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Managing Groundwater Quality and Quantity: Comparative Approaches of Southern California Water Basins

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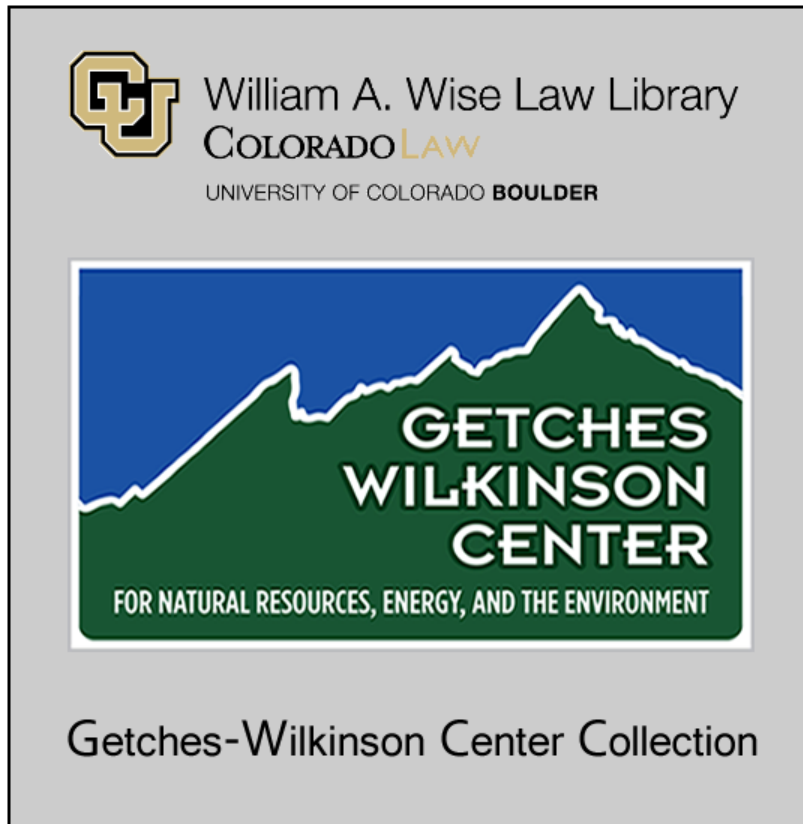
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Managing Groundwater Quality and Quantity:
Comparative Approaches of Southern California Water Basins

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**Uncovering the Hidden Resource:
Groundwater Law, Hydrology and Policy
in the 1990s**

**University of Colorado at Boulder
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I. INTRODUCTION

The concept of "management" of groundwater basins may soon be swept into the temple of environmental worship along with the preservation of species and restoration of wetlands. This conference therefore, provides an excellent opportunity to introduce some common sense guidance about what is becoming a movement to "preserve" [read: DO NOT TOUCH] the groundwater basins.

Groundwater basins are resources to be used, and not enshrined for worship, like wetlands.

II. STATUS OF EFFORTS BY UNITED STATES AND STATE OF CALIFORNIA TO IMPOSE GROUNDWATER BASIN MANAGEMENT REQUIREMENTS

A. Status of State Efforts

California does not have a comprehensive statewide groundwater management statute or program. If the producers determine that governance of groundwater quantity is needed, some governance structure is developed through local or regional effort, on an as-needed basis, as the result of negotiations over a period of time.

The typical governance institution selected is the court-appointed watermaster as part of the resolution in an adjudication, or creation of a special governing district.

Management of water quality is seldom addressed in the older judgments, and there is controversy about how quality provisions in judgments are to be interpreted.

Locally developed management programs in the major California basins in Southern California function quite well, and there is no indication that the imposition by the State or by the federal government of yet another management scheme would be helpful in addressing local problems.

Nevertheless, the almost annual attempt is being made again this year, and bills have been introduced (e.g., AB 3030) to "comprehensively regulate" groundwater. One legislator has introduced a bill calling for the metering and annual reporting of water produced from each well in the State (SB 1369). Operators of basins which already have management plans in place are maneuvering for exemptions, and with good reason.

1. The Overlay Agency Concept: SAWPA

In one highly managed grouping of groundwater basins of the Santa Ana River in Southern California, an overlay management authority has been formed and successfully provides management and construction financing on a regional basis.

The Santa Ana Watershed Project Authority (SAWPA) was formed by the underlying water districts pursuant to a joint powers agreement. It is the vehicle used to finance the construction of groundwater treatment facilities necessary to improve salt balance and essential to reclaiming non-potable

groundwater supplies. SAWPA financed construction of the Santa Ana Regional Interceptor (a brine line), the Arlington desalter, and a groundwater treatment plant to treat the contaminated plume from the Stringfellow Acid Pits in Glen Avon.

2. A More Sophisticated Overlay Concept: The Main San Gabriel Basin Water Quality Authority

A second example of an overlay district is the Main San Gabriel Basin Water Quality Authority, formed pursuant to a joint powers agreement to provide technical assistance for and to undertake groundwater cleanup for the local agencies which formed it. One of the purposes of this Agency is to reclaim local water supplies from contaminated areas.

The Main San Gabriel Water Quality Authority boundaries roughly coincide with the San Gabriel Valley Superfund site.

3. A Possible New State Approach

On April 6, 1992, Governor Pete Wilson announced a long-term water policy for California. It covered a wide range of topics, but proposed very little in the way of specific programs, and thereby left a number of key questions unanswered with respect to a proposed groundwater management policy.

The Governor's policy called for a "[p]ush for management of overdrafted groundwater basins and encourage[ment of] State and local governments to cooperate in developing long-term plans for recharging aquifers during times of moderate and heavy rains." The Governor also indicated that the State would provide technical assistance to help local areas in the management of groundwater resources.

No details on how the policy would be implemented have been released. The Governor has been silent about when and how facilities required to convey water from areas of heavy rains to areas of depleted basins would be financed and constructed. Any such plan would probably mean more controls on well water use by farmers and other groundwater users.

The policy does not provide any suggestions to reconcile its directly conflicting elements: that of protecting fish and wildlife in the Sacramento-San Joaquin Delta Estuary and providing flows for storage in depleted groundwater basins south of the Delta.

Water from the Sacramento-San Joaquin Delta Estuary is relied on extensively by certain Southern California groundwater basins. The water is used conjunctively with local water resources, including reclaimed water, surface water runoff and local rainfall.

Imported supplies are a critical element in maintaining the quality of the water supply. The use of water from the Sacramento-San Joaquin River system, in effect, "stretches" the local supplies, particularly when used conjunctively with surface supplies are stored in the basins. Imported supplies are also relied on to dilute reclaimed wastewater discharged to stream and basin systems for percolation into the ground. That water is later pumped for municipal and industrial use.

B. The Status of Federal Efforts

1. EPA's Strategy for the 1990s

In July 1991, the Environmental Protection Agency (EPA) published a report entitled "Protecting the Nation's Ground

Water: EPA's Strategy for the 1990s". The strategy calls for each state to develop a profile of its groundwater for groundwater protection programs identifying gaps in groundwater protection efforts, prioritizing risks to groundwater resources, and developing action plans for comprehensive groundwater protection. The information provided by the states will be used by the EPA Regional Offices to support state efforts to design and implement groundwater protection programs. The report indicates that EPA will review the State groundwater protection programs for "adequacy" as opposed to "consistency": The threshold question will not be whether a state's program is consistent with EPA criteria, but whether a program falls within a range deemed "adequate" to protect a state's groundwater resource. The EPA, in collaboration with the states, will define a range of ways to achieve 'adequacy' rather than one prescriptive definition. Little is certain as to what level of "protection" might be called for, or if groundwater could ever be used once EPA gained jurisdiction.

2. The Superfund Overlay Approach: Congressman Esteban Torres' Model

A Bill has been introduced by Representative Esteban Torres (D-California) designed to use the threat of liability under Superfund to compel those persons who would be classified as potentially responsible parties (PRPs) for the cleanup of the San Gabriel Basin to contribute to a fund to provide for the cleanup of the basin. The bill, which provides for the demonstration project, amounts to the equivalent of a consent decree between the PRPs overlying the basin and the federal government.

The benefit to PRPs is that once they pay into the fund, any additional liability for the cleanup is extinguished.

Under Superfund, each PRP could be held jointly and severally liable for the cost of the cleanup.

The bill may indicate a trend on the part of the federal government to accept that the methods used in the past for extensive cleanups have been slow and impractical. If this bill passes, and the demonstration project is a success, it is safe to assume that more bills providing for this system for cleaning up groundwater basins could be expected in the future.

III. THE EMERGING ISSUES: TOMORROW'S CONFLICTS

As with all problems involving shared resources, problem definition and solution selection and implementation takes a long time and requires a process of examination, discussion, debate, conflict resolution, planning and adoption of a funding mechanism.

The process itself is the force that forges the bond and mutual consent to a governance structure. Models imposed absent the self-interest examination do not work as well.

Professor Blomquist has written extensively about how governance institutions work in eight groundwater basins in Southern California. The management structures he has studied were developed to address problems prevalent, understood, and agreed to exist, in the 1930's, 1940's, 1950's, 1960's and 1970's.

Now, new problems are being recognized by producers. And new management structures are emerging. The process of examination, discussion, debate, conflict resolution, planning and debate about funding is underway in some basins about some problems.

The problems generally involve contamination cleanup, the results of reduced surface water supplies, and competing environmental requirements for the basins.

A. The Emerging Issues

These are the problems I see emerging and the governance structures being adopted to address the problems.

1. The Need to Improve the Quality of the Groundwater Supply to Satisfy Municipal and Industrial Requirements

The Chino Basin Watermaster is now faced with the need to clean up the residue from historic agricultural fertilizing practices, pesticide contamination, industrial landfill contamination, and current and past dairy uses with their high nitrate concentrations in some municipal wells which require immediate well head treatment and other management applications. While the Chino Basin judgment provided the skeletal framework to address water quality issues and to provide the Watermaster with the tools to collect revenue, the policy change to improve water quality was resisted by those having the voting control.

The Watermaster is still struggling to address the corrective measures and another agency, a superimposed agency, the Santa Ana Watershed Project Authority, stepped up to undertake studies and to offer a framework to finance the construction of facilities to improve water quality in the basin. The reluctance to proceed results, in part, from a lack of sense of responsibility for the agricultural practices that resulted in the high nitrate levels and a sense that "it isn't my problem." Also not all of the supply is contaminated, and those not yet

confronted with a plume are disinclined to assist those who are.

There has been an intensive educational program within the Judgment area following the filing of a motion to compel enforcement of the Judgment and an order calling for the adoption of an Optimum Basin Management plan, as required by the Judgment. The Watermaster has begun the educational program to demonstrate how the contaminants will ultimately spread to all producers in the basin and showing why it is in the best interest of those subject to the Judgment to participate in the improvement of water quality for everyone.

2. **The Nature of the Right to Percolate and Store and Otherwise Occupy the Subsurface with Foreign Water**
 - a. **Whose space is it?**
 - b. **Among those competing for the subsurface storage capacity, are there priorities to store?**
 - c. **Are there extraction priorities?**
 - d. **Who is in charge of the right to store?**
3. **The Uncertainty in State Policy with Respect to the Question of Whether Reclaimed Wastewater is a By-product or a New Water Supply**
4. **How the Policies of the Endangered Species Act and the Wetlands Provisions of the Clean Water Act Conflict with the Operation of Groundwater Basins**

a) **The U. S. Fish & Wildlife Service's Efforts to Curtail Pumping on the San Luis Rey River**

In January, the National Audubon Society filed a lawsuit in federal court in San Diego (National Audubon Society v. Manuel Lujan; John Turner,; United States Department of the Interior; and United States Fish & Wildlife Service - Case No. 92-209H (BTM)) to compel the designation of critical habitat for the least Bell's vireo. (an endangered species.)

The proposed rule would impact 43,000 acres of land in Southern California, mostly along rivers.

One purpose of the lawsuit is to curtail any pumping which would result in fluctuation of the water table. Fluctuation could impact riparian habitat of the least Bell's vireo.

b) **How the policies of the U. S. Fish & Wildlife Service conflict with the policies of the Orange County Water District's operation of the lower Santa Ana basin**

One area immediately upstream of Prado Dam in Riverside County on the Santa Ana River has become habitat for the least Bell's vireo.

No final rule has been issued on critical habitat. Yet for the last five years, the U. S. Fish & Wildlife Service has insisted on restricting the amount of water impounded behind the Dam as if the area were already designated as critical habitat. The Service's position that the U. S. Army Corps of Engineers (the dam's owner and operator) cannot increase the

amount of spring runoff stored behind the dam severely impacts the amount of native water available to the Orange County Water District for percolation and storage in the lower Santa Ana Basin. The Service insists that elevating the pool behind the dam would cause inundation of riparian habitat and a "taking" of the birds. As a result, even in the midst of California's long drought, thousands of acre feet of water have wasted to the Pacific Ocean.

5. **The Unwillingness or the Inability of the Federal Government and the Tribes to Regulate Landfills and Hazardous Materials Storage on Reservations**

B. The Emerging Solutions

The new generation of problems appears to be addressed in several ways:

- 1) Through the formation of overlay districts such as
 - a) Santa Ana Watershed Project Authority and the
 - b) Main San Gabriel Basin Water Quality Authority;
- 2) Judicial action to modify or to enforce provisions of existing judgments allocating water or groundwater; and

- 3) Development and adoption of local water resources management plans which integrate the storage of surface supplies, when available, into the groundwater basin, and which address quality issues. Sometimes enabling legislation is needed.

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