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Maximum Utilization Collides with Prior Appropriation in A-B Cattle Co. v. United States

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COMMENTS

MAXIMUM UTILIZATION COLLIDES WITH PRIOR APPROPRIATION IN *A-B CATTLE CO. V. UNITED STATES*

I. INTRODUCTION

The right of a water appropriator in Colorado to receive water of a quality that will not significantly impair his historic use has been recognized by Colorado courts since the adoption of the appropriation doctrine.[1] The duty of a water appropriator in Colorado to apply the water he receives to a beneficial use also dates from the beginning of the appropriation doctrine.[2] Implicit in the requirement of beneficial use is the recently articulated concept of maximum utilization,[3]—that water application produce the highest benefit for the greatest number of people.[4]

A perhaps inevitable clash between the doctrines of prior appropriation and maximum utilization occurred in *A-B Cattle Co. v. United States*.[5] This comment will trace the histories of water quality as an aspect of prior appropriation and maximum utilization as an outgrowth of beneficial use, analyze the reasoning of the decision in the instant case, and discuss its impact on Colorado water law.

II. FACTS OF *A-B CATTLE CO. V. UNITED STATES*

On June 11, 1969, the United States Bureau of Reclamation instituted condemnation proceedings in the Denver Federal District Court for the headgate and upper segment of a diversion ditch owned by the Bessemer Irrigating Ditch Company (Bessemer).[6] The condemnation action was in relation to the construction of Pueblo Dam on the Arkansas River in southeastern Colorado, as part of the Fryingpan-Arkansas Reclamation Project.[7] Bessemer responded with a claim for damages exceeding $100,000,000, alleging construction of the dam would impound the silt normally occurring in the Arkansas River. It was claimed that the delivery of clear water rather

1. Larimer County Reservoir Co. v. People, 8 Colo. 614, 9 P. 794 (1886). *Accord*, Rocky Ford Irrigation Co. v. Kents Lake Reservoir Co., 104 Utah 216, 140 P.2d 638 (1943); Arizona Copper Co. v. Gillespie, 12 Ariz. 190, 100 P. 465 (1909), *aff'd*, 230 U.S. 46 (1913); Hill v. King, 8 Cal. 336 (1857).

2. Coffin v. Left Hand Ditch Co., 6 Colo. 443 (1882).

3. Fellhauer v. People, 167 Colo. 320, 447 P.2d 986 (1968).

4. Trelease, *Policies for Water Law: Property Rights, Economic Forces, and Public Regulation*, 5 NAT. RES. J. 1 (1965) [hereinafter cited as Trelease].

5. 589 P.2d 57 (Colo. 1978).

6. United States v. 508.88 Acres of Land, No. C-1480 (D. Colo., filed June 11, 1969). Bessemer is a non-profit, mutual ditch company whose operating expenses are shared by its shareholders on a pro rata basis. COLO. REV. STAT. §§ 7-42-101 to -109 (1973). *See also* Jacobucci v. District Court, 189 Colo. 380, 541 P.2d 667 (1975).

7. 43 U.S.C. §§ 616a-f (1976).

than silt-laden water to Bessemer would: (1) aggravate seepage loss through the sides of the ditch, which the silt had formerly sealed; (2) allow the growth of aquatic plants in the ditch, increasing maintenance expense; and (3) cause the water to settle more rapidly in irrigating ditches than the same amount of silt-laden water, cutting down the amount of acreage which could be irrigated.[8]

According to Bessemer, each of these consequences interfered with the use to which its stockholders had historically applied their water appropriation. Under Colorado law, an interference in decreed water rights is a legally-compensable taking of property,[9] and the United States was therefore liable to Bessemer for inverse condemnation.[10]

The United States moved to strike Bessemer's response, but Federal District Judge Arraj upheld Bessemer's claim that the loss of silt was a taking of property under Colorado law.[11] Bessemer subsequently shifted its claim to the United States Court of Claims under the name of one of its stockholders, A-B Cattle Company. Judge Arraj then removed his opinion so that all Bessemer's rights could be adjudicated by one court.[12] The Court of Claims certified the question of Bessemer's right to silt to the Colorado Supreme Court, determining that the question involved an interpretation of Colorado law.[13]

On August 21, 1978, the Colorado Supreme Court, in a four to three decision, held that Bessemer did have a right to a continuation of conditions formerly occurring in the Arkansas, including silt.[14] After granting a petition for rehearing by the United States and amicus Southeastern Colorado Water Conservancy District (SEWCD), the court reversed its earlier decision by another four to three vote, with Justice Kelly changing his vote.[15] Justice Erickson, joined by Justices Lee and Carrigan, dissented.[16]

III. WATER QUALITY AS AN ASPECT OF PRIOR APPROPRIATION

The purpose of the prior appropriation doctrine in Colorado water law is to protect a senior appropriator's right to a specific quantity of water.[17] The right to use water, therefore, has been elevated to a property right.[18] As such, it gives a senior appropriator the power to have an upstream junior appropriator's use cut off, if the senior is not receiving the full amount of his

8. Brief for Plaintiff Bessemer at 2-3.
9. Town of Sterling v. Pawnee Ditch Extension Co., 42 Colo. 421, 94 P. 339 (1908).
10. 28 U.S.C. § 1491 (1976).
11. United States v. 508.88 Acres of Land, No. C-1480 (D. Colo., Opinion of May 8, 1973).
12. *Id.* (D. Colo., June 18, 1976).
13. Erie R.R. v. Tompkins, 304 U.S. 64 (1938).
14. 7 COLO. LAW. 1873 (1978).
15. 589 P.2d 57 (Colo. 1978).
16. *Id.* at 62.
17. *See generally* C. MEYERS, A HISTORICAL AND FUNCTIONAL ANALYSIS OF THE APPROPRIATION SYSTEM, National Water Commission Legal Study No. 1 (July 1, 1971). *See also* Note, *A Survey of Colorado Water Law*, 47 DEN. L.J. 226 (1970).
18. Farmers Irrigation Co. v. Game & Fish Comm'n, 149 Colo. 318, 369 P.2d 557 (1962); Sherwood Irrigation Co. v. Vandewark, 138 Colo. 261, 331 P.2d 810 (1958); Strickler v. City of Colorado Springs, 16 Colo. 61, 26 P. 313 (1891).

decreed right.[19] He may also demand compensation from a governmental body which condemns his senior right.[20] The policy underlying this doctrine has been to encourage the beneficial application of water to an arid geographic region, dependent on water diversion for economic productivity.[21] By protecting a prior appropriator's right to a specific quantity of water, there is an assurance that his expenditure of time, effort, and money will not be wasted because of a later upstream diversion.

Under the same reasoning, and provided with the same remedies of enjoinment and compensation, a prior appropriator has been guaranteed a continuation in the quality of water existing in a stream at the time of his appropriation.[22] A significant deterioration in quality can impair an appropriator's use to the same extent as a diminution in quantity.[23]

The earliest Colorado case addressing the issue of quality was *Larimer County Reservoir Co. v. People*.[24] It involved, as does the instant case, the construction of an onstream reservoir by a junior appropriator. Though the court upheld the junior's right to store the water, it conditioned the storage right on the prevention of any impairment of water quantity or quality that would injure downstream senior appropriators. If downstream use had been hampered by a deterioration in water quality, the junior appropriator would have been held liable.[25]

The specific quality of water to which an appropriator is entitled has never been adequately defined by Colorado courts or statutes. Most of the quality cases have involved a discharge of pollutants, *e.g.* mill tailings,[26] but the definition of quality has never been limited to a simple absence of pollutants.

Two aspects of the kind of water quality protected by the appropriation doctrine have been enunciated and followed by Colorado courts. One is that there can be no impairment of the use an appropriator has made of the

19. City of Colorado Springs v. Bender, 148 Colo. 458, 366 P.2d 552 (1961).

20. Town of Sterling v. Pawnee Ditch Extension Co., 42 Colo. 421, 94 P. 339 (1908); Armstrong v. Larimer County Ditch Co., 1 Colo. App. 49, 27 P. 235 (1891).

21. *See* note 17 *supra*.

22. "[The senior appropriator's right] is to have the natural waters and all accretions come down the natural channel undiminished in quality as well as quantity." Humphreys Tunnel & Mining Co. v. Frank, 46 Colo. 524, 532, 105 P. 1093, 1096 (1909).

23. 1 W. HUTCHINS, WATER RIGHTS LAWS IN THE NINETEEN WESTERN STATES, 448 (1971).

> *Quality of the Water.* (1) As a general principle, the appropriator is entitled to the flow of water in the stream to his diversion works in such a state of natural purity as to substantially fulfill the use for which his appropriation was made. If not protected in this particular, the usefulness of his water right may be depreciated or even be destroyed. The necessity for the rule is self-evident.

Id. See Wilmore v. Chain O'Mines, 96 Colo. 319, 44 P.2d 1024 (1934).

24. 8 Colo. 614, 9 P. 794 (1885).

25. But the privilege [to store water] so recognized is, of course, qualified by the condition that no injury to others shall result through its invocation . . . . He cannot lessen the quantity of water, seriously impair its quality, or impede its natural flow, to the detriment of others who have acquired legal rights therein superior to his; and he must respond in proper actions for all injuries resulting to them by reason of his acts in the premises.

Id. at 617, 9 P. at 796.

26. Wilmore v. Chain O'Mines, 96 Colo. 319, 44 P.2d 1024 (1934).

water he receives;[27] the other is that an appropriator has a right to receive water of a quality which existed at the time of his appropriation.[28]

These two water quality protections are codified in the Water Right Determination and Administration Act of 1969 [hereinafter "Water Act"].[29] The relevant sections state that a senior appropriator has a right to receive water of a quality which he has historically put to beneficial use[30] and that upstream storage is a right conditioned on the requirement that the substituted water be of a quality to meet a senior downstream appropriator's normal use.[31]

Even if the impairment in quality is caused by a preferred user,[32] he must compensate the downstream appropriator.[33] The senior's rights are not subsumed by the fact that the change is of a greater benefit to the public than his use—his quality rights are still protected.[34]

IV. THE REQUIREMENT OF BENEFICIAL USE

An essential element of the right to appropriate water is the requirement that the water so appropriated be put to a beneficial use.[35] This element has been a condition since one of the earliest cases recognizing the appropriation doctrine in Colorado, *Coffin v. Left Hand Ditch Co.*[36] Later, the Colorado Constitution explicitly included the beneficial use requirement.[37]

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27. " '[P]ollution' means an impairment, with attendant injury, to the use of the water that plaintiffs are entitled to make . . . . In reality, the thing forbidden is the injury." *Id.* at 331, 44 P.2d at 1029. *Accord*, Atchison v. Peterson, 87 U.S. (20 Wall.) 507 (1874); Hallenbeck v. Granby Ditch & Reservoir Co., 160 Colo. 555, 420 P.2d 419 (1966); Suffolk Gold Mining & Milling Co. v. San Miguel Consolidated Mining & Milling Co., 9 Colo. App. 407, 48 P. 828 (1897).

28. Farmers Highline Canal & Reservoir Co. v. City of Golden, 129 Colo. 575, 272 P.2d 629 (1954); Vogel v. Minnesota Canal & Reservoir Co., 47 Colo. 534, 107 P. 1108 (1910) (which also extended the right to water quality to junior appropriators).

> [A] junior appropriator of water to a beneficial use has a vested right, as against his senior, in a continuation of the conditions on the stream as they existed at the time he made his appropriation. If this means anything, it is that when the junior appropriator makes his appropriation he acquires a vested right in the conditions then prevailing upon the stream, and surrounding the general method of use of water therefrom.

Id. at 541, 107 P. at 1111.

29. COLO. REV. STAT. § 37-92-305(5) (1973). *See also* COLO. REV. STAT. § 37-80-120(3).

30. *Id.* § 37-80-120(3).

31. *Id.* § 37-92-305(5).

32. COLO. CONST. art. XIV, § 6.

33. Black v. Taylor, 128 Colo. 449, 264 P.2d 502 (1953); Town of Sterling v. Pawnee Ditch Extension Co., 42 Colo. 421, 94 P. 339 (1908); Montrose Canal Co. v. Loutsenhizer Ditch Co., 23 Colo. 233, 48 P. 532 (1896). "[Preferred use] is subject to that other constitutional provision requiring just compensation to those whose rights are affected thereby." *Id.* at 237, 48 P. at 534.

34. Hallenbeck v. Granby Ditch & Reservoir Co., 160 Colo. 555, 420 P.2d 419 (1966).

> [An upstream appropriator storing water and causing injury to the downstream user cannot use the argument that] the right that is to be changed is proportionately of a greater benefit to the senior than is the detriment to the junior, for the vested property rights of the junior appropriator include the right to have the conditions remain as they were when he obtained his appropriation.

Id. at 569, 420 P.2d at 427.

35. People v. Hinderlider, 98 Colo. 505, 57 P.2d 894 (1936); Farmers' High Line Canal & Reservoir Co. v. Southworth, 13 Colo. 111, 21 P. 1028 (1889); Thomas v. Guiraud, 6 Colo. 530 (1883). *See* Note, *A Survey of Colorado Water Law* 47 DEN. L.J. 226, 237-39 (1970).

36. 6 Colo. 443 (1882).

37. "The right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied." COLO. CONST. art. XVI, § 6. *See* COLO. REV. STAT. § 37-92-103(3)

Defining beneficial use has proven as elusive as defining quality.[38] The Colorado Constitution recognizes several uses of water as beneficial—domestic, agricultural, and manufacturing.[39] Court decisions later added uses such as watering trees and grass,[40] and statutory enactments have added recreational purposes.[41] Other than the above vague categories, there is no specific list including all those applications considered beneficial.[42]

There are, however, certain characteristics of beneficial use which Colorado courts have recognized. The most basic is that a failure to continue beneficial application of appropriated water will cause a loss of the appropriation right.[43] A corollary is that there is no right to appropriate more water than can be beneficially applied; only the amount of water reasonably necessary for the intended beneficial use is allowed.[44]

The Water Act defines beneficial use as that amount of water reasonably necessary to accomplish the intended purpose of the appropriation, with consideration given to the special circumstances and reasonably efficient practices of each case.[45]

The necessity of efficient and economic use of appropriated water has not been limited to methods employed on land to which the water is applied. Colorado courts have expanded this requirement to include the manner utilized for conveyance of the water from the point of diversion to the point of application. In *Town of Sterling v. Pawnee Ditch Extension Co.*,[46] an attempt by a municipality to divert water for domestic purposes was opposed by a downstream prior appropriator. The court stated that water was too valuable to be wasted by either an inefficient application at the point of use or an inefficient method of conveyance when this loss could be averted by reasonable diligence.[47]

(1973), which states: " 'Appropriation' means the application of a certain portion of the waters of the state to a beneficial use."

38. City and County of Denver v. Sheriff, 105 Colo. 193, 96 P.2d 836 (1939), "The term 'beneficial use' is not defined in the Constitution. What is beneficial use, after all, is a question of fact and depends upon the circumstances in each case." *Id.* at 204, 96 P.2d at 842.

39. COLO. CONST. art. XVI, § 6.

40. City and County of Denver v. Sheriff, 105 Colo. 193, 209, 96 P.2d 836, 844 (1939).

41. COLO. REV. STAT. § 37-92-103(4), which states, " 'Beneficial use' . . . includes the impoundment of water for recreational purposes . . . ."

42. The problems created by lack of specific beneficial use standards is discussed in Carlson, *Report to Governor John A. Love on Certain Colorado Water Law Problems*, 50 DEN. L.J. 293 (1973). "The existing water law of Colorado does not recognize the possibility that appropriators may seek to develop water rights which, although beneficial uses under existing law, are nonetheless socially undesirable for the public at large." *Id.* at 324. This problem manifested itself in the instant case. *See* notes 79, 80 & 81 *infra*.

43. COLO. REV. STAT. § 37-92-402(2)(j) (1973). *See* Farmers Reservoir and Irrigation Co. v. Fulton Irrigating Ditch Co., 108 Colo. 482, 120 P.2d 196 (1941).

44. Enlarged Southside Irrigation Ditch Co. v. John's Flood Ditch Co., 120 Colo. 423, 210 P.2d 982 (1949). "The time during which water may be diverted thereunder is measured by the reasonable needs of the land, and when the water is not so needed, it may no longer rightfully be diverted from the stream, but must be left therein for use of subsequent appropriators." *Id.* at 428-29, 210 P.2d at 984-85. *Accord*, Snow v. Abalos, 18 N.M. 681, 140 P. 1044 (1914).

45. COLO. REV. STAT. § 37-92-103(4) (1973).

46. 42 Colo. 421, 94 P. 339 (1908).

47. It is a matter of common knowledge that in . . . [conveying the water in the manner proposed by the city] necessarily a very great proportion of such volume would be lost by seepage and evaporation before it was conveyed any considerable

An extension of the requirement that the means used to convey water be reasonably efficient occurred in *City of Colorado Springs v. Bender*.[48] Colorado Springs had dug wells and appropriated water from an underground aquifer above the senior appropriator, Bender. This caused the water table to drop to a point below the capacity of Bender's pumps, thereby cutting off his water supply. In denying Bender's plea for an injunction against Colorado Springs, the court found that Bender's wells were so shallow that they constituted an inefficient method of diversion. Bender's request was, in effect, an attempt to control the entire underground aquifer to protect his inefficient diversion. The court held that no senior appropriator had this right.[49]

An earlier Colorado case, *Empire Water and Power Co. v. Cascade Town Co.*,[50] recognized the right of an appropriator to take advantage of the natural flow of a stream as a beneficial use, but it limited this right to an efficient application. Cascade had constructed a resort to take advantage of a beautiful, luxuriant plant growth caused by the spray of a waterfall on Cascade Creek. Empire began to divert the creek above the falls, causing a significant lessening of the flow reaching the falls, with a consequent deterioration of the plant life. Although recognizing that beneficial application of water for an intended use did not require construction of *man-made* diversions, the court held the application by nature had to be efficient, and remanded the case for further hearing.

Colorado statutes also recognize the need for efficient diversions, by requiring appropriators using ditches to keep them in a state of repair that will prevent unnecessary loss through overflow or seepage.[51]

V. THE EVOLUTION OF MAXIMUM UTILIZATION

The doctrine of maximum utilization is a natural outgrowth of beneficial use. The Colorado Constitution implicitly recognizes the need for water to be applied so that it will produce the best and highest benefits for the greatest number of people through: (1) the recognition that all water not appropriated is the people's and for their benefit,[52] and (2) the establishment

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distance. The law contemplates an economical use of water. . . . Water is too valuable to be wasted, either through an extravagant application for the purpose appropriated or by waste resulting from the means employed to carry it to the place of use, which can be avoided by the exercise of a reasonable degree of care to prevent unnecessary loss, or loss of a volume which is greatly disproportionate to that actually consumed.

Id. at 429-30, 94 P. at 341. *Accord*, Glen Dale Ranches Inc. v. Shaub, 94 Idaho 585, 494 P.2d 1029 (1972).

48. 148 Colo. 458, 366 P.2d 552 (1961).

49. [E]ach diverter must establish some reasonable means of effectuating his diversion. He is not entitled to command the whole or a substantial flow of the stream merely to facilitate his taking the fraction of the whole flow to which he is entitled . . . . [P]riority of appropriation does not give a right to an inefficient means of diversion . . . .

Id. at 462, 366 P.2d at 555.

50. 205 F. 123 (8th Cir. 1913).

51. COLO. REV. STAT. §§ 37-84-107-119 (1973).

52. COLO. CONST. art. XVI, § 5.

of the preference system.[53] Article XVI, section 6, provides that when a conflict of use occurs, domestic application of water will be preferred over agricultural use, and agricultural will be preferred to manufacturing activities.[54] This preference system reflected a realization by the lawmakers that some water uses are more beneficial for more people than others. Unfortunately, later court decisions limited this policy to the right to condemn and pay for the taking of a lower use.[55] Nevertheless, the first expression of what would later become maximum utilization had been made.

Though the doctrine of maximum utilization remained in an inchoate state for many years, court decisions concerning beneficial use and limiting wasteful or inefficient application[56] were a recognition that the water in Colorado should be developed in the best interests of all the people of the state.[57]

An extensive discussion of the concept of maximum utilization comes from several law review articles written in the mid-1960's by Professor Frank J. Trelease, then of the University of Wyoming Law School.[58] In these articles, Trelease states that Western water should be shifted to more efficient uses in order to accomodate the rapidly increasing population of Western states.[59] Trelease's suggested method of shifting the water uses to more efficient, productive uses is to encourage free marketability of water rights; the most economically desirable uses of water will cause private interest to buy out less beneficial applications.[60] Government regulation would be used only where private interests were not promoting public welfare, and only on the condition that the less desirable use be condemned and the prior appropriator compensated.[61] The purpose is to shift to more beneficial uses with-

53. *Id.* § 6.

54. *Id.* For an interesting and revealing history of the conflicts concerning which uses were to have priority during the constitutional convention of 1876, *see* COLORADO WATER STUDY, DIRECTIONS FOR THE FUTURE, *The Current Legal System*, II-9 to -14 (Colo. Dept. of Nat. Res., publication forthcoming). *See also* Trelease, *Preferences to the Use of Water*, 27 ROCKY MTN. L. REV. 133 (1955).

55. Black v. Taylor, 128 Colo. 449, 264 P.2d 502 (1953); Town of Sterling v. Pawnee Ditch Extension Co., 42 Colo. 421, 94 P. 339 (1908); Montrose Canal Co. v. Loutsenhizer Ditch Co., 23 Colo. 233, 48 P. 532 (1896). *See* Thomas, *Appropriations of Water for a Preferred Purpose*, 22 ROCKY MTN. L. REV. 422 (1950).

56. *See* notes 44, 47, 49, & 50 *supra*.

57. Suffolk Gold Mining and Milling Co. v. San Miguel Consolidated Mining and Milling Co., 407, 48 P. 828 (1897). "[T]he title to the waters of the state always remains, in a measurable sense, in the people . . . . The appropriator may acquire title, but that title is necessarily subject to many conditions." *Id.* at 412, 48 P. at 830. *See generally* G. RADOSEVICH, K. NOBE, D. ALLARDICE, & C. KIRKWOOD, EVOLUTION AND ADMINISTRATION OF COLORADO WATER LAW, 1876-1976 (1976).

58. Trelease, *supra* note 4; Trelease & Lee, *Priority and Progress-Case Studies in the Transfer of Water Rights*, 1 LAND AND WATER REV. 1 (1966). *See also* Danielson, *Water Administration in Colorado—Higher-iority or Priority*, 30 ROCKY MTN. L. REV. 293 (1958); Milliman, *Water Law and Private Decision-Making: A Critique*, 2 J. OF L. & ECON. 41 (1959).

59. Trelease, *supra* note 4, at 4. *See* Fox, *Water: Supply, Demand and the Law*, 32 ROCKY MTN. L. REV. 452 (1960).

60. Trelease, *supra* note 4, at 2.

61. *Id.* at 4, 30. *Contra*, Carlson, *supra* note 42 at 341: "One approach . . . would be to treat existing uses in the way that nonconforming uses are treated in zoning law. In this way, undesirable existing uses might be phased out over a period of time without the necessity of payment of compensation arising."

out injuring prior appropriators.[62]

The first Colorado court decision to refer to maximum utilization was *Fellhauer v. People*.[63] This was an action by a prior appropriator to enjoin the state engineer from shutting off the appropriator's wells. Fellhauer claimed this was a violation of due process and a taking of his property. Although the court upheld his request because of the lack of an established method by which the state engineer could decide whose water to shut off, the court warned that the time had come to recognize maximum utilization as a necessary policy to be integrated with the doctrine of prior appropriation.[64] Subsequent decisions applied the doctrine of maximum utilization and upheld the state engineer's right to issue regulations and limitations on use of underground water.[65]

The Colorado legislature officially adopted the concept of maximum utilization in the Water Act, stating that the policy of water use in Colorado was maximum utilization of all water available, including an integration of ground and surface waters.[66]

VI. PRIOR APROPRIATION COLLIDES WITH MAXIMUM UTILIZATION

An appropriator's right to water quality clashed with the policy of maximum utilization in *A-B Cattle Co. v. United States*. In asserting an impairment of water quality through loss of silt, Bessemer raised a unique question—Can a junior appropriator be held liable not only for adding pollutants to a stream but also for removing material already in the stream?[67] Prior Colorado cases had dealt only with the addition of pollutants; none had dealt with the proposition that removing stream materials constituted a deterioration in quality.

The United States and amicus SECWCD argued that Bessemer had no right to the silt normally occurring in the Arkansas because: (1) Bessemer's ditch was inefficient; (2) silt is a pollutant, and if required to provide silt to downstream users, the United States would be violating state and federal pollution regulations; and (3) allowing Bessemer a right to silt would effectively prevent any future storage project construction in Colorado.[68]

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62. Trelease, *supra* note 4, at 4.

63. 167 Colo. 320, 447 P.2d 986 (1968).

64. *Id.* at 336, 447 P.2d at 994 (1968):

> It is implicit in these constitutional provisions [protecting the rights of appropriators], that, along with *vested rights*, there shall be *maximum utilization* of the water of this state. As administration of water approaches its second century the curtain is opening upon the new drama of *maximum utilization* and how constitutionally that doctrine can be integrated into the law of *vested rights*.

Id. at 336, 447 P.2d at 994 (1968) (emphasis in original).

65. Hall v. Kuiper, 181 Colo. 130, 510 P.2d 329 (1973); Kuiper v. Well Owners Conservation Ass'n, 176 Colo. 119, 490 P.2d 268 (1971).

66. It is hereby declared to be the policy of the state of Colorado that all waters originating in or flowing into this state, whether found on the surface or underground, have always been are hereby declared to be the property of the public, dedicated to the use of the people of the state, subject to appropriation and use in accordance with law.

COLO. REV. STAT. § 37-92-102(1) (1973).

67. Brief for Defendant United States at 3.

68. *Id.* at 15-31; Brief for Amicus Curaie SECWCD at 14-27.

In finding that Bessemer had no right to the silt in the Arkansas, the court based its reasoning on *Shodde v. Twin Falls Land and Water Co.*[69] In that case, a downstream appropriator was denied an injunction against upstream junior diverters who had impaired his use. Shodde had used the current of the Snake River to drive water wheels which carried his appropriated water up to his fields, making two uses of the river. By constructing a dam upstream of Shodde, the junior appropriators had slowed the current so that it would no longer drive Shodde's water wheels. Because his *means* of diversion was found to be inefficient, his claim was dismissed, the Supreme Court reasoning that his wasteful diversion was in effect appropriating the entire flow of the Snake River.[70]

The Colorado Supreme Court found that Bessemer's ditch was inefficient. Despite the fact that by the method of irrigation used by some of Bessemer's stockholders, row irrigation, a given amount of water will irrigate more acreage if it is silty,[71] the court further found that Bessemer's request for silt was an attempt, like *Shodde*, to appropriate the entire flow of a river in order to maintain a wasteful method of diversion.[72] The court cited *Fellhauer v. People* to illustrate the need for maximum utilization of Colorado's waters.[73] The beneficial effects of water storage, which make possible a continuous, dependable flow of water during the late summer months when water for irrigation and other uses is critical, is an attempt to put the waters of the Arkansas to maximum use;[74] as such, the court elevated the United States' use above that of Bessemer.[75]

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69. 224 U.S. 107 (1912).

70. Plaintiff's claim is that the entire Snake River shall be allowed to flow as in a state of nature, with volume and current undiminished. This is tantamount to a claim . . . that the entire river has been appropriated by the plaintiff . . . . This claim which is the basis of plaintiff's asserted cause of action cannot be sustained.

Id. at 113.

71. Row irrigation is being used less frequently in favor of more efficient drip and sprinkler systems. *See, e.g.*, 13 IRRIGATION AGE (Sept. 1978) and C. HOUSE, C. RUSSELL, R. YOUNG, & W. VAUGHAN, FUTURE WATER DEMANDS (Final Report to the National Water Commission 1971), which found that use of sprinklers saved 30-40% more water than row or flood irrigation. "Properly operated sprinkler systems can save water by reducing all elements of losses, conveyance from the farm water source, deep percolation, and runoff . . . . For lands newly developed for irrigation, sprinklers are a common choice . . . ." *Id.* at 97. Sediment is particulary damaging to these more modern systems, clogging intake and distribution devices. *See* Proceedings of the Second Drip Irrigation Congress (Lib. of Cong. Catalog Card No. 74-15261, 1974).

72. 589 P.2d at 61.

73. *Id.* at 60-61.

74. *Id.* at 61. Many Colorado court decisions have recognized the need for storage projects to insure a dependable supply of water. *See, e.g.*, People v. Hinderlider, 98 Colo. 505, 515, 57 P.2d 894, 898 (1936), where the court stated, "The storage of water to insure dependable, continuous use has always been encouraged by Colorado courts." *Accord*, Hill v. District Court, 134 Colo. 369, 304 P.2d 888 (1956); Larimer County Reservoir Co. v. People, 8 Colo. 614, 9 P. 794 (1886); Cushman v. Highland Ditch Co., 3 Colo. App. 437, 33 P. 344 (1893).

75. 589 P.2d at 61.

In using its leaky ditches the Bessemer Co. has not attempted to make maximum utilization of the water. . . . [P]laintiffs do not have the right to use silt content to help seal leaky ditches. To view it otherwise would run contra to a basic principle of western irrigation that conservation and maximum usage demand the storage of water in times of plenty for the use in times of drought.

Id.

VI. IMPACT ON COLORADO WATER LAW

The majority in this case characterized Bessemer's ditch as inefficient. This appears to be a mistake of cause for effect. Bessemer's ditch was reasonably efficient until the construction of Pueblo Dam. As Bessemer claimed, the court was "putting the cart before the horse."[76] Bessemer's use of the silt to seal its ditch, though fortuitous, was a beneficial application.[77]

However, Bessemer's original applications for appropriation rights did not include an intention to use the silt in the Arkansas to seal its ditch or extend its use in the fields. That this occurred was fortunate for Bessemer, but it did not necessarily give Bessemer a property right to the silt.[78] In addition, though not mentioned by the court, a finding that Bessemer had a right to silt would have placed the United States and SECWCD in an untenable position, for they would have been required, in effect to release a statutorily defined pollutant in direct violation of state and national water pollution laws.[79]

The point on which the case turned, though, seemed to be on a weighing of beneficial uses.[80] Bessemer's use of the silt-laden water of the Arkansas had been beneficial. The storage of water by the United States was also beneficial. But a finding against the United States would have jeopardized all future storage projects in Colorado at a time when storage of water has become critical not only to sustain population growth but also to maintain current water uses.[81]

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76. Reply Brief for Plaintiff Bessemer at 25. *Accord*, Middlekamp v. Bessemer Irrigation Ditch Co., 46 Colo. 102, 103 P. 280 (1909); City of Combs v. Agricultural Ditch Co., 17 Colo. 146, 28 P. 966 (1892).

77. Empire Water & Power Co. v. Cascade Town Co., 205 F. 123 (8th Cir. 1913).

78. Most Colorado court decisions have conditioned a decree recognizing appropriation rights not only on a beneficial application, but also on an *intent* to apply the water for that specific purpose. *See, e.g.*, Town of Genoa v. Westfall, 141 Colo. 533, 349 P.2d 370 (1960); Thomas v. Guiraud, 6 Colo. 530 (1883).

79. COLO. REV. STAT. §§ 25-8-101 to -612; 33 U.S.C. § 1251(a), (b) (1976).

80. G. RADOSEVICH, K. NOBE, R. MEEK, & J. FLACK, ECONOMIC, POLITICAL, AND LEGAL ASPECTS OF COLORADO WATER LAW (OWRR project No. A-013-COLO, Feb. 1, 1973).

> [T]he water resource system in Colorado is being increasingly placed under extreme stress. The goal of providing adequate supplies of useable water to meet the rapidly growing domestic, industrial, and recreational needs within the state and maintaining adequate supplies to support traditional agricultural uses is becoming ever more difficult and costly to achieve. Means must be found to maximize the efficient utilization of the limited water resources of the state if a water crisis is to be averted.

Id. at 7-8. *See also* REVIEW DRAFT, PROPOSED REPORT OF THE NATIONAL WATER COMMISSION (Wash. D.C., Nov. 1972), which recommends lining ditches and increased construction of dams and reservoirs to prevent water waste:

> A higher degree of efficiency can be realized through storage facilities where waters controlled by direct flow rights can be impounded and later released on call so that the irrigator receives the amount of water to which he is entitled at the time needed and not at some other time. This has significant advantage over direct flow withdrawals where the amount diverted under direct flow rights might be excessive to the needs of one moment and deficient at other times.

Id. at 7-166.

81. *See* Trelease, *The Concept of Reasonable Beneficial Use in the Law of Surface Streams*, 12 WYO. L.J. 1 (1957).

> [T]here are few absolutes on this list [of beneficial uses] . . . . When one [appropriation applicant] urged that the other's use was not beneficial, he was usually relying upon the often inarticulate premise that it was not beneficial because his use was *more* beneficial. Therefore, most of the cases did actually amount to a choice by the courts

The conflict in this case was really between two incompatible water use doctrines. Prior appropriation seeks to protect private property rights in individuals; maximum utilization contemplates regulation of water use so that the best interests of the people as a whole are protected and developed. The hope expressed by Justice Groves in *Fellhauer v. People* that the two doctrines could be integrated is not possible.[82] It will be necessary to further restrict and modify the prior appropriation doctrine in the future so that Colorado can keep up with the increasingly complex demands of an expanding population.[83] Colorado's legislative, administrative, and judicial bodies must more adequately define beneficial use, establish more efficient methods of determining which uses are more valuable to the state, and provide processes which implement the transfer of water rights to those more beneficial uses without causing undue injury to the rights of prior appropriators.

In the early days of Colorado's history, prior appropriation was essential to encourage settlement and development of resources. But Colorado's needs today are for management and conservation.[84] It is time for a change.

Stephen M. Brown

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between one use over another, but analysis of the cases in these terms is generally impossible because that is not the way the courts talked about them. But as competition for the supply grew fiercer, and as the realization grew upon the courts and legislatures that the allocation of water involved a problem in the conservation of natural resources, new concepts evolved, that each use must not only be beneficial in the abstract sense, but must also be a reasonable and economic use in the light of other demands for the little water remaining to be allocated.

Id. at 14-15.

82. *See* note 65, *supra*.

83. *See* discussion of establishing zoning type restrictions on water use to gradually eliminate inefficient uses in note 61, *supra*; Carlson, *Has the Doctrine of Appropriation Outlived Its Usefulness?*, 19 ROCKY MTN. MIN. L. INST. 529 (1974).

Prior appropriation grants claimants private property rights on a first come, first served basis. Maximum utilization, on the other hand, would appear to involve a sharing of water resources among senior and junior users to foster intensive and efficient use of water for the overall benefit of the state. It is not a quantity of use concept but one of quality of use. Maximum utilization would appear to involve an analysis as to the best means and pattern of allocation for the state and its people. Such a concept does not lend itself to a system designed to protect private property in water, where the protection of vested rights is the paramount concern.

Id. at 537. *Accord*, Kuiper v. Well Owners Conservation Ass'n, 176 Colo. 119, 490 P.2d 268 (1971), in which the court upheld the regulations on underground water use promulgated by the state engineer as a result of the decision in *Fellhauer* and the enactment of the "Water Right Determination Act of 1969", and stated:

[T]here is a slight indication of a feeling upon the part of the plaintiffs and on the part of the trial court that changes should not be required in the operation of wells on the Platte River. There must be change, and courts, legislators, the State Engineer and users must recognize it.

Id. at 150, 490 P.2d at 283.

84. For specific suggestions for implementing various changes in the prior appropriation doctrine, see Recommendations 7-26 to 7-35, WATER POLICIES FOR THE FUTURE (Report of the National Water Commission, 1973).