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A REVIEW AND REVITALIZATION: CONCEPTS OF GROUND WATER PRODUCTION AND MANAGEMENT—THE CALIFORNIA EXPERIENCE*

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A reevaluation and redefinition of the nature of legally protected interests in ground water production is past due. Feats of importing water supplies from distant places have shown that technological innovations and implementations have outdistanced judicial thought in the allocation of ground water resources.[1] Judicial allocation of water resources has traditionally been predicated on the belief that the division was between competing users in a limited natural supply. This judicial approach is questionable because imported water supplies, used conjunctively with ground water basin storage facilities, increase the availability of water resources.

How do expanded quantities of raw water resources affect the practical concept of adequate water supplies? Substantially more than a *mere quantitative* determination of raw water resources is encompassed by the concept of adequate water supplies. Water must be envisioned as it is made available to the consumer in time, quantity, quality, and manner which are effective to meet his needs. The efficiency and cost of the transition of water from its natural state to the ultimate consumer necessitates (1) a means of capture, (2) a means of distribution by the wholesaler to the water service-retailer, (3) a facility for storage of the water by the retailer until the water is needed by the consumer, and (4) a means of distribution by the intermediary water service company to the consumer. Upon each of these physical functions, there is superimposed the

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1. See generally Warne, *California Pioneers New Water Development Concepts*, 2 Natural Resources J. 248 (1962).

pervasive limitation of cost. If the cost of implementing the technological designs for capture, storage, or distribution exceeds the value which can be obtained by the ultimate utilization of the water, there will be a resultant inadequacy of supplies.[2]

One of the clearest paths toward the minimization of the costs of production and the assurance of adequate supplies is to capitalize on the available natural counterparts of these required facilities. For example, ground water basins serve the dual functions of storage and distribution. Storage is a pivotal factor in the minimization of production costs because of the nature of consumer uses of water. Most of the current uses of water in southern California, for example, are for residential purposes. Water service functionaries who supply this class of consumer must take into account:

(1) The daily disparities of use wherein the largest proportions of water are required during specific portions of the day. These are called peaking requirements.

(2) The seasonal disparities of use which require long term storage to meet the exaggerated use of water during the warmer months. These are called cyclic storage requirements.[3]

Both of these peculiarities require that water be effectively stored where it can be drawn upon in large quantities to meet the needs of the people. Three choices are available. The first is to construct some means of surface storage wherein imported waters are fed at a constant rate during the winter months and during the off-hours of the day, and the stored water is used to meet cyclic and peaking requirements. Second, pipe line facilities could be constructed large enough to import water supplies which are adequate for the full water requirements of exaggerated periods of use. Either of these solutions would be prohibitive in their cost-benefit relationship. Surface storage facilities would be far too costly. They require huge capital outlays for construction and take a great portion of

2. For example, there is normally little water found on the desert. During a flash flood, immense quantities of water are thrust upon the region. These waters are not available in a constructive sense. Lacking a means of capture, distribution, and storage there can be no utilization of the water by consumers. Despite adequate quantitative measures of water, inadequacy results from the absence of a means of production. Even if this were a regular and predictable phenomenon, there could not be an implementation of possible technological means of capture, storage, and distribution because the immense costs of constructing these facilities far exceeds the benefits to be derived.

3. Utilization of ground water basins is recognized as being significant in the California water plan, that is, bringing upstate waters down to the southern California region to meet these cyclic needs. Address by Kletzing, Irrigation Districts Association of California, Marysville, Cal., March 19, 1958.

land under utilization off the land market. Larger pipe lines, although technologically feasible, would have to be of such immense size that their cost would be disproportionate to the service performed.

The third and most feasible solution is to coordinate the use of natural basin facilities with the direct use of imported waters. This could be done by using the basin as a storage facility to meet peaking and cyclic requirements. Imported waters could be economically piped in at a constant rate equal to the base requirements of water needs. That is to say, the lowest common denominator of water which is used as a constant throughout the day should determine the size of imported water pipe lines with peaking and cyclic needs satisfied by water stored for use in the basin.

Clearly, this involves the distinct conceptual recognition of the basin as a place of storage. The basin should be the legally protected entity and emphasis should be on its storage value. Early cases were primarily concerned with the allocation of the water supplies which the basin captured and stored and not with the storage capacities of the ground water basin.[4] These cases did not lend themselves to making the transition to a conceptualization of the basin as being the object of value in an adjudication of water rights. Protection of the basin, therefore, had to be framed in relation to the protection of naturally occurring supplies. By this "back door" method, the basins of the southern California region have been temporarily protected from the devastating effects of a continued overdraft.

The California experience highlights the evolution by which water rights cases have projected the protection of the storage qualities of the basin. In three major cases, producers of ground water have gone into court seeking a determination of their rights to take water from a basin. All three cases have resulted in an implicit recognition of the storage value of the basin as a natural resource, subject to judicial allocation and control.[5] In each case,

4. Acton v. Blundell, 12 Mees. & W. 324, 152 Eng. Rep. 1223 (Ex. 1843); Katz v. Walkinshaw, 141 Cal. 116, 74 Pac. 766 (1903); Burr v. Maclay Rancho Water Co., 160 Cal. 268, 116 Pac. 715 (1911). See also Hutchins, The California Law of Water Rights 418 (1956).

5. City of Pasadena v. City of Alhambra, 33 Cal. 2d 908, 207 P.2d 17 (1949); California Water Serv. Co. v. Sidebotham & Son, Inc., 224 Cal. App. 2d 715, 37 Cal. Rptr. 1 (Dist. Ct. App. 1964); Central & West Basin Replenishment Dist. v. Adams, Civil No. 786,656, Cal., Jan. 2, 1962. The settlement agreement of the parties received judicial approval and judgment was rendered in the action in October 1966. There are nonlitigation situations which could be considered, but these cases have been selected

rather than leave the solution to the design of the court and the then existing legal strictures, the parties devised elaborate settlement agreements which the courts were then prevailed upon to enforce. In each case, the agreement was given the force and effect of positive law.

Why were the parties able to come to satisfactory agreements allocating the water and preserving the utility of the basins? What is the scope and effect of their settlement agreements? Are these agreements sufficient to cope with future problems of increased need for water and storage space? If not, is there a need for state or local intervention and what form should this take? These and other questions will be discussed in the context of California's water problems which have reached a high level of sophistication; they center upon the innumerable problems of increasing urbanization and population. A detailed analysis of California's three cases, tracing their evolution through the stages of increased water usage, is essential to a complete understanding of legal regulation of ground water production.

I

THE CALIFORNIA EXPERIENCE

Increased urbanization of the southern California area since 1900 has precipitated an imbalance between the supply of and the need for water. There are several aspects to the problem. First, decreasing amounts of water have been absorbed into the basins because of the paving of streets, construction of parking lots, and the erection of buildings. As areas where the free downward movement of water into the basin are covered, less water can be absorbed.[6] Second, decreasing amounts of water have been available

because of their physical relationships to one another. Further, the availability of information regarding these cases makes them the likely subjects of investigation. For a discussion of one non-court solution, see Krieger & Banks, *Ground Water Basin Management*, 50 Calif. L. Rev. 56, 62 (1962), where the authors note:

> [T]he interests in Orange County have deliberately avoided an adjudication of their rights. Even though the basin was overdrawn and the mutuality of prescription rule might well have been applied to the pumpers with matured prescriptive rights, the area took a non-litigious approach to the problem.

6. Bookman, Report on Proposed Central and West Basin Water Replenishment District 42 (Cal. Dep't of Water Resources 1959):

> Historically, one source of replenishment to the ground water bodies has been deep penetration of precipitation on the forebay areas. It should be noted, however, that as the forebay areas urbanized, more and more of the surface area becomes impervious because of the construction of streets, parking lots, and buildings. As a result of this development, an increasing portion of precipitation, which formerly percolated, is being discharged to the ocean through storm water and flood control facilities.

for assimilation because of an extended drought which dates back to the beginning of the century.[7] Third, increasing amounts of water have been withdrawn from the basin in order to meet the needs of the growing area.

The historical accumulation of water trapped in the basin would be depleted if more water were allowed to be pumped each year than the average annual replenishment of the basin.[8] Before arriving at a point of actual physical exhaustion, however, several more immediate consequences resulting from the depletion of the basins' supplies would occur:

(1) As the water levels declined, the cost of pumping the water to the surface would increase. At some point, the water levels would have declined so that it would become impractical to further utilize the basin as a *source* of water supplies.

(2) As the water levels declined, there would be a structural change in the basin due to a compacting or settling of the aquifying layers resulting in a loss of storage area.[9]

(3) Lesser quantities of water would increase the mineral content per unit, thereby making the quality of water unsuitable for use.

(4) Coastal basins, those which border on the Pacific Ocean, would be subject to sea water intrusion as their water levels declined. Sea water would permanently destroy the utility of the basin by debasing the quality of the water.[10]

Clearly, some means had to be developed to curtail the constant decline of basin water levels. The most obvious solution would have been to reduce the amount of water being withdrawn. This reduction, however, decreases the water available for the continued growth and maintenance of the area. If the required re-

7. There is a conflict among authorities regarding the extent of the present drought. Whether the span of below normal precipitation extends back to the beginning of the century, or whether it has only been since the early 1940's is a conflict with merit. It serves to highlight the fact that California is in a perpetual state of drought with only intervening wet years.

8. In the past, the feasibility of accurate water measurments was a matter viewed with skepticism by the judiciary. In City of San Bernardino v. City of Riverside, 186 Cal. 7, 21, 198 Pac. 784, 790 (1921), the court said:

> There are no practical means of ascertaining the total annual rainfall on the watershed. No records are kept, except in San Bernardino and a few other places. . . . To ascertain with even approximate accuracy the rainfall on the entire watershed for any year a large number of additional daily records must be kept, and great expense must be incurred therefore.

See also Cal. Dep't of Water Resources, Determination of Safe Field (Mimeo.).

9. See generally Tolman, Ground Water (1937).

10. See generally West Coast Basin Barrier Project Investigation of Influence on Ground Water Quality (Central and West Basin Replenishment District 1964). See also text accompanying note 49 *infra*.

duction were sufficiently large, the effect might be the economic and social retardation of communities dependent upon the ground water basin waters as their sole source of supply.[11] Fortunately, there were some immediate alternatives available.

In 1928, possibly encouraged by the success of the Los Angeles imported water project from the Owens Valley,[12] the thirteen leading cities of southern California met to form the Metropolitan Water District of Southern California. The purpose of the organization was to study plans to bring water into the region from the Colorado River, over three hundred miles away. In 1931 a bond issue was passed by these thirteen cities. By 1941 water was flowing into the area.[13] It was at this time that the first major suit was begun.

A. *City of Pasadena v. City of Alhambra*[14]

The City of Pasadena had relied heavily on the waters of the Raymond Basin.[15] Until 1934, when the city attempted to supplement its withdrawals from the basin by importing waters from the San Gabriel river system, the basin may have been their sole source of water supply.[16] This imported water was probably used in

11. Even the prospect of publicity regarding inadequate supplies of water has been felt to be of substantial detriment to the community. Cal. Dep't of Water Resources, Report to San Bernardino Valley Water Conservation District on Legal Problems of San Bernardino Underground Water Basin 25, Dec. 21, 1953 (Mimeo.).

12. The City of Los Angeles purchased Water rights in the Owens Valley beginning in 1905. By 1913, the water was being "piped in" for use in the city. Address by Skinner, Rotary Club of Los Angles, July 31, 1964.

13. Materials for an inspection tour of the Colorado River System prepared by the Metropolitan Water District of Southern California (Nov. 13-15, 1964).

14. 33 Cal. 2d 908, 207 P.2d 17 (1949).

15. The Raymond Basin is located in Los Angeles County. Its forty square miles expanse is composed of sand, gravel, rock, and other permeable materials. Its boundaries have been described as follows:

> The northern side is formed by the San Gabriel range of mountains which rise back of the valley to a general elevation of from 5,000 to 6,000 feet. The area . . . is separated from the rest of the valley along its southern boundary by the Raymond Fault, sometimes known as Raymond Dike, a natural fault in the bedrock constituting a 'Barrier in the alluvium . . . which greatly impedes the sub-surface movement of water from the area, although it does not entirely stop it, thus creating a vast underground storage reservoir.' There is a pronounced slope to the south from elevations of 1,000 feet above sea level at the mountains to a general elevation of 500 to 700 feet at Raymond Fault.

Id. at 921, 207 P.2d at 25.

16. In 1934, less than four years before the commencement of this action, the City of Pasadena began to take a quantity of water from the San Gabriel River, which is not a source of supply to the Raymond Basin Area. This diversion was terminated in 1941 as part of the settlement of litigation brought by users of water from the river.

Id. at 934, 207 P.2d at 33.

conjunction with the waters of the basin by allocating basin waters to peaking needs and river supplies to base needs. Despite partial cut-backs in Pasadena's use of ground water, the water levels in the basin continued to decline because of increased pumping by other cities and water service companies in the area.[17]

The City of Pasadena became increasingly fearful of losing both the water suplies of the ground water basin and the beneficial use of the basin itself. In 1937 it brought an action[18] wherein it sought:

(1) A declaration of its rights to water in the basin.

(2) A determination of the available water supply of the basin. That is to say, of the quantity of water available for use each year, taking into account the decline of water levels and the potential loss of this supply if the levels continued to decline.

(3) The injunction of all pumping in excess of the "safe yield," which, parenthetically, was the measure suggested by Pasadena as the quantity which could be withdrawn each year.

(4) That this injunction issue against those defendants whom Pasadena alleged were inferior in right.[19]

Only some of the producers in the basin were parties to the action. Any order of the court would bind only these parties and a full solution could not be effected. In order to determine the rights of even the parties to the action, there would have to be a full inquiry into the rights of all pumpers. To achieve a meaningful solution to the overdraft, the court-appointed referee requested that other parties be joined in the action. The court allowed an amended complaint to implement the referee's request.[20] Pursuant to the referee's

17. Of course the drought which extends back to the beginning of the century greatly affected the continued decline of water levels.

18. 33 Cal. 2d at 916, 207 P.2d at 23.

19. These issues are framed in the traditional manner of water controversies: "[T]o determine the ground water rights within the area and to enjoin an alleged annual overdraft in order to prevent eventual depletion of the supply." *Ibid.*

20. The court says:

> The referee filed a preliminary report which stated that it would be impracticable to attempt to include all . . . parties. It recommended, however, that certain named parties who used fairly substantial amounts be joined in the action, and the court ordered them brought in over the objections of appellant.

Id. at 919-20, 207 P.2d at 25.

The referee was brought in by the court of its own motion; this procedure is set forth in the Water Commission Act, Cal. Water Code § 1003. The reference procedure itself is contained in division 2, part 3 of the act. Cal. Water Code § 2000 provides:

> In any suit brought in any court of competent jurisdiction in this State for determination of rights to water, the court may order a reference to the board, as referee, *of any or all issues involved in the suit.*

(Emphasis added.)

next suggestion, the court ordered that the rights of all of the parties be adjudicated *inter se*; each party's rights should be determined in relation to every other party's rights.[21] By this interweaving of rights, the scope of the action was expanded far beyond the original contemplation of the parties.[22]

The basic problem remained: who should be required to reduce his pumping from the basin and in what quantities? At the time of the *City of Pasadena* case, the principles of allocating ground water supplies were found in *Katz v. Walkinshaw*.[23] Justice Luciern Shaw had set forth the following scheme of allocation:

(1) Water belonged first to those who used it upon the land (overlying owners); these users had co-equal rights to the supply and had to share equally in times of shortage or in instances where their uses were in conflict.

(2) When overlying needs were satisfied, then, and only then, could water be used for industrial, urban and non-overlying uses by *appropriative takers*. These pumpers took water on the basis of proximities in time of use; first in time was first in right and the last in time had to yield when there were shortages or conflicting uses.[24]

Most of the water pumped from the Raymond Basin was being used by public utilities and cities for traditional appropriative uses. Very little of the water was being used for overlying uses. The rights of each party would therefore be made dependent upon when he started to pump water from the basin, in what quantities, and primarily upon the ability to prove both of these factors before the

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Cal. Water Code § 2001 provides:

> In any suit brought in any court of competent jurisdiction in this state for determination of rights to water, the court may refer the suit to the board for investigation of and report *upon any or all of the physical facts involved.*

(Emphasis added.)

The court in *Pasadena* noted:

> Every recent major water law decision of this court has expressly or impliedly approved the reference procedure provided by section 24 and has recommended, in view of the complexity of the factual issues in water cases and the great public interests involved, that the trial courts seek the aid of the expert advice and assistance provided for in that section.

33 Cal. 2d at 917, 207 P.2d at 23-24.

21. The court ordered "that the issues should 'embrace an adjudication of rights of the defendants *inter se* and the rights of each and every party as against each and every other party.'" *Id.* at 919, 207 P.2d at 24. (Emphasis added.)

22. The original contemplations of the parties are noted by Krieger & Banks, *supra* note 5, at 61.

23. 141 Cal. 116, 74 Pac. 766 (1903).

24. Reis, *Legal Planning for Ground Water Production*, 38 So. Cal. L. Rev. 484, 487 (1965).

referee and the court. It is fair to assume that great uncertainty existed among the parties (1) as to when they started pumping and (2) as to the initial quantities which they pumped. None of the parties, even if they knew when and in what quantities they had been pumping, could be sure of any other party's relative priority. Most of the parties feared that they would be the ones required to curtail production from the basin.[25]

To avoid the hazards and uncertainties of litigating the issue of water rights, each of the parties agreed to a pro rata reduction based upon the amount he had been pumping for the past five years in order not to exceed the "safe yield" of the basin. Since they had all been using the basin waters with relative impunity and disregard as to the future supplies, it would be only equitable that they share the burden proportionately among themselves. The result which they wished to reach was described in terms of "prescription." It was stipulated that each party had been taking water from the basin openly, adversely, under claim of right for the required period of time.[26]

The agreement assured each signatory that he would retain a fairly substantial quantity of his pumping rights within the basin. It meant that the utilities had the continued advantage of using the basin's storage properties in meeting their peaking and cyclic needs. By using the imported waters of the Metropolitan Water District of Southern California to supply their base needs, they could then use the substantial amount of water rights left them in the ground water basin to meet their peaking needs. Thus, they would not have to construct additional surface storage facilities or enlarged pipe lines to supply the peak hours of water usage. This meant that the sole additional cost of water to them would be the difference between the cost of raising the ground water to the surface (pumping costs) and the cost of the imported waters.

Only one party appears to have refused to sign the agreement—California-Michigan Land and Water Company. California-Michigan, by 1946, was pumping in excess of 800 acre-feet of water each year. Under the settlement agreement, it would be entitled to only

25. See generally Cal. Dep't of Water Resources, *op. cit. supra* note 11.

26. With respect to the water rights acquired by the various parties it was stipulated by all of them, including appellant, that 'all of the water taken by each of the parties to this stipulation and agreement, at the time it was taken, was taken openly, notoriously and under a claim of right, which claim of right was continuously and uninterruptedly asserted by it to be and was adverse to any and all claims of each and all of the other parties joining herin.'
33 Cal. 2d at 922, 207 P.2d at 26.

521 acre-feet per year.[27] The great disparity between its rights in the basin and its total water needs meant:

(1) It would have to use large quantities of imported water which when averaged with the basin waters would have greatly increased the cost of water to it and ultimately to its consumers.

(2) Further, it would have to construct either expensive storage facilities or large pipe lines to meet the physical water requirements of its consumers at a prohibitive cost.

Because of this disparity between basin waters and water needs, California-Michigan contested the agreement. At worst, it would be compelled to comply with the settlement; at best, it would gain increased water rights as a prior appropriator under *Katz v. Walkinshaw.*

After a detailed review of the prior case law,[28] the court concluded that it was not applicable to the present situation because the parties had been taking adversely to each other for the prescriptive period. The overlying or appropriative rights distinction was not necessarily relevant to the conclusion of the case. What became important were the amounts that each had been taking for the five-year period immediately preceding the action.[29] Whether he retained rights he already had, or gained them by prescription, each of the parties had the right to take the full continuous amount pumped from the basin in the preceding five years. Under this analysis, none of the parties had greatr priority.[30] Thus, no party had the benefit of prior law which extended preference based on the distinction between overlying and appropriative uses since all par-

27. City of Pasadena v. City of Alhambra, 75 Cal. App. 2d 91, 93, 170 P.2d 499 (Dist. Ct. App. 1946).

28. *Id.* at 924, 207 P.2d at 27-33. The year in which the case came before the Supreme Court, 1949, was a key year because of the availability of Metropolitan Water District water supplies. Although the issue, as framed by the court, did not expressly take metropolitan waters into account, it appears to have been capable of recognition within its terms:

> whether the trial court properly limited the amount of water that appellant may take from the ground in the Raymond Basin Area, and whether it erred in placing the burden of curtailing the overdraft proportionately on all parties.

Id. at 916, 207 P.2d at 23.

29. Reis, *supra* note 24, at 488-89.

30. 75 Cal. App. 2d at 93, 170 P.2d at 499. By giving equal priority, the court implicitly recognized only those rights in the ground water basin which were essential to the continued well being of the community. That is to say, the application of the rule of mutual prescription would eliminate some of the water rights which had not been used by the parties during the prescriptive period of five years predating initiation of the suit.

ties had prescriptive rights. Each then had to yield proportionately to reduce the overdraft of the basin to the safe yield.

The court did not say whether it would have enforced the terms of the lower court decree against California-Michigan if there had not been a settlement agreement. Nor, did it specify whether the number of signatories to the agreement had any bearing on its decision. Much of the court's reasoning, however, points to the conclusion that (even if there were no theory of mutual prescription put forth by the parties) it would have enforced the agreement against California-Michigan because the court believed that it effected a solution to the problem in the most equitable manner and in the best interests of the public. This conclusion may be seen, in part, in the following statement of the court:

> Adoption of appellant's position that the water must be allocated . . . strictly on the basis of priority in time of appropriation would . . . result in an unequal sharing of the burden of curtailing the overdraft in that all pumping conducted under authority of certain of the later appropriations would be completely eliminated, whereas no restriction in amount would be imposed upon pumping based on earlier appropriations. Such a result does not appear to be justified where all of the parties have been producing water from the underground basin for many years, and none of them have acted to protect the supply or prevent invasion of their rights until this proceeding was instituted. Moreover, it seems probable that the solution adopted by the trial court will promote the best interests of the public, because a *pro tanto* reduction of the amount of water devoted to each present use would normally be less disruptive than total elimination of some of the uses.[31]

By utilizing the settlement agreement as providing the vehicle for effecting the maximization of private and public interests, the court avoided the more pervasive questions of judicial and legislative rules, reliance, and expectancies of parties, as well as broader questions of property rights.[32]

The reaction of ground water pumpers to the decision of the court in *Pasadena* took divergent lines. The most immediate conse-

31. 33 Cal. 2d at 932-33, 207 P.2d at 32.

32. Water rights in California are usually considered to be property rights. See generally Bennett, *Some Fundamentals of Legal Interests in Water Supplies*, 22 So. Cal. L. Rev. 1 (1948). See also Smith, *The Rural-Urban Transfer of Water in California*, 1 Natural Resources J. 64 (1961); Hutchins, *Background and Modern Developments in Water Law in the United States*, 2 *Id.* at 416 (1962).

quence of the decision was a rush by pumpers in other overdrawn basins to increase the amounts of water which they were producing from the basin because of the fear of an adjudication within their basin. Basin levels began to decrease at an alarming rate.[33]

Some of the more enlightened pumpers, particularly in the West Basin and Central Basin, approached the problem from another vantage. They joined together in forming associations of producers to review their ground water situations and to attempt formulations of solutions. The West Basin Association had been formed about the time of the lower court decision in the *Pasadena* case; by the time of the California Supreme Court decision, it was already operational.[34] The Central Basin Association was formed a year after the California Supreme Court's decision in *Pasadena*. It was composed of over "60 member agencies comprising 70 per cent of the total ground water production in the Central Basin."[35]

These two associations fostered consideration of several pieces of legislation which their membership and officers were instrumental in drafting. Their efforts resulted in three major legislative enactments.

First, in 1951, section 1005.1 was added to the Water Code.[36] That section reads in part:

> Cessation of or reduction in the extraction of ground water by the owner of a right to extract, as the result of the use of an alternate supply of water from a nontributory source, shall be and is deemed equivalent to, and for purposes of establishing and maintaining any right to extract the ground water shall be construed to constitute, a reasonable beneficial use of the ground water to the extent and in the amount that water from the alternative source is applied to reasonable beneficial use, not exceeding, however, the amount of such reduction.

33. Each producer, by increasing the amount of water which he pumped from the basin, felt that he could satisfy his total needs when the time for curtailing production in an adjudication arrived because he would get a percentage of his total withdrawals based upon the five-year period immediately preceding the institution of the action. This law had an unfortunate consequence on the balance of water levels in many of the ground water basins. Producers who had been taking imported water because of ground water levels in their areas returned to pump from the basin in an effort to ensure their "unadjusted" rights.

34. The West Basin Association was formed in 1946. Prior to this time, the pumpers in the basin were organized into temporary action groups. See Bookman, Report on Proposed Central and West Basin Water Replenishment District 9 (Cal. Dep't of Water Resources 1959).

35. Bookman, Control and Reduction of Ground Water Pumping in the Central Basin 1 (1961).

36. Cal. Laws 1951, ch. 1361, § 1, at 3275.

When the effect of this credit for imported water usage is viewed in the light of the increased pumping after the decision of *Pasadena*, it becomes clear that the statute was designed (1) to allow those who had, before the decision, been using imported waters to go back to that source of supply, and (2) to foster new uses of imported water.[37] The basic philosophy behind this credit is that there is a resultant benefit to the basin through decreased usage. Allowing those that use imported waters to retain their rights curtailed pumping and aided the ground water situation.

Then, in 1955, the joint efforts of these two associations were directed toward drafting and sponsoring an act which would require the recordation of ground water extractions. In 1955 the legislature found the following:

> that by reason of the combination of light rainfall, concentrated population, the transition of considerable areas of land from agricultural use to urban use, and a similar dependence on ground water supplies which prevails in the Counties of Riverside, San Bernardino, Los Angeles, and Ventura, . . . most such underground water supplies are overdrawn . . . .[38]

Because of this finding, the extraction of twenty-five acre-feet or more by any ground water producer in the aforementioned counties must be recorded.[39] The act's purpose is to make available, as part of the public records, information concerning the amounts of extractions. This information facilitates planning activities. Further, it serves to provide prima facie proof of the amounts of withdrawal in further adjudications.[40]

Finally, the most renowned piece of legislation was the Water Replenishment District Act, passed in 1955.[41] The stated purpose

37. See Reis, *supra* note 24.

38. Cal. Water Code § 4999.

39. Cal. Water Code § 5001: "Each person who, after 1955, extracts ground water in excess of 25 acre-feet in any year shall, file with the board on or before March 1st of the succeeding year . . . ." As originally enacted, a fifth county was included—Santa Barbara; it was deleted from the Act in 1959. Cal. Laws 1959, ch. 526, § 1, at 2493.

40. Extensive development of the ground water resources of the State, especially in Southern California, has resulted in an increasing overdraft of these resources. Under these conditions the necessity of accumulating information which will enable protection of the water rights of users and minimize the expense and delay in event of a comprehensive adjudication is urgent.

Cal. Water Rights Bd., Rules, Regulations and Information Pertaining to Recordation of Water Extractions and Diversions 4 (1959).

41. Cal. Water Code § 60000-449.

of the legislature at the time of passing the act was contained in section 60047 (it has since been amended):

> The Legislature finds and declares that this act is necesary to the solution of a problem arising out of the following unique circumstances:
>
> The water supplies in the underground basins in the arid southern part of this State to which the provisions of this division apply are insufficient to meet the water demands of the areas, and because of the geological conditions peculiar to this area, further excessive pumping without replenishment is certain to destroy the usefulness of these basins.[42]

To cope with the broader problems of ground water basins, the legislature provided that the formation of districts was to be coincident with the physical boundaries of the natural basin area.[43] Extensive powers were given the districts to carry forth the objectives of balancing water supplies with water needs.[44] These districts were also given power to be the "institutional initiators" of an adjudication of ground water rights within the basin to bring withdrawals down to the safe yield of the basin.[45]

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42. Cal. Laws 1955, ch. 1514, § 1, at 2758. Note that the section covered most of the southern California area.

43. Cal. Water Code § 60044, allows geographic organization of replenishment districts which disregard political subdivisions:

> A district may be organized entirely within unincorporated territory, or partly within unincorporated territory, and within one or more counties in this State.

Ground Water basins are in name independent of other basin areas within differing political subdivisions. They are, however, interdependent upon one another, a prime example being the Central Basin and West Basin. Proper handling of ground water replenishment problems requires the entire area to be treated as a single unit.

44. Cal. Water Code § 60221:

> Without being limited to the following enumerations, a district may, among other things but only for the purposes of replenishing the ground water supplies within the district:
>
> (a) Buy and sell water;
> (b) Exchange water;
> (c) Distribute water to persons in exchange for ceasing or reducing ground water extractions;
> (d) Spread, sink and inject water into the underground;
> (e) Store, transport, recapture, reclaim, purify, treat or otherwise manage and control water for the beneficial use of persons or property within the district.
> (f) Build the necessary works to achieve ground water replenishment.

45. Cal. Water Code § 60222:

> A district may take any action necessary to protect or prevent interference with water, the quality thereof, or water rights of persons or property within the district, subject to the limitations contained in Section 60230.

In 1958 a joint committee of the Central and West Basin Associations studied the formation of a district which would cover their combined areas. In 1959 the district's formation was put before the voters. An election was held, a resolution was passed, and the district was formed under the name of the Central and West Basin Water Replenishment District. Operations were begun in late 1959.[46]

B. California Water Service Co. v. Sidebotham & Son, Inc.[47]

In the early 1920's increased water usage in the Central and West Basin areas caused a noticeable decline of the water levels as evidenced by the decline of the water levels in the wells.[48] Three major consequences of this decline were contemplated. The first two threatened to produce the same results as in the Raymond Basin:

(1) The declining water levels would increase the levels at which withdrawals could be made and thereby the costs of pumping water from the basin.

(2) The continued decline threatened to destroy the utility of the basin by compaction and increased mineral content in the water. A third consequence, peculiar to the West Basin because it bordered upon the ocean, was the threat of sea water intrusion. As more water was pumped inland, particularly at the higher water and land levels, the water levels declined below those of the coastal area. The basic phenomenon of water seeking its own level explained why the gradient of the water was reversed. This meant that the fresh water, instead of flowing toward the sea, began flowing back up the basin. Once sea water was in the basin, that area might be lost forever, or reviveable only at a considerable expense. Any new supplies of water which enter the basin are mixed with the salt water, contaminated, and useless for beneficial purposes.[49]

By 1932 a quantity of sea water had intruded into the basin.[50]

46. Bookman, Control and Reduction of Ground Water Pumping in the Central Basin 3 (1961).

47. 224 Cal. App. 2d 715, 721, 37 Cal. Rptr. 1, 4 (Dist. Ct. App. 1964). The West Basin is located in West Los Angeles County. It is several times larger than the Raymond Basin. The total area of this expanse exceeds 101,000 acres. The boundaries of the basin are: on the East and South the Newport-Inglewood uplift (this earthen fault runs from a point above Beverly and Baldwin Hills in a Southwesterly direction to just below the City of Long Beach); the Pacific Ocean is the Western boundary.

48. Water levels in basins are commonly measured by the use of observation wells.

49. See generally Central & West Basin Replenishment Dist., West Coast Basin Barrier Project Investigation of Influence on Ground Water quality (1964).

50. Water levels have been declining steadily since the first decade of the century. In certain portions of the coastal areas, sea water was found in wells early in the 1920's.

Producers were worried about the continued use of the basin as a source of supply. The seriousness of this situation prompted an action in the West Basin, styled after *Pasadena v. Alhambra*,[51] to protect the basin from the further consequences of declining water levels.

Three water producing agencies (California Water Service Company, Palos Verdes Water Service Company, and The City of Torrance) initiated the West Basin action[52] almost contemporaneously with the rendition of the lower court opinion in the *Pasadena* case. In contrast to *Pasadena*, this action started as multipartied: *Pasadena's* influence was manifest in the naming of some 500 actual defendants and 180 ficticiously named defendants.[53]

It is notable that the purpose of the action was phrased in terms of the protection of the supply of water which the basin would yield.[54] Protecting the basin itself assumed secondary importance as a means to an end. The parties limited their concern, ostensibly, to the protection of the future productivity of the basin; limitations on withdrawals were to protect the basin for this purpose and not for its intrinsic value as a means of storage.

As in the *Pasadena* case, the court found itself obliged to appoint a referee. It appointed the Division of Water Resources, Department of Public Works, as referee. The referee was charged with gathering facts and suggesting possible physical solutions to the problem.[55] The referee and the parties to the *Sidebotham* action believed that the only practical solution to the West Basin situation was in adopting the Raymond Basin procedure to their own ends. Although many hundreds were initially made parties, it later became apparent that several hundred additional defendants were necessary under the *Pasadena* decision in order to affect a complete adjudication. A petition for an amended complaint was filed with the court.[56]

Changes in the factual situation were very likely a determinative force in the parties' eventual compromise solution. By 1950 the

51. That is, the parties sought a declaration of rights and an injunction to safeguard their water supplies.

52. California Water Serv. Co. v. Sidebotham & Son, Inc. 224 Cal. App. 2d 715, 721, 37 Cal. Rptr. 1, 4 (Dist. Ct. App. 1964).

53. *Ibid.*

54. "[T]o enjoin an alleged annual overdraft in order to prevent eventual depletion of the *supply* and permanent injury by mineralization and salt water intrusion." *Ibid.* (Emphasis added.)

55. Cal. Water Code §§ 2000-01.

56. 224 Cal. App. 2d at 721, 37 Cal. Rptr. at 4.

Metropolitan Water District of Southern California was operating at a substantial capacity.[57] It was clear that all the water *quantity* needs of the basin producers could be met by proper utilization of these water supplies. Constant water needs could be satisfied by direct use of imported waters while peaking needs could draw upon the basin. The parties attempted to draft a solution which would differentiate between storage needs of utilities and consumer needs with constant base water requirements. Thus, the reduction sought by the water service companies was one wherein their reduction in pumping would coincide with their needs for constant service demands. The cessation would therefore affect them as an economic quantity, measured solely by the difference between the more expensive Metropolitan Water District water they would have to purchase and the pumping costs of water they previously had withdrawn from the basin.

By 1955 parties with approximately eighty per cent of the assumed relative water rights had joined in a tentative settlement agreement, that is, an "interim" agreement.[58] They consented to curtail their production approximately twenty-five per cent until the final settlement and decree of the court.[59]

In most respects, the agreement was similar to that approved by the court in *Pasadena*.[60] Additional provisions for an elaborate exchange pool were included. The exchange pool concept was unique. It is one whereby parties in the basin with connections to the Metropolitan Water District supplies could offer their pumping rights in the basin to others who either did not have such a connection, or needed the water from the basin to meet their total water service needs because of storage problems. Allocation of the offers of use, and the charges to be made therefor, were to be regulated by the water master. The formula by which the charges were to be arrived at was the difference in price between the average cost of pumping in the basin and the price of Metropolitan Water District waters. In theory, this should have made large quantities of water available. It appears, however, that as late as 1965, the producers in the West

57. The capacity of the Metropolitan Water District aqueducts were much greater at this time than the measure of demand. It was not until several years after the decision in *Pasadena* that producers began to increase their use of these imported water supplies.

58. 224 Cal. App. 2d at 721, 37 Cal. Rptr. at 4.

59. *Id.* at 723, 37 Cal. Rptr. at 5.

60. The parties provided for (1) reductions based upon prescriptive rights, (2) the exercise of continuing jurisdiction of the court, and (3) the appointment, by the court, of a water master.

Basin were not offering sufficient quantities to cover the needs of the utilities and there was a continued overdraft to meet the water requirements of water service companies and other pumpers.[61]

Two pumpers, against whom the trial court had enforced the settlement agreement (although they were not signatories thereto), brought independent appeals in 1961.[62] These appeals were consolidated for hearing under the heading of *California Water Service Co. v. Sidebotham & Son, Inc.*[63]

The City of Hawthorne's appeal was on the merits. It raised two questions. First, it objected to the enforcement of the settlement agreement against it as it was not a signatory to the agreement. Its contention was that the rules of overlying and appropriative rights should have governed its rights in the ground water basin. Second, it further raised an issue not decided by the court in *Pasadena v. Alhambra*: what was the effect of the civil code provision (section 1007) which exempted municipal corporations from the running of the adverse possession statute?

The district court of appeals enforced the settlement agreement against all parties to the action, despite the refusal of some to voluntarily comply therewith. The *Pasadena* case was cited as authority for enforcing the agreement against parties who would not join of their own accord. The court then proceeded through the same motions of decision-making as had been undertaken in the earlier decision of *Pasadena*. First, it reviewed the law applicable to overlying and appropriative water rights; second, it found the elements of prescription present under the facts of the case; finally, it

61. Despite the comprehensive purpose of the agreement and the judgment of the court, the decree provided for the parties to continue withdrawals from the basin if the water master found that forebearance would cause undue hardship. Many of the pumpers in the West Basin have continued to withdraw water from the basin under this provision, substantially equal to their "prescriptive rights."

62. The adjudication was originally set for trial in 1956. When it finally came before the court in 1961, the final settlement agreement was approved by the court and adopted as part of its judgement and decree. The court enjoined further pumping from the basin in excess of the amounts agreed upon in the settlement agreement; it appointed a water master to exercise continuing supervision over the performance of the court's decree; and, finally, it reserved jurisdiction to review the safe yield if, after a lapse of time, there was a change of circumstances.

63. 224 Cal. App. 2d 715, 37 Cal. Rptr. 1 (Dist. Ct. App. 1964). Sidebotham was not contesting the merits of the lower court decision. He was objecting on procedural points relating to the death of counsel during the pendency of an action. Other than to consider that his failure to prove the amounts of his withdrawals over the prescriptive period had resulted in a total injunction of his further withdrawals from the basin (due here, allegedly to death of counsel), there is no need to further dwell on his appeal.

ruled that the doctrine of mutual prescription was applicable and decisive.[64]

It was in this action that the court began to answer the inquiry raised about *Pasadena*: would the court in *Pasadena*, and now in this action, have enforced the terms of the settlement agreement against the nonconsenting parties had the proportion of signatories to dissenters not been so greatly divergent; and, if the theory of mutual prescription had not been put forth as the available "peg." In other words, did the "will of the majority" express the best interests of the public?

After noting the adoption of the interim settlement agreement by the lower court in 1955; recognizing the fact that it and the final agreement were operational at the time of the appeal; pointing out that the lower court had provided a transition period for the adjusting of ground water production; and, stating that the operation of the exchange pool was to the satisfaction of the court and the parties, the court gratuitously added:

> The solution adopted by the trial court in this case after so many years of diligence is completely in accord with the rule of reasonable and beneficial use of water expressed by Section 3 of Article XIV of the state Constitution. This rule dictates that when the supply of water is limited, as in the overdrawn basin here in question, the public interest requires that there be the greatest number of beneficial users which the supply can yield. It has also been held that under the constitutional provision, *the trial court has the duty of working out a physical solution if possible and if none is suggested by the parties to work out one independently of the parties.* Here, because of Hawthorne's failure to appear, the solution as to its rights had to be worked out independently.[65]

The court seems to have indicated that it would have adopted this same solution were it to have taken the initiative. Whether the solution originated from the action of the parties, or from the work-

64. The court stated:

> [I]t is well settled that the computation of prescriptive water rights in an overdrawn basin is quantitative. The rights of the parties are measured by the amounts of the respective takings for the prescriptive period.

Id. at 727, 37 Cal. Rptr. at 8.

It went on to conclude:

> We think that the [trial] court properly concluded that there was no necessity for distinguishing between the overlying users and appropriators. The object of the judgement was to relieve the overdraft and prevent salt water intrusion.

Id. at 731, 37 Cal. Rptr. at 10.

65. *Id.* at 731-32, 37 Cal. Rptr. at 10-11. (Emphasis added.)

ings of the court, the terms of the agreement would be enforced against parties who did not voluntarily join in the execution thereof.

Hawthorne's next point was not decided by the court in the *Pasadena* case. It appears that Hawthorne was trying to undermine the "peg" upon which it felt the court was basing its enforcement of the settlement agreement. Claiming that there should have been a substantive distinction recognized between prescription as applied to private parties and as applied to municipal corporations, the city believed that the solution offered by the settlement agreement should not be accepted by the court as determinative of its rights. The court treated this argument in a rather cavalier manner. After noting the scope and purpose of section 1007 of the civil code, it declined a final determination of the issue by saying:

> Even assuming arguendo that Hawthorne had established a present invasion of its rights, the record indicates that it should be precluded on equitable grounds from invoking any benefit from the 1935 amendment to section 1007 of the Civil Code.[66]

Thus is shown the extent to which a court would go in overruling the objection of non-complying parties. It reiterated the application of *Pasadena v. Alhambra*; it gave an extensive opinion on the independent application of the constitutional mandate of article XIV; and, finally, it used an estoppel rationalization against the City of Hawthorne's utilization of section 1007. The solution achieved in the *Pasadena* case now appears to be given the full sanction of the courts and the force and effect of positive law.

C. *Central & West Basin Water Replenishment District v. Adams*[67]

The Central Basin's[68] original sources of water supply and historical water usage are similar to those of the West Basin. In large part, the San Gabriel and Los Angeles Rivers are their common-main-sources of water supplies. Precipitation in the Central Basin, as in the West Basin, accounts for approximately ten per cent of the annual replenishment of the basin. The distinguishing feature

66. *Id.* at 729, 37 Cal. Rptr. at 9.

67. Civil No. 786, 656, Cal., Jan. 2, 1962.

68. The Central Basin is located in west Los Angeles. It is the largest of the three basins subject to the controls of an adjudication proceeding. For further information on the description of the basin, see generally Bookman, Control and Reduction of Ground Water Pumping in the Central Basin 1 (1961).

between the water supplies in these two basins is that water is *primarily absorbed* in the Central Basin forebays, to remain a part of the Central Basin supplies; whereas, to become a part of the West Basin supplies, water must pass through the Central Basin.

It is important to note this source of origin factor in the Central Basin because the Central Basin pumpers could effectively have secured for themselves the greatest portion of annual ground water replenishment by increased pumping. It also has meant that the effects of overdraft were belatedly felt in the Central Basin area because increased pumping of ground water merely utilized part of the supply that had historically flowed on to the West Basin.

Even after the institution of the West Basin adjudication, there was very little concerted activity among the producers in the Central Basin. By 1955 their combined rate of water withdrawals had increased measurably. Because of the nexus existing between the producers of both basins as to water supply and economic interdependency, the West Basin situation began to concern seriously the Central Basin producers. Central Basin producers began activities toward a solution of the ground water problem vis-à-vis comprehensive litigation.

In 1961 the engineering firm of Bookman and others reported back to the Central Basin Association regarding the feasibility of control through an adjudication.[69] This report made the following reservations:

(1) There was an increasing disparity between water supplies and water use in the Central Basin area.

(2) The increased activities of responsible agencies in supplementing ground water supplies by the utilization of imported waters was not sufficient to alleviate this continuing disparity between supply and use.

(3) The only feasible manner of complete control of the quantities of ground water withdrawal required an adjudication and the continued supervision of the court.[70]

The report also allayed initial fears that the adjudication's trial and engineering costs would be extensive.[71] It should be pointed out that the cost of the reference and the fact finding process could be kept at a minimum in light of the 1955 Ground Water Recordation

69. *Ibid.*

70. *Id.* at 2, 3.

71. Implicit in the preparation of this report and letter of transmittal is the idea that costs could be kept minimum by adequate preparation.

Act,[72] and the fact finding surveys of both the state and the replenishment district.[73] Both of these allowed parties to go into court with the greater part of the fact finding process incorporated into their settlement agreement. Verification of amounts reported could be made by the referee and the court by the use of public records, that is, the recordation act.

By this time a second consideration, previously neglected, became extremely important—the relationship of ground water rights to the spreading activities of the replenishment district. Necessary funds for the purchase of imported waters by the replenishment district were derived from the levy of a "pumping tax." The legislature had said that the tax could be levied upon amounts of ground water pumped in excess of the producer's rights in the basin waters.[74] Clearly, in order to levy the tax effectively, the replenishment district had to know what were the quantitative rights of the pumper in the basin waters.

As with the *Pasadena* and *Sidebotham* adjudications, the stated purpose of the *Adams* action was to reduce the permissible sphere of pumping in the basin to curtail the annual overdraft.[75] The area

72. Cal. Water Code §§ 4999-5008. Note that one of the purposes of the Ground Water Recordation Act is to assure the preservation of evidence for situations of this nature. See Reis, *Legal Planning for Ground Water Production and Management*, 38 So. Cal. L.. Rev. 484, 489-91 (1965).

73. For an excellent bibliography on state publications, see Bookman, Report on Proposed Central and West Basin District, app. A (1961). See also Cal. Water Code §§ 60230 (10), 60300.

74. The "pumping tax" is a major source of revenue for the replenishment district. The funds are used to purchase imported water for spreading from the Metropolitan Water District of Southern California.

75. Central & West Basin Water Replenishment Dist. v. Adams, Civil No. 786,656, Cal., Jan. 2, 1962. The settlement agreement of the parties received judicial approval in October 1966 with the adoption of the stipulation for settlement substantially unchanged. Subsequent references are to the settlement agreement as filed and modified on January 13, 1965. This action was brought under the authority of the Replenishment District Act, Cal. Water Code § 60230 (7):

> To carry out the purposes of this act, to commence, maintain, intervene in, defend and compromise, in the name of said district, or otherwise, and to assume the costs and expenses of any and all actions and proceedings, now or hereafter begun to determine or adjudicate all or a portion of the rights to divert, extract, or use waters within the district, or within any segments thereof or sub-basins therein, as between owners of or claimants to said rights, to prevent any interference with water or water rights used or useful to the lands, inhabitants, owners, operators, or producers within said district, or to prevent the diminution of the quantity or quality of the water supply of said district, or to prevent unlawful exportation of water from said district.

Because the authority of the district to bring an action as the real party in interest had not yet been tested, the district brought the action with the City of Lakewood to

of concern appeared to be *expressed* more broadly than in prior actions:

> In order to preserve the utility of the Central Basin as a source of ground water, to prevent undue lowering of water tables with increased pumping costs . . . and in order to provide for economical utilization of said Central Basin and to preserve the same as *a storage and reservoir facility,* it is necessary that extractions of ground water be reduced and controlled . . . and that parties be limited to the quantities of extractions annually set forth . . . under the column 'Allowed Pumping Allocations.'[76]

The required reduction was based upon a measure of safe yield distinct from that introduced in the *Pasadena* case. In *Pasadena* the reduction was based upon the natural safe yield of the basin. In *Adams* the measure of safe yield incorporated the annual spreading activities of the replenishment district. The result of this composite replenishment was the "artificial safe yield."[77] The required reduction in pumping was limited to twenty per cent of the "base water right" of the party.[78] By changing the measure of safe yield, the parties incorporated a *de facto* recognition of the intrinsic qualities of the basin as a means of storage and distribution.

The agreement sets forth an elaborate and detailed "exchange pool." The distinct features of this scheme as opposed to the *Sidebotham* solution were its mandatory characteristics. Thus, any party who joined in the action necessarily would have agreed to the provisions of the exchange pool agreement. Parties who were not signatories to the agreement were given authority to enter into the exchange pool by filing a notice of election with the court either before or after judgement was entered in the action. The agreement was made mandatory in more than one sense:

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prevent disruption of the action in the event of question. Interview With Mr. Carl Fossette, Secretary, Central Basin Association, in Downey, California, Feb. 1965.

76. Central & West Basin Water Replenishment Dist. v. Adams, Stipulation and Agreement for Judgment, Findings of Fact, and Conclusions of Law 10-11, Cal., Jan. 13, 1965. (Emphasis added.)

77. "Artificial safe yield" is natural safe yield plus the amounts of water which can be spread effectively in the ground water basin. See *Id.* at 10, Finding No. 14.

78. Originally, the parties had contemplated a twenty-five per cent reduction of their pumping activities. In the agreement, however, it appears to have been reduced to twenty per cent: "*Allowed Pumping Allocation* is that quantity in acre feet which the court finds and concludes to be the maximum quantity which a party should be allowed to extract annually from Central Basin . . . which constitutes eighty per cent of such party's Total Water Right." Central & West Basin Water Replenishment Dist. v. Adams, Proposed Judgment 2-3, Cal., Jan. 13, 1965. (Emphasis in original.)

> *Required Subscription.* Each party having existing facilities for the taking of imported water as of the beginning of any water year hereby subscribes to the Exchange Pool for purposes of meeting Category (a) requests thereon . . . twenty percent (20%) of its Allowed Pumping Allocation, or the quantity of imported water which it is able, without undue hardship, to obtain, take and put to beneficial use through its distribution system or systems in addition to such party's own estimated needs for imported water during that water year, whichever is the lesser.[79]

Not only was assent to the agreement made inclusive of consent to the exchange pool, but proportionate subscriptions under the exchange pool were also made mandatory.

Recognizing that the costs of an adjudication could be minimized only if there was the highest degree of voluntary compliance, the agreement, as filed with the court, was made conditional upon the following:

> This Stipulation and Agreement shall become effective as to the then signatories hereto when the same has been executed . . . and delivered by a number of parties to this action having Total Water Rights aggregating 200,000 acre feet (which is approximately 75% of the estimated aggregate of Total Water Rights of all parties to this action.)[80]

A substantial number of ground water producers were public utilities subject to the jurisdiction of the Public Utilities Commission. The total water rights of these parties were in excess of thirty-three per cent. If they did not become signatories thereto,

79. *Id.* at 3, app. 7.

80. *Id.* at 4. Some idea of the time, effort, and expense which has gone into the settlement practices under consideration is contained in a related case, Central Basin Municipal Water Dist. v. Fossette, 235 Cal. App. 2d 689, 45 Cal. Rptr. 651, 656-57 (Dist. Ct. App. 1965):

> [S]ince May of 1959, when the action was commenced, there have been constant studies and negotiations toward settlement. Negotiating committees of five men each were appointed for the plaintiffs and for the defendants represented by amici curiae. These committees met together on 45 different occasions. In addition, there were literally hundreds of conferences both between opposing counsel and among the attorneys and experts on both sides. Further, there were almost continuous studies of various aspects of the hydrologic picture. Expenses involved in arriving at the settlement represented by the stipulation and proposed judgement are estimated to exceed $300,000 disregarding the value of the time devoted by members of the negotiating committees. It cannot be said that prolonged and costly litigation on the same subject would result in any different or better solution than the physical solution arrived at and contained in the stipulation and proposed judgment.

their failure to join would have precluded the agreement from becoming operative. Approval of the agreement and authority for the public utilities to sign the settlement was sought by the replenishment district from the Public Utilities Commission. A hearing was held before the commission on September 25, 1962.[81]

The Commission, after a review of all the facts of the situation, gave its approval to the interim agreement and a signing by the public utilities subject to its jurisdiction. This was done only after the Commission had made some broad observations of the public interest involved in this type of an action:

> Were it not for the fact that there is a clear need to institute a ground water management program requiring the participation of virtually all water producers in the Basin, there might be good reasons why a given utility should not commit itself to pay a higher price for water during the interim period. Isolated from the need for such a comprehensive program, the interests of an individual utility's rate-payers might not necessarily be best served by such a commitment. To the extent, however, that participation by applicants is essential in order to implement the program, the need to preserve the basin overrides such possibly detrimental effects. If there were a reasonable alternative to the proposed program (and none appears) the Commission would be concerned with weighing this proposal in the narrower aspect of the economic effect of it upon each utility. The failure of this plan, however, resulting from the nonparticipation therein by applicant utilities would cause serious impairment of the Central Basin. Measured against such a prospect, the proposal herein appears reasonable since it is reasonably directed toward a solution which is in over-all public interest, even though it might result in higher cost water.[82]

The Commission also noted:

> if the overdraft in the Central Basin continues, use of the Basin as a reservoir for providing daily and seasonal peaking and fire protection

81. 60 Cal. Public Utilities Comm'n 219 (1962). The parties to the hearing, in addition to the Replenishment District, were: California Water Service Company, Conservative Water Company, Dominguez Water Corporation, Investment Water Corporation, Ltd., Junior Water Company, Park Water Company, Peerless Land and Water Company, Inc., San Gabriel Valley Water Company, Inc., Southern California Water Company, Southwest Water Company, and Suburban Water Systems. The authority of water service companies subject to the jurisdiction of the California Public Utilities Commission, as well as the authority of towns and cities to enter into settlement aggreements, was extensively reviewed in Central Basin Municipal Water Dist. v. Fossette, *supra* note 80.

82. 60 Cal. Public Utilities Comm'n 219, 225 (1962).

> requirements will be seriously impaired and the cost to the water producers of providing the equivalent aboveground storage can reasonably be expected to exceed the cost increases involved in the proposed agreement.[83]

The decision in the Public Utilities action was rendered on September 25, 1962, and on September 28, 1962, the court accepted the interim agreement.[84] It appointed a water master and enjoined further takings in excess of the quantities agreed upon by the signatories to the stipulation.

On January 13, 1965, the finding of fact and proposed judgement were filed with the court. Over 216,000 acre-feet of the estimated total water rights held by parties were encompassed in the agreement signed at this time. Through February 1965, the names of other producers were being added.[85]

II

SYNTHESIS: SOME PROBLEMS LEFT UNANSWERED BY USE OF SETTLEMENT AGREEMENTS

Will the use of private settlement agreements remain adequate to the solution of further controversies as the disparity between ground water resources and water needs increases? Why have the parties been able to resolve their present differences? What are some of the basic problems inherent in the adjudication-settlement process?

A. Procedural Problems

1. Time Lapse

The adjudication process, as evidenced by *Pasadena, Sidebotham,* and *Adams*, is unwieldly and cumbersome. Thirteen years were needed to settle *Pasadena* and fifteen years elapsed before the court was able to cope with *Adams*. Although the *Adams* producers have attempted to alleviate the "time lapse" problem, it was not until October 1966 that the parties were able to obtain a final judgement, a judgement which accepted their settlement agreement—a lapse of five years.

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83. *Ibid.*

84. Bookman, Annual Survey Report on Ground Water Replenishment 7 (Central & West Basin Water Replenishment Dist. Feb. 28, 1963).

85. Interview With Mr. Carl Fossette, Secretary, Central Basin Association, in Downey, Cal., Feb. 1965.

2. Expense

Expenses of adjudicating ground water rights have been in excess of a quarter of a million dollars. The fact finding process, appointment and payment of a referee, attorneys' fees, and court costs are necessary and unavoidable aspects of an adjudication. Out-of-pocket expenses do not even consider the ultimate cost, for example, the economic detriment induced by the "time lag" noted above.

3. Jurisdictional Questions

Many unanswerable questions of the binding effect and scope of the decisions can be raised. For example, what if a party is left out of the action? Is he enjoined by the decision from pumping? What if he pumps "unnoticed" under claim of right in theory, for five years? Can he come in and seek a declaration of his "greater" water rights? How would this affect the settlement arrangement? Would it require a whole new adjudication?

B. Failure To Distinguish Needs of Producers for Storage Space

Katz v. Walkinshaw[86] set forth the first system of judicial allocation of ground water supplies intended for California. Justice Shaw's design was appropriately applicable to situations of conflict between overlying and appropriative users. The interference which prompted the bringing of an action was the ability of the parties to pump water. As the feasibility of importing distant water supplies had not yet been realized, the basic assumption was made that competing water needs could only be satisfied from limited local water supplies. No judicial recognition was accorded the basin's storage values.

In *Pasadena v. Alhambra* the producers in the Raymond Basin were able to resolve their differences because demand did not exceed the safe yield of the basin in unmanageable proportions. In contrast to *Katz*, the majority of pumpers in the Raymond Basin were appropriative takers. If the court in *Pasadena* followed a rule of total exclusion, as in *Katz*, the order of right would be based upon priorities in time of use and uses of long duration, if junior to others, would be completely curtailed; this would result in a disruption of the area's economy.

Supplemental waters were available from the Metropolitan Water District of Southern California. These water supplies could be successfully integrated with the waters of the basin to satisfy the needs of all pumpers in the area. Realizing this, the parties

86. 141 Cal. 116, 74 Pac. 766 (1903). See text at note 24 *supra*.

were quick to minimize their chances of losing their water rights by each agreeing to a proportionate reduction of ground water production; none would be completely excluded from pumping in the basin; each would have the continued advantages of the basin storage properties; imported water supplies could adequately be utilized to serve base, or constant water needs.

In *Sidebotham,* although the disparity between total water needs and water stored in the basin had continued to grow, even over that of *Pasadena,* imported water supplies were being fed into the basin by spreading. Based upon projections of increased spreading and increased direct use of imported waters, the parties agreed to a reduction approximating "artificial safe yield."

Furthermore, allowance was made for the situation where adequate quantities of water could not be spread in the basin by the replenishment district. If peaking and cyclic needs could only be satisfied by pumping water from the basin, exchanging rights to take from the basin through the exchange pool was thought to be the solution. The parties clearly envisioned a difference between basin demands and total water needs subject to solution without the construction of costly surface storage facilities. Their potential use of imported waters, via direct pipe lines, was commensurate with their base daily needs. It was later found that very little water was being offered to the exchange pool under the provisions of the agreement. In order to keep the supply of water and the costs of water production within feasible limits, increased pumping by water service companies had to be allowed.

When the *Adams* adjudication was begun in 1962, the parties attempted to resolve the problems of inadequate exchange pool offerings. For those who did not have adequate connection with the pipe lines of the Metropolitan Water District, the twenty per cent required subscription of each party's "Allowable Pumping Rights" was thought adequate. This plan has a serious flaw which will become more evident as the disparity between ground water supplies and total water needs continues to increase. Those with the least need for the storage capacity of the basin will offer the least amount of water to the exchange pool. The mandatory aspects of the exchange pool setting out the required subscriptions of each party were mentioned earlier.[87] The exclusionary clause of the agreement, however, specified that two types of producers would not have to contribute to the exchange pool: (1) those without outside con-

87. See text accompanying note 79 *supra.*

nections to imported water supplies, and (2) those who cannot subscribe to the pool without undue hardship. A party can effectively avoid the strictures of yielding his rights to pump from the basin by purporting to come within the following:

> Any party having the existing facilities for the taking of imported water and estimating that it will be unable, without undue hardship, in that water year to obtain, take and put to beneficial use through its distribution systems or systems existing as of the beginning of that water year, sufficient imported water to further reduce its extractions from the Central Basin by 20% of its Allowed Pumping Allocation for purposes of providing water to the Exchange Pool must furnish not later than November 10th of such water year substantiating data and other proof which, together with any further data and other proof requested by the Water Master, establishes said inability, or such party shall be deemed to have subscribed 20% of its Allowed Pumping Allocation for the purpose of providing water to the Exchange Pool.[88]

It would appear that the smaller producers of water would come within the first category above mentioned—those without connections to the Metropolitan Water District supplies. They are also the parties who generally are using the basin solely for its use as a source of water and not, as the public utilities, for its storage value. As their water requirements are usually maintained at a constant during the day, they are the pumpers who could most efficiently and economically directly utilize the imported water supplies. Under the terms of the exchange pool agreement, not only are they not required to give up their rights to pump from the basin vis-à-vis the required subscription clause, but they are also the first to benefit by the filing of category (a) requests. Category (a) requests would appear to cover:

> *Any party not having existing facilities for the taking of imported water as of the beginning of any water year,* and any party having such facilities as of the beginning of any water year who is unable, without undue hardship, to obtain, take, and put to beneficial use, through its distribution system or systems existing as of the beginning of the particular water year, imported water in a quantity which, when added to its Allowed Pumping Allocation for that particular water year, may purchase water from the exchange pool.[89]

88. Central & West Basin Water Replenishment Dist. v. Adams, Proposed Judgment 4, app. 7, Cal., Jan. 13, 1965.

89. *Id.* at 2. (Emphasis added.)

Not only will this water be withheld from the utilities who need the storage benefits of the ground water basin, but some utilities may have to yield water because of the orders of the water master to these pumpers. Utilities, as the disparity between constant use and total water needs increases (where storage needs are greater than basin rights), will be put to the additional expenditure necessary for the construction of surface storage facilities.

III

CORRECTING SETTLEMENT PRACTICES— ORGANIZATIONAL ALTERNATIVES

We return to the question of minimization of costs of production, that is, operational and ideal water production methods. The effect of the operational maxim is to keep the water producers in a position to provide their services at a cost which is *feasible* in relation to the ultimate consumer's ability to pay. This requires that the basin be utilized for storage and distribution purposes. Where there are greater needs for water than can be satisfied by allocating the use of the basin without consideration of this storage factor, then, at some point the basin waters must be made available first to those who need this facility and, only thereafter, to those with needs satisfiable by the direct use of imported waters. At some point all of the water storage space in the ground water basin will be required to satisfy the water production needs of the utility companies. At that time both the operational and the ideal maxims will coincide in point of fact toward meeting the water needs of the producers and the ultimate consumers.

Should this issue be left to the operation of market factors? Should it be regulated by the court with its control of settlement practices, or acting of its own initiative; or, should the issue be relegated to the jurisdiction of a state agency? In the alternative, perhaps it should be settled by consolidation of ownership and control of all state waters in the state.

A. Market Allocation Theories

The decision about the utilization of water resources should be left to private individuals operating within the structure of the market place. Where water service companies desire the use of the basin as a means of storage and distribution, they should have to go into the market and purchase from the owners of the ground water rights the privilege of withdrawing water from the basin. If

they can acquire this water right at a cost less than that of constructing surface storage facilities, then they will have the availability of the basin's storage properties. The uppermost limits on the exchange price of ground water rights would be set by the alternative cost of imported water plus the cost of constructing surface facilities.

Under this type of an arrangement, the cost of water to the ultimate consumers would be substantially increased. From the consumer's vantage, an effective control would be placed upon the other limits of the price to be charged for ground water rights by private owners by the limitations of economic structure of the community—whatever is the maximum cost of water which can be borne by the consumer. Water, of course, would be available in the operational sense; the costs of production would remain within the realm of feasibility; but, much of the area's capital resources would be unnecessarily contained.

Public policy might warrant that neither the economic resources of the community should be allocated disproportionately to the production of water, nor, that the private owner of water rights be permitted to precipitate this undesirable situation. The windfall which would be realized by the private producer and owner of ground water might be against public policy. It is said that public policy requires the highest and best use of all water resources be made by the greatest number of users.[90] By operation of the market, some persons will benefit in a manner which might not have been within the contemplation of the philosophy of "reasonable and beneficial use." Further, there is always the possibility of breakdown in the market system when producers refuse to sell their water rights at any price.

B. Regulatory Controls

Superimposed upon the rights of private parties in the waters of the basin should be a regulatory scheme. This can be accomplished by one of three means:

(1) Use of mandatory-settlement agreement and exchange pool wherein the pool operative mechanisms are directed toward the conceptual distinctions between those who need the basin for storage and those who do not:

90. Cal. Const. art. XIV § 3. See generally Hutchins The California Law of Water Rights 12 (1956). See also Central Basin Municipal Water Dist. v. Fossette 235 Cal. App. 2d 689, 45 Cal. Rptr. 651, 657 (Dist. Ct. App. 1965).

(2) Reliance upon the discretion of the courts to enforce and adopt as their own policies such a distinction as (1) *supra;*

(3) Use of the administrative agencies, that is, such as the replenishment district, the Department of Water Resources, or other agencies, to allocate the use of the basin in (1) *supra.*

Under the settlement practices in (1) *supra*, parties would be allowed to incorporate in their settlement agreements solutions to ground water problems as they saw fit and in response to time limitations as they arose. It is submitted that existing exchange pool arrangements would only have to be modified to take into account the prior needs of the utilities for the basin; thus, making all other users of constant water needs, which can be satisfied by Metropolitan District waters, suscribe the total of their ground water rights to the other basin producers.

Under (2) *supra*, a more extensive analysis is not presently possible, other than to refer back to the opinion of the court in *California Water Service Company v. Sidebotham & Son, Inc.* There, the court noted that it was its duty to create, as well as enforce, physical solutions to ground water problems.[91] If the court can be prevailed upon to recognize the need for allocating use of the basin for storage purposes, despite the refusal of parties to enter voluntarily into a settlement agreement considering such a factor, then the court should have the inherent authority to effect such a solution.

Under (3) *supra*, the legislature could effect the necessary distinctions by amending existing water laws by drafting an additional article for the Water Code. A selected agency must be given the necessary authority to direct who, and under what circumstances, can use the ground water basins. Of the three solutions proffered, this may be the most satisfactory; it takes into account private rights to ground water and also ensures that there will be a public body with sufficient powers and continuing interest in the situation to provide an effective solution.[92]

C. State Ownership and Control

The ownership and control of waters should be vested in the state itself. This, of course, is the most radical of the three basic solutions offered herein. Such a position, however, is consistent

91. California Water Service Co. v. Sidebotham & Son, Inc., 224 Cal. App. 2d 715, 731-32, 37 Cal. Rptr. 1, 10-11 (Dist. Ct. App. 1964).

92. See generally Craine & Fox, *Organizational Arrangements for Water Development*, 2 Natural Resources J. 1 (1962).

with the view that waters of the state are being held in trust for the people, and that the greatest number of beneficial uses should be made of all available water supplies. That California, for example, does in fact own vast quantities of water is beyond question. In a recent application by the Central and West Basin Replenishment District for a permit to appropriate the waters being imported from the north of California, the Department of Water Resources denied the application on the theory that the water was owned by the state and therefor not available for appropriation.[93]

The extensive public interest in sufficient water supplies, and the benefits which could be achieved from coordinated ownership and control of these waters by the state, indicate that it would be a proper public use for the state to condemn private ground water rights. The somewhat impeding questions involved in the valuation of water rights could be resolved on the basis of either of these two possible alternatives:

(1) By compensating the ground water owner on the basis of the present worth of his right to future waters from the ground water basin.

(2) By allowing a transferable credit which could be used to offset the cost of waters purchased from the state under a guaranteed contract of delivery.

The second suggestion would operate in the following manner. What the ground water producer, or any water producer for that matter, wants is water in manner, time, quality, and cost which suffice to meet his water needs. It does not matter to him whether the water is allocated to him by the state, with a service charge made therefor, or whether he pumps the water from the ground water basin at the same final cost. Thus, if the cost of water service from the state is X dollars per acre-foot and he has been granted a yearly allowance of 12 X dollars, he is only required to pay, under his contract with the state, the difference between the total water service charge and his annual credit of 12 X dollars granted him in the condemnation action. The decisive factor, however, is that the state can either supply his needs by direct water service connection or allow him to pump his water service quantities from the ground water basin. Water producers who do not have water use credits would pay the full amount of all their water service deliveries. By this means, the state is able to allocate the use of the basin

93. Cal. Dep't of Water Resources, Second Biennial Report of the States Water Rights Board 13 (1963).

waters in a manner which would minimize the cost and maximize the efficiency of total water production from all available water resources.

CONCLUSION

The underlying problems of ground water production should not be viewed as disjointed occurrences. They should be seen as fragments of a continuum. The polarities of the problem are the adequate water supplies occurring by the natural process of the ground water basins as compared with increasing water needs necessitating the interjection of private and public controls to maintain a state of operational balance. That balance may be thought of in terms of the production of adequate water supplies at the lowest possible cost by utilization of the available natural counterparts of (1) capture, (2) distribution, (3) storage, and (4) marketing facilities.

Further problems in providing adequate water supplies at a feasible cost will arise as the disparity between water needs and water supplies increases. All of the private solutions have attempted to resolve the situation by allocating the right to pump from the ground water basin equally among all producers. No distinction has been made between those who need the basin as a storage facility and those whose needs may be satisfied by proper direct utilization of imported water supplies. At some reasonably forseeable time in the future, economic limitations upon the production of water supplies will require that such a distinction be made. Several alternatives are available for implementing this necessary distinction in practice:

(1) Allowing operation of the market to allocate the use of the basin storage facilities by those who need it;

(2) Superimposing upon private water rights a system of regulatory control which will allocate the basin facilities to those who need the storage area: (a) by relying on private settlement agreements; (b) by prevailing upon the courts to make this distinction of their own initiative, or (c) by amending existing legislation to provide the necessary powers for a state or local agency.

(3) Consolidating ownership and control of all state waters in the state.

The private settlement agreements have brought the management and production of ground waters closely in line with the operational maximization of coordinated usage with the imported

water supplies. The point in time when providing adequate water supplies for the southern California region will require conceptual distinctions not yet realized in these settlement agreements is approaching. Although private arrangements have proven satisfactory in the past, it is unlikely that they can cope effectively with the broadened scope of the problems of the future. Water production and the satisfaction of the water needs of the community require a coordinated dispensation of all available water source and storage facilities. To meet this requirement, the public interest requires that control be placed in an agency with the necessary power and responsiveness to the situation. Effective water regulation dictates that basic assumptions be reevaluated continually. Society has progressed far from the narrow view of the common law that:

> The good old rule sufficeth them,
> The simple plan,
> That they should take who have the power,
> And they should keep who can.[94]

But, the development of ground water concepts cannot be arrested; legal regulation of ground water resources must be redefined in context, taking into account technological advances and ever-increasing water needs.

94. Katz v. Walkinshaw, 141 Cal. 116, 128, 74 Pac. 766, 769 (1903).