

## GROUND WATER AND GROUND WATER LAW IN NEW MEXICO

Governor Edwin L. Mechem<sup>1/</sup>

In 1950, in a report entitled Water Resources Law the President's Water Resources Policy Commission observed that "New Mexico, while not the first state to enact ground-water legislation, has pioneered in this field, in that its ground-water legislation...was the first of the ground-water statutes to be put into action and has set the pattern for much of the subsequent legislation in that field."

Now, first is not necessarily best. But the basic New Mexico statute has proved serviceable, even though it was adopted at a time when many of the problems that challenge us today had not been recognized. Administered from the beginning by officials whom Robert Emmet Clark describes as "imaginative, inquiring, and conscientious beyond what can usually be expected of modestly paid civil servants," and constructively interpreted from time to time by enlightened courts, the law has met the test of adequacy.

How did enactment of this pioneer instrument come about, more than 30 years ago? The story is too long to be told in detail here this evening. But we can hit a few of the high places.

Laws are shaped by need. And when it is considered that white settlement of this land of little rain began some 350 years ago, one might wonder that regulation of the use of ground water did not come much earlier. The truth is that in New Mexico intensive development of ground water, calling for statutory control of appropriation and development, occurred only in relatively recent times.

Although there was early development, thirteen prehistoric shaft-like excavations which seem to have been aboriginal wells several thousand years old have been excavated at the well-known "early man" site near Portales. The site is an abandoned gravel quarry near the western edge of the southern High Plains, on the bed of an ancient lake.

The conical shafts are about 6 feet deep and about 2 feet in diameter at the bottom. Excavated materials indicate that water stood in all 13 pits, and that all 13 were refilled with earth shortly after being opened.

Archaeologists speculate that many more such wells were opened here by paleo-Indian transients who used the site as a way-station. They speculate further that the wells were refilled at the end of each encampment to protect the water against contamination or drying up, and possibly to keep its presence a secret from other transients.

---

<sup>1/</sup> Governor of the State of New Mexico, Santa Fe, New Mexico.

It would seem, then, that New Mexicans have been concerned with developing and conserving ground water supply and forestalling junior appropriators since about the tenth or eleventh century, B.C. Perhaps it could have been expected that we would be among the first to come up with solutions.

A prehistoric well similar in structure but somewhat deeper than the High Plains well was excavated recently on the opposite side of the State among paleo-Indian ruins in the Gila wilderness -- redemonstrating that New Mexicans have long known where to look for water when the surface supply runs short.

For the most part, the sedentary agricultural Indians who lived and farmed in New Mexico at the time of the Spanish entrada established their communities near springs and perennial streams, and depended upon surface flows for domestic and agricultural uses; though when surface flows were unavailable those people also opened shallow wells in dry lake and river beds to reach underground water. There are definite records of this practice in Gran Quivira (in 1661) and at Zuni and Pecos pueblos (in 1776), and it can be presumed to have dated back to pre-Columbian times.

The chronicles of Coronado record that inhabitants of Moho Pueblo north of present Bernalillo attempted to dig a well within the pueblo walls while resisting a siege by Spanish soldiers in 1541, but failed to reach water and were forced to surrender in consequence.

The first Spanish colonists depended principally on surface water to supply their needs, and the example of the Mohos seems not to have impressed them, for they apparently did not provide even their places of fortification with wells. Paul Horgan in Great River mentions a well in the garden of the Palace of the Governors in Santa Fe in the 1670's, but it apparently was not in operation in 1680, the year of the great pueblo rebellion, for the Indian besiegers diverted the flow of the palace ditch to force the Spanish capitulation, and also that De Vargas used the same strategy in reconquering the capital from the Indians in 1692.

Ralph Twitchell's book Old Santa Fe describes another well in the palace patio in 1716. This well may have been constructed to offset a decline in surface supplies, and it is likely that other wells were opened in the same general period--particularly as settlement moved southward from the northern mountains. A dug well still in existence near Pecos village is said to date back to Spanish or Mexican times, but records on it are lacking.

It is generally agreed, however, that the water well had no prominent place in the Spanish scheme of colonization.

After the occupation of New Mexico by the United States in 1846, the development of ground water for drinking purposes was accelerated. By 1850, Topographical Engineers of the United

States Army were prospecting in the so-called "Great American Desert" for what then was called "earth water" or "phreatic water" for use along the stage and freight roads -- and, ultimately, to determine routes along which railroads would be built through the arid Southwest. These explorations produced flowing artesian wells in some areas, and there was interest in developing them for irrigation at surprisingly early dates.

The historian Bancroft records that in the 1850's "The boring of artesian wells for an increased water supply was often urged and sometimes discussed in government reports. In 1858-59, a well was bored near Galisteo to a depth of 1,300 feet, but though it showed the practicality of wells for travelers it did not bring the water to the surface, and so far as irrigating was concerned it was considered a failure." And the heartbreaking efforts of Captain John Pope of the Topographical Engineers to find flowing artesian water in the vicinity of what is now known as Pope's Crossing of the Pecos River near the New Mexico-Texas line from 1855 to 1858 are described in a recent issue of New Mexico Magazine.

Had the Captain bored his exploratory deep wells some 50 or 60 miles to the north, his reputation would have been enhanced, and the development of the Roswell artesian basin would have come about some 50 years before it did.

From their earliest penetration of the western arid zones, the railroads had used windmills to raise ground water for their locomotives -- huge structures with fans sometimes 30 feet in diameter. By the middle 1870's, a smaller windmill for ranch and homestead use had been engineered, and its mass production revolutionized the western livestock industry and the pattern of settlement in general. Then as now, however, wind-powered pumps could not lift water in quantities sufficient for field irrigation, and except where flowing artesian water was discovered successful application of well water to irrigation awaited perfection of the centrifugal pump.

In 1891, while sinking a well to serve his household needs, Nathan Jaffa, a prominent citizen of Roswell, brought in a flow of artesian water, and there followed a bonanza in ground-water development which ultimately involved large portions of Chaves and Eddy counties. By 1910, the Roswell flats supported the richest farming community in New Mexico. Development and use of surface water had been brought under control of the state by the water code of 1905, but there was no control of the appropriation of ground water. In the Roswell artesian basin, any farmer who could afford to construct a well could develop a private water supply, without the expense of pumping or of joining with his neighbors to finance construction of costly surface-water storage and distribution works.

In the meantime, the phenomenon had attracted the attention of the United States Geological Survey, and shortly after 1900 Mr. C. A. Fisher of that agency began a study of the geology and hydrology of the entire artesian basin. Results of the study were

published as Water-Supply Paper 158 of the Survey. Utilizing the study's findings, and urged on by the Roswell water users, the legislature in 1905 adopted "an act to regulate the use of artesian wells and to prevent the waste of subterranean flows of water."

The date 1905 is significant in the history of water legislation in New Mexico. This was the year of enactment of the first New Mexico statute regulating appropriation of surface water. This statute, rewritten in 1907, first declared the surface waters to be public and subject to appropriation.

The 1905 artesian water law did not mention public ownership or prior appropriation. It declared any artesian well "not tightly and securely cased, capped, or furnished with such mechanical appliances as will readily and effectively arrest and prevent the flow of water from the well" to be a public nuisance, the owner guilty of a misdemeanor. It authorized the governor to create "artesian districts" and to appoint "artesian well supervisors" to enforce terms of the act. It anticipated the doctrine of prior appropriation by requiring all well owners to register their wells with the supervisor, recording such information as location, date of construction, capacity, and use of flow. All persons drilling new wells were required to notify the supervisor in writing of the location of the well and the type of casing planned.

The supervisor could condemn any well whose casing was deemed faulty or inadequate.

Governors apparently did not respond to their new powers in a manner acceptable to the Roswell irrigators, for we find the legislature in 1909 taking the power to create "artesian districts" away from the chief executive and authorizing county commissioners to create "County Artesian Well Boards," which were empowered in turn to appoint artesian-well supervisors and in general to oversee uses of artesian water. It limited the distance which artesian water could be transported from wells in lined and unlined ditches, and specified a maximum allowable use in irrigation at 3 acre-feet per acre per year. It authorized the well supervisor to make inspection of works, to measure flows of wells, to shut down wells which violated any provision of the act.

The statute applied only to artesian water and, therefore, was operative only in certain areas in Chaves and Eddy counties. And I'm sure that our guests from Colorado and Texas will indulge me in the observation that -- as regards control of the appropriation and use of ground water -- the Territory of New Mexico in 1909 stood just about where their states stand today.

Coming back to the Roswell Flats, exploration widened to more than 660 square miles the area upon which flowing wells could be obtained, and optimism ran high. In 1912, the legislature redefined artesian wells to include all wells "finished in artesian strata whose waters may or may not flow to the surface under natural pressure," and imposed further safeguards against waste.

But new development continued to go in, and by 1915 it was apparent that artesian pressures were declining.

By the early 1920's wells in almost a third of the original artesian area had ceased to flow. At this time the efficiency of pumping equipment had been greatly improved, and in most instances when a flowing well failed the owner merely installed a pump and went on irrigating as before.

By 1925, more than 1,400 artesian wells were in operation in the Roswell basin, irrigating something like 45,000 acres. But the bonanza had burned itself out. Water levels continued to decline and more wells failed. Banks refused to invest more money in irrigated farms until some means of protecting investments could be devised.

The situation affected and concerned the entire community, and in 1925 the Roswell Chamber of Commerce urged the legislature to appropriate money to finance an investigation of conditions in search of a remedy. The legislature appropriated \$5,000 to the State Engineer to initiate the study. Under an ensuing agreement, the U.S. Geological Survey allotted an equal amount for the study. Subsequently, the State and the Survey each contributed an additional \$4,500 and Chaves and Eddy counties subscribed lesser amounts.

The investigation was carried out by A. G. Fiedler, B. C. Renick and S. S. Nye of the Geological Survey. The findings were just about what most irrigators had suspected. Pressures were declining because a limited supply of artesian water was being over-developed. The study recommended that controls be instituted immediately, and Mr. Fiedler worked closely with local water users and attorneys in framing a statute which would apply the doctrine of prior appropriation to ground water. So, once again the Roswell irrigators took up the cudgels for conservation of an invaluable resource -- joined now by irrigators in Lea and Luna counties, where pump-irrigation from shallow wells was getting under way.

And, once again, the legislators of New Mexico reacted in a responsible and enlightened fashion. The surface-water code of 1905 and 1907, based on the doctrine of prior appropriation, had met and passed the test of time. In an historic action in March 1927, the legislature empowered the State Engineer to control ground water development and use under the appropriative doctrine, throughout the State.

The 1927 ground-water statute contained only six sections and somewhat less than 400 words. It provided, among other things, that "All waters in the State found in underground streams, channels, artesian basins, reservoirs, or lakes, the boundaries of which may be reasonably ascertained by scientific investigations of surface indications, are hereby declared to be public waters and to belong to the public, and (to be) subject to appropriation for beneficial uses under the existing laws of this State relating to appropriation and beneficial use of waters from surface streams."

The 1927 law was almost immediately put to court test in the case Yeo versus Tweedy, eventually heard in the New Mexico Supreme Court. The statute was declared invalid because it violated Article 4 of the State Constitution, in that it attempted to extend existing legislation by reference and was, in effect, "blind legislation." However, the court stated that the statute, while objectionable in form, was merely enunciatory of existing law, was not subversive of vested rights of owners of land overlying ground waters, and was fundamentally sound. In 1931, the statute was reenacted in a form the court outlined in its opinion.

Generally, the ground-water law of 1931 is modeled after the surface-water statute of 1907. Like the 1927 ground water law, it accepts the doctrine of prior appropriation, and thus no dual doctrine of riparian and appropriative water rights emerged in New Mexico, as in some western states, to further complicate already complex problems of water administration.

For nearly 20 years, the constitutionality of the second statute was taken for granted, probably because of the declaration of the court in Yeo versus Tweedy. Then, in 1949, the validity of the entire ground-water code was challenged in the well-known case, State ex rel. Bliss versus Dority, which rose out of action by the State Engineer in enjoining unlawful uses of ground water in the declared Roswell Artesian Basin.

The defendants in the action claimed that they had acquired title to their land through United States patents which did not reserve the water and that they were the owners of the underlying waters, on common law principles. They alleged that, in violation of the State Constitution, the statute permitted the State to deprive persons of their property without due process of law and authorized the taking of private property for public use without just compensation.

In 1950, the New Mexico Supreme Court held that the Desert Land Act of 1877 had reserved underground waters for disposition according to the laws and court procedures of the various states. The defendants appealed to the Supreme Court of the United States. That Court dismissed the appeal for want of a Federal question and constitutionality of the New Mexico ground water law has not been questioned since.

Over the years, as the value of lands and crops increased, as new areas of ground-water occurrence were discovered, and as the efficiency of pumps improved, the State Engineer has found it necessary to "declare" 18 areas of ground-water control to prevent impairment of existing rights, to insure beneficial use of water, and to provide for orderly development of ground-water resources. These areas aggregate almost one-fifth of the State's total acreage. In 1960, a total of 945,000 acres were irrigated in New Mexico, of which 468,000 acres were irrigated with ground water exclusively, and an additional 150,000 irrigated acres received ground water to supplement surface-water.

Also in 1960, about 90 percent of New Mexico's industrial and municipal uses were served with ground water.

An impressive aspect of the New Mexico ground-water code is the fact that the initiative in the enactment of practically every statute originated with the users of the water themselves. This reflects an enlightened populace -- a heritage of a people's long experience in an arid environment where water is without doubt the most precious natural resource of all.

At this point, we might ask the question "Why have a ground-water law?" Why did the people of New Mexico push for its enactment, and why is there continuing vigilance against efforts to erode it?

The answers are both simple and complex. In a climate such as we have, where water demands greatly exceed supply, the use of water must be regulated, and the only practical method of regulation is through the doctrine of prior appropriation.

In arid regions such as this one, firm water supplies usually become available only through development. More often than not, the processes of development are costly and large investments are based on the water rights acquired.

Those who develop must have assurance that their investment will be protected. Under the common-law doctrine of riparian right, it is virtually impossible to establish firm water rights in arid areas, and in this day of increasing industrialization of our economy the importance of assured water supplies can scarcely be over-stated.

Perhaps this importance can best be illustrated by looking briefly at conditions in some of our neighbor states which have no effective regulation of ground water.

In 1956, the Denver Post cautioned citizens of Colorado that practically all ground water in that state was tributary to streams and therefore was subject to appropriation through surface rights. "About all it would take to shut off our wells is a lawsuit by surface-water users," the paper warned. The reporter noted that the city of Denver was underlain by a vast ground-water reservoir, but that there was no procedure in law whereby the city or any industry could establish firm rights to use of any of the water. He pointed out that a similar situation existed in the city of Pueblo, where absence of effective ground-water laws had cost the community a multimillion-dollar industrial development, auxiliary to the Colorado Fuel and Iron Company steel mills. He observed that no other steel mill in the nation had so little allied industry around it as the CF&I plant in Pueblo, and that the mills themselves divert from the Arkansas River as far upstream as Leadville, some 150 miles away. He quoted a company official as saying, "We wouldn't give any thought to underground water development. We don't use any of it. It's illegal."

In 1957, perhaps in response to sentiment stirred by the Post crusade, Colorado did enact a law intended to curtail development of ground water in the state; but the statute thus far has not proved effective, and the newspaper's comments probably would be as appropriate today as when written.

Colorado does not, of course, stand alone in her misfortune. In the Salt River Valley of Arizona, water levels in areas of intensive ground-water development have declined more than 200 feet in less than 2 decades.

In Deer Valley north of Phoenix, water levels have declined as much as 100 feet since 1954. And in the Maricopa-Stanfield area, water levels are 200 feet below their original static level -- owing principally to development which has occurred since World War II. So, it doesn't take a seventh son of a seventh son to perceive that Arizona is faced with water problems of staggering magnitude -- however favorably she may fare in ultimate division of the waters of the Colorado River.

Texas likewise is facing a day of reckoning where her ground water resources are concerned -- owing again to absence of effective state control. Water levels are declining at an alarming rate. Excessive pumping must eventually have adverse effects, and Texas cannot avoid damage to her citizens from uncontrolled use of ground waters. This truth finds illustration in what might be called the "parable of the Fort Stockton springs."

Irrigation from springs near the frontier U.S. Army outpost in the lower Pecos Valley began in the 1860's. In 1942, the year of the Pecos River Joint Investigation, some 10,000 acres were under cultivation, supporting a sound economy. Shortly thereafter the presence of a vast underground-water basin was detected north and west of the developed area, and another bonanza in ground-water development followed. By 1960, some 150,000 acres were under irrigation with ground water from artesian and shallow sources in Reeves and Pecos counties, but in the Fort Stockton area springs had ceased to flow.

Water rights dating back almost a hundred years were not being served; farmers were ruined and had no recourse under Texas law. I might add that the same thing could happen almost anywhere in Texas with no remedy in sight.

Then there is our friend California, where most rights to ground water are under a variant of the common-law doctrine. As we all know, California is now embarking on a 1.7 billion-dollar program of developing its surface waters for more efficient use, and officials have suddenly realized that effective statewide control of ground water is necessary before the plan can succeed. Only last month, the California Water Rights Board declared "It is inconceivable to us how the projects of the State water plan can operate without legislation for ground-water control." Thus



in another state, the handwriting is on the wall.

In all, ground-water statutes definitely invoking the doctrine of prior appropriation have been enacted in 10 western states: Idaho, Kansas, Nevada, Oklahoma, Oregon, South Dakota, Utah, Washington, Wyoming, and, of course, New Mexico. I predict that the list soon will become much longer.

While we in New Mexico appear to have occupied the role of leadership in ground-water legislation, this is not to say that we can sit idly by -- resting on the imaginative thinking and legislating of farsighted predecessors.

If we are to grow and make the best use of our water, we must continue to bring the same imagination and scholarship to current problems in water law, and in water conservation and development. With the water users aggressively participating as they have in the past we will be more and more economical in our uses of water and will revise our water code as may be necessary for the continued growth of our economy without detriment to the rights of others and within the framework of the appropriate caveat -- first in time first in right.