

Groundwater Resource Development

Groundwater is one of the most abundant and geographically distributed sources of fresh water. Groundwater is found in unconsolidated sediments, consolidated porous rock, and fracture networks in relatively impermeable rock.

Natural groundwater is generally of good quality, with low to moderate total dissolved solids (TDS), naturally-occurring dissolved inorganic minerals, and no pathogens. However, yields and quality do vary by location and depth, and in some cases groundwater is impacted by man-made chemicals.

Aquilologic staff has extensive experience evaluating groundwater resources as potential sources of domestic/municipal, industrial, and agricultural water supply. In addition to a groundwater resources assessment, we have overseen the installation of test wells and water supply wells to depths greater than 1000 feet below ground surface (bgs) in a variety of geologic settings.

These programs have included lithologic and geologic description, soil analytical testing (physical and chemical properties), geophysical testing, flow logging, discrete-depth groundwater sampling and laboratory analysis, well installations with multiple perforated intervals, aquifer pumping tests, and pump and riser installation. In addition to the physical development of the resource, we have also secured appropriate abstraction permits, other regulatory approvals, and water rights determinations.

Aquilologic staff has also supported the implementation of aquifer enhancement programs, such as the design, installation, and monitoring of recharge basins, percolation wetlands, and treated water reinjection programs for aquifer storage and recovery (ASR) and saline intrusion barriers.