

Modesto Uses USGS Information to Manage Drinking Water Contamination Problems

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City of Modesto, California

- Utility Planning & Projects Department
 - Responsible for water, wastewater, and storm water planning, funding (rates), financing and capital projects
 - Also responsible for all water resource strategic initiatives

Modesto, California

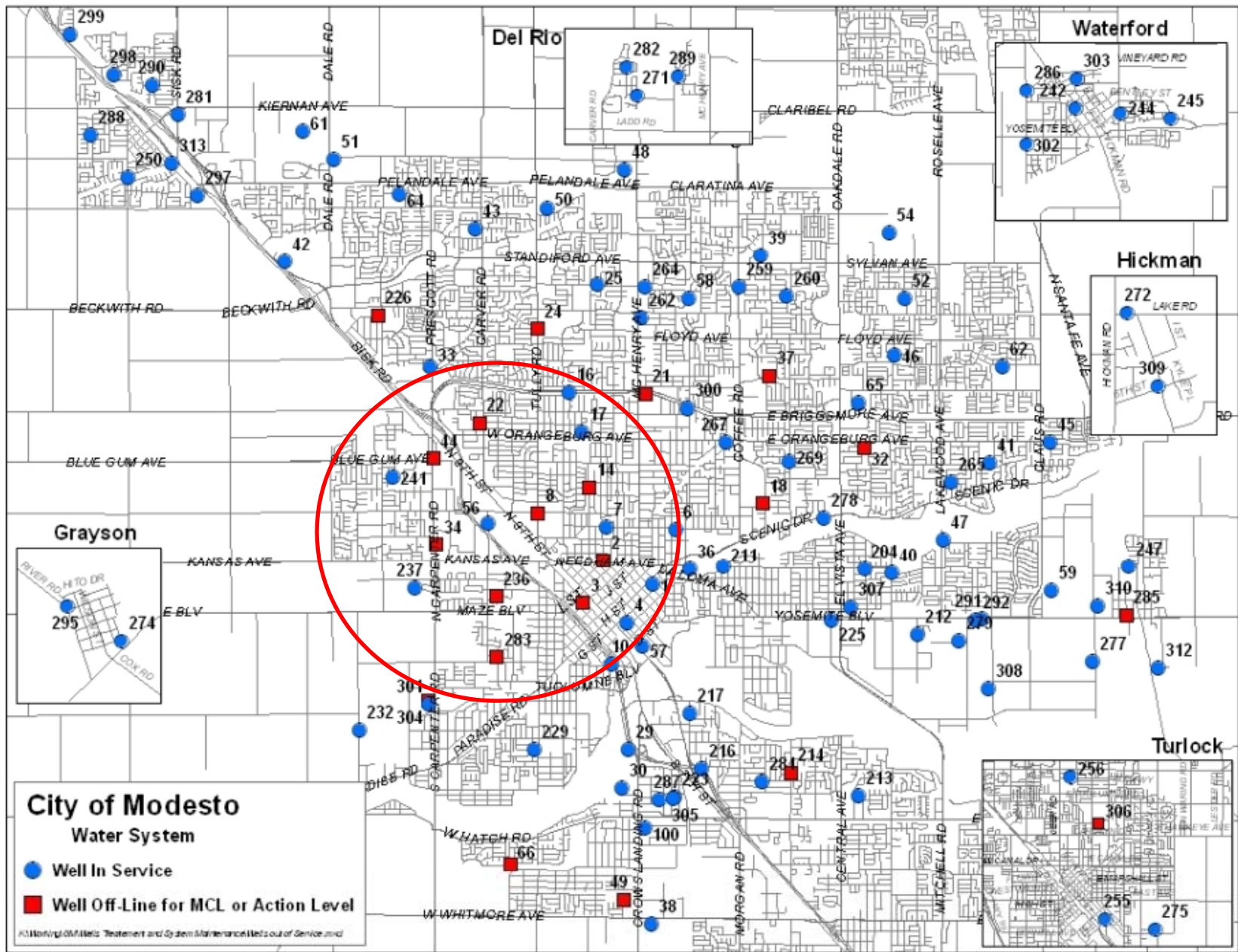
- Population 210,000
- Conjunctive use agency with 113 water wells
- Up to 60 million gallons per day (mgd) of surface water available to City

California



Modesto Water Wells

- 21 wells off-line due to contaminants above the Maximum Contaminant Level (MCL)
- 10 wells impacted by uranium
- 6 wells impacted by nitrate
- Remaining wells impacted by PCE, radionuclides, manganese



Issues/Concerns

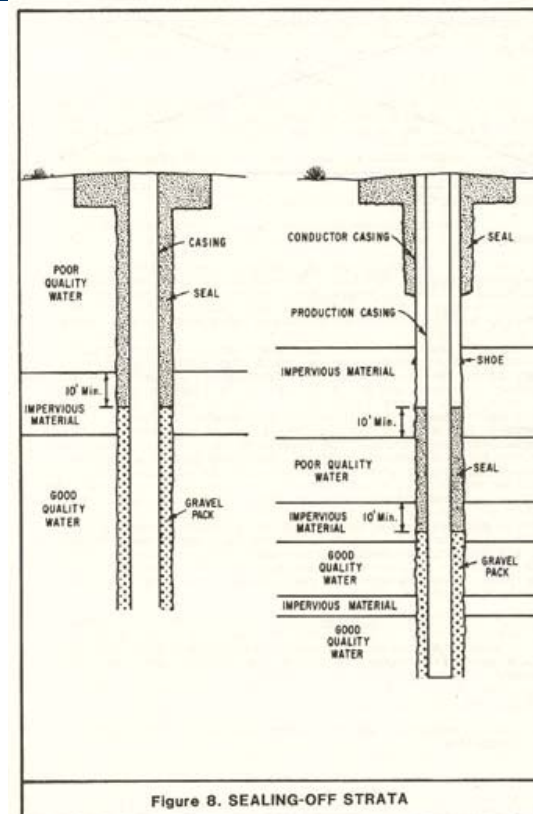
- Groundwater development drives contaminants into production zones
 - Continued downward movement of uranium poses a threat to public water supply
 - VOC downward movement poses a significant threat to public water supply
 - Contaminants of Emerging Concern

Application of Collaborative Study Results



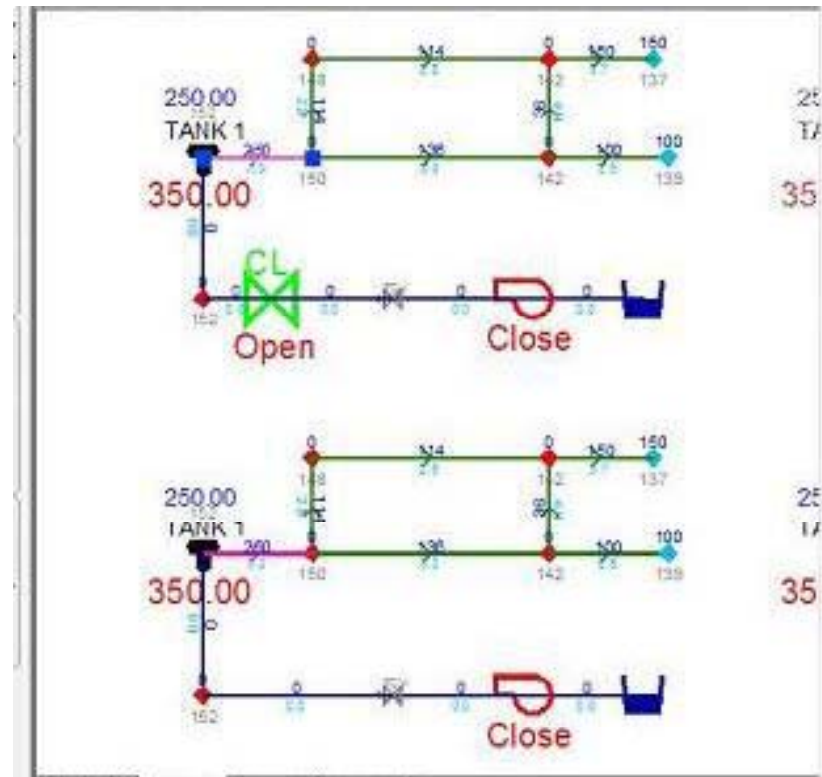
Well Design

- For well design/ construction standards, information is applied to:
 - New well locations (placement)
 - Screened intervals – depths
 - Well seals



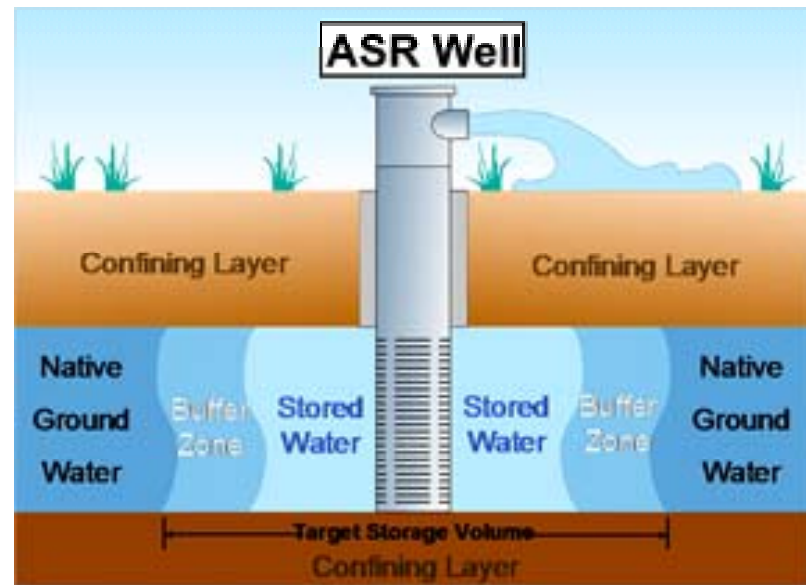
Well Field Operations

- For well field operational strategies:
 - Pumping times
 - Pumping duration
 - Pump selection
 - Blending



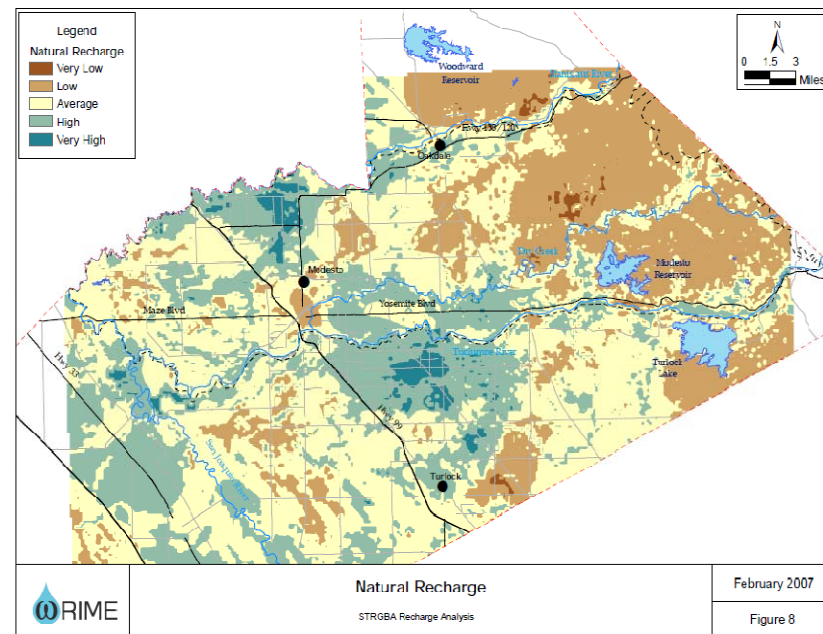
Artificial Recharge

- Aquifer Storage and Recovery (ASR) program:
 - Well location
 - Well design
 - Potential project impacts on contaminants



Groundwater Management

- For groundwater management and land use planning, study information is applied to:
 - Layout of monitoring well networks
 - Recharge facility locations



Value

- Collaborative efforts provide valuable groundwater information and data that are often difficult for local agencies to develop on their own