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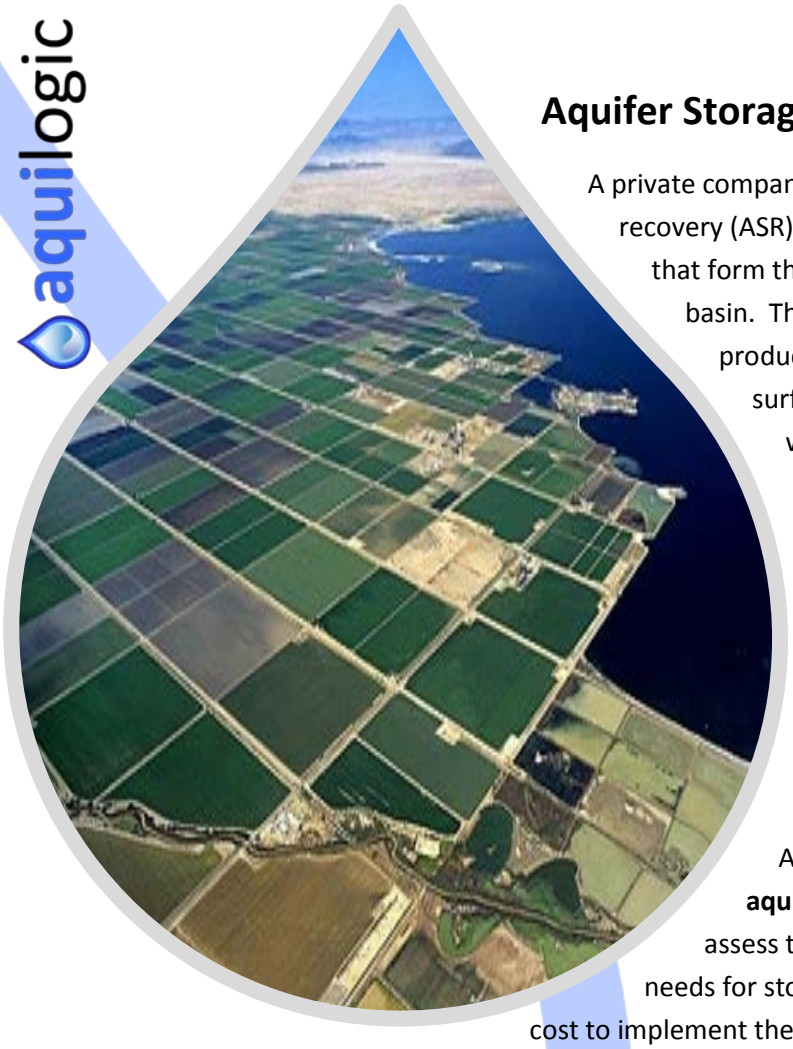

Aquifer Storage and Recovery Project

A private company is implementing an aquifer storage and recovery (ASR) project along a series of coalescing alluvial fans that form the periphery of a large, interior groundwater basin. The basin underlies a valley that is one of the most productive agricultural regions in the world. To date, surface water supplies have provided most of the water needs for agricultural production in the valley. However, the local irrigation district is looking to store water during years when surplus supplies are delivered from the Colorado River. This water can then be used during periods of reduced supply or for sale to other users. The irrigation district hopes to deliver up to 100,000 acre-feet (AF) of water per year to the ASR project.

As the first step in this large ASR project, **aquilogic** is reviewing the project hydrology to assess the feasibility of the project, estimating land needs for storage of up to 100,000 AF, and estimating the cost to implement the overall project. The hydrologic characterization of the project includes the following:

- The structural geology of the basin (e.g. boundaries, faults);
- The hydro-stratigraphy within the basin (e.g. the location, depth and thickness of lithologic and stratigraphic units);
- The hydraulic character of water-bearing units (e.g. permeability, storativity);
- The hydrologic inputs to the basin (e.g. rainfall, infiltration, return flows, inter-basin groundwater inflow);
- The hydrologic outputs from the basin (e.g. evapotranspiration, pumping, spring flows, inter-basin out-flow);
- The groundwater flow conditions within, and between, the aquifer units (e.g. head, gradient, direction, velocity); and
- The general quality of groundwater within the basin (e.g. TDS, nitrates).

Based upon this review, a field program will be developed to collect data needed for the effective design of a full-scale ASR pilot project.