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"WATER MINING" AND WYOMING LAW

Past thinking in the field of underground water law has been based upon the idea that water is a "flow resource," i.e., one of ". . . those resources whereof 'different units become available for use in different intervals. . . . The present flow does not diminish future flow, and it is possible to maintain use indefinitely provided the flow continues.'"¹ In some areas of the arid west, however, supplies of underground water have been discovered, in some of which the water is available for use, but because of the dryness of the climate, there is little or no recharge into the area. Consequently, each drop used in excess of the recharge amount is gone, just as each drop of oil pumped out of the ground is gone. In these areas water must be treated as a "stock resource," i.e., one of ". . . those resources whose 'total physical quantity does not increase significantly with time . . . each rate of use diminishes some future rate.'"² Because each rate of present use will prevent a use in some future time, an "overdraft" will result, the water table will be lowered, and eventual depletion of the storage area will ensue.³ However, before depletion occurs, increased costs may prevent continuing development. Consequently, any evaluation of the legal aspects of the problem must include a consideration of the concept of "safe yield." "Safe yield" is composed of many factors; for example, the return from use, the cost of applying the resource, and the cost of obtaining the resource. Additional factors to be considered are the benefits to primary users and present and future benefits to secondary beneficiaries in the area.⁴ Although at the danger of oversimplification, the problem of "safe yield" can best be explained by the following example. If the return from use is one hundred dollars an acre and the cost of application is ten dollars an acre, there remains ninety dollars as profit margin and for obtaining the resource. If the water table is at fifty feet and it costs fifty dollars per acre to bring up water from that depth, the user still has a possible profit margin of forty dollars. If the water table is lowered to seventy-five feet and the cost is increased proportionately, the profit margin is lowered to fifteen dollars an acre. If the water table is further lowered, the cost will be increased proportionately, the user's profit margin will further decrease, and eventually he will no longer be able to make a living at that particular use. This concept of "safe yield" applies to storage areas that have sufficient recharge to allow prolonged development, but the problem is more pressing in areas that have no recharge.⁵ As the demand for water increases, it will be necessary to use those storage areas at an ever increasing rate, thus accentuating the problem. Wyoming must plan now to meet it.

New Mexico, Texas, and Arizona have already struggled with the

1. Kelso, *The Stock Resource of Water*, J. of Farm Economics, 1112 (1961).

2. *Ibid.*

3. Hutchins, *Statutory Law of Ground Water*, 34 Texas L. Rev. 157, 184 (1956).

4. *Ibid.*

5. U.S. Geological Survey Circular 117, *Water Law with Special Reference to Ground Water*, 11 (1951).

problem, and their solutions have been far from consistent. Arizona⁶ and Texas⁷ follow variations of the rule of common law regarding percolating waters—the land owner owns the percolating waters. Statutory attempts, however, have been made in those states to provide for some type of administrative control to prevent rapid depletion of this resource.

Texas has tried to solve the problem of water mining by creating water control districts.⁸ These districts are run in much the same manner as in the administration of water law in a prior appropriation system.⁹ In these water control districts the spacing of wells may be controlled, waste prevented, permits issued, and beneficial use required. However, these water control districts control only wells that are capable of producing 150,000 gallons per day.¹⁰

Arizona has provided a different solution. The State Land Commissioner is given the power to declare critical ground-water areas and to stop further irrigation development in such areas.¹¹ During a recent session of the state legislature, the Central Valley was declared a critical area by act of the legislature and all future development was stopped.¹² On the other hand, no authority is given the Land Commissioner to limit withdrawals and thus stop overdevelopment once it has occurred. It has been suggested that the only way that he might have this power would be if the area were found to be a "definite watercourse," thus coming under the law of watercourses and requiring regulation under prior appropriation.¹³

New Mexico has a prior appropriation system, and it has applied this system to its underground water law.¹⁴ However, prior appropriation needs some clarification in a water mining system. If the traditional appropriation in perpetuity were claimed, the first appropriator possibly could demand all the water in the basin and thus be forever protected, while the remainder of the area law was undeveloped. New Mexico has therefore used the concept of an appropriation for a limited term. In the Lea County Basin in southeastern New Mexico, it was found that at the present rate of use all the water would be used up within a period of sixty years, although it would be economically unfeasible to use it for agriculture beyond the period of forty years.¹⁵ An underground basin was determined and water use planned to protect present users, with the wells spaced so that maximum benefit would occur.¹⁶ Priority of appropriation

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6. USDA Misc. Pub. 418, Selected Problems in the Law of Water Rights in the West, 182 (1942).
 7. *Id.* at 250.
 8. Vernon's Stat. Tex., art. 7880-1 (1954).
 9. Vernon's Stat. Tex., art. 7880-3c (1954).
 10. *Ibid.*
 11. Ariz. Rev. Stat., § 45-308 (1952).
 12. Ariz. Rev. Stat., art. 21, § 75-2111 (Supp. 1954).
 13. *Supra* note 5 at 18.
 14. Yeo v. Tweedy, 34 N. M. 611, 286 Pac. 970 (1929).
 15. Harris, *New Mexico's Role in the Development of the Law of Underground Water*, 26 *Dicta* 41 (1954).
 16. *Ibid.*

is given effect by denying permits to later applicants when the number of permits has reached the maximum that can efficiently use the water. Each user is aware that he has not an appropriation in perpetuity but one lasting for only a period of years. No court cases have been brought to the appellate level since the initiation of this plan.

The principal obstacles to the application of the theory of "water mining" to any area is the possibility of the administrator's possessing only a limited scope of authority due to the preexistence of vested property rights in the water. In order to provide a sustained yield for the maximum benefit, an administrator must have the power to determine the optimum amount of withdrawal, either by preventing new withdrawals or by limiting present withdrawals. The State Engineer of Wyoming has that power in regard to permits issued after 1957.¹⁷ Upon determining a critical area,¹⁸ the State Engineer and the Board of Control shall issue corrective controls.¹⁹ These corrective controls may consist of any or all of the following: (a) closing the area to future appropriation, (b) determining permissible total withdrawal and apportioning that total withdrawal, (c) requiring junior appropriators to cease withdrawal, and (d) specifying a system of rotation.

Thus, the State Engineer has the power to regulate a "water mining" area for maximum benefit. Furthermore, no user who receives a permit after 1957 can require that the water level be maintained at any level other than that required for maximum beneficial use.²⁰ While the statute does not indicate whether maximum beneficial use shall be that of the individual user or that of a particular group, it further specifies that²¹ the State Engineer may issue any permit subject to such condition as he may find to be in the public interest.²² Consequently, maximum beneficial use must be for the benefit of the entire area rather than that of the individual user.

The crux of the problem of regulation of water mining in Wyoming is the user who acquired his rights prior to the passage of the 1957 statute.²³ The question is, even though such a user may have a vested property right, may the State Engineer issue regulations that would deprive that user of water? While such a user may have a vested property right,²⁴ it is limited by the amount reasonably necessary for beneficial use.²⁵ Furthermore,

17. Wyo. Stat., ch. 2, § 41-122 (1957).

18. Wyo. Stat., ch. 2, § 41-129 (1957) — A "critical area" is any underground water district or subdistrict in which either (a) the use of underground water is approaching a use equal to current recharge rate, (b) the ground-water levels are declining or have declined excessively, (c) conflicts between users are occurring or foreseeable, (d) the waste of water is occurring or may occur, (e) other conditions require regulation in the public interest.

19. Wyo. Stat., ch. 2, § 41-132 (1957).

20. Wyo. Stat., ch. 2, § 41-141 (1957).

21. *Ibid.*

22. See also *Young & Norton v. Hinderlider*, 15 N. M. 666, 110 Pac. 1045 (1910).

23. Wyo. Stat., ch. 2, § 41-122 (1957).

24. *Ibid.*

25. *Quinn v. John Whitaker Ranch Co.*, 54 Wyo. 382, 92 P.2d 568 (1939).

it is not the quantity of water that controls in a water mining situation, but the ability to draw it to the surface. Assume a situation in which several appropriators are each using a water right of 100 units to achieve a profit margin of 25 per cent per user. The water table drops, since there is no recharge, and the profit margin drops to 10 per cent per user because of increased pumping costs. The first user would not be benefited by shutting off junior appropriators, since that would not increase his profit margin. The only way the first user could be put in his original position would be to allow him to use more units of water. To give him a larger water right than that to which he is entitled at the expense of others would be unconstitutional.²⁶ Thus, in this situation, refusal to apply prior appropriation doctrine in this function would be constitutional even with respect to a user who acquired his right prior to the passage of the 1957 statute.

A more complicated situation is that in which a basin has a pre-1957 user, some post-1957 users, and the State Engineer determines the basin to be a critical area of water mining. As a result of his investigation, he determines the area to have an economically useful life of 60 years. Yet he adds two more users, which will shorten the water use in the basin to 40 years, and then closes the area to further appropriation. Have the users who were present prior to a "critical area" determination been deprived of a legal right by the shortening of the life of the basin by 20 years? Three reasons must make the answer to this question "no." One, there was additional water economically available. The two newest users were entitled to their appropriation even though it would shorten the life of the basin by 20 years. An analogy could be drawn here to unappropriated stream flow for which the State Engineer could not refuse a valid appropriation application.²⁷ Two, consider that the State Engineer must regulate for maximum benefit of the entire area. The addition of the two new users may have increased benefits much more over the 40-year period than if appropriation were closed prior to the granting of their permits. Three, while the state guarantees a right to use water, it does not guarantee that the water will be present.²⁸

With reference to the previous situation, consider the possibility of the State Engineer making a mistake as to the length of the economically useful life of the basin. Can he now apportion water equitably among all the users and cut the amount of their water right? Again, consider the controlling factor to be the ability to draw water economically, not the presence of water. If an equitable apportionment is the only way to reduce the downdraft on the water table, then the State Engineer can properly do so. Not to do so would decrease the profit margin of the prior users rather than increase it, much as in the situation previously discussed

26. Wyo. Const., Art. I, § 33.

27. Mitchell Irr. Dist. v. Whiting, 59 Wyo. 52, 136 P.2d 502 (1943).

28. Bower v. Big Horn Canal Co., 70 Wyo. 80, 307 P.2d 593.

of not using the prior appropriation doctrine. Again, the action of the State Engineer would be constitutional even as to prior users.

Additional factors to consider in the solution of the problem are the use of surface water and a lowering of the amount of applied water per acre. While a certain amount of water may be required to create the maximum unit return, the cost of this water may, when the water table is lowered, be such that it is more feasible to use surface water combined with smaller amounts of underground water to achieve maximum unit return. Consideration should also be given to lowering the amount of return from use by decreasing the application of water. While the return will be lowered, the cost will also be lowered, perhaps to a lesser, perhaps to a greater degree.²⁹

The State Engineer of Wyoming has the power to consider all of these factors in making his determination for control of "critical areas." Should a "critical area" occur in which users who obtained their rights prior to passage of the statute are present and should the physical factors require it, the principles of water mining could be used for maximum benefit under the present statute. The controls are present in the statute to effectively regulate even those users, although they acquired their rights prior to its passage in 1957. While a contention of unconstitutionality might be made, a shift in thinking by the courts from the idea of quantity of water as the controlling factor to the idea of ability to acquire the water economically for maximum beneficial use as the controlling factor should be effective enough to rebut the contention of unconstitutionality and to uphold the regulations of the State Engineer.

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29. Kelso, Stock Resource Value of Water, *J. of Farm Economics* 1124 (1961).