water.

**CREST**. Top of a dam, dike, spillway or weir to which water must rise before passing over the structure.

**CRITICAL DEPTH**. Depth at which flowing water transitions from tranquil to turbulent flow and vice versa.

**CRITICAL MANAGEMENT AREA**. A ground-water basin where water is being withdrawn in excess of the safe yield for which a ground-water management plan is being prepared or is in force.

**CUBIC FOOT PER SECOND, OR SECOND-FOOT (CSF).** A unit of flow measurement equal to one cubic foot per second past a given point, or 448.8 gallons per minute.

**CURRENT METER**. Instrument for measuring the velocity of water flowing in a stream, open channel or conduit.

**CUTOFF COLLAR**. Projecting collar built around the outside of a pipe to lengthen the seepage path along the outer surface of the conduit.

**DAM**. Artificial barrier or obstruction, together with appurtenant works, if any, which impounds or diverts water.

[**DAM INSPECTION**](http://waterrights.utah.gov/daminfo/default.asp). The inspection of a dam to determine safety. Performed by the Dam Safety Section of Division of Water Rights. Federal dams are exempt for state responsibility.

**DEAD STORAGE.** Water in a reservoir that lies below the lowest outlet and cannot be withdrawn without pumping.

**DECREED RIGHTS**. Water rights determined by a court decree.

**DECLARATION OF BENEFICIAL USE AMOUNTS (DECLARATION**). Either a form provided by the State Engineer, or an alternative document containing the same information, for use by Water Right Holders to declare the Beneficial Use Amount of some or all of the individual water rights in a Water Use Group.

**DEED**. Written document transferring ownership of land from one person to another.

**DEFORMATION ANALYSIS**. A study of how a dam will permanently deform as a result of strains caused by seismic loads.

**DEGRADATION**. 1) Geologic process in which parts of the earth's surface, such as cliffs, rocks and streambeds, disintegrate. 2) Removal of channel bed materials and down-cutting of natural stream channels.

**DENTAL CONCRETE**. Concrete used to smooth rough places in dam foundations and abutments.

**DEPENDABLE SUPPLY.** Water that can be expected to be available at a time and place with the quality demanded.

**DEPLETION**. See **CONSUMPTIVE USE.**

**DESICCATION**. Loss of water from pore spaces of sediments through compaction or through evaporation caused by exposure to air; cracking of the soil due to shrinkage during drying.

**DESICCATION CRACKS**. Surface fractures that can result from the drying of soil or porous sedimentary rock.

**DIKE**. An embankment to confine or control water.

**DILIGENCE CLAIM**. A claim to the use of surface water where the use was initiated prior to 1903.

**DISALLOWED**. The termination of a water right through the adjudication process.

**DISCHARGE**. Outflow that is measured as the rate at which a volume of water passes a given point in a given period of time.

**DISPERSIVE CLAYS**. Clays whose particles detach in the presence of water and may be transported by water.

[**DISTRIBUTION SYSTEM**](http://waterrights.utah.gov/distinfo/distribution_systems.asp). An administrative unit, established by the State Engineer and supervised by an appointed Water Commissioner, for the distribution of water from the natural source according to the priority date of the respective water rights in a particular area.

**DITCH RIDER**. individual responsible for operating structures and distributes water internally within an irrigation project.

**DIVERSION**. Removal of water from its natural source; turning aside or alteration of the natural course of a flow of water, normally considered physically to leave the natural channel.

**DIVERSION DAM**. Barrier built to divert part or all of the water from a stream into a different course.

**DIVINING ROD**. Forked branch or stick that is believed to indicate subterranean water by bending downward when held over a source.

**DIVISION BOX.** Structure used to divide and direct the flow of water between two or more irrigation ditches.

**DOMESTIC WATER USE**. Water used for inside household purposes only.

**DOWSER.** Person who uses a **DIVINING ROD**.

**DRAFT**. Water that is diverted.

**DRAIN**. Excess collection/control system (surface or groundwater) from which a point of diversion maybe established.

**DRAINAGE AREA**. Area or watershed that drains naturally to a particular point on a river, stream or creek.

**DRAINAGE BASIN.** see **BASIN**.

**DRAINAGE BLANKET**. Permeable layer placed directly over the foundation material.

**DRAWDOWN**. 1) Lowering of the surface of a body of water by releases of water. 2) Lowering of the elevation of the groundwater table.

[**DREDGING**](http://www.waterrights.utah.gov/strmalt/rds.asp). Method for deepening streams or other waters by scraping and removing solid materials from the bottom.

**DRIP IRRIGATION**. Planned irrigation system in which water is applied directly to the root zone of plants by means of applicators operated under low pressure.

**DROP STRUCTURE**. Physical obstruction placed within a stream channel for the purpose of stabilizing the channel; used to facilitate vertical downward movement of water without causing erosion.

**DROUGHT**. Period of abnormally dry weather sufficiently prolonged to cause a serious hydrological imbalance.

**DUTY OF WATER**. Quantity of water, determined by the State Engineer, required to satisfy the irrigation water requirements in a given area; based on the irrigation requirements of alfalfa.

**DYNAMIC ANALYSIS**. Analysis that predicts the stability and/or deformation of a dam due to seismic loads.

**EFFLUENT**. 1) Something that flows out, such as a stream flowing out of a body of water. 2) Discharged wastewater.

**ENVIRONMENTAL IMPACT STATEMENT (EIS**). Detailed and formal evaluation of the favorable and adverse environmental and social impacts of a proposed project and its alternatives.

**ELECTION TO FILE A WATER USERS CLAIM**. A form used to allow the State Engineer to file proof of appropriation on a water right through the adjudication process. No longer used.

**EQUIVALENT LIVESTOCK UNIT (ELU).** A standardized measure related to the watering of various sized livestock. (1 ELU = 1 large animal or 5 medium animals or 33 1/3 small animals).

**EMBANKMENT**. Artificial deposit of material that is raised above the natural surface of the land and used to contain, divert or store water.

**EMERGENCY ACTION PLAN**. Predetermined plan of action to be taken to reduce the potential for loss of life and property damage in an area affected by a dam break.

**EMERGENCY SPILLWAY**. Secondary spillway designed to convey excess water generated by unusual hydrological events through, over or around a dam.

**EMINENT DOMAIN**. Right of a government to appropriate private property for public use.

**ENDANGERED SPECIES**. Any plant or animal species threatened with extinction by man-made or natural changes throughout all or a significant area of its range.

**[E.P.A.](http://www.epa.gov/)** U.S. Environmental Protection Agency.

**EPHEMERAL STREAM.** Stream that flows only in direct response to precipitation.

**EROSION**. wearing away and removal of materials of the earth's crust by natural means. Examples are STREAMBANK and STREAMBED (scouring of material and cutting of channel banks and beds); SHEET (removal of a thin layer by runoff waters); RILL (numerous small channels are formed); GULLY (widening and deepening of small channels).

**ESCARPMENT**. Steep slope that results from erosion or faulting and separates two relatively level areas of differing elevations.

**EVAPOTRANSPIRATION**. Evaporation of liquid or sublimation of solid water plus transpiration from plants.

**EXCHANGE**. 1) Release of water into a stream, reservoir or other body of water in exchange for a like quantity withdrawn at another point. 2) An application, made to the State Engineer, to facilitate the changing of water used under contract from the U.S. Bureau of Reclamation or similar entity.

**EXIT CHANNEL**. Open channel, located downstream from any conduit or spillway, which conducts the flow to a point where it may be released without jeopardizing the dam.

**EXTENSION**. Request for additional time to complete a water project, submit proof, resume use, submit information, or comply with an administrative proceeding or order. In those cases where the extension request involves the submission or proof: if the application was approved within the last 14 years, no advertising of the request is required; after 14 years, advertising is required.

**FACE**. In reference to a structure, the external surface that limits the structure.

**FLASHBOARDS**. Lengths of timber, concrete or steel placed on the crest of a spillway to raise the water level, but that may be quickly removed in the event of a flood.

**FLOOD**. 1) Temporary rise in streamflow or stage that results in significant adverse effects in the vicinity. 2) An overflow on lands.

**FLOOD PLAIN**. Relatively flat area bordering a stream or adjoining a body of standing water that may be overflowed during times of high water.

**FLOOD ROUTING**. Computation of the changes in the rise and fall in stream flow or reservoir levels as a flood moves downstream.

**FLOOD STAGE**. Stage or elevation in which overflow of the natural banks of a stream or body of water begins.

**FLOW**. Rate of water discharged from a source given in volume with respect to time.

**FLOW MODEL**. see Ground-water Flow Model.

**FLOWING WELL**. Artesian well having sufficient head to discharge water above the land surface.

**FLOWLINE**. Lowest point in a water conveyance structure where water can flow.

**FLUME**. Open artificial channel or chute carrying a stream of water, or as a measuring device.

**FLUVIAL**. Of or pertaining to rivers and streams.

**FOREBAY**. A storage basin, usually adjacent to a larger reservoir, for regulating water; a storage basin for the percolation surface water into groundwater basins.

**FORFEITURE**. Potential loss of a water right because of seven or more years of non-use, usually determined by a court.

**FOUNDATION OF DAM.** Natural material on which the dam structure is placed.

**FREEBOARD**. Vertical distance between the design maximum water level and the top of a structure.

**FRICTION LOSS**. Total energy loss in the flow of water due to friction between the water and walls of a conduit or channel.

**GABION**. Wire cage, usually rectangular, filled with cobbles and used as a component for water control structures or for channel and bank protection.

**GAUGE (GAGE).** Instrument used to measure the elevation of a water surface, velocity of flowing water, or pressure of water.

**GAUGING (GAGING) STATION**. Particular site on a stream, canal, lake or reservoir where systematic observations of height or discharge are obtained.

**GALLERY**. Permanent accessible structure within the interior of a dam used for seepage collection, monitoring and remedial work.

**GATE**. Structure or device for controlling the rate of water flow into or from a canal, ditch or pipe.

**GEOHYDROLOGY**. Branch of hydrology relating to waters below the earth's surface.

**GEOLOGICAL SURVEY**. Generally refers to the USGS.

**GEOMEMBRANE**. Geosynthetic fabric that is designed to be an impermeable barrier.

**GEOTEXTILE.** Geosynthetic fabric that is designed to be a filter, a drain, act as reinforcement, or for separation.

**GEOTHERMAL RESOURCE**. Natural heat energy found below the surface of the earth.

**GIS.** Geographic Information System.

**GRADE**. Slope of a stream bed.

**GPS.** Global Positioning System.

**GRADIENT**. Degree of incline; slope of a stream bed.

**GRAVITY FLOW**. Any downhill flow of water generated by the force of gravity.

**GROIN**. Area along the contact or intersection of the face of a dam with the abutments.

**GROUND-WATER BASIN**. Groundwater reservoir together with all the overlying land surface and underlying aquifers that contribute water to the reservoir.

**GROUND-WATER FLOW MODEL**. Digital computer model that calculates a hydraulic head field for the modeling domain using numerical methods to arrive at an approximate solution to the differential equation of ground-water flow.

**GROUND-WATER MANAGEMENT PLAN**. A plan promulgated by the State Engineer to control the withdrawal of ground water for the purpose of preventing or correcting ground-water mining.

**GROUND-WATER MINING**. see **MINING (GROUND WATER).**

**GROUND WATER RECHARGE**. Inflow of water to a ground water reservoir from the surface.

**GROUT CURTAIN**. Barrier to reduce seepage under a dam.

**GROUT**. Fluid mixture of cement and water of a consistency that can be forced into a pipe, well or dam foundation and placed as required.

**GUZZLER**. Manmade rain collection and storage device for watering livestock and wildlife in remote locations.

**HEAD**. 1) Difference in elevation in a pipe between intake and discharge points; a direct indicator of pressure. 2) Height difference of the water level at the headworks or upstream point of a waterway, and the water surface at a given point downstream. 3) A measure of the energy in water as a result of its elevation, pressure and velocity.

**HEAD LOSS**. Decrease in total head caused by friction, a drop in pressure, a lowering of elevation or a decrease in velocity.

**HEADGATE**. Gate that controls water flow into irrigation canals and ditches.

**HEADWATERS**. 1) Source and upper reaches of a stream or reservoir. 2) Small streams that come together to form a river.

**HEAT EXCHANGE**. The process that transfers heat from a relatively low-temperature reservoir to one at a higher temperature, usually transferring the heat in ground-water reservoir for the space heating of a building.

**HISTORIC FLOW**. Flow that has occurred and was, or would have been, recorded at a gauging station.

**HUNDRED-YEAR FLOOD**. see **ONE HUNDRED YEAR FLOOD**.

**HYDRAULIC FRACTURING**. Fracturing of soil materials due to excessive fluid pressures.

**HYDRAULIC HEAD**. see **HEAD**.

**HYDRAULIC HEIGHT**. Vertical dimension of a dam as measured from the natural streambed at the downstream toe to the elevation of the water surface at the crest of the primary spillway.

**HYDRAULICS**. Science of the static and dynamic behavior of fluids.

**HYDROGRAPH**. Graphical representation of discharge, stage, volume, or other hydraulic property of a river, creek, or stream, with respect to time, for a particular location.

**HYDROGRAPHIC SURVEY**. 1) Instrumental survey to measure and determine characteristics of streams and other bodies of water within an area. 2) Position and elevation of high water marks. 3) Location and depth of wells. 4) The mapping of the places of use of water rights involved in an adjudication proceeding.

**HYDROLOGIC BASIN**. see **BASIN**.

**HYDROLOGIC CYCLE**. Circuit of water movement from the atmosphere to the earth and return to the atmosphere through various stages or processes such as precipitation, interception, runoff, infiltration, percolation, storage, evaporation and transportation.

**HYDROLOGY**. Study of the properties, distribution and movement of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere.

**HYDROMETER**. Instrument used to determine specific gravity, especially a sealed, graduated tube, weighted at one end.

**HYDROPOWER**. Electric power produced by falling water.

**IMPERMEABLE**. Unable to transmit water; not easily penetrated.

**IMPERVIOUS**. Incapable of being penetrated by water.

**IMPOUNDMENT**. Body of water confined by a dam, dike or other barrier.

**INCIDENTAL RECHARGE**. Ground water recharge that occurs as a result of human activities unrelated to a recharge project.

**INCREMENTAL DAMAGE ASSESSMENT (IDA).** Analysis showing the influence of a dam failure when superimposed on an extreme hydrologic event.

**INFILTRATION RATE**. Rate at which a given soil can accept surface water.

**INFLOW**. Act or process of flowing, or something that flows, in or into.

**INFLOW DESIGN FLOOD (IDF).** Flood hydrograph that is used to size a dam's spillway.

**INJECTION**. Refers to a system of artificially introducing surface water into the ground water system as a means of storage or recharge.

**INJECTION WELL**. Injects water directly into a designated aquifer.

**INLET CHANNEL**. Open channel upstream from a spillway or conduit.

**INSTREAM FLOW**. Non-consumptive water requirements or uses that do not require diversion from its natural watercourse nor reduce the water supply.

**INTERFERENCE**. Condition occurring when the area of influence of a water well comes into contact with or overlaps that of a neighboring well.

**INTERMITTENT STREAM**. A natural watercourse where the flow stops and starts at intervals.

**INTERNAL EROSION**. see **PIPING**.

**INTERSTATE COMPACT**. see **COMPACT**.

**INTERSTICES**. Openings or pore spaces in a rock.

**INUNDATION MAP**. Map showing areas that would be subject to flooding due to storm conditions or failure of a dam.

**IRRECOVERABLE LOSSES**. Water lost to a salt sink or lost by evaporation or evapotranspiration.

**IRRIGATION**. The controlled application of water to land to supplement that supplied by nature.

**JETTY**. Structure extending into a sea, lake or river to protect the shore or bank.

**JOINT TENANCY**. A form of co-ownership by two or more persons in equal shares characterized by the by the incident of survivorship.

**LAPSE**. Invalidation of a water right application for failure to show proof of beneficial use, meet a deadline, honor a respond from further information, comply with conditions set in a State Engineer's Order or for other reasons.

**LATERAL**. Irrigation conveyance structure intended to convey water away from the main canal or ditch.

**LEACHING**. Process by which soluble materials in the soil, such as salts, nutrients, chemicals or contaminants are washed into a lower layer of soil or are dissolved and carried away by water.

**LEFT (OR RIGHT) BANK**. Left- or right-hand side of a stream when the observer faces downstream.

**LEVEE.** Natural or man-made earthen obstruction along the edge of a stream, lake or river.

**LIQUEFACTION**. 1) Act or process of making or becoming liquid. 2) Sudden loss of strength or stiffness of a saturated soil resulting from dynamic loading as from earthquakes.

**LITTORAL**. Region along the shore of a non-flowing body of water.

**LOAD.** Amount of solid material that a stream is actually carrying at a given time.

**LOG BOOM**. Floating device intended to prevent large floating debris from being carried into a spillway.

**LOSING STREAM**. Stream or reach of a stream that is losing water by seepage into the ground.

**LOW LEVEL OUTLET**. Conduit from a reservoir, generally used for lowering the reservoir or for providing downstream releases.

**LOWER BASIN STATES (Colorado River Compact).** Arizona, Nevada and California.

**LYSIMETER**. Instrument used to measure the quantity or rate of downward water movement through a block of soil.

**M & I WATER USE**. Water supplied for municipal and industrial uses provided through a municipal distribution system.

**MAINSTEM**. Major reach of a river or stream formed by the smaller tributaries that flow into it.

**MANOMETER**. Instrument for measuring pressure.

**MAXIMUM CAPACITY**. Maximum volume of water that can be stored in a reservoir when filled to the crest of the dam.

**M.C.E.** Maximum credible earthquake.

**MEAN DEPTH**. Average depth of water in a stream channel or conduit. It is equal to the cross-sectional area divided by the surface width.

**MEANDER.** Turn of a stream, either live or cut off; winding of a stream channel.

**MEANDER LINE**. Line delineated by survey for the purpose of defining the bends or windings of the banks of a stream or lake.

**MEASURING WEIR**. Shaped notch, typically rectangular, trapezoidal or triangular, through which flowing water is measured.

**METEORIC WATER.** Ground water derived primarily from precipitation.

**METEOROLOGY.** Science that deals with the phenomenon of the atmosphere, especially weather.

**MILLRACE.** Fast-moving stream of water that drives a mill wheel.

**MINER'S INCH**. An old term for the rate of discharge through an orifice one inch square under a specific head; in Utah, it equals 0.020 CFS.

**MINING (GROUND WATER).** Withdrawal of water from a ground water source at a rate greater than its rate of recharge.

**MITIGATION.** Action designed to lessen or reduce adverse impacts.

**MODEL.** Simulation, by descriptive, conceptual, statistical or other means, of a process or thing that is difficult or impossible to observe directly. The concept is to approximate reality by means of a quantifiable process. In this way the mod el may be used to simulate various changes in conditions in a "what if" or predictive framework.

**MOISTURE EQUIVALENT**. Percentage ratio of weight of water which the soil, after saturation, will retain against a centrifugal force 1,000 times the force of gravity, to weight of the soil when dry.

**MONITOR WELL.** Well used to measure groundwater levels or obtain water quality samples.

**MORAINE**. Accumulation of boulders, stones or other debris carried and deposited by a glacier.

**MOVABLE BED**. Stream bed made up of materials readily transportable by the streamflow.

**MULTIPLE USE**. Coordinated management of various surface and subsurface resources, without impairment of the land, that will best meet the present and future needs of the people.

**MUNICIPAL DISCHARGE**. Product resulting from the treatment of sewage and other pollutants by a publicly owned treatment works.

**MUNICIPAL WATER**. Water used by a municipality within its municipal limits and/or service area.

**NAPPE**. Free-falling stream from a weir.

**NARROWS.** 1) Water channel with little width that connects two larger bodies of water. 2) Part of a river that is not wide.

**NATURAL FLOW**. Rate of water movement past a specified point on a natural stream from a drainage area for which there have been no effects caused by upstream diversion, storage, import, export or return flow.

**NATURAL RECHARGE.** Groundwater storage from naturally-occurring surface water supplies such as precipitation and stream flows.

**NATURAL RESOURCE**. Material source of wealth, such as timber, fresh water or a mineral deposit, that occurs in a natural state and has economic value. They are considered NONRENEWABLE when they do not naturally replenish themselves within the limits of human time, or RENEWABLE when they are more or less continuously replenished in the course of natural events within the limits of human time.

[**NATURAL RESOURCES CONSERVATION SERVICE**](http://www.nrcs.usda.gov/) **(NRCS).** Formerly Soil Conservation Service.

[**NATURE CONSERVANCY**](http://www.nature.org/) **(The)**. An international conservation organization that, through private donations, purchases lands and then either retains ownership or transfers ownership to other conservation groups.

**NAVIGABLE STREAM**. A river which is 3 chains (198 feet) or more in width or a lake with a surface area of 25 acres or more.

**NON-CONSUMPTIVE.** Where water is not consumed during the course of a beneficial use, such as fish culture or hydroelectric power generation.

**NON-POINT SOURCE POLLUTION.** Pollution discharged over a wide land area, not from one specific location, and carried to lakes and streams by surface runoff.

**NON-POTABLE.** Water that is not suitable for drinking because of pollutants, contaminants, minerals or infective agents.

**NON-USE.** When a water right has not been used for a period of 7 years or more, it is said to be in a state of non-use and can be lost through the abandonment statute. Usually requires a court interpretation, especially where a state owned water right is concerned.

**NON-USE APPLICATION**. An application to the State Engineer where the water right holder, anticipating that the water will not be used for 7 years, seeks to protect his water right from forfeiture.

**NONCONSUMPTIVE USE.** Water withdrawn for use that is not consumed, e.g., hydropower generation, recreation, instream flow.

**NONPOROUS**. No void spaces through which water could pass.

**NONPRODUCTION WELL**. A well used for the recharging, monitoring and/or testing of an aquifer system, heat exchanging to heat a building.

**NORIA.** A type of water wheel with buckets attached to its rim, used to raise water from a stream.

**NORMAL FREEBOARD**. Vertical distance between the primary spillway overflow crest and the top of the dam.

**[N.R.C.S.](http://www.nrcs.usda.gov/)** see **NATURAL RESOURCES CONSERVATION SERVICE**.

**NOTICE OF VIOLATION.** A formal written notice from the State Engineer that the noticee is in violation of the law.

**[N.W.S.](http://www.nws.noaa.gov/)** National Weather Service.

**OBSERVATION WELL.** Well used to monitor changes in water levels of an aquifer and obtain samples for water quality analyses.

**OBSTRUCTION**. Includes but not limited to any dam, dike, abutment, excavation, bridge, channelization, culvert, building, fence, rock, fill, structure, vegetation in, across, along or projecting into a watercourse that may alter, impede, retard or change the direction and/or velocity of the flow of water.

**OFFSTREAM USE**. Water withdrawn or diverted from a ground or surface water source for use at another place.

**ONE HUNDRED YEAR FLOOD**. The flood having a one percent probability of being equaled or exceeded in any given year.

**ONE HUNDRED YEAR PRECIPITATION**. The precipitation having a one percent probability of being equaled or exceeded in any given year.

**ORIFICE**. Used for the measurement or control of water, it is an opening with a closed perimeter. It is usually sharp edged and of regular form in a plate, wall or partition through which water may flow.

**OUTFALL**. Place where a stream discharges; outlet or structure through which reclaimed water or treated effluent is discharged.

**OUTLET**. Point where water exits from a stream, river, lake or artificial drain.

**OVERDRAFT**. see **MINING (GROUND-WATER).**

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| [[http://www.waterrights.utah.gov/images/staff/glossary/oxbows_sm.jpg](http://www.waterrights.utah.gov/images/staff/glossary/oxbows.jpg)](http://www.waterrights.utah.gov/images/staff/glossary/oxbows.jpg) |
| *Oxbows in a meandering stream* |

**OXBOW**. Abandoned meander in a river or stream; used to describe the U-shaped bend in the river.

**PARSHALL FLUME**. Device used to measure the flow of water in an open channel.

**PARTIAL PENETRATION**. Well constructed in such a way that it draws water directly from a fractional part of the total thickness of the aquifer.

**PARTICULATES**. Very small solids suspended in water.

**PEAK FLOW**. Maximum instantaneous discharge of a stream or river at a given location.

**PENSTOCK**. Gate or sluice used in controlling the flow of water; a tube or trough for carrying water to a water wheel.

**PERCHED WATER TABLE**. Water table of a relatively small groundwater body supported above the general groundwater body.

**PERCOLATING WATERS**. Underground waters whose course and boundaries are incapable of determination.

**PERCOLATION.** Movement of water within a porous medium without a definite channel; entrance of a portion of the streamflow into the channel materials to contribute to groundwater replenishment; slow seepage of water through a filter.

**PERENNIAL STREAM**. stream that flows from source to mouth throughout the year.

**PERFECTED WATER RIGHT**. A fully developed water right that has been certificated the State Engineer, decreed by a court of law, or has been legislatively as such; is considered real property.

**PERFORATION OF WELLS**. Holes in the casing of wells that allow water to flow into the well.

**PERMANENT CHANGE APPLICATION**. An application to the State Engineer where a water right holder seeks to permanently change the point of diversion, place of use, period of use, or nature of use of his water right.

**PERMEABILITY**. Rate that water passes through soil or other materials in a specified direction. It is equal to velocity of flow divided by hydraulic gradient.

**PERVIOUS ZONE**. Part of the cross section of an embankment dam comprising material of high permeability.

**Ph.** Measure of acidity or alkalinity of water.

**PHREATIC**. Of or relating to ground water.

**PHREATIC SURFACE**. Term equivalent to groundwater surface or the water table.

**PIEZOMETER**. Instrument for measuring pore water pressure within soil, rock or concrete.

**PIPING**. Progressive development of internal erosion of material by seepage.

**PITOT TUBE**. Instrument used to measure the velocity of flowing water.

**PLACE OF USE**. Specific location documented in the water right where the water is to be used.

**PLUMB**. Weight on the end of a line, used to determine water depth.

**PLUVIAL.** Having to do with rain.

**POINT DISCHARGE**. Instantaneous rate of discharge, in contrast to the mean rate for an interval of time.

**POINT OF DIVERSION**. Point specified in a water right from which water is diverted from a source.

**POINT OF RE-DIVERSION**. Refers to a specific point of diversion category in the Utah Division of Water Rights records. A point of re-diversion refers to a diversion point, which diverts water which was previously diverted and released upstream. Usually associated with reservoir storage.

**POINT OF RETURN**. Point where water that has been non-consumptively used is returned back to the natural stream.

**POINT SOURCE**. Stationary or clearly identifiable source of a large individual water or air pollution emission.

**POINT SOURCE POLLUTION**. Pollutants discharged from any identifiable point, including pipes, ditches, channels, sewers and containers of various types.

**POINT TO POINT DIVERSION**. Refers to a specific point of diversion category in the Utah Division of Water Rights records. Point To Point diversions are not developed points of diversion. The reference is to a stream segment from which stock may drink.

**POLLUTION**. Any introduction into water of microorganisms, chemicals, wastes or wastewater in a concentration that makes the water unfit for its intended use.

**PORE PRESSURE.** Pressure exerted by water in the void space of soil or rock.

**POROSITY**. Measure of the water-bearing capacity of a formation.

**POROUS INTERVAL**. Portion of a piezometer where infiltrating water is allowed to act on the device.

**POTABLE WATER**. Water that is drinkable.

**POTENTIAL YIELD**. Maximum rate at which a well will yield water under a stipulated set of conditions.

**POTENTIOMETRIC SURFACE**. Surface that represents the static head; level to which water will rise in tightly cased wells.

**POWER FILING**. Filing for electric power generation.

**P.O.T.W**. Publicly-owned treatment works; facilities for treatment of domestic sewage.

**PRACTICABLY IRRIGABLE ACREAGE**. Standard for quantifying reserved water rights on an Indian reservation.

**PRESCRIPTION**. 1) A legal term for a method of acquisition of title or the use of water by immemorial or long-term continued use; also referred to as positive prescription. 2) A legal term for a time limit beyond which an action, debt, or crime in no longer valid or enforceable; also referred to as negative prescription.

**PRESCRIPTIVE RIGHT**. A right sanctioned or authorized by long-standing use.

**PRESSURE GAUGE**. Device for registering the pressure of solids, liquids or gases.

**PRESSURE HEAD**. Energy contained by fluid because of its pressure.

**PRIMACY**. Term used to denote the rank of first; state delegated authority by federal government.

**PRINCIPAL SPILLWAY**. Main spillway for normal operating conditions.

**PRIOR APPROPRIATION DOCTRINE.** System for allocating water, used in most western states. "First in time is first in right" means that the first person to take a quantity of water and put it to beneficial use has a higher priority than a subsequent user.

**PRIORITY**. Concept that the person first using water has a better right to it than those commencing use later.

**PRIORITY DATE**. Date of establishment of a water right.

**PROBABLE MAXIMUM FLOOD (PMF).** Flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions possible in the region.

**PROBABLE MAXIMUM PRECIPITATION (PMP).** maximum amount of precipitation that could be expected to fall on a drainage under the most severe meteorologic condition.

**PROOF DUE DATE**. End of approval period for putting water to beneficial use.

**PROOF OF APPROPRIATION**. Document that attests to the amount of water withdrawn for the uses specified in the application and that it has been put to beneficial use.

**PROOF OF BENEFICIAL USE**. see **PROOF OF APPROPRIATION**.

**PROOF OF CHANGE**. used in same manner as PROOF OF APPROPRIATION only applies to a change application.

**PROTEST**. A document that states opposition to the granting of a water right application. There are specific requirements for a protest to have legal standing. See Utah State Code Section 73-3-7, 73-3-13, and Rule R655-6.

**PROTESTANT**. A person who has filed a protest to the granting of a water right application.

**PROVISIONAL WELL**. Authorization to drill under a pending, unapproved water right, or for the purpose of determining characteristics of an aquifer; does not allow the water to be utilized.

**PSEUDO STATIC ANALYSIS**. Approximate method for predicting the dynamic stability of a structure using static loads.

**PUBLIC DOMAIN**. All U.S. lands that the federal government obtained from: 1) the original 13 states, 2) the Louisiana purchase, 3) cession from Spain, 4) occupation of the Oregon Territory, 5) Mexican Cession, 6) purchase from Texas, 7) Gadsen Purchase, and 8) purchase of Alaska.

**PUBLIC INTEREST**. Sometimes vague term which can affect water right applications if they would be contrary to the public interest or public welfare.

**PUBLIC SUPPLY WATER**. Water withdrawn by and delivered to a public water system regardless of the use made of the water.

**PUMP LIFT**. Distance between the ground water table and the overlying land surface.

**PUMP TEST**. Test that is conducted to determine aquifer or well characteristics.

**QUANTIFICATION**. The process of determining the exact size and limits of a water right, usually in acre-feet per year, based on beneficial use.

**QUICKSAND**. Sand that is unstable due to the upward pressure and/or flow of water.

**QUIT CLAIM DEED.** A form of deed, containing no warranties, conveying the current right, title, and interest of the grantor in, and to, real property.

**RACE.** Strong or swift current of water; an artificial channel built to transport water.

**RACE NOTICE STATE**. Where there is a conflict between deeds to a property, states such as Utah will recognize the deed first recorded with the appropriate County Recorder.

**RADIAL FLOW**. Flow of water in an aquifer toward a vertically oriented well.

**RANGE LINE**. In the U.S. Public Land Survey system, the grid lines running north and south.

**RATING CURVE**. Curve showing the relation between GAUGE height and discharge of a stream at a given gauging station.

**RAW WATER**. Water direct from the source, ground or surface water, without any treatment.

**REACH (OF RIVER).** Generally, any length of river. More specific, a length of channel uniform in discharge depth, area and slope; length of channel for which a single gage affords a satisfactory measure of the stage and discharge; length of river between two gauging stations.

**RECHARGE**. Introduction of surface or ground water into ground-water storage by natural or artificial means.

**RECHARGE AREA**. see **RECHARGE ZONE**.

**RECHARGE BASIN**. Surface facility, often a large pond, used to increase the infiltration of surface water into a ground water basin.

**RECHARGE ZONE**. Land area into which water can infiltrate into an aquifer relatively easily, replenishing the aquifer.

**RECORD**. To incorporate into the public records of the County Recorder; also the system of public records imparting constructive notice of title to claims, or interests, in real property.

**RECORDER**. Mechanical apparatus that records a continuous record of a water level or other hydrologic factors.

**RECYCLED WATER.** Water that is used more than one time before it passes back into the natural hydrologic system.

**RE-DIVERSION**. see **POINT OF RE-DIVERSION**.

**RED TAG**. A formal written order to a well driller to cease operation until a violation of well drilling regulations is resolved.

**REGIMEN**. System or order characteristic of a stream; stream that has reached an equilibrium between erosion and deposition.

**REGIONAL ENGINEER**. Employee of the State Engineer responsible for administering water rights in a particular region of the state.

**REINSTATE**. Where the State Engineer rescinds his lapsing of an application on petition of the applicant; usually the priority date is reduced to the date of reinstatement.

**REGULATION**. Artificial manipulation of the flow of a stream.

**RENOVATE/REPLACE**. To renovate or replace an existing well that has an existing water right. A replacement well must be within 150 feet of the existing well to qualify as a replacement well. A new well located more than 150 feet but less than 660 feet from the existing well requires a change application but the application does not need to be advertised. A replacement well must include the legal abandonment of the existing well. As the term suggests, the authority to drill a replacement well only allows for **replacing** an existing well. A change application is required to drill additional wells, or drill a new well without abandoning an existing well.

**REPAIR OF A WELL STRUCTURE**. The modification or replacement of the casing, screens, seals, etc. of an existing well.

**REPLACEMENT OF A WELL STRUCTURE**. The abandonment of an existing well and the drilling of a new well in its stead.

**RESERVED RIGHTS**. Category of federal water rights created when the federal government withdraws land from the public domain.

**RESERVED RIGHTS DOCTRINE**. Legal rule that states when the federal government reserves public lands for a particular purpose, such as a national park, forest or Indian reservation, it also reserves sufficient water to accomplish that purpose, sometimes called the Winters Doctrine.

**RESERVOIR**. Pond, lake or basin, either natural or artificial, for the storage, regulation and control of water.

**RESERVOIR AREA**. Surface area of a reservoir when filled to a given water elevation.

**RESERVOIR STAGE**. Measure of the depth or elevation of water in a reservoir relative to an established datum.

**RESIDUAL FREEBOARD**. Vertical distance between the maximum water surface during a given hydrologic event and the top of the dam.

**RESPONSE SPECTRUM**. Graphical representation of actual motions, including displacement, velocity and acceleration, caused by seismic events.

**RETURN**. see **POINT OF RETURN.**

**RETURN FLOW**. Part of a diverted flow that is not consumptively used and returns to its original source or another body of water.

**RETURN SEEPAGE**. Water that percolates from canals and irrigated areas to underlying strata, raising the groundwater level, and eventually returning to natural channels.

**REUSE**. Water that is discharged by one use and placed to another before leaving the physical control of the water right holder.

**REVETMENT**. Facing of stone, concrete or sandbags used to protect a bank of earth from erosion; a retaining wall.

**RIFFLE**. Shallow rapids in an open stream.

**RIGHT OF SURVIVORSHIP**. The right to succeed to the interest of a deceased.

**RIPARIAN.** Pertaining to the banks of a river, stream, or other body of water as well as to plant and animal communities along such bodies of water.

**RIPARIAN DOCTRINE**. System for allocating water in the eastern United States, which gives owners of land along a stream or river an absolute prerequisite to a right to use water from that body of water.

**RIPRAP**. Layer of large stones, broken rock, or precast blocks placed on the upstream slope of an embankment dam, on a reservoir shore, or on the sides of a channel, as a protection against waves, ice, and scour.

**RISK ASSESSMENT**. Qualitative and quantitative evaluation performed in an effort to define the risk posed to human health and/or the environment.

**RIVER BASIN**. Term used to designate the area drained by a river and its tributaries.

**RIVER COMMISSIONER**. see **WATER COMMISSIONER**.

**ROD**. Surveyor's measurement equal to 16.5 feet.

**ROUTING**. 1) Derivation of an outflow hydrograph of a stream from known values of upstream flow, using the wave velocity and/or storage equation. 2) Technique used to compute the effect of channel storage and channel movement on the shape and movement of a flood wave through a river reach.

**RUNOFF**. Precipitation, snow melt or irrigation water that appears in surface streams or rivers.

**SAFE YIELD**. The amount of groundwater that can be withdrawn from a groundwater basin over a period of time without exceeding the long term recharge of the basin or unreasonably affecting the basin's physical and chemical integrity.

**SALINE**. Term used to describe waters containing common salt, or sodium chloride.

**SALTS**. A common term for minerals that water picks up as it passes through the air, over and under the ground, and through household and industrial uses.

**SALVAGED WATER**. An obsolete term for a part of a particular stream or other water supply that is saved from loss, in respect to quantity or quality, and is retained and made available for use.

**SATURATED FLOW**. Liquid flow of water in soils that occurs when the soil pores in the wettest part of the soil are completely filled with water and the direction of flow is from the wettest zone of higher head to one of lower head.

**SATURATED ZONE**. Subsurface area in which all pores and cracks are filled with water under pressure greater than the atmosphere.

**SATURATION POINT**. Point at which a soil or an aquifer will no longer absorb any amount of water without losing an equal amount.

**SCOUR**. Erosive action of running water in streams, which excavates and carries away material from the bed and banks.

**SEAL**. An impermeable material placed in the annular space between the outermost water well casing and the drill hole to prevent inflow and movement of surface water or shallow ground water.

**SECOND-FEET**. see **CUBIC FOOT SECOND (CSF).**

**SECTION**. Unit of land area, generally equal to one square mile or 640 acres. Thirty- six sections comprise a township.

**SECTION 404**. That section of the Clean Water Act delineating restrictions on dredging and filling of wetlands, and disruption of beds and banks of streams.

**SEDIMENT**. Deposition of eroded materials carried by the waters of streams or lakes.

**SEDIMENT LOAD**. Total sediment, including bedload, being moved by flowing water in a stream at a specified cross section.

**SEDIMENT POOL**. Portion of a reservoir allotted to the accumulation of submerged sediment during the design life of the dam.

**SEEPAGE.** Slow movement of water through small cracks or pores of a material into or out of a body of surface or subsurface water; loss of water by infiltration into the soil from a canal, ditches, laterals, reservoir or other body of water.

**SEEPS**. A spring having a very small discharge rate.

**SEGREGATION**. To split an existing water right into one or more separate water rights.

**SEISMIC**. Pertains to an earthquake or earth vibration.

**SETTLING BASIN**. Enlargement in the channel of a stream to permit the settling of materials carried in suspension.

**SEWAGE REUSE**. The capture of treated effluent from a wastewater treatment plant before it leaves the control of the water right holder for the purpose of placing it to additional uses.

**SHALLOW WELL**. Well with a pumping head of 30 feet or less.

**SHARE**. Stock in a mutual irrigation company. Many irrigation companies exist in Utah which own water rights used by their shareholders. The amount of water the company allows each shareholder to divert is usually determined by the company stock shares owned or rented. Shares in an irrigation company are not water rights. The company collectively owns the water right(s), the benefits from which are distributed to the shareholders. This is evidence of the holder's right to a portion of the water delivered by the company.

**SHEET EROSION**. Removal of thin, fairly uniform layer of soil or materials from the land surface by the action of rainfall and runoff water.

**SHERRIFF'S DEED**. Conveyance of title to a debtor's property as a consequence of an execution sale.

**SHOAL**. Shallow place in a body of water.

**SIERRA CLUB**. National environmental organization founded in 1892.

**SILT**. Sedimentary particles smaller than sand particles, but larger than clay particles.

**SILTATION**. Deposition of finely divided soil and rock particles upon the bottom of stream and riverbeds and in reservoirs.

**SINKHOLE**. Depression in the earth's surface caused by dissolving of underlying limestone, salt or gypsum.

**SITE IDENTIFICATION (USGS).** 15-digit number based on the grid system of latitude and longitude. First six digits denote degrees, minutes and seconds of latitude; next seven digits denote degrees, minutes and seconds of longitude; and the last two digits identify sites within a 1-second grid.

**SKIMMING**. Siversion of water from a stream or conduit by a shallow overflow.

**SLOPE PROTECTION**. Protection of an embankment slope against wave action or erosion.

**SLOUGH.** Place of deep mud or mire; wet or marshy place; side channel or inlet as from a river.

**SLUICE**. Artificial channel for conducting water, with a valve or gate to regulate the flow; body of water impounded behind a floodgate.

**SLUMP**. Sliding or gravitational movement of an overlying layer of soil, typically from becoming saturated, and lying on a rock layer or other impermeable layer.

**SLURRY WALL**. Material placed vertically in the ground to prevent the lateral movement of groundwater.

**SMALL DAM**. A dam impounding 20 acre-feet or less, or 18 feet or less in height. Generally, used for overnight storage ponds or sprinkler pressurizing ponds.

**SNOW SURVEY**. Process or operation of determining the depth, water content and density of snow at various selected points for the purpose of forecasting subsequent runoff.

**SNOW WATER EQUIVALENT**. Amount of water that would be obtained if the snowpack was melted.

**SNOWMELT**. Net decrease in water equivalent of the snowpack after allowing for increases due to precipitation.

**SOLE SUPPLY**. The amount of Beneficial Use allowed under a particular water right when used alone and separate from all Supplemental Rights. If a water right has been assigned to more than one Water Use Group, the Sole Supply of the water right is the sum of its Beneficial Use Amounts.

**SOLUTE**. Any material that is dissolved in another.

**SOUNDING**. Measuring the depth of water.

**SPILLWAY**. Open or closed channel, conduit or drop structure used to convey excess water past a dam.

**SPRING**. Concentrated discharge of ground water coming out at the surface as flowing water.

**SPRINKLER IRRIGATION**. Pressurized irrigation system where water is distributed through pipes and applied through a variety of sprinkler heads or nozzles.

**STAFF GAUGE**. Graduated scale used to indicate the height of the water surface in a stream channel, reservoir or lake.

**STAGE**. Height of a water surface above some established reference point at a given location.

**STANDARD OPERATING PLAN (PROCEDURE)**. Written procedure outlining the operation and maintenance of a dam and its appurtenant structures and equipment.

**STANDPIPE**. Large vertical pipe: 1) into which water is pumped in order to produce a desired pressure or 2) from which water is allowed to flow to relieve excess pressure in a pipe network.

**START CARD**. An intention to drill card supplied by the applicant to the driller to be submitted to the agency when the driller starts construction.

**STATE ENGINEER**. Official charged with the administration of water appropriation and distribution within the state.

**STATIC HEAD**. Difference in elevation in feet between the water surface of the body of water being pumped and the centerline of the discharge pipe at the point of release.

**STATIC LEVEL**. Stabilized water level in a non-pumped well beyond the area of influence of any pumping well.

**STEADY STATE**. Equilibrium condition in which the flow in equals the flow out.

**STILLING BASIN**. Open structure or excavation at the foot of an over-fall, chute, drop or spillway to dissipate excess energy of the descending stream or water emerging from a spillway or outlet.

**STOCK CERTIFICATE**. A certificate issued by an irrigation company representing ownership in the assets of the company including water rights. An ASSESSMENT is required, based on shares owned, to pay the operating expenses of the company.

**STOCK POND.** impoundment, the principal purpose of which is to supply water to livestock.

**STOPLOGS**. Beams placed on top of each other across a channel with their ends held in guides on each side of a channel or conduit to raise the upstream water level.

**STORAGE**. Water artificially impounded in surface or underground reservoirs for future use; water naturally detained in a drainage basin.

**STORAGE CAPACITY**. Volume of water that can be stored at the elevation of the primary spillway, including both active and dead storage.

**STREAM ALTERATION**. To obstruct, diminish, destroy, alter, modify, relocate or change the natural existing shape of the channel.

**STREAM CHANNEL**. Natural water course of perceptible extent with definite beds and banks that confines and conducts continuously flowing water.

**STREAM GAUGING**. Quantitative determination of stream flow using gages, current meters, weirs or other measuring instruments at selected locations.

**STREAM GAUGING STATION**. Gauging station where a continuous record of the discharge of a stream is obtained.

**STREAM REGIMEN**. Condition of a stream and its channel as it relates to erosive characteristics. It is "*in regimen*" if its channel has reached a stable form as the result of its flow characteristics.

**STREAMBED**. Channel through which a natural stream of water runs or used to run.

**STREAMFLOW**. Discharge that occurs in a natural channel.

**STRUCTURAL HEIGHT**. Vertical dimension of a dam as measured from the natural streambed at the downstream toe of a dam to the top of a dam.

**SUBLIMATION**. Change of a solid to a vapor (or the reverse) without the appearance of a liquid state.

**SUBSIDENCE**. Sinking of an area of the earth's surface due to compaction of the underlying material.

**SUPPLEMENTAL RIGHT**. A water right that is used together with one or more other water rights for a common Beneficial Use.

**SURFACE SUPPLY**. Water supply from streams, lakes and reservoirs.

**SURFACE WATER**. All waters whose surface is naturally exposed to the atmosphere, e.g., rivers, lakes, reservoirs, impoundments, springs.

**SURPLUS WATER**. Developed water supplies in excess of contract entitlement or apportioned water.

**SURVEY MARKER**. Permanent physical mark on a dam or appurtenant structure used to measure changes in horizontal and vertical movement.

**SUSTAINED YIELD**. see **SAFE YIELD**.

**TAIL WATER**. Water immediately downstream from a structure; water that reaches the lower end of a field.

**TAILINGS**. Waste material remaining after metal is extracted from ore.

**T.D.S.** Total dissolved solids.

**TEMPORARY APPLICATION**. An application to appropriate or change water which, if approved, is good for one year.

**TENANCY IN COMMON**. A form of co-ownership of property by two or more persons in undivided interest.

**TERMINATED**. The ending of a water right by an order of the court.

**TEST BORINGS**. Holes drilled to determine the type and physical properties of subsurface materials.

**TEST WELL**. Well hole drilled for experimental or exploratory purposes.

**THALWEG**. Subsurface, groundwater stream percolating beneath and in the general direction of a surface stream; lowest thread along the axial part of a valley.

**TILTING GATE.** Hinged gate counterbalanced by weights that automatically opens and closes with a change in head.

**TIME OF CONCENTRATION**. Time required for water to flow from the farthest point on the water shed to the gauging station or other point of interest.

**TOE OF DAM**. Junction of a dam face with the foundation. For an embankment dam, the junction of the upstream face with ground surface is called the upstream toe--the downstream junction is called the downstream toe.

**TOPOGRAPHIC MAPS**. Maps with lines showing a region's relief and position of natural and man-made features.

**TOTAL HEAD**. Energy contained by fluid because of its pressure, velocity and elevation.

**TOTAL STORAGE**. Volume of storage below the maximum designed water surface level, including dead storage.

**TOTALIZING METER**. Water measuring device that registers or accumulates total volume resulting from a flow.

**TOWNSHIP**. Territorial subdivision six miles long by six miles wide; contains 36 sections.

**TOWNSHIP LINE**. In the U.S. Public Land Survey system, the grid lines running east and west.

**TRACT**. An expanse of land or water.

**TRANSITION ZONE**. Zone of material used to provide filter requirements between two zones of material which do not meet filter requirements.

**TRANSMISSIVITY**. Ability of an aquifer to transmit water; values are given in gallons per minute through a vertical section of an aquifer one foot wide and extending the full saturated height of an aquifer.

**TRANSPIRATION.** Process by which water escapes from a living plant.

**TRANSPORT**. Conveyance of solutes and particles in flow systems.

**TRASH RACK**. Screen located at an intake to prevent entry of floating or submerged debris.

**TREMIE**. Device used to place concrete or grout under water.

**TREMIE PIPE**. Device that carries materials to a designated depth in a drill hole or annular space.

**TRIBUTARY**. Stream that joins another stream or body of water.

**TURBID**. Water containing suspended matter that interferes with the passage of light through the water or in which visual depth is restricted.

**TURBULENCE**. State of fluid flow in which instantaneous velocities exhibit irregular and apparently random fluctuations.

**UNAPPROPRIATED WATER**. Public water of the state in streams, rivers, lakes, springs or groundwater in excess of that necessary to satisfy prior existing water rights.

**UNCONFINED AQUIFER**. Aquifer containing water that is not under pressure; water level in a well is the same as the water table outside the well.

**UNDERGROUND WATER CLAIM**. A claim to the use of underground water where the use was initiated prior to 1935.

**UNGATED OUTLET**. Outlet that allows uncontrolled flow through or around a dam.

**UNIT HYDROGRAPH**. Hydrograph that shows the rates at which runoff occurs for one inch of storm runoff from a drainage area.

**UPLIFT**. Upward water pressure in the pores of a material or on the base of a structure.

**UPPER BASIN STATES (Colorado River Compact).** Colorado, New Mexico, Utah and Wyoming.

**U.S.B.R**. U.S. Bureau of Reclamation.

**U.S.F.S.** U.S. Forest Service.

**U.S.F.W.S.** U.S. Fish and Wildlife Service.

**U.S.G.S. (U. S. Geological Survey).** agency established in 1879. The Water Resources Division is involved in data gathering, interpretation, analysis and research.

**[V-NOTCH](http://www.waterrights.utah.gov/images/staff/glossary/types_of_weirs.gif)**. Type of weir for gaging discharge in small streams; narrow ravine or valley.

**VADOSE ZONE**. Zone containing water under less than atmospheric pressure. It extends from land surface to the zone of saturation or water table.

**VELOCITY**. Time rate of motion; distance traveled in a unit of time, usually in feet per second.

**VENTURI METER**. Meter for measuring flow of water; consists of a closed conduit that gradually contracts to a throat, causing a pressure head by which the velocity may be determined.

**VESTED WATER RIGHT**. A legal term for a certificated or perfected water right.

**VORTEX.** Revolving mass of water that forms a whirlpool.

**WARRANTY DEED**. A deed containing express covenants as to good title and right to possession.

**WATER COMMISSIONER (also referred to as RIVER COMMISSIONER).** An employee of the State Engineer charged with distributing water from its natural source to water right holders within an established distribution system.

**WATER CYCLE**. Cycle of evaporation and condensation that controls the distribution of the Earth's water as it evaporates from bodies of water, condenses, precipitates and returns to those bodies of water.

 WATER DUTY. see **DUTY OF WATER**.

**WATER EXPORTS**. Water that is appropriated from sources within the state of Utah and used outside the state.

**WATER MARKETING**. The trading of water rights in an open market.

**WATER PURVEYOR**. Anyone who sells drinking water to the public, usually the owner of a public water supply system.

**WATER QUALITY**. Term used to describe the chemical, physical and biological characteristics of water in respect to its suitability for a particular purpose.

**WATER RIGHT.** The right to use water diverted at a specific location on a water source, and putting it to recognized beneficial uses at set locations.

**WATER SHARE**. see **SHARE**.

**WATER SUPPLIER**. One who owns or operates a public water system.

**WATER TABLE**. Upper surface of a saturated zone, where the body of ground water is not confined by an overlying impermeable formation.

**WATER USE GROUP.** One or more water rights listed and assigned a unique number in the records of the State Engineer as being applied to a common Beneficial Use.

**WATER USERS CLAIM**. A claim to the use of water which is submitted to the court in connection with an adjudicative procedure.

**WATER WITCH**. Person who predicts the presence of underground water with hand-held tools such as forked twigs or metal rods.

**WATER YEAR**. Generally, October 1 through September 30. It is designated by the calendar year in which it ends.

**WATERCOURSE**. Any natural or artificial channel through which water flows at least periodically.

**WATERMARK**. Mark showing the greatest height to which water has risen.

**WATERMASTER**. Person hired by a group of water right holders or a water company to distribute and oversee available water supplies.

**WATERSHED**. All lands enclosed by a continuous hydrologic drainage divide and lying upstream from a specified point on a stream.

**WATERSTOPS**. Strips of material used to prevent leakage through joints between adjacent sections of concrete.

**WEIR**. Device for determining the quantity of water flowing over it.

**WEIR BOX**. Wooden or concrete box oblong in shape and open at both ends, set lengthwise in a canal and in which a weir is set crosswise.

**WELL**. Horizontal or vertical excavation or opening into the ground made by digging, boring, drilling, jetting or driving for utilizing or monitoring underground waters.

**WELL CAPACITY**. Maximum rate at which a well will yield water under given conditions.

**WELL DEVELOPMENT**. Application of a surging or brushing process to a well to draw fine material from the aquifer and increase its discharge capacity.

**WELL DRILLER**. Any person duly licensed that constructs a well for compensation or otherwise.

**WELL DRILLING**. Act of drilling, constructing, repairing, renovating or deepening, cleaning, developing or abandoning a well.

**WELL DRILLING RIG OPERATOR**. A person who physically operates well drilling equipment under the direction of a licensed well driller.

**WELL FIELD**. Tract of land that contains a number of wells for supplying a large municipality, irrigation district or a heat exchange system.

**WELL INTERFERENCE**. Effects of neighboring pumping wells on the discharge and drawdown at a particular pumping well.

**WELL LOG**. Official report of well construction submitted by well drillers which includes a description of the various formations and rock materials and the depths at which they are encountered.

**WELLHEAD**. 1) Source of a well or stream. 2) Physical structure, facility, or device at the land surface from or through which ground water flows or is pumped from subsurface, water-bearing formations.

**WET LINE**. Length of sounding line below the water surface when measuring the depth of a lake or stream.

**WETLANDS**. Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. The U.S. Army Corps of Engineers and the Environmental Protection Agency administer the Section 404 permit program.

**WILDERNESS**. Undeveloped land and associated water resources, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural condition.

**WING WALL**. Side walls of a structure used to prevent sloughing of banks or channels and to direct and confine bank material.

**WINTERS DOCTRINE**. U.S. Supreme Court 1908 decision that established the doctrine of federal reservation rights.

**ZONE OF INFLUENCE**. Area surrounding a pumping well within which the water table has been changed due to ground water withdrawal.

**ZONE OF SATURATION**. Underground region within which all openings are filled with water; top of the zone is called the water table.