

Article 100-Definition of Terms

Adopted by the CGA Board of Directors on April 11, 1992

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| Abandoned Well | A well whose use has been permanently discontinued or which is in such a state of disrepair that no water can be produced. |
| Active Well | An operating water well. |
| Alignment of Borehole | The measure of straightness of the well; conversely, the lack of excessive twists or doglegs. |
| Alluvial | Relating to sediments deposited on land by running water. May include debris flow materials deposited as a slurry. |
| Annular Space | The space between the well casing and the wall of the drilled hole, or the space between the well casing and the conductor pipe |
| Aquifer | A geologic formation, group of formations, or part of a formation that is water bearing and which transmits water in sufficient quantity to supply pumping wells. |
| Artesian Well | A well which obtains its water from a confined aquifer. The water level in an artesian well stands some distance above the top of the aquifer it taps. Where pressure is sufficient to force the water level above the ground surface, the well is termed a flowing artesian well. |
| Bailer | A long narrow bucket with a bottom valve used to remove cuttings, sand or fluids from a well. |
| Bentonite | A highly plastic colloidal clay composed largely of montmorillonite used as a drilling fluid additive or as a sealant. |
| C-57 Contractor | A California Contractor licensed to install and repair water wells and pumps by boring, drilling, excavating, casing, cementing, and cleaning to provide a supply of uncontaminated water. |
| C-61/D21 | A California Contractor licensed to install and repair water pumps and Contractor - appurtenant materials. |
| Casing | A tubular retaining structure which is installed in the well bore to maintain the well opening. |
| Clay | A fine-grained geologic material (grain size less than 0.004 mm in diameter) which has a very low permeability. |
| Conductor Casing | A tubular retaining structure installed in the upper portion of a well between the wall of the drilled hole and the inner well casing. |
| Cone of Depression | A depression in the water table or piezometric surface of a ground water body that is in the shape of an inverted cone and develops around a well that is being pumped. It defines the area of influence of the pumping well. |
| Confined Ground water | Ground water under pressure whose upper surface is at the bottom of Water - an impermeable bed or a bed of distinctly lower permeability than the material in which the confined water occurs. Confined ground water moves under the control of the difference in head between the intake and discharge areas of the water body. |
| Connate Water | Water entrapped in the interstices of a sedimentary rock at the time it was deposited. These waters may be fresh, brackish, or saline in character. Usually applies only to water found in geologically older formations. |

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| Consolidated Material | A geologic material whose particles are stratified, cemented, or firmly packed together; usually occurs at depth, e.g. sandstone. |
| Contractor | A Contractor as used in this Series implies an individual or firm who holds a valid California Contractor's license in the classifications of either C-57 or C61/D21. Any contractor member of CGA must be so licensed. |
| Destroyed Well | A well that has been properly filled so that it cannot produce water or act as a vertical conduit for the movement of ground water. |
| Drawdown | The difference between static water level and pumping level. |
| Drift in Borehole | The distance a borehole deviates from true vertical; plumbness |
| Drill Cuttings | Disaggregated or broken pieces of formation brought to the ground surface during drilling. |
| Driller's mud | A fluid composed of water and clay used in the drilling (primarily rotary) operation. The mud serves to remove cuttings from the hole, to clean and cool the bit, to reduce friction between the drill stem and the sides of the hole, and to plaster the sides of the hole. Such fluids range from (continued) relatively clear water to carefully prepared mixtures of special purpose compounds. |
| Drive Shoe | A forged steel collar with a cutting edge fastened onto the bottom of the casing to shear off irregularities in the hole as the casing advances, and to protect the lower edge of the casing as it is driven. |
| Flow | The volume of water moved over a given length of time, usually expressed in gallons per minute (gpm) or gallons per hour (gph). |
| Flow Control Valve | An in-line plumbing fitting or fixture designed to restrict and control the flow of water. The valve may operate hydraulically, electrically, or mechanically. |
| Friction Loss | The loss of pressure or head due to resistance to flow through pipe and fittings. Friction increases as the pipe diameter decreases or the flow increases. Friction loss is usually expressed as feet of head per 100 feet of pipe. |
| Geophysical Well Log | The measurement and recording of the physical and chemical properties of formations and fluids in or around the vicinity of the well. (see CGA Std Practice Series Article 480) |
| Gravel Packed Well | A well in which filter material (sand, gravel, etc.) is placed in the annular space between the casing and the borehole to increase the effective diameter of the well, and to prevent fine grained material from entering the well during pumping. |
| Ground Water Basin | An area underlain by permeable materials which are capable of storing or furnishing a significant water supply; the basin includes both the surface area and the permeable materials beneath it. |
| Ground Water | That part of the subsurface water that is in the zone of saturation. |
| Grout | A fluid mixture of cement and water that can be forced through a pipe and placed as required. Various additives, such as sand, bentonite, and hydrated lime are used to meet certain requirements. |
| Hardrock Well | A well that produces water from fractures in bedrock. |
| Impermeable | That property of a geologic material that renders it incapable of allowing water to move through it perceptibly under the pressure differentials ordinarily found in subsurface water. |
| Impervious Strata | A geologic unit that will not transmit water in sufficient quantity to furnish an appreciable supply to wells. |
| Inactive Well | A well not routinely operated but capable of being made an operating well with a minimum of effort. |

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| Liner | A tubular material, either solid or perforated, placed inside the well casing or bore hole. |
| Packer | A device used to plug or seal a well at a specific point; frequently used as retainers to keep grout in position until it sets. |
| Perforations | Openings in a well casing or liner to allow the entrance of ground water into the well. |
| Permeability | The capacity of a geologic material for transmitting a fluid. The degree of permeability depends on the size and shape of the openings and spaces within the material and the extent of the interconnections. |
| Plummet | A plumb bob |
| Pressure Grouting | A method of forcing grout into specific portions of a well, such as the annular space, for sealing purpose. |
| Pump Setting | The vertical distance from the top of the well to the pump. |
| Pumping Level | The water level during pumping. In many small bore, low capacity wells the pumping level is constantly changing. |
| Sounding Tube | A small diameter pipe or tube placed in the well to allow permanent access for taking periodic water level measurements. The well can be "sounded" or measured by pumping compressed air into the tube and calculating depth, or the wires of an electrical conductance device can be lowered into the tube. |
| Specific Capacity | A measure of the increase in production of groundwater with increasing drawdown in a well. |
| Static Level | The undisturbed water level in the well before pumping. |
| Static Discharge Head | In an open discharge system, the elevation of highest water level above the well, measured in feet. In a closed pressure system, the elevation in feet from the well to the pressure tank plus the pressure setting in psi (continued) converted to feet. |
| Total Pumping Head | The total pressure or head the pump must develop. Also referred to as total discharge head, it is the sum of the depth to pumping level, the static discharge head and the friction loss. All measurements must be converted to the same units, usually feet of head, before adding them together. |
| Total Dynamic Head | Equivalent to total pumping head plus velocity head. In most small residential systems velocity head is negligible. |
| Transmissivity | Specific permeability of an aquifer times its thickness. |
| Tremie | A tubular device or pipe used to place grout in the annular space. Originally designed for placing concrete under water, the discharge end of the tube is kept submerged in the freshly deposited grout so as to not break the seal while filling in the annular space. |
| Turbidity | A condition in which solids, organic materials, and colloids are suspended in water; reduces or scatters the transmission of light through the water. |
| Unconfined Ground Water | Ground water that has a free water table, i.e. water not confined under - pressure beneath relatively impermeable rocks. |
| Unconsolidated Material | A sediment that is loosely arranged or unstratified, or whose particles are not cemented together either at the surface or at depth. |
| Well Size | The inside diameter of the well. |
| Well Capacity | The maximum pumping rate the well will sustain, determined by well yield and storage capacity. |