

CONSEQUENCES TO NEW MEXICO OF WATER QUALITY STANDARDS  
ON INTERSTATE STREAMS

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The October 1965 Federal Water Quality Act gave the states until June 30, 1967, to develop (1) water quality criteria applicable to the interstate waters, or portions thereof, within each state, and (2) a plan for the implementation and enforcement of the water quality criteria adopted. The fast approaching dead-line for the adoption of water quality standards placed many of the states in the extremely difficult position of having a single year in which to formulate fundamental policy for the future uses of their water resources--this policy, by its very nature, to have long-term consequences. Unfortunately, because the time made available was so short, standards for many states will be based on inadequate technical information with little regard given to the economic implications of particular provisions.

Standards have now been proposed for three of New Mexico's five major interstate streams. To assess the significance of the proposed quality standards in the development, and redevelopment, of New Mexico's water resources, three steps will be followed in this paper:

1. A review of the structure, intent, and administration of our current water-rights legislation.
2. A review of the nature, intent, and language of the proposed standards.
3. After comparing their similarities, a deduction of the consequences of the administration of quality standards based on certain parallelisms with water-rights law.

IMPORTANT ASPECTS OF WATER-RIGHTS LAW

In New Mexico water-rights legislation, and in its interpretations by the courts, there is the repetition of the concepts of beneficial use, of admonishments against the waste of water and of efficiency of use. The State Constitution (1) specifies that "beneficial use is the basis, the measure, and the limit of the right to the use of water." Beneficial use has been interpreted to include recreational uses and fish and wildlife propagation as well as agricultural, mining, industrial, municipal and domestic applications. It is interesting to note that

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the Colorado River Compact (2) specified the relative importance of various beneficial uses of water as follows:

1. Uses for navigation are subservient to domestic, agricultural, and power purposes.
2. Impoundment for electrical generation is subservient to agricultural and domestic purposes.

The language of a number of New Mexico (3,4) and California (5) court decisions may be interpreted to show that beneficial use implies efficient use and that an appropriator is not entitled to waste water. New Mexico statutes (6) require that the amount of water used for irrigation "shall not be in excess of the limits imposed" and shall be "consistent with good agricultural practices" that will result "in the most effective use of available water in order to prevent waste".

One of the three major purposes of the Pecos River Compact between Texas and New Mexico is specified (7) to be "the more efficient use of water". With a slight variation, this same phrase also appears in the Costilla Creek Compact (8) between New Mexico and Colorado. In addition to requirements for the efficient use of water is its reasonable use. Hutchins (9) reports the following:

The supreme court has adopted the rule that in contests over water rights, prior appropriators who complain of injury must prove that their use of water is reasonable and beneficial-----.

There are a number of phrases in these citations from New Mexico water-rights law that have bearing on the implications of water quality legislation--these are (a) beneficial use, (b) efficient use, (c) most effective use, (d) non-wasteful use and (e) reasonable use.

In general, the State Engineer has responsibility for the apportionment and efficient use of the public waters of the State. The right to appropriate these waters is administered through a system of use permits and licenses issued by his office and through court decrees upon adjudication proceedings. Based on hydrologic and hydrographic studies, the State Engineer must establish the amount of water available for appropriation at a particular site on a stream system and must resolve questions of the efficiency and reasonableness of use.

#### CHARACTERISTIC PROVISIONS OF THE PROPOSED QUALITY STANDARDS

In establishing water quality standards, factors which should be considered are the costs incurred by the water user to meet a particular standard; the value of damages to stream life and downstream users resulting from violation of the standard; and the dollar value added

to the water (or the benefits to society) through the application of the water to beneficial use. Thus economics, by implication, are an integral part of all standards. Professor Harold A. Thomas (10), in his widely quoted paper "The Animal Farm: A Mathematical Model for the Discussion of Social Standards for Control of the Environment", states that

It may be shown that without exception every quality criterion or rule whether it pertains to health, to aesthetics or to property damage is always equal to a function of a cost: benefit ratio----. To set a criterion is to impute a cost: benefit ratio.

The following are selected sections from the Standards for the San Juan River in New Mexico and are cited as examples of the intent and language of the proposed standards:

1. Pollution is defined as the addition of materials or substances of other than natural origin to the stream in concentrations which will impair or adversely affect the application of the water of the stream to beneficial use with pollution deemed to be preventable by practical, conventional waste-water treatment and disposal techniques.
2. Degradation is used to describe the deterioration of water quality which results through beneficial uses, but which is not readily preventable by economical treatment methods. The appropriate right to water does not include the right to pollute, but concomitant to use is the degradation of quality to some degree. Thus, inherent with the beneficial use of water is some deterioration of its quality.
3. The term "conventional waste-water treatment" is intended to indicate one of the many economically feasible waste-water treatment and disposal techniques which have been evolved in sanitary engineering practice. The application of such treatment methods to waste-waters prior to their discharge to the stream is implied in these standards. No wastes, amenable to conventional treatment, should reach the stream prior to the application of appropriate treatment techniques, with the requirement for treatment imposed so as to limit the waste materials reaching the stream to a minimum.
4. The Department will also take appropriate measures to avoid unreasonable stream deterioration that is readily preventable by economical treatment methods but will not apply these standards to prohibit degradation resulting from the development and use of waters within the limitations of the Colorado River Compact, the Upper Colorado River Compact and the La Plata River Compact.

5. Turbidity introduced in the stream, other than that which occurs naturally, shall not reduce light transmission to the point that existing aquatic life in that section of the stream is inhibited or that will cause substantial visible contrast with natural appearance of water. Naturally occurring turbidity caused by silt and suspended sediment or by the operation of irrigation or flood control facilities are not subject to these regulations.
6. The stream bottom shall be free of debris and sediment of other than natural origin, that will adversely inhibit the growth of normal stream flora and fauna or significantly alter the physical and chemical properties of the bottom.
7. The stream shall be free of objectionable floating solids, oils, and grease where these materials come from other than natural sources.
8. Toxic substances and chemicals such as, but not limited to, pesticides, herbicides, heavy metals, and organics, shall not be introduced into the stream in waste-water flows in concentrations which (1) are toxic to plants, fish, aquatic or wildlife; or (2) will change the ecology to an extent detrimental to these forms of life.

#### CONSEQUENCES OF QUALITY STANDARDS

The concepts of beneficial use, of reasonable use, of efficient use, and of the elimination of waste appear in the proposed standards. Consciously, or perhaps unconsciously, the concepts incorporated in standards have been carried over from the water-rights area. Just as consumptive use is recognized in water-rights law as a consequence of beneficial use--the quality standards consider degradation to be inherent with beneficial use.

Just as the waters of a stream system are shared by the users, the degree of degradation brought about through beneficial use must be shared. Just as the State Engineer must decide on the amount of water available for appropriation, the water pollution agency must establish limits on the degree of degradation which will be permitted at a particular place on the stream.

New Mexico is now in the process of adopting water quality standards for our major interstate streams and I believe that the State will establish similar standards for all our streams and tributaries as the federal share of the cost of new water pollution control facilities is increased for states willing to do this. I also believe that a system of effluent standards and permits for effluent discharge will be instituted in the next ten years.

Because of the tremendous growth potential of our state, I believe that

the administration of water quality programs will have the same far reaching consequences as water-rights administration--and because of the similarity of basic intent, both will be administered in much the same fashion in the future.

The administration of the water-rights system has been successful over the years because of the high calibre of our present and past State Engineers and because of the availability of a well-trained technical staff. We have just as big a stake in water quality as we do in water quantity and it behooves all of the water users to support the development of a strong water pollution agency in New Mexico, and this can best be brought about by the provision of a separate, identifiable budget for this agency.

#### REFERENCES

1. New Mexico Constitution, Article XVI, Section 3.
2. Colorado River Compact, Article I and IV, approve August 19, 1921.
3. Snow V. Abalos, 18 N. Mex. 681, 694, 695, 140 Pac. 1044 (1914).
4. Stroup V. Frank A. Hubbell Co. 27 N. Mex. 35, 37-39, 192 Pac. 519 (1920)
5. Gibson V. Puchta, 33 Calif. 310, 316-317, (1867).
6. N. Mex. Stats. 1953 Ann., Ses. 75-5-17 Amended by Laws 1955, Ch. 91.
7. Pecos River Compact, Article 1, signed December 3, 1948.
8. Costilla Creek Compact, Article 1 between New Mexico and Colorado, signed Sept. 30, 1944.
9. Hutchins, Wells A., The New Mexico Law of Water Rights, Technical Report No. 4, New Mexico State Engineer Office, 1955.
10. Thomas, Harold A., "The Animal Farms: A Mathematical Model for the Discussion of Social Standards for Control of the Environment", The Quarterly Journal of Economics, Vol. LXXVII, pp 143-148, February 1963.