LAW AND POLITICS OF GROUNDWATER IN ARIZONA

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One of the leading students of the water problems of Arizona once quoted an old saying to the effect that "Life ain't in holding a good hand, but in playing a pore hand well."[1] In Arizona the management of this "pore hand" of water which nature dealt out in its inscrutable wisdom determines the nature of life. Water is the critical factor in sustaining life and maintaining an economic base for an expanding population and industry. It has transformed otherwise worthless land into an agricultural, manufacturing, mining, and recreational empire. In view of its importance as the "key to the greater part of Arizona's modern development no aspect of its economic life merits greater attention."[2]

Indeed, no subject excites the attention of the community more readily than the water problem. The unending struggle over the waters of the Colorado River, the rapid decline in the water tables in the argricultural valleys, and actual shortages of water in some urban places have created an active concern and interest in water problems among the general public as well as among the public and private leadership groups within the state.

Public and private groups have eagerly sought new ways to increase the supply of water for its varied uses. But interest in regulation of the use of water in order to establish priorities of use, to control exploitation of the resource, or to redevelop an equitable system of apportionment of water appears to be lacking. Proposals to restrict the use of water meet with massive opposition from present users who contend that use of water should be restricted only to those now having water rights. As the chief publication of the Arizona farmer recently said editorially,

> The major road block in the way of statewide planning is that there is not enough water now to meet all the needs and demands for

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* See Contributors' Section, p. 269, for biographical data.

[1] Ariz. Agricultural Experiment Station 50th Annual Report 10 (1939) (Statement by R. H. Forbes).

[2] Balchin & Pye, *Recent Economic Trends in Ariz.*, 120 Geographical Journal pt. 2, at 161 (June 1944).

> water. Under present conditions—until much more water is available—even statewide planning probably calls for sacrificing the full development of one area for that of another.[3]

But if planning is difficult in times of shortages and maximum utilization, it is difficult to conceive of it during periods of plenty.

Nowhere is the unwillingness to restrict the use of water more clearly demonstrated than in the extraction of water from underground reservoirs. Owing to full utilization of the available surface water supply and the increasing need for water in an expanding economy, subsurface water has come to supply the preponderance of the water presently used in the state. In 1940 an estimated 1,500,000 acre-feet was pumped for irrigation; in 1953 this figure had increased to 4,800,000 acre-feet and has remained near the four million acre-feet figure annually since that time.[4] Approximately 95 per cent of all water used in the state is used in agriculture.[5] The result of this greatly increased pressure on the underground water resource has been a steady decline in the water tables. In the most important agricultural areas of the state, those located in the broad central valley north and south of Phoenix, the decline in the water table has been precipitous. From 1946 through 1955 the water table declined in some areas from 55 to 70 feet. The average lift for pumped water was 280 feet for the entire state in 1958 with the pumping lift varying from 50 feet in some areas to over 450 feet in the Maricopa-Stanfield area of Pinal County.[6] The rapid decline in the water tables in some areas has made it economically unfeasible for some operators to continue in agricultural production because of the excessive costs of bringing the water to the surface.[7]

The problem is serious but a solution is not readily obtainable. Constitutional, legal, political, and economic limitations of rather staggering proportions make any attempted solution difficult to achieve. It is to the analysis of these problems and the historical attempts to solve them that this paper is dedicated.

One of the most serious problems relating to the management of water resources is the imbalance between the scientific information regarding the resource and its environment and the methods of controlling its use. Such a discrepancy played a critical role in the early decisions rendered by policy-makers and courts regarding the ownership and use of ground water. Ground water was used for domestic

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[3] ARIZ. FARMER-RANCHMAN No. 6, at 4 (March 16, 1957).

[4] UNDERGROUND WATER COMM'N, THE UNDERGROUND WATER RESOURCES OF ARIZ., 66 (Jan. 1, 1953); ARIZ. STATE LAND DEP'T., PUMPAGE AND GROUND-WATER LEVELS IN ARIZ. IN 1955, at 8-9 (Phoenix, Oct. 1956).

[5] U.S. GEOLOGICAL SURVEY, ESTIMATED USE OF WATER IN THE U.S. (1955); U.S. GEOLOGICAL SURVEY CIRCULAR 398 (1957).

[6] ARIZ. AGRICULTURAL EXPERIMENT STATION, ARIZ. AGRICULTURE 5 (1959).

[7] The cash cost for water in the production of upland cotton varied from $13.50 for 4 acre-feet in the Salt River Project to $37.00 for the same amount in 350 foot lift areas. *Id.* at 8.

and stockwatering purposes early in territorial days, but it was not considered a fruitful source of large-scale agricultural development. In contrast with surface water, where the relationship between the public interest and water utilization was clear, ground water appeared to present no need for public control. It was generally agreed, moreover, that there was no relationship between the surface and underground water flow and water that percolated through the soil.

For these reasons the territorial government did not vest "percolating" water with a public character as it did with surface water. The Howell Code of 1864, which was Arizona's territorial constitution, entirely ignored the subsurface water in declaring that:

> All streams, lakes, and ponds of water capable of being used for the purposes of navigation or irrigation, are hereby declared to be public property; and no individual or corporation shall have the right to appropriate them exclusively to their own private use, except under such equitable regulations and restrictions as the legislature shall provide for that purpose.[8]

In 1919 the Legislature, for the first time, took action involving subsurface water when it included a provision within the State Water Code stating that water flowing "in definite underground channels . . . belongs to the public, and is subject to appropriation."[9] The Legislature did not define "definite underground channels" but it was assumed that there was a distinction between water flowing in such channels and water that percolated through the soil into relatively unmoving "reservoirs."

This distinction between water in underground streams and water that percolated through the soil was supported both by the common law and the decisions of courts throughout the west. Water in underground channels was generally governed either by the riparian rights doctrine or the arid region doctrine of prior appropriation, while percolating water was governed by the English common-law rule, which provided that "all percolating waters are considered a part of the soil where found, and, therefore belong absolutely to the owners thereof."[10]

The legal doctrines on which ownership and use in Arizona were based did not receive court sanction until 1904 in the case of *Howard v. Perrin*.[11] In this case, a squatter claimed the right to appropriate water from what he claimed was an underground stream. The landowner claimed title to the water on the grounds that it was percolating water and part of the realty. The two litigants agreed on the legal distinction between water flowing in subsurface channels and percolating water.

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[8] STATUTORY BILL OF RIGHTS, art. 22 (1864).
[9] ARIZ. SESS. LAWS 1919, ch. 164, par. 1, at 278.
[10] Kinney, *A Treatise on the Law of Irrigation* 2150-2153 (San Francisco, 1912).
[11] 8 Ariz. 347, 76 Pac. 460 (1904).

The court had to decide the factual question of whether the water was from an underground stream or was percolating water, and not whether the legal distinction was valid.

The decision of the Supreme Court of Arizona, later affirmed by the United States Supreme Court, declared the water percolating and not subject to appropriation.[12] It stated that surface and underground stream water was treated the same under the doctrine of prior appropriation. The distinction lay "between all waters running in distinct channels, whether upon the surface or subterranean, and those oozing or percolating through the soil in varying quantities and uncertain directions."

Arizona courts thus formally accepted the distinction between percolating and flowing water without regard to its ultimate impact on the economy of the state. One of Arizona's leading hydrologists, G. E. P. Smith of the University of Arizona, stated of this decision ". . . it was not the studied conclusion of the court that such division was in the interest of justice or was best suited to the physical and economic conditions in the Territory . . ." since the case did not involve extensive property or the welfare of the entire community.[13] Smith contended the court, in its responsibility to rule on the suitability of the common law doctrine governing percolating waters for Arizona, merely accepted what it found in other western states and territories. In his estimation, since the Territorial Legislature had laid down no rules, the court could have used the broadest discretion in establishing rules for the ownership and use of this valuable commodity.

The court continued to apply the rule of *Howard v. Perrin* in subsequent cases. In 1919 in the case of *McKenzie v. Moore* the Supreme Court of Arizona decided that a subsurface spring of water was not one of the sources from which water might be appropriated.[14] The court found such water percolating in nature and therefore part of the realty. Since there had been no mention of springs in the statutes, the doctrine of prior appropriation did not hold. Without proof that the water flowed in a definite channel, it was assumed to be percolating.[15]

In 1926 the supreme court decided the case of *Proctor v. Pima Farms Co.*, a case involving an entire river basin and agricultural lands totaling 14,500 acres.[16] The Pima Farms Company had purchased considerable land along the Santa Cruz River and had developed a wa-

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[12] 200 U.S. 71 (1906).

[13] G. Smith, *Groundwater Law in Ariz. and Neighboring States*, TECHNICAL BULLETIN No. 65, ARIZ. AGRICULTURAL EXPERIMENT STATION (Dec. 29, 1936).

[14] 20 Ariz. 1, 176 Pac. 568 (1919).

[15] Two months later the State Legislature, in passing the State Water Code, included springs in the category subject to appropriation and in 1921 changed it to "springs on the surface".

[16] 30 Ariz. 96, 245 Pac. 369 (1926).

ter supply for the land from pumps of large diameter and capacity. The Company sold the land to farmers and then supplied them with water from its wells. The pumping by Pima Farms imposed a heavy draft on the ground-water supply, resulting in a significant depression of the water and in the need to deepen the wells. Proctor, an early farmer in the area, sued to prevent the Company from lowering the water table, claiming the rights of a prior appropriator. He asserted the right to have such stream's level remain so that his "means of capture and diversion as originally installed will not be impaired . . . or to have the later appropriators deliver to him his water in such manner as to make it available for his uses."[17] Both Proctor and Pima Farms agreed that the source of water was an independent underground stream despite the fact that the water supply from which they pumped was over a mile in width and ran in no discernible channel or within any defined banks.

The court accepted the assumption of the parties that the body of water was an underground stream and therefore applied the doctrine of prior appropriation. The court stated, "If the first appropriator's rights are superior under the law, they should be made so in fact."[18] Pima Farms was required, therefore, to make available to Proctor water undiminished in quantity and quality and in a place equally accessible to him for diversion.

This decision reinforced the distinction between flowing and percolating subsurface water but appeared to extend the concept of an underground stream to water which was clearly not within banks and channels. Smith observed that "The description would fit most of the rivers of the state and would include most of the ground water supplies."[19] The decision further demonstrated the inability of the courts to deal with a subject concerning which they had little technical information or training.

In 1931 another opportunity to review ground water law arose in the case of *Maricopa County Municipal Water Conservation Dist. v. Southwest Cotton Co.* involving millions of dollars in property values.[20] The court recognized the importance of its decision for the future of Arizona and therefore treated the matter "as though it were of first impression in all respects."[21] After rehearing the water law doctrines from the early Spanish period and comparing them with the common law, the court found neither system of law determinative and considered the government of Arizona able to make whatever rules it so desired regarding ground water.

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[17] *Id.* at 100.
[18] *Id.* at 103.
[19] *Op. cit. supra* note 13, at 63.
[20] 39 Ariz. 65, 4 P.2d 369 (1931).
[21] *Id.* at 71.

The court first found that the Howell Code and subsequent legislation and constitutional provisions had not applied to percolating waters. Only surface waters were included in statutory enactments. On the other hand, since the Howell Code specifically provided that the common law was adopted when not inconsistent with the Constitution of the United States and the Bill of Rights of the Territory the common-law doctrines governing percolating water did apply and therefore made such water "the property of the owner of the land, subject to the rules of the common law."[22] The court held that since the Legislature never "specifically made percolating waters subject to appropriation, and, if we apply the usual rule of *'expressio unius'*, has very carefully excluded them therefrom."[23]

In thus reasserting the doctrine of *Howard v. Perrin*[24] the court contended that whether the doctrine of that case was *dicta* or not, "it has been accepted as the law of this jurisdiction for so long, and so many rights have been based on it, that only the clearest showing that the rule declared was error would justify us in departing from it." Since the Legislature had not upset the judicial finding, it was to be upheld.

The case involved the damming of the Agua Fria River by the Maricopa County Water Conservation District. Southwest Cotton Company argued that such damming caused a decline in the water available from its wells drilled on land bordering the stream below the dam. The Company asserted that the water in question was all part of a large subterranean stream and therefore subject to appropriation. The court, however, rejected the view of the Company, agreeing with the Conservation District that the water underlying the Cotton Company's land was percolating water and thus not available for appropriation like surface water. The Water District could dam the river and divert its flow regardless of the effects of such diversion on agricultural developments, unless the Company could prove that it had prior rights to appropriate water.

In contrast with the decision in the *Pima Farms*[25] case, the court took a very restrictive view concerning what was necessary to prove the existence of an underground stream. It required clear evidence of a channel, with well-defined bed and banks, and current, and a certainty of location. The presumption would be, without evidence to the contrary that underground water was percolating and therefore subject to ownership by the overlying land owners. The court refused to consider the question of the relative rights of users of percolating water coming from the same basin of underground water, but suggested two al-

[22] *Id.* at 79.
[23] *Id.* at 80.
[24] *Supra* note 11.
[25] Proctor v. Pima Farms Co., *supra* note 16.

ternatives: the strict rule of ownership by the overlying owners of the land or the doctrine of correlative rights.

Subsequent cases involving ground water did little to alter the legal situation. In *Fourzan v. Curtis*[26] the court decided that a spring which did not naturally provide water to the surface of the earth was not subject to appropriation since the Water Code made only springs on the surface subject to that law. In *Campbell v. Willard*[27] artesian water was considered as percolating water unless there was definite proof that the water had its origin in an underground stream. In the case of *Parker v. McIntyre*[28] the court declared that springs on the surface providing sufficient water to be put to beneficial use (in this instance for stock-watering) were subject to appropriation.

It was during the 1930's that concern for the conservation of underground water supplies first developed. Owing to the increased efficiency of pumps, higher prices for cotton and lower costs for power, ground water began to play an important part in Arizona agriculture.[29] Some saw the early need for settlement of the legal and policy questions surrounding ground water but their hopes for settlement were vain.[30]

In 1939 the Water Commissioner was able to win from the Legislature an appropriation of $10,000 for ground water investigations, to be undertaken in cooperation with the United States Geological Survey. The Commissioner recommended no substantive action on a code until a survey was completed, although he indicated that "quite a little interest" was being shown in a state code.[31] During the early 1940's proposals were introduced into the Legislature calling for the establishment of study committees for the writing of a code, and for the passage of a ground water code, but both of these measures died along the thorny legislative path.[32] As early as 1942 the Arizona Farm Bureau Federation called for a code.[33]

In 1944, after five years of investigation—as limitied as it was owing to inadequate financial support—by the U.S. Geological Survey, the State Land Commissioner (who had assumed the duties of the State Water Commissioner in 1943) informed the Governor that without a

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[26] 43 Ariz. 140, 29 P.2d 722 (1934).
[27] 45 Ariz. 221, 42 P.2d 403 (1935).
[28] 47 Ariz. 484, 56 P.2d 1337 (1936).
[29] G. Smith, *The Groundwater Supply of the Eloy District in Pinal County, Ariz.*, TECHNICAL BULLETIN No. 87, ARIZ. AGRICULTURAL EXPERIMENT STATION (June 1, 1940).
[30] Smith, *op. cit. supra* note 13, at 87; see also *Id.*, Introduction to Smith by Burgess.
[31] STATE WATER COMM'R, 11TH BIENNIAL REPORT 75 (1939-1940).
[32] ARIZ. H.R. JOUR., 15th Legis., 1st Spec. Sess. (1942) (H.R. 13); ARIZ. S. JOUR., 17th Legis., Reg. Sess. (1945) (S. 109); ARIZ. H.R. JOUR., 17th Legis., Reg. Sess. (1945) (H.R. 153, 190).
[33] See Gov. Osborne's Message to the Legislature, ARIZ. H.R. JOUR., 15th Legis., 1st Spec. Sess. 23 (1942).

ground water code "the agricultural development of the state can never be safeguarded against overdevelopment that will always threaten the return of certain areas to the desert."[34] He pointed out that speculators would open up marginal lands and threaten the existence of established irrigation districts unless a restrictive code was imposed. In 1944 the Arizona Agricultural Post-War Planning Committee of the Arizona State Resources and Planning Board, after considering the sizable growth of agriculture during World War II, confirmed this view, in saying that "abandonment of developed acreage appears inevitable."[35] The Committee recommended the adoption of a ground-water code, and the adjudication of all existing rights to water.

Governor Sidney Osborne time and again asked the Legislature for funds to finance an extensive underground water survey beyond what the Geological Survey was then engaged in, but until 1945 he was consistently turned down. It was the Central Arizona Project that finally tilted the scales in favor of legislative action. By 1945 the pressure for enactment of some kind of code increased with the first expression of views on the Central Arizona Project by the Bureau of Reclamation. The Bureau found the Project economically feasible and engineeringly sound, but was reluctant to approve such a project unless the State took action to control its own ground-water depletion problem. The Governor warned that the Project would not receive Bureau of Reclamation support without a ground water law.[36] This argument, in addition to the previous arguments, convinced all but those who maintained that the State could obtain water from the Colorado River without having to contract with the federal government that some law had to be passed.[37] The result was the passage of the Ground Water Act of 1945.[38]

The primary purpose of this act was to provide information on wells and to acquire data concerning the nature and extent of ground water in the State.[39] The act required that all persons owning and operating wells report such wells to the State Land Commissioner with certain information regarding their operation: depth, whether cased or not, the land on which the water was used, amount of water produced, etc.[40] No wells were to be drilled thereafter without a notice of intention to drill having first been filed with the Commissioner.

While the act did make the first faltering steps in providing infor-

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[34] STATE LAND COMM'R., 32ND ANNUAL REPORT 5 (July 1, 1943-June 30, 1944).
[35] POST-WAR PLANS FOR AGRICULTURE 6 (Feb. 1944).
[36] ARIZ. S. JOUR., 17th Legis., 1st Spec. Sess. 15 (1945).
[37] There were some who had maintained from the earliest attempts to utilize Colorado River water that early filings on the River were sufficient to give the State the right to divert water, without the approval of the federal government.
[38] ARIZ. SESS. LAWS 1945, 1st Spec. Sess., ch. 12.
[39] STATE LAND DEPT., A SUMMARY OF GROUND WATER LEGISLATION IN ARIZ., Bull. No. 301 at p. 7 (1954).
[40] ARIZ. SESS. LAWS 1945, 1st Spec. Sess., ch. 12, § 1.

mation about the rate of depletion, it did nothing to lessen the speed with which the water supply was being exploited. During the post-war period agriculture continued to expand under the stimulus of high prices; new lands were brought into production causing ever-increasing pressure on the water supply.

Between 1945 and 1948 several attempts were made to write and pass a restrictive ground-water code. The proposed code took various forms. One would have declared all ground water public property and would have given the State Land Commissioner the power to regulate the appropriation and use of water except in established irrigation districts.[41] Another would have adopted the correlative rights principle and would have restricted the pumpage of water on that basis.[42] A third would have declared all ground water not already subjected to use as public and would have restricted the utilization of these waters. All vested rights would have been protected with the public waters subjected to management by the State Land Commissioner on a sustained yield pumpage basis.[43] A fourth bill would have restricted public control to areas below 2500 feet in elevation.[44]

There were several bases for opposition to these proposed codes. Perhaps the most important source of opposition came from those who opposed any code at all. In spite of the State Land Commissioner saying that the irrigation farmers were "preponderantly in favor of legislation which would lead to the most beneficial utilization and protection of ground water resources"[45] a large segment of these farmers opposed a code in any form. Indicative of this attitude was the exclamation by one farmer in a legislative committee hearing in 1947. He said, ". . . who is going to tell me what to do and how to do it? If my land is destroyed through lack of water I want to destroy it myself; I don't want you [presumably the state legislators] to do it."[46]

Those who opposed any and all codes were generally the more recent developers of land through use of ground water. They would have had inferior rights under any scheme based on the doctrine of prior appropriation. While undoubtedly some were interested in a permanent livelihood on the desert, many were of the "suitcase" variety, willing to

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[41] ARIZ. H.R. 153, 1st Spec. Sess. (1945).
[42] ARIZ. H.R. 8, Reg. Sess. (1947). Under this doctrine, "owners of overlying lands have equal rights to the ground-water supply for use on such lands and each is entitled to an equitable apportionment if the supply is not enough for all." Hutchins & Wells, *Selected Problems in the Law of Water Rights in the West*, U.S. DEPT. OF AGRICULTURE MISCELLANEOUS PUBLICATIONS No. 418, 159 (Washington, D.C., 1942).
[43] ARIZ. H.R. 1, 18th Legis., 4th Spec. Sess. (1947).
[44] ARIZ. H.R. 2, 18th Legis., 6th Spec. Sess. (1948).
[45] STATE LAND COMM'R., 34TH ANNUAL REPORT 5 (July 1, 1945-June 30, 1946).
[46] Arizona Daily Star, Jan. 31, 1947, p. 1.

make an investment for short-term profits with full knowledge that the resource eventually would play out.

Some opposition developed to any arrangement in which farmers were treated in a discriminatory fashion with respect to administration of a code. In one form this meant that irrigation districts were in effect exempted from the code and in another form this meant that farming areas above a certain elevation would be exempted. It was felt that all should be regulated or all should be left alone. There were those who objected to what they called "dictation" by the Bureau of Reclamation in urging passage of a ground water code in return for Bureau support of the Central Arizona Project.

There were serious legal and constitutional problems involved in the proposed codes. Opinions ranged from those who thought the Legislature could declare all ground water in public ownership, and therefore subject to public control, to those who believed the Legislature was powerless to act to regulate what the courts had declared to be private property.

The primary support for the code came from the older irrigation farmers who saw their investments jeopardized by those whom they viewed as land speculators.[47] The *Arizona Farmer*, chief spokesman for the irrigation farmer, accused the opposition of being "ignorant and selfish" and called for early passage of a code.[48]

Meanwhile the Geological Survey continued compiling its survey data, which demonstrated the serious depletion of the underground water supplies in central Arizona.[49] The Survey found that under the then existing conditions, the annual safe yield was being exceeded in most of the heavily developed areas and in at least one locality by eighteen times the safe annual yield.

Governor Osborne was an ardent supporter of a ground-water code and was determined to see one passed. He assailed what he called the "forces of greed and destruction" who resisted passage of a code.[50] Failing to obtain action from the regular session of the Legislature in 1947, he called the Legislature back into session three times for the specific purpose of writing a ground-water code and finally was successful.[51]

The result of the Legislature's action, taken more in desperation

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[47] Arizona Daily Star, Feb. 6, 1948, p. 1.

[48] 26 ARIZ. FARMER No. 4, at p. 6 (Feb. 26, 1947).

[49] U.S. GEOLOGICAL SURVEY, GEOLOGY AND GROUND-WATER RESOURCES OF THE SALT RIVER VALLEY AREA, MARICOPA AND PINAL COUNTIES, ARIZONA (Feb. 4, 1947); U.S. GEOLOGICAL SURVEY, FURTHER INVESTIGATIONS OF THE GROUNDWATER RESOURCES OF THE SANTA CRUZ BASIN, ARIZONA (March 11, 1947).

[50] ARIZ. H.R. JOUR., 18th Legis., 2d Spec. Sess. 13 (1947).

[51] Other sessions were called in the meantime for other reasons. The third special session on ground water was the sixth special session of the biennium. A seventh was yet to come.

than from conviction, was the Ground Water Code of 1948 which everyone admitted was a stop-gap measure designed to slow down the rapid depletion of ground water but certainly not to solve the long-range problem of balancing agricultural development with the available water supply.[52]

The act declared it a matter of public policy "in the interest of agricultural stability, general economy and welfare of the state and its citizens to conserve and protect the water resources of the state from destruction, and for that purpose to provide reasonable regulations for the designation and establishment of such [critical ground-water areas] within the State."[53] The act defined critical ground-water areas as "any ground water basin . . . not having sufficient ground water to provide a reasonably safe supply for irrigation of the cultivated lands in the basin at the then current rates of withdrawal."[54] The State Land Commissioner, after obtaining information about the safe annual yield and the use of water in each basin, was authorized to designate critical ground-water areas. He could do so on his own initiative or under petition by users of ground water.[55] He was required to hold hearings and then make a decision which was conclusive as to facts unless appealed within a stated time.[56]

The importance of the designation of an area as critical lay in the power of the Commissioner to refuse to permit the construction of irrigation wells in those areas except under certain conditions. The Commissioner was required to grant the permit "except that no permit shall be issued for the construction of irrigation wells within any critical ground-water area for the irrigation of lands which shall not at the effective date of this act be irrigated, or shall not have been cultivated within five years prior thereto."[57] Clearly the intent of the act was to give the State Land Commissioner administrative control over the development of ground water in critical areas, to restrict its use to that land which was cultivated within a previous five-year period and to control the drilling of wells. Only the replacement and deepening of wells which had been in operation during the previous five years were to be permitted in critical areas.[58] Wells used for the purpose of stock

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[52] See editorial, Arizona Daily Star, March 27, 1948. Representative Murphy of Maricopa County, in a beautifully mixed metaphor, asserted the code was "as weak as restaurant soup and should have been sent from the Senate with crutches." Arizona Republic, March 26, 1948.

[53] ARIZ. SESS. LAWS 1948, 6th Spec. Sess., ch. 5, § 3.

[54] *Id.* § 2.

[55] *Id.* § 6b.

[56] *Ibid.*

[57] ARIZ. SESS. LAWS 1948, 6th Spec. Sess., ch. 5, § 8.

[58] STATE LAND DEPT., A SUMMARY OF GROUND-WATER LEGISLATION IN ARIZ., BULL. NO. 301 (1954); ARIZ. SESS. LAWS 1948, 6th Spec. Sess., ch. 5.

watering, domestic water supply, industry or transportation were exempted.[59]

The Code was designed to limit the acreage irrigated by means of ground water and to restrict the number of wells in these critical areas. Powerful opposition in the Legislature prevented the imposition of any restrictions on the quantity of water pumped from wells already in operation. The act specifically stated that "Nothing in this Act shall be construed . . . . to affect the right of any person to continue the use of water from existing irrigation wells or any replacements of such wells.[60] The act attempted to prevent expansion of agriculture by use of ground water and thus prevent more serious overdrafts, but did nothing to reduce existing overdrafts or to forestall "critical" water situations in other locations. Although some weakening provisions had been removed, such as local option, the obvious weakness of the law lay in the fact that the bill preserved the concept of private property for undergound water and imposed no restrictions whatever on the pumpage of water on land having a five-year history of cultivation prior to the effective date of the act. The doubts concerning the constitutionality of the act led to elimination of any provisions which would impose limits on pumping.

The objections on constitutional grounds were serious. Some contended that the act violated due process of law in that it was arbitrary use of the police power to interfere with private property. If the water was denied land owners, their land was worthless also, so that the act in fact diminished the value of their property.[61] It was also charged with being in violation of the equal protection of the laws clause of the U.S. Constitution and a comparable provision of the Arizona Constitution in that it failed "to regulate the use of underground water by present irrigation pumpers, while preventing land owners who do not have wells or pumps from drilling new wells."[62] It was further argued that the act conferred legislative authority on the State Land Commissioner because of its indefiniteness. The legal professional apparently felt that the law would be declared unconstitutional on any one or all of the above grounds.

The passage of the ground-water act occasioned a great deal of activity on the part of those who wanted to bring into cultivation new land prior to the operation of the act. Restrictions on drilling were not to apply until the State Land Commissioner had declared areas critical after public hearings. The Commissioner reported that the notices of intention to drill new wells "showed a material increase" much of which

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[59] ARIZ. SESS. LAWS 1948, 6th Spec. Sess., ch. 5, § 2.
[60] *Id.* § 16.
[61] See Kelso, *The Ariz. Ground-Water Act,* 1 WESTERN POLITICAL QUARTERLY No. 2, at 181 (June 1948).
[62] ARIZ. CONST. art. II, § 13; *Ibid.*

occurred "during the week preceding the effective date of the Ground Water Code of 1948."[63] The first critical area, near Eloy, was not so designated until April 4, 1949, and other areas in the State were not designated critical until 1951 and later.[64] Meanwhile, landowners could continue to construct wells in water-short areas.

The ineffectiveness of the Code is amply demonstrated by the statistics on pumped water and land under cultivation during the years immediately following passage of the Code. With the continuation of the drought, ground water became even more important to Arizona each year. The State Land Commissioner reported the following amounts pumped for the years 1949-1954: 1949: 3,250,000 acre feet; 1950: 3,500,000 acre-feet; 1951: 3,680,000 acre-feet; 1952: 3,750,000 acre-feet; 1953: 4,800,000 acre-feet.[65] The decline in surface water and the practice of double cropping accounted for some of the increase. But the effect of new lands on pumpage can be measured by the increase in irrigated acreage from just under 1,000,000 acres in 1949 to nearly 1,300,000 acres in 1953.[66]

The Land Commissioner was given insufficient money to provide adequate supervision of critical areas. Violations were reported but apparently went unpunished.[67] It was quickly realized that Governor Osborne's expressed belief that it would be necessary only to spread the ground-water supply over a ten or twelve year period until supplementary water was obtained from the Colorado River was vain.[68] The Central Arizona Project had twice failed in Congress and litigation appeared to be the only means of securing water from the Colorado. If the ground-water base were to be protected there would have to be more stringent restrictions imposed on use of ground water. The Geological Survey continued to warn of the rapid decline in the water tables in Central Arizona and the higher costs, lower yields, and poor quality of water resulting from these declines.[69]

Soon after the passage of the 1948 code another attack was made on the theory of private ownership of percolating water in the case of

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[63] STATE LAND COMM'R, 36TH ANNUAL REPORT 6 (July 1, 1948-June 30, 1949).

[64] See STATE LAND DEPT., A SUMMARY OF GROUND-WATER LAW IN ARIZ., BULL. No. 302 at p. 18 (1957) for dates when all areas were declared critical.

[65] See the annual reports of the State Land Comm'r. for fiscal years 1950 through 1954.

[66] Reported in ARIZONA AGRICULTURE, the annual report of the condition of the state's agriculture by the Agricultural Experiment Station, Tucson. See the reports for 1950 and 1954, Bulletins 226 and 253. If the span of years included 1947 and 1948 it would show an increase of nearly double the acreage, from approximately 700,000 acres in 1947.

[67] Ben Avery of the Arizona Republic asserted the only attempts at enforcement involved the writing of letters. Arizona Republic, March 19, 1953.

[68] ARIZ. H.R. JOUR., 18th Legis., 4th Spec. Sess. 11 (1948).

[69] U.S. GEOLOGICAL SURVEY, PUMPAGE AND GROUNDWATER LEVELS IN ARIZONA (1952); U.S. GEOLOGICAL SURVEY, GROUND WATER IN THE GILA RIVER BASIN AND ADJACENT AREAS, ARIZONA—A SUMMARY (1952).

Bristor v. Cheatham,[70] filed in the Superior Court of Maricopa County. This case involved two landowners who pumped from a common underground water supply. Bristor, the earlier user, had used his water for domestic purposes. Cheatham and others later installed powerful pumps to extract water for agricultural purposes, causing a decline in the water table; in fact, Bristor's well went dry. Bristor sued Cheatham on the grounds that Cheatham was pumping from a common supply and transporting the water from the land where they were pumped to other lands for agricultural purposes, in violation of what Bristor argued was the rule regarding ground waters. It was contended that the water could be used only on the land from which it was pumped and could not do injury to others who shared in the same supply. Bristor, in effect, argued for a form of the correlative rights theory as it had been adopted in the neighboring state of California. Cheatham contended that the absolute English rule applied, that the overlying land-owner could do with ground water as they pleased.

The case excited a great deal of attention throughout the state and occasioned the entrance of several important legal firms who represented some of the most important interests in the state.[71] These filed briefs as *amici-curiae* on both sides of the case. Significantly, a number of these friends of the court rejected both legal doctrines presented by the litigants and argued in lengthy briefs in favor of the doctrine of public ownership. They took the position that the ground-water situation could be reversed only if ground water were declared public property and if the Legislature were provided a firm legal base to apportion the remaining water supply in some equitable way.

On November 14, 1949, the Superior Court of Maricopa County granted Cheatham's motion to dismiss Bristor's causes of action. On December 29, 1949, Bristor filed a motion for appeal and the case was put in the lap of the Arizona Supreme Court on Feb. 10, 1950. The difficulty the court had in deciding this case is indicated by the fact that it did not reveal its decision until January, 1952, nearly two years after receiving the case.

In the fall of 1951 Governor Pyle appointed a committee to study the ground-water situation and to recommend methods of strengthening the Code, which, he said, "everyone admits is shot full of loopholes and virtually ineffective."[72] This committee consisted of some of the leading figures in the agricultural industry in the State. The group met several times with technicians in the field of hydrology, studied available information and held several open hearings during the fall months. After

[70] 73 Ariz. 228, 240 P.2d 185 (1952).

[71] For example, the Salt River Valley Water Users Association, Goodyear Farms and the Central Arizona Project Association.

[72] Arizona Republic, October 12, 1951, p. 1.

much deliberation, the committee recommended to the Governor a program which called for a reversal of previous policy on ground water. Their report advocated declaring ground water in public ownership and adopting the rule of prior appropriation with some modifications toward the principle of correlative rights.[73] All ground-water basins would be classified on the basis of the relationship of total pumpage to total supply of the basin. Some would be closed to further drilling of wells when the overdraft was excessive, some would be restricted, and others would be unregulated when there was no existing or potential imbalance in pumpage and supply. A complicated schedule operating on the basis of a combination of rights based on the prior appropriation principle and the correlative rights principle would determine the amounts of water to be withdrawn, depending on the condition of the ground-water basin.

The recommendations were transmitted to the 1952 session of the Legislature by Governor Pyle, but without his approval and with his suggestion that the Legislature was free to make its own decision.[74] It was in this situation that the supreme court delivered its opinion in *Bristor v. Cheatham*.[75] The court, by a three-two margin, declared all ground water public property and subject to the rule of prior appropriation.

The court majority took the remarkable position that previous decisions of the court in distinguishing between percolating and underground stream water were erroneous. It dismissed the doctrine of *Howard v. Perrin*[76] as *dicta* and the doctrine of the *Southwest*[77] case (including the rule of *stare decisis*) by stating that it would be "more harmful to the public at large," to follow the rule, "than to overrule precedent and establish a sound principle.[78] The court held that the nature of percolating water had been decreed by the Desert Land Act,[79] which declared that the "right to the use of water by the person so conducting the same, on or to any tract of desert land . . . shall depend upon bona fide prior appropriation. . . ."[80] The supreme court maintained that by this act, Congress dedicated "to the public all interest, riparian or otherwise, in the waters of the public domain,"[81] and abrogated the common-law rule in respect of riparian rights as to all lands settled upon or entered after March 3, 1877. It cited the decision of the Supreme Court of the United

[73] For the best available summary of the committee's recommendations, see Arizona Republic, Nov. 2, 1951, p. 1.
[74] Ariz. H. R. Jour., 20th Legis., 2d Reg. Sess. 14 (1952).
[75] 73 Ariz. 228, 240 P.2d 185 (1952).
[76] 8 Ariz. 347, 76 Pac. 460 (1904).
[77] 39 Ariz. 65, 4 P.2d 369 (1931).
[78] Bristor v. Cheatham, *supra* note 75, at 234, 240 P.2d at 189.
[79] 9 Stat. 377, 43 U.S.C. § 321 (1952).
[80] *Ibid.*
[81] Bristor v. Cheatham, *supra* note 78.

States in upholding the constitutionality of the Desert Land Act in which that court stated that the act held that all water not navigable was severed from the land "free for the appropriation and use of the public. . . ."[82]

As long as the public character of the water supply was maintained, stated the Court, the states and territories were free to make their own rules for using the water supply. No legislative enactment was necessary to invest ground water with a public character. Inaction by the Legislature in failing to specify the steps necessary for the appropriation of ground water did not divest the water of public character, even though the Legislature had prescribed steps for other waters.

The majority was concerned with the impact of its decision on the economy of the State and rights of individuals. Noting that counsel for Cheatham had argued that "citizens throughout the state relying upon the decision in that [*Howard v. Perrin*] and subsequent cases, have spent large sums of money and that they therefore have vested rights which must be recognized,"[83] the court replied that "the vested rights of the users of percolating waters since the decision in the *Howard v. Perrin* case are more fully protected under the law of prior appropriation than under the so-called common-law rule.[84] The court saw "inevitable exhaustion of all underground water in the State of Arizona if the rule of private ownership . . . is still held to be law,"[85] since such a rule would put pumping beyond the power of the Legislature to regulate. The court believed the only feasible way to control the execessive pumpage was to give preference to those with priority of use, and thus make all later appropriators subject to the availability of water to prior users. Public ownership would permit the writing of reasonable rules by the Legislature.

The dissenting opinions disagreed on the law and on the predicted effects of the decision. One dissenter compared it to the "dropping of a gigantic atomic bomb in our midst" which would "destroy and wipe out all rights and investments that have been acquired by the expenditure of millions of dollars and industry of thousands of citizens."[86] The later appropriators would be put at the mercy of the prior appropriators who would be fully protected by the decision. Persons who had drilled wells within the last five, ten, or perhaps fifteen years would have to close down operations whenever a prior appropriator demonstrated that the ground-water supply had diminished to his detriment. The dissenters held out the prospect of endless litigation and literal destruction of a

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[82] Calif.-Ore. Power Co. v. Beaver Portland Cement Co., 295 U.S. 142 (1934).
[83] Bristor v. Cheatham, *supra* note 75, at 233.
[84] *Id.* at 234.
[85] *Id.* at 235.
[86] *Id.* at 243.

good share of Arizona agriculture since almost every well had some effect on the ground-water level in an area.

The dissenters believed the court had no right to upset what had been settled law since the *Southwest Cotton Company* case.[87] They argued that the court had misconstrued the Desert Land Act, for that act, they claimed, did not dictate the method of appropriation for the western states, but gave each state the option of adopting the prior appropriation doctrine for all its water or the common-law doctrine of any combination of the two it might choose. Arizona, by omission on the part of the Legislature, and by positive declaration by the courts, had adopted the common-law rule for percolating waters. The dissenters asserted there was power under which the Legislature could enact regulatory legislation. They suggested various lines of approach, including the doctrine of reasonable use and the exercise of the police power. One justice suggested the correlative rights doctrine as a method of sharing ground water among those in the same basin.

The decision of the supreme court met with a violent reaction among those who felt they faced ruin from the decision, even including threats of personal harm to the justices of the supreme court. The court was subjected to attacks by various spokesmen for the opponents of public ownership, particularly in Pinal County where the water situation was most serious. The farmers there contended that effects of the decision were immediate in that cotton-ginning companies, banks, and other institutions were refusing financing.[88] Luncheon clubs and chambers of commerce meetings heard predictions of impending doom for Arizona's agricultural economy.[89] Meanwhile the attorneys for Cheatham prepared briefs in hope of obtaining a rehearing of the case.

The advocates of a strong ground-water code took heart from the decision and felt the way cleared for positive action during the 1952 legislative session.[90] Heads of prominent banks cautioned against unjustified "scare" talk, asserting that their lending policies remained the same. They feared that the "campaign of fear and hysteria" would frighten away outside investment capital on which Arizona banks depended.[91] The officials of the Salt River Valley Water Users Association called for support of the decision and ordered its attorneys to prepare for a continuation of the fight for public ownership of underground water.[92] It

[87] An interesting feature of this case was that former supreme court Justice Lockwood, who wrote the opinion of the court in Maricopa County Municipal Water Conservation Dist. v. Southwest Cotton Co., 39 Ariz. 65, 4 P.2d 369 (1931), recommended reversal of his own opinion. His views followed closely the arguments presented by the majority opinion above. Arizona Republic, Jan. 24, 1952, p. 1.

[88] Arizona Republic, Jan. 16, 1952, p. 1.

[89] *Id.*, Jan. 18, 1952, p. 1; Jan. 20, 1952, p. 1.

[90] Arizona Daily Star, Jan. 15, 1952, p. 1.

[91] Arizona Republic, Jan. 22, 1952, p. 1.

[92] *Id.*, Jan. 31, 1952, p. 1.

also pressed for immediate passage of a ground-water code. Many of the leading irrigation districts held meetings and instructed their attorneys to prepare new briefs upholding the court's decision.[93]

With the appeal for a rehearing before the court and rumors rife that one justice had had a change of heart, the Legislature was reluctant to take up a ground-water code in the 1952 session.[94] Governor Pyle's committee on ground water, finding support for its recommendations in the supreme court decision, modified its original recommendations to fit the decision.[95] Governor Pyle sent the revised recommendations to the Legislature with a notable lack of enthusiasm.[96] Pyle previously had championed a strong ground-water code, and one observer saw Pyle's attitude an attempt to maintain good relations between himself (a Republican) and the Democratic leadership of the Legislature which was known to oppose a strong code.[97]

The leadership of the Legislature apparently had decided already against passage of a new code, with or without the support of the Governor.[98] The opponents of a new code introduced a bill which authorized the appointment of a commission by the Governor for the purpose of making a study of the underground water situation.[99] The supporters of this bill argued that the previous committee had done its work too hastily and that it based its conclusions on inadequate and inaccurate information.

It was at this point that the supreme court granted a rehearing in *Bristor v. Cheatham* and stated that a new opinion was being written. The granting of the rehearing in effect nullified its original decision and indicated that the court was going to reverse itself. It was assumed that the court was going to declare percolating water in private ownership. This change of heart made impossible passage of a code in 1952.

The Legislature went through the motions of holding hearings on a new code and on the bill to create a new study commission. They listened to the testimony of hydrologists, geologists, and representatives of the farm organizations. The opponents of the supreme court's original decision and a stronger code vigorously supported the study commission bill.[100] The code bill died in committees but the study commission bill was passed with heavy majorities in each house. One amendment was

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[93] *Id.*, Feb. 4, 1952.
[94] Arizona Daily Star, Jan. 18, 1952, p. 1.
[95] *Id.*, Feb. 2, 1952, p. 1.
[96] *Id.*, Feb. 12, 1952, p. 1.
[97] *Id.*, Feb. 11, 1952, p. 1; April 23, 1952, p. 14-B.
[98] The Speaker of the House was reported to have said there would be no new code as early as Jan. 26, 1952. Arizona Republic, Jan. 26, 1952, p. 1.
[99] ARIZ. S. JOUR. 20th Legis., 1st Reg. Sess. (1952) (S. 56).
[100] Arizona Republic, Feb. 19, 1952, p. 1. Pickrell of the Salt River Valley Water Users Association described the hearings as "more of a farce than anything else." *Accord,* Arizona Daily Star, Feb. 19, 1952, p. 1.

added which bowed toward the ground-water problem in that it prohibited pumping from wells in critical areas which were not completed prior to the effective date of the ground-water act.

It was in this confused situation that the Underground Water Commission took up its duties. No one was quite sure of the legal nature of ground water; restrictions were in existence in regard to the development of new land by ground water and the pumping from illegal wells in critical areas, but there was little real possibility of enforcement.[101] There were serious doubts in many circles, particularly in the legal profession, that any code would be constitutional in view of the supreme court's expected reversal.[102] The *Arizona Farmer* lamented:

> But precious little sense has ever been displayed in dealing with ground water. Every move toward conservation, toward recognizing and confirming the rights of the first ground-water users, has been blocked by the pump-and-run boys. They are able to make more noise and throw up a bigger stink than anybody else. Apparently they are to have their own sweet way until all the water is gone. Then what?[103]

The act creating the Underground Water Commission stipulated that all members of the Commission were to be farmers on the presumption that the farmers then would not have any excuse for failing to pass some kind of code the next year.[104] In the appointment of members the Governor was apparently favorably disposed toward those who opposed a stringent code. The Farmers' Protective Association, representing opponents of previously proposed codes, made available to the Governor a list of names from which he might choose.[105]

The Commission held numerous hearings throughout the State during 1952 and gathered voluminous testimony from farmers on their water problems. The testimony indicated a wide disagreement on the nature of regulation desired and even on the question of whether there should be any regulation at all. Many expressed dissatisfaction with the 1948 Groundwater Code. A large number of farmers wanted the economics of agriculture and pumping to determine the manner in which the underground water resources were exploited, untrammeled by "bureaucrats" or "politicians" appointed by the Governor. If some regulation was desirable, a large number wanted it by local option and under local

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[101] Officials of the State Land Department were dubious about its enforcement. One said the Code would require a policeman by every well. Another said it could be enforced but that no one really wanted it enforced.

[102] Arizona Republic, Feb. 28, 1952, p. 6.

[103] 31 ARIZONA FARMER, No. 8, at 2 (April 12, 1952).

[104] The Speaker of the House stated, "I don't think they are going to want a code any more next Jan. 1, than they do now, so let's not leave them any loopholes to complain." Arizona Daily Star, March 8, 1952, p. 1.

[105] 31 ARIZ. FARMER No. 8, at 2 (April 12, 1952).

administration. A few called for regulation on a priority basis with strong enforcement powers, but these were clearly a small minority.[106]

The Underground Water Commission made its report on January 1, 1952, recommending the adoption of the correlative rights principle as the basis for regulation, in order to provide "an equitable apportionment of water among all present legal users in over-developed areas."[107] It recommended the closing of over-developed areas to further pump irrigation, the creation of districts for local determination of necessary cut-backs in pumping, provision for industrial or municipal acquisition of water rights by means of purchase, and the establishment of a commission to administer the law.

The reaction to the proposals of the Commission varied. The *Arizona Daily Star* said the report indicated that the Commission had bowed to the heavy pressure of the agricultural spokesmen. It said the local option arrangement "would be like the patient deciding to what extent the surgeon should operate. There would be the very human desire to avoid surgery entirely . . ."[108] The *Arizona Republic* called the report "realistic" and felt that it should "convince the Legislature that no stone has been left unturned to find out what situation the State faces or what should be done about it."[109] Everyone agreed with Governor Pyle that nothing concrete could be done until the supreme court gave its decision on ground water.[110]

The supreme court finally made public its reversal of opinion in March 1953.[111] It is necessary only to rehearse briefly the arguments of the court and the new dissenters. The reconstituted majority asserted that the common law regarding percolating water had prevailed in Arizona and had not been contravened by federal law. It again pointed out the police power as "possibly the only source of power the legislature possesses . . ."[112] It did not specify the manner and extent to which the Legislature might exercise that power since that question was not before the court.

In dealing with the common-law rule, the court adopted the doctrine of reasonable use and specifically rejected the doctrine of correlative rights. The reasonable use rule required that all water pumped from underground be used on owners' lands to the extent necessary to improve those lands; the water must be used in a manner reasonable to the needs and requirements of the land.[113] The reasonable use doctrine

[106] UNDERGROUND WATER COMM'N., THE UNDERGROUND WATER RESOURCES OF ARIZONA, Jan. 1, 1952, app. C, *passim*.
[107] *Id.* at 3.
[108] Jan. 14, 1953, p. 1.
[109] Jan. 13, 1953, p. 6.
[110] *Id.*, Jan. 11, 1953, p. 1.
[111] Bristor v. Cheatham, 75 Ariz. 227, 255 P.2d 173 (1953).
[112] *Id.* at 234-35.
[113] Kenney, *op. cit. supra* note 10, at 2160.

requires no apportionment, but only reasonable use, even though pumping might damage another water user. The court withheld judgment regarding what constituted reasonable use in order that decisions might be made in individual cases in terms of particular circumstances.

The new dissenters derided the confidence of the majority in the use of police power, contending there was no legal authority anywhere in the country for using this power in state-wide regulation of the water supply. They predicted "that the mad race to 'mine' percolating waters which are our greatest natural resource will continue unabated until such times as these waters are declared to be public in character and suitable regulatory measures are adopted."[114]

With the Legislature near the end of the 1953 session, there was little hope for passage of a new code. Therefore the Legislature passed Senate Bill 107 which established restricted areas which were closed to agricultural development by means of ground water and prohibited the drilling of new wells in these areas until March 31, 1954. These restricted areas were virtually the same areas that had already been declared "critical" under the 1948 Code by the State Land Commissioner. The life of the Underground Water Commission was extended to the above date for the purpose of recommending definite measures to solve the water problem in light of the court's new opinion.[115]

The Commission deliberated during the next months in preparation for the 1954 legislative session. During 1953 there was a tremendous increase in pumping, amounting to over 1,000,000 acre-feet over 1952. Opinion continued divided on the question of means of controlling the exploitation of the ground-water basins. This division crystalized further with a superior court decision late in 1953 which ruled that the Groundwater Code of 1948 was unconstitutional.[116] Further doubt was thus thrown on legislative efforts to curb pumping.

With the opening of the Legislature in 1954 the Underground Water Commission recommended a code to the Governor which followed closely its recommendations of the previous year. Water conservation districts would be established to determine the necessity of and the extent of reductions in pumping. Vested rights would be guaranteed. All critical areas then existing would be closed for drilling wells. New critical areas could be designated by a newly established commission or on petition by

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[114] Bristor v. Cheatham, *supra* note 111, at 243. Newspaper opinion was sharply divided on the reversal. Many felt that the new decision virtually precluded regulation of ground water. The Arizona Republic, March 15, 1953, p. 1, opined that economics would be the means of control thereafter. Some felt it a blow to the Central Arizona Project since regulation was required in order to get supplementary water from the Colorado River. *Ibid.* Others felt the decision made all existing laws on ground water unconstitutional.

[115] ARIZ. S. JOUR., 21st Legis., 1st Reg. Sess. (1953) (S. 109).

[116] See Arizona Daily Star, Dec. 6, 1953. The issues of this case are discussed in Southwest Engineering Co. v. Ernest, 79 Ariz. 403, 291 P.2d 764 (1955).

the land owners in an area.[117] The Governor gave only tentative support to these recommendations in view of the unsettled legal situation.[118] He urged the continued support of the Underground Water Commission so that it might make whatever alterations were necessary in light of subsequent court decisions.

Like its predecessors, this version of a code received indelicate treatment from the Legislature. Each interest sought exemption from any code that might be adopted or demanded the right to construct supplementary wells when others played out.[119] Strategically located legislators prevented action in legislative committees.[120] Efforts by the Governor, Lewis Douglas (former ambassador to Great Britain and one of the State's leading citizens), and some legislators availed nothing. A complete impasse was reached.

The only hope of preventing a further deterioration in the situation lay in extending the prohibitions already in existence. House Bill 367 was the answer, providing for the continued life of the Underground Water Commission for one additional month and an extension of the prohibition on drilling wells in critical areas for one year more. This passed both houses by heavy majorities. The Governor signed this bill, but severely rebuked the Legislature for its unwillingness to correct the ground-water law. He accused the mining companies, the farmers, and the municipalities of each contributing to the defeat of the code by their demands for exceptional status. He alleged that a "few rail-perched lobbyists . . . are more effective in wrecking useful legislation than the 99 members of the 21st legislature are in passing it."[121] With this message ringing in their ears and with threats of a special session being given widespread currency, the Legislature went back to work to appease the Governor.

The renewed effort again proved vain. Senate Bill 135 passed by large majorities in both houses only to keep the Governor from calling a special session.[122] This bill transferred the duties of the Underground Water Commission to the State Land Commissioner, confirmed existing critical areas, provided for the establishment of enlarged critical areas after hearings by the State Land Commissioner, prohibited the issuance of permits for new wells for the purpose of irrigating lands not already under cultivation in critical areas, and prohibited the use of ground water for irrigation in violation of either the 1948 Code or the 1953

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[117] ARIZ. S. JOUR., 21st Legis., 2d Reg. Sess. (1954) (S. 90).
[118] ARIZ. S. JOUR., 21st Legis., 2d Reg. Sess. 15 (1954).
[119] Arizona Daily Star, Feb. 16, 1954 (editorial); *id.*, Feb. 16, 1954, p. B-1; *id.*, Feb. 25, 1954, p. B-12 (letter by R. H. Forbes).
[120] *Id.*, March 25, 1954, p. 1.
[121] ARIZ. H.R. JOUR., 21st Legis., 2d Reg. Sess. 654 (1954).
[122] Ariz. Daily Star, April 11, 1954, p. 1.

amendment. The Governor allowed this bill to become law without his signature, declaring to the Legislature:

> I could never sign such legislation as this, representing as it does, a sorry, weak, and confused ending to a two-year struggle for an adequate underground water code to protect our entire economy against the dangers of dwindling water supplies.[123]

Ironically, that same month of April 1954, when the Legislature completed its rout of ground-water legislation, was declared "Conservation Month" by Governor Pyle.[124]

Legislative action on ground water virtually ceased in 1954. Governor McFarland, coming to office in 1955, barely mentioned water problems in his address to the Legislature and no bills of any general significance were introduced.[125] The State Land Commissioner continued to hold hearings and designate new and enlarged critical areas during 1954 and 1955,[126] but none has been created since that time. Hearings have been held regarding the creation of a critical area in the McMullen Valley, where considerable agricultural development has taken place, but no action was taken.[127]

It was in 1955 that the case of *Southwestern Engineering Co. v. Ernst* reached the state supreme court.[128] Southwestern Engineering Co. had applied to the State Land Commissioner for a permit to construct a well on land within a critical area which did not have a history of cultivation prior to the passage of the Groundwater Code. The Commissioner denied the application and the Company then sued to enjoin the Commissioner from preventing the construction of the wells.

The primary argument of the Company was that the waters under their property were percolating and therefore part of the soil and subject to whatever use might be made of it. It argued that the Groundwater Code amounted to a deprivation of property without due process of law and without just compensation. It further argued that the classification involved in the Code was arbitrary and unreasonable and therefore violated the equal protection clause of the 14th Amendment to the Federal Constitution since the classification was not reasonably related to the purpose for which the Code was passed. The Code allegedly discriminated among persons within a single class, the distinction between present and potential users being unwarranted. Finally, the Company contended the Act was unconstitutional for want of definiteness and gave the Land Commissioner law-making power.

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123 ARIZ. H.R. JOUR., 21st Legis., 2d Reg. Sess. 760 (1954).
124 Arizona Daily Star, April 13, 1954, p. 12-B.
125 ARIZ. H.R. JOUR., 22d Legis., 1st Reg. Sess. (1955).
126 STATE LAND DEPT., A SUMMARY OF GROUNDWATER LAW IN ARIZONA, BULL. No. 302 at 18 (1956).
127 STATE LAND DEPT. 46TH ANNUAL REPORT 25 (July 1, 1957-June 30, 1958).
128 79 Ariz. 403, 291 P.2d 764 (1955).

In considering these arguments, the court found it necessary to review the meaning of the police powers of the state in regard to the rights of property. After reviewing numerous cases, the court said:

> We are of the opinion that there is a preponderant public concern in the preservation of the lands presently in cultivation as against lands potentially reclaimable, and that whereas here the choice is unavoidable because a supply of water is not available for both, we cannot say that the exercise of such choice, controlled by considerations of social policy which are not unreasonable, involves a denial of due process.[129]

The police power, then could be used to restrict property rights in water because of the needs of "social policy."

Although admitting the distinction between present and potential users was an unusual classification, the court said that this was sufficient to invalidate the Code since the classification had a rational basis. All occupations called by the same name did not have to receive the same treatment under this constitutional standard since there were sound reasons for the distinction, reasons involving protection of the community against economic loss. The court further asserted that the application of the restrictions of the Code to people within critical areas and not to those outside these areas was constitutional and a reasonable classification related to the conditions existing within the state.[130]

The court accepted the argument that a law must not be so "vague, uncertain and incomplete" that reasonable men could not agree on the law's meaning and application, but found that there was sufficient certainty concerning the principles to be used in the determination of critical areas and the procedures to be followed. The court stated that it was a well settled principle that the legal consequences expressed in the law could take effect upon the determination of a fact or condition by an administrative agency. The complexity of the ground-water problem required that the responsibility for the determination of the facts be delegated to an administrator.

The lone dissenter in this case was the writer of the original decision in *Bristor v. Cheatham.*[131] He contended that the law violated the due process clause in denying the exercise of rights of property. He maintained that the classification was unreasonable since it did not in fact promote the stated purpose of conserving ground water. He argued that the law in no way restricted pumping so that the alleged purpose of the law was not served by its classifications.

More recent developments, while not challenging the constitutionality of the Code, have further raised questions concerning its useful-

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[129] *Id.* at 410, 291 P.2d at 769.
[130] *Id.* at 413, 291 P.2d at 771.
[131] 73 Ariz. 228, 240 P.2d 185 (1952).

ness. The prohibitions against the drilling of new wells in critical areas, except for replacement and deepening, expired in 1955 when the Legislature failed to extend them in revising the State Code. In November 1956 the supreme court, in the case of *Ernst v. Collins*, decided that the State Land Commissioner had the authority to issue licenses to construct new wells only in the event that it was necessary to replace a failing well in a critical area.[132] In May 1957, however, the court permitted the construction of a new well in a critical area even though it was clearly not a replacement of an existing well. In the case of *Vance v. Lassen* the court said that since the Legislature failed to re-enact the prohibition on well drilling, a well could be drilled to provide water for lands in cultivation during the qualifying period.[133] The Land Commissioner was required to issue the license. There was no limit, therefore, on the number of wells which can be dug in the critical areas which have a history of cultivation five years prior to 1948.

In 1960 the supreme court further weakened the Code in the case of *State ex rel. Morrison v. Anway* in which the court stated that a landowner could transfer the application of ground water from a parcel of land having a history of cultivation prior to the effective date of the 1948 Act to a parcel of land not having such a history.[134] While it appeared to the State Land Department that the Code forbade expansion of the acreage developed by ground water, the court said this was only an implication drawn from the Code and the court could not expand the statute.

On the legislative side, the Legislature, with the support of the State Land Department, passed an amendment to the Code which permitted land to be irrigated by ground water in critical areas when it had had a history of cultivation five years prior to the creation of the critical area.[135] Land which was brought into cultivation as late as 1955 in some instances can be irrigated with ground water, in spite of the original purpose of limiting agricultural development in critical areas to that land in cultivation prior to 1948.

The irrigated acreage in the state declined between 1955 and 1957 in part because of the increased costs of pumping water from greater depths. In 1958, however, agricultural acreage began to expand again, partly as the result of new areas brought into cultivation such as Harquahala Plains, Salome, Wenden and others. These areas are almost entirely dependent on ground water and have not yet been declared critical since they are only recently developed. The 1948 Ground Water Act does not afford these areas protection against overdraft.

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[132] 81 Ariz. 178, 302 P.2d 941 (1956).
[133] 82 Ariz. 188, 310 P.2d 510 (1957).
[134] 87 Ariz. 206 (1960).
[135] ARIZ. SESS. LAWS 1959, ch. 109.

Perhaps the most important change in the picture has been the rapid urbanization of Arizona in some of the most important agricultural areas. Phoenix, and the surrounding complex of cities have grown rapidly, causing reduction in agricultural lands through subdivision for residences. Substitution of residential development for agriculture may relieve temporarily the pressure on ground water and increase the supportable population since residential water use is markedly less than agricultural use. In the Tucson area, a recent study concluded that "If the city continues to grow at its present rate, some water will have to be diverted from agricultural use to meet future municipal needs, or new sources must be found.[136]

The relentless increase in population in Arizona cities apparently will continue, with predictions that Phoenix will reach 820,000 by 1975 and Tucson will reach at least 425,000, in each case nearly double their present population.[137] With such increases, the competition between water for agriculture and domestic use will intensify. The U.S. Geological Survey has warned both the State and its municipalities that they are drawing on a water bank account of uncertain size and they are are making few attempts to ascertain what the size of the account is.

There is frequent discussion of the possibility of increasing the available water supply through various schemes such as the Central Arizona Project. Governor McFarland emphasized this in 1957 when he urged support for the Interstate Stream Commission in its prosecution of the suit against California over the waters of the Colorado River. He said, "We have been borrowing on our underground water in the hope that we would finally receive water from the main stream of the Colorado . . ."[138] The Special Master for the U.S. Supreme Court has made his recommendations to the Supreme Court in which he found for Arizona on most points.[139] Assuming the Court agrees with the Master's recommendations, there will still remain the problem of obtaining Congressional authorization for the costly project necessary to bring Colorado River water into Central Arizona.[140]

Desaltation of sea water, cloud seeding, and vegetative manipulation are other techniques that have received some attention. Some geologists have suggested the use of recharge wells to capture much of the

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[136] See Schwalen & Shaw, *Ground Water Supplies of Santa Cruz Valley of Southern Arizona between Rillito Station and the International Boundary,* ARIZ. AGRICULTURAL EXPERIMENT STATION, BULL. No. 228, 2 (1957).

[137] Figures supplied by the Bureau of Business and Public Research, University of Arizona, based on 1960 census data.

[138] ARIZ. SESS. LAWS 1957, 23rd Legis., 1st Reg. Sess.

[139] S. Rifkind, Special Master, *Draft Report,* in the Supreme Court of the U.S., Oct. Term, 1959, State of Ariz. v. State of Calif.

[140] For some time many Arizonans were optimistic about state financing of the Central Arizona Project, but costs now appear prohibitive.

flood water now lost through evapo-transpiration. The feasibility of these techniques both in terms of technical and economic considerations is not yet proven, but extensive experimentation is going on in vegetative manipulation, cloud seeding and desaltation of sea water. Experimentation with recharge wells has not received adequate support by the State or its cities. The U.S. Geological Survey, owing to financial limitations imposed by its matching arrangements with the State, makes an annual report on ground-water levels in Arizona but can do little basic geologic investigation of water resource structures.

Some of these now-developing techniques may provide the means of avoiding increasing competition for ground water, but the prospects are not certain. In spite of the old adage, "When the well is dry, they know the worth of water," it does not appear that Arizonans have yet fully realized their dependence on this vital commodity. Many assert the need for planning and adoption of practices needed to conserve the limited supply of water but there has been little initiative in planning. It appears that economic forces will dictate the utilization of water. While some view the marketplace as the proper place to determine the uses to which water should be put,[141] it appears questionable that decisions concerning the very basis of the economy—the water supply—should be made solely on that basis. It would appear necessary to adopt a policy which would subordinate short-run economic interests to the long-run future of the State's economy. Such a policy should provide for the most efficient utilization of the existing water supply and whatever adjustments might be required.

The foregoing study of the problems of managing the ground water supply emphasizes the enormity of the task facing the policy-makers. Serious legal, constitutional, political, and economic impediments strew the path of those wishing to adopt effective measures to plan and control the use of ground water. Many people consider the water problem primarily a technical and engineering problem, but it appears that the social questions involved in the management of ground water are at least of the same magnitude as the physical questions.

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[141] See Fox, *Water: Supply, Demand, and the Law*, RESOURCES FOR THE FUTURE 22 (Reprint No. 15, Jan. 1960).