

Legal Instruments for Dealing with Agricultural Groundwater Management in the United States



John C. Peck
 Connell Teaching Professor of Law
 University of Kansas School of Law
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Toward Sustainable Groundwater in Agriculture

- Meaning of Sustainable?
- Legal question—three aspects: What power does a state have to
 - Keep someone from drilling a new groundwater well?
 - Keep someone from making changes in an existing well?
 - Curtail the pumping of an existing well?
- Philosophical/moral question: To what extent should a state preserve water for future generations?

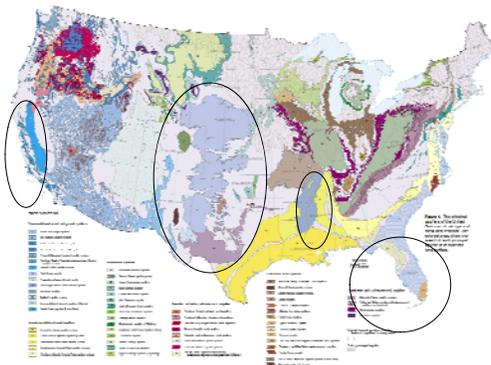
Outline

- I. Introduction
 - U.S. groundwater aquifers and use
 - Protection of property rights
 - Overview of legal instruments
- II. Legal instruments for groundwater management
 - State laws of water allocation
 - Groundwater user conflict resolution
 - Special groundwater management districts
 - Other legislative, administrative, and judicial regimes
 - Interstate groundwater disputes
- III. Conclusion: Outcomes and challenges

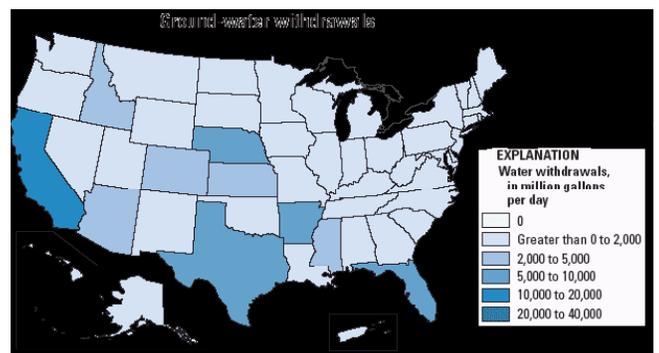
I. Introduction

- U.S. groundwater aquifers
 - Location
 - Concentrations of groundwater use
- Property rights
- Overview of legal instruments

United States Aquifer Map



Groundwater Use—U.S.



Water, Water Rights, & Property Rights

- Personal property versus real property
- Water
 - A liquid
 - Personal property
- Water right
 - The right to use water from a specific source for a beneficial use, over a period of time (forever)
 - Real property (real estate)

Water, Water Rights, & Property Rights

- U.S. Constitution, 5th Amendment
 - Governments may not “take” property without compensation
 - “Takings”
 - include direct takings (condemnation, eminent domain)
 - may include regulatory “takings”, i.e., substantially diminishing the value of property through regulation

Overview of Legal Instruments for Groundwater Management

- State groundwater allocation regimes
- Special groundwater management districts
- Other management instruments and projects
- Interstate water disputes

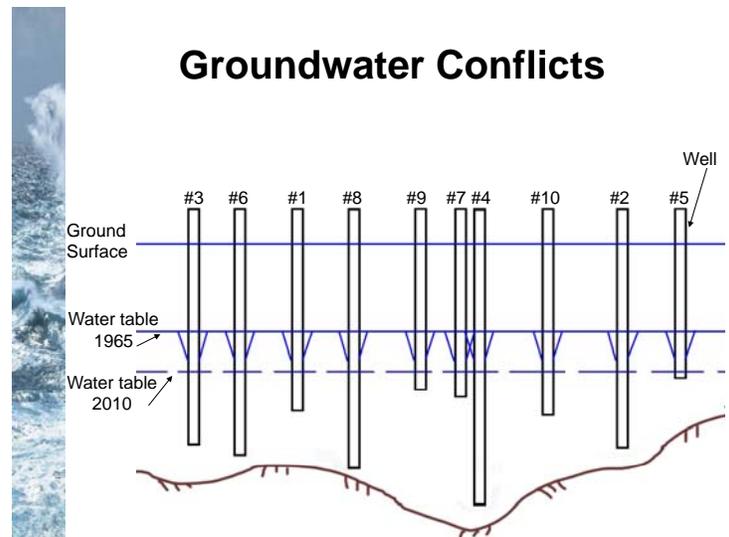
State Water Allocation Regimes

- Groundwater versus stream water
 - Law of stream water allocation: eastern states (riparian) vs. western states (prior appropriation)
 - Law of groundwater allocation: varies by state

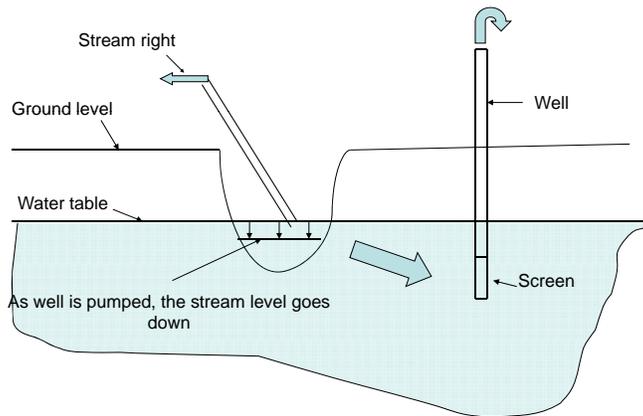
State Groundwater Allocation Doctrines

- Absolute ownership: Texas
- Reasonable use: many states
- Correlative rights: California
- Prior appropriation: many western states including Kansas

Groundwater Conflicts



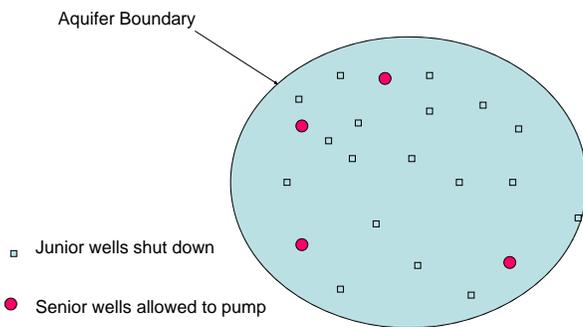
Conflict between alluvial well and water right from stream



Groundwater Conflicts, Direct and Indirect

- **Direct conflicts:**
 - One groundwater well vs. another well
 - One surface water diversion vs. a well from the interconnected alluvium
- **Indirect conflicts: One groundwater well vs. many other wells**
 - 1949 California case (safe yield imposed)
 - 1966 New Mexico case (depletion formula created in non-rechargeable aquifer)
 - 1973 Idaho case (mining prohibited in unconfined aquifer)

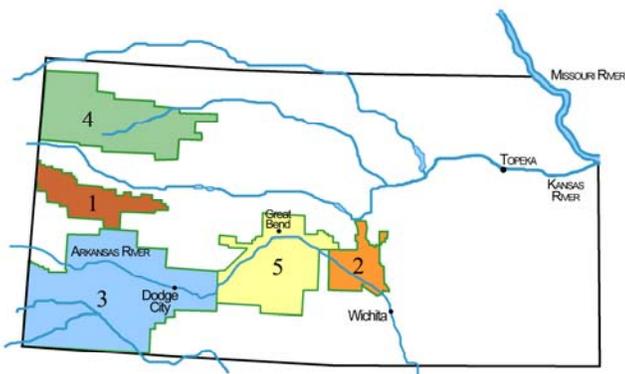
Baker v. Ora-Ida Foods (Idaho)



Groundwater Management Districts (e.g., Kansas)

- Local control
- Well spacing on new wells
- Safe yield or planned depletion formulae for new wells or changes in existing wells

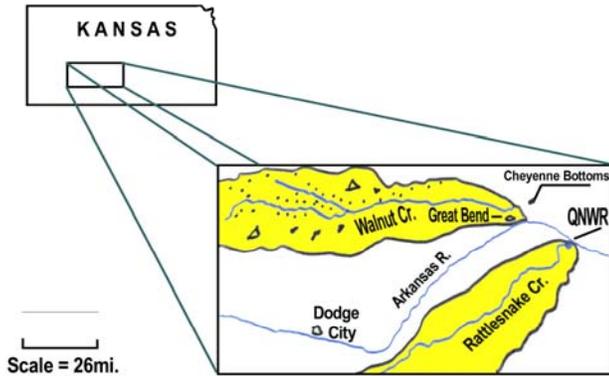
Kansas Groundwater Management Districts



Special Groundwater Districts

- Example: Kansas: Walnut Creek Intensive Groundwater Use Control Area (IGUCA) designation (1992)

Walnut Creek IGUCA (Kansas)



Other groundwater management instruments and projects

- Aquifer storage and recovery projects (ASR)
- Water re-use projects
- Placing water rights in trust (like land trusts)
- Others

Others: statutes, cases, regulations, and practices

- Eliminate waste (e.g., California & Kansas)
- “Public Trust Doctrine” (applied to streams in California)
- Inventory wells and require annual use reports (Kansas & Missouri)
- Long-term incremental curtailment of pumping (Arizona) (5 periods from 1980 to 2025)
- Favor surface water use over groundwater (Florida)
- Encourage water re-use (Florida) and storm-water recovery (California)

Interstate Groundwater Disputes

- Methods of dispute resolution
 - U.S. Supreme Court, “equitable apportionment”
 - Congressional allocation
 - Interstate compact
 - Existing
 - Model Interstate Groundwater Compact

Interstate Disputes over Groundwater



Kansas v. Colorado—Arkansas River



Kansas v. Colorado and Nebraska—Republican River



Mississippi v. Tennessee



III. Challenges: Outcomes and Challenges to Sustainability

- Private property rights: the engine that has driven the water development phase and the economy
- But a system based on private property rights may now be part of the problem:
 - To what extent may states force reductions in pumping groundwater?
 - Is reallocation the only solution?

Challenges, cont.

- Is groundwater sustainability possible under state water allocation laws that are based on constitutionally protected property rights?
- Some solutions:
 - Arizona groundwater statute: incremental reductions
 - Kansas IGUCA: safe yield imposed on existing water rights
 - California waste curtailed in Imperial Valley case
 - Is California “public trust doctrine” applicable to groundwater?

Challenges, cont.

- Do states have the political will to change groundwater allocation doctrines?
- Is groundwater management worth the cost?
- Will we eventually have a true interstate groundwater case before the U.S. Supreme Court?