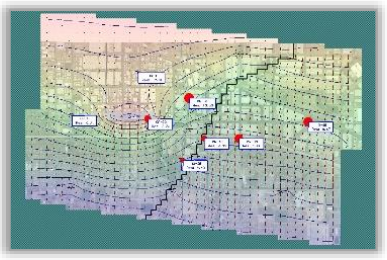
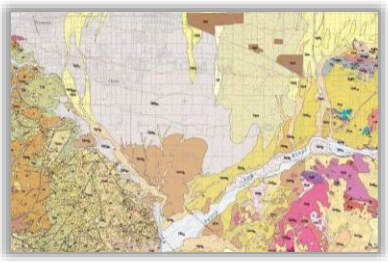
Principal Technical Consultant for Mediated Hydraulic Containment and Water Supply Remedy in the Chino Groundwater Basin





The Chino Groundwater Basin is a highly regulated and adjudicated basin in Southern California. Due to salt and nitrate loading to the basin, the Chino Desalter Authority (CDA) extracts over 20,000 acre-feet per year (AFY) limit groundwater leaving the basin. Water extracted from the basin is treated by CDA to remove salts and nitrate prior to use for municipal supply. EKI was retained to represent multiple entities in the integration of available geologic information, water level data, and water quality data for the region and to develop a hydrogeologic conceptual model (HCM). EKI also represented these entities in mediation discussions at JAMS and served as their representative to a technical subcommittee that was formed to evaluate potential joint water supply and groundwater remedial alternatives within the basin.

EKI performed a variety of technical analyses on large amounts of water level and water quality data compiled for the project. These analyses were focused on generating an understanding of the sources and spatial and temporal distributions of water quality constituents of concern, including trichloroethene, boron, nitrate, and total dissolved solids (TDS).

EKI's analyses included: (1) detailed numerical groundwater modeling utilizing the MODFLOW groundwater basin model and other analytical models to assess impacts of water supply wells that are part of CDA's existing desalter well network and planned Phase III expansion; (2) delineation of contaminant plume boundaries and their evolution through time; (3) trend analysis of contaminant concentrations in groundwater wells; (4) capture zone analysis for existing and planned future extraction wells; (5) calculation of groundwater mounding beneath artificial recharge basins; (6) estimates of contaminant transport velocities including advection, dispersion, and retardation processes; and (7) development and cost-benefit analysis of water supply alternatives for impacted private well owners impacted by contaminants.

EKI worked with representatives from several cities and public utility agencies and their technical experts to develop a mutually agreed upon technical solution to some of the most important water quality problems facing the Chino Basin.

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