

GENERAL PRINCIPLES OF GROUND WATER ADMINISTRATION IN TEXAS

R. M. Dixon^{1/}

The primary objective of any form of administrative control of ground water is to provide for the optimum use of available ground-water supply, and concurrently provide for the equitable distribution of those ground-water supplies.

In some legal cases regarding ground water both in England and the United States there has been a separation in court holdings of two classifications of ground water: (1) underground streams and (2) percolating waters. Best hydrologic thought available suggests that there is no basis in fact for such a classification of ground water, and that all ground water is "percolating" in a physical sense.

Texas does not now have in its legal code provisions for state-wide administration and control of ground water. The courts, in implementing statutes on the books, have in general applied the principle of the law of capture in ground-water disputes. The following is a quotation from the Proceedings of the Water Law Conference, May 22-23, 1959, sponsored by the School of Law, University of Texas:

CASES ON UNDERGROUND WATER RIGHTS

"Houston & Texas Control Railroad Company v. East, 98 Tex. 146, 81 S.W. 279, decided in 1904, holds that W. A. East, the plaintiff in the case, had no remedy against the Railroad Company for drying up a water well on his property by drilling a well on adjoining property and taking large quantities of water for the operation of a locomotive and machine shop in the City of Denison. The case was decided on the authority of the English case, Acton v. Blundell, 12 Mees. & W 324, decided in 1843, holding that a plaintiff could not recover for drying up a spring on his land on account of water being diverted from the spring by underground channels dug in mining coal from defendant's land.

"The East case was followed in City of Corpus Christi v. City of Pleasanton, 154 Tex. 289, 276 S.W. 2d 798, decided in 1955. In that case the Court held that a water district should not be enjoined by the City of Pleasanton and others from producing four water wells drilled into the Carrizo sand in Atascosa County and flowing the water into the Nueces River in order to transport it over 100 miles down stream to be sold to the City of Corpus Christi.

"The Trial Court and Court of Civil Appeals found from the evidence that from 63% to 74% of the water discharged into the Nueces River failed to reach the diversion facilities of the City of Corpus Christi on account of evaporation and seepage. The Trial Court and Court of Civil Appeals found that this constituted

^{1/} Texas Member, Board of Water Engineers

"waste" of the water, which an adjoining property owner was entitled to enjoin in the protection of his rights to take water from the same formation. The lower courts held that, though the East case held that the taking of the water in such quantities as to dry up a neighbor's well was not actionable, the right of the overlying landowner did not extend to producing water from wells and wasting it. The lower courts relied both on a general rule of public policy, and on Art. 7602, Texas Civil Statutes, relating to waste of water from artesian wells by flowing the water into rivers, creeks and drains.

"The majority opinion of the Supreme Court in the Corpus Christi-Pleasanton case held that the release of water into the Nueces River was for the 'purpose' of making a beneficial use of the water and the fact that large amounts of it were inadvertently lost in transportation did not constitute waste within the meaning of the statute. The Court held that under the holding of the Supreme Court in Texas Company v. Burkett, 117 Tex. 16, 296, S.W. 273 (1927), the landowner had the right to take underground water from his land and transport it elsewhere for any beneficial use without reference to injury that might be caused to the wells of adjoining landowners.

"Three of the nine Judges of the Supreme Court dissented from the majority opinion in the Corpus Christi-Pleasanton case. Judge Griffin dissented only on the ground that the loss of up to 74% of the water in the course of transmission constituted "waste," and should be enjoined whether or not the waste was intentional. Judge Wilson, joined by Judge Culver, dissented both on the "waste" issue and on the general proposition that the East case should not stand in the way of protecting the correlative rights of landowners in water in an underground reservoir or strata.

"The Court of Civil Appeals at El Paso, in Pecos County Water Control & Improvement District No. 1 v. Williams, et.al., 271 S.W. 2d 503 (Writ ref. s.r.c.), decided in 1954, held that the Water Control & Improvement District, which had a statutory appropriation of the waters of Comanche Spring at Fort Stockton, was not entitled to enjoin the diversion of the Comanche Spring water through wells drilled on adjoining property above the spring. The spring water had been used by the irrigators in the District for some 90 years. The case was decided on exceptions to pleadings. The Court of Civil Appeals held that if the waters in question were percolating waters that the diversion through wells was justified by the East case, and that the plaintiff's allegation that the waters in question were running through a well defined underground channel was not sufficiently specific, in that the exact measurements and course of the underground stream was not set forth.

"These cases by our Texas Courts hold that, though the right to take underground water is appurtenant to the overlying land, the landowner is not restricted in any way or under any conditions to the use

of the water on or in connection with the land overlying the water bearing strata. In this respect, water rights in underground water are held to be different from all other water rights which appertain to the ownership of land. Both riparian and appropriative rights in all other water, whether in streams, the underflow of streams, lakes or water flowing in definite underground channels which are appurtenant to certain land may not be used for irrigation and other uses off of the land to which the right appertains if such use interferes with the use of water by other landowners having like rights."

In Texas the statewide administration of ground water, and for that matter of surface water, is complex because of the geographic, economic, social and hydrologic diversity of the State. This diversity results, of course, in part from the great size of the State, and in part from its location which places its East Texas counties in a humid climate and its West Texas counties in an arid environment.

The Texas Legislature recognized in 1949 the problem which would be encountered in attempting to provide equitable and adequate means of controlling ground-water development on a statewide basis. At that time the Legislature enacted a statute enabling the creation of underground-water conservation districts.

The UNDERGROUND WATER DISTRICT ACT (Art. 7880-3c) specifically authorizes these units of government to take administrative and authoritative action to promulgate rules regarding the conservation and use of underground water. The districts are created for the purpose of conserving, preserving, protecting, recharging and preventing waste of ground water from underground reservoirs. The act by which their creation is authorized provides for an appeal to the courts and a judicial determination of the validity and reasonableness of rules for these purposes promulgated by a district created in accordance with the statute.

Districts may be created by the Legislature, the State Board of Water Engineers, and individual county commissioners courts. Prior to creation of an underground-water conservation district, the Board of Water Engineers must determine that an underground-water reservoir, or subdivision thereof, having definable boundaries and meeting other pre-determined requirements, does in fact exist. Co-determined with the boundaries of the reservoir or subdivision, as delineated by the Board of Water Engineers, the water districts may be created. Under the terms of the statute authorizing their creation, each district is an autonomous regulatory entity with the geographic extent of its regulatory authority determined by the boundaries of the district. The district is a corporate unit which can own property and act in all ways as an entity having financial and legal responsibilities.

Since the passage of this legislation in 1949, the Board of Water Engineers has delineated 12 reservoir subdivisions and seven underground water conservation districts have been created. Five

of these districts are extremely active and have, through their own initiative and utilization of their own tax resources, established an organization through which rules have been adopted regulating the development and protection of ground water within the district. In cooperation with other governmental units these districts have caused water surveys to be made within their boundaries and are, in general, exercising fully and responsibly the authority given them by the statutes.

The initial legislation passed in 1949 was amended in 1955 to strengthen the power of the districts with regard to well spacing, the regulation of production, and the prevention of waste. The amendment authorized well spacing as a means of preventing waste, lessening interference between wells, and preserving and conserving ground water. There are a few exceptions to the spacing authority given the districts, such as the application of spacing rules only to wells producing 100,000 gallons or more per day.

In enacting these statutes the legislature recognized the need for flexibility in ground-water administrative control to the end that these water supplies can be developed for the maximum benefit of the State. Establishment of the district program assumed that the local administration of ground-water control would permit this control to reflect local variations in hydrology and the impact of ground water use on the local economy.

The development of ground-water districts has been strong in Texas in the High Plains area where a large unconfined ground-water aquifer, the Ogallala formation, supports a vast economy of irrigated agriculture. Four districts on the High Plains operate actively to provide a strong regulatory program for the development of ground water within their boundaries. These four districts have adopted regulations which require permits before wells producing 100,000 gallons or more per day can be drilled, regulating the spacing of such wells and providing for control of pollution and waste within district boundaries. The authority of these districts is vested in elected officials, and administrative costs of the districts are supported by taxation on property within their boundaries.

Two serious problems with which the districts in the High Plains have had to deal have been (1) pollution of the ground-water reservoir by salt water produced with oil and gas in the area, and (2) the equitable distribution of the water available from storage as it is removed by pumpage from the water table aquifer.

Regulation of pollution by the districts has been spotty, but in general has taken the form of work through State authorities such as the Railroad Commission. In these instances studies have been made at the expense of the district to determine the extent of the pollution problem, and the technical data thus obtained has been referred to the Railroad Commission for authoritative action.

In other instances the districts have acted directly on their own initiative and under their own authority to end the disposal of brines produced with oil and gas into unlined pits on the surface of the ground.

The problem of providing an equitable distribution of the water supply has been approached generally through such means as well spacing, regulation of size and capacity of pumping equipment, limitations upon the rate at which permitted wells are produced, and education for most effective use of ground water. Well spacing is found to be beneficial as a conservation measure under conditions such as those found in the Ogallala reservoir for the following reasons: (1) interference between wells is reduced, (2) the drawdown between wells is minimized, (3) a higher ultimate recovery of water storage from the reservoir is made possible, and (4) pollution resulting from drawing in salt or other mineralized water under conditions of intensive pumping is reduced.

While the High Plains area has been strongly influenced by the district program of ground-water administration, other areas where ground water is of primary significance such as the San Antonio area have also been affected by this administrative pattern.

A fifth district operating actively in Texas is the Edwards Underground Water Conservation District in that portion of the Edwards formation west of and including the City of San Antonio. Historically, vast spring flows emanating from the Edwards limestone along the Balcones fault zone have supplied a considerable municipal and industrial complex in this area. The intensive development of irrigated agricultural area west of San Antonio within the past few years has demonstrated a dramatic relationship between the flow of these great springs, the effects of the pumping wells, and the base flow of perennial streams in the area. Objectives of the Edwards District have been to achieve the equitable distribution of ground-water supply available among the various economic interests of the area, and to conduct research into the possibility of increasing recharge to the reservoir by various means.

The physical relationship between ground water and surface water supplies in the hydrologic cycle make the separate discussion of ground water administration and surface water administration fairly academic insofar as ultimate goals are concerned. However, the integral relationship and interdependence of one supply upon the other cannot be adequately determined in an administrative framework until there is as much known of ground-water resources as surface water resources.

We have, however, in recent years recognized that the essential beginning which must be made if ground-water administration is to,

in fact, meet its goals, is the study of the quantitative and qualitative availability of the ground-water supplies in the State. A very long-range program designed to provide enough information to permit an appraisal of the availability for use and reuse of our ground-water supply is now underway. Completion of these studies should make it possible to create a climate of understanding of the need for the unified program of administration of ground and surface water.

The State Board of Water Engineers of Texas is, of course, vitally interested in the problem of wise administration of ground-water policy. We feel that ultimately legislative action, prompted by public awareness of the value of our ground water resources, will establish a broad statutory basis for the development and implementation of additional administrative authority in this field. Our role at the present time in furthering this aim is that of accumulation of as much knowledge about these resources as can be obtained in intensive study and investigation.