

6-1-1998

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BASIC EXCHANGE 101

CASEY S. FUNK AND AMY M. CAVANAUGH[†]

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INTRODUCTION

The exchange is one of the most important tools through which water is used efficiently in Colorado. However, it is also one of the more misunderstood concepts in Colorado water law. This article begins with the basics — the what, who, where, when, why, and how of exchanges; the Colorado law governing exchanges; and the respective roles of the State Engineer and the water courts in administering and adjudicating exchanges. The latter third of the article then moves beyond the basics to address one of the more pressing exchange issues being raised in Colorado water courts today: the issue of water quality

[†] The authors are both attorneys for the Denver Water Board. However, the views expressed in this article are solely the authors' and do not reflect the position or opinion of the Board of Water Commissioners.

* * *

in exchanges. It is the authors' position that water quality standards applied to the substitute supply should be those promulgated by the Colorado Water Quality Control Commission rather than those standards created by the water courts or downstream senior appropriators. However, this discussion comes later — first, the basics.

THE BASICS

THE WHAT

An exchange is a trade of water between structures or users. Accomplished by diverting water upstream and then introducing an equivalent amount of water from a different source to the downstream water user, an exchange allows a junior water right to divert out-of-priority when a substitute supply is introduced to the senior water right. There are four critical elements to an exchange: (1) the source of substitute supply must be above the calling water right; (2) the substitute supply must be equivalent in amount and of suitable quality to the downstream senior appropriator; (3) there must be available natural flow¹ at the point of upstream diversion; and (4) the rights of others cannot be injured when implementing the exchange.² The source of substitute supply can include a storage release,³ or reusable return flows.⁴

THE WHO

Any water user can exchange water if there is a source of substitute supply and they comply with the directives and requirements of Colorado Revised Statutes section 37-80-120.⁵ Notable in this statutory section are the following provisions: an exchange of water can be made to another entity;⁶ it is not necessary to decree an exchange;⁷ and, the State Engineer administers the operation of exchanges.⁸

1. Natural flow includes water that is legally available to be diverted.

2. Interview with Hal Simpson, State Engineer, in Denver, Colo. (Feb. 24, 1998).

3. COLO. REV. STAT. § 37-83-104 (1997).

4. Reusable return flows include return flows from foreign water, which is water introduced into a stream system such as transmountain sources; developed water such as nontributary groundwater; consumed water from a transfer proceeding; or water specifically appropriated for reuse. *City of Thornton v. Bijou Irrigation Co.*, 926 P.2d 1, 66 (Colo. 1996).

5. COLO. REV. STAT. § 37-80-120 (1997).

6. *Id.* §§ 37-80-120(2), 37-83-105.

7. *Id.* § 37-80-120(1).

8. *Id.*

THE WHERE

The reach of an exchange extends from the point of introduction of the substitute supply to the upstream point of withdrawal.⁹

THE WHEN

Although the release of substitute supply should be coordinated with the state water officials, an exchange does not require that the introduction of the substitute supply be simultaneous with a withdrawal.¹⁰ An exchange is normally operated when a downstream water right places a call,¹¹ but an exchange or transfer can be made without a call.¹²

THE WHY

Exchanges promote the flexible and efficient use of water including foreign water.¹³ Thus, exchanges are encouraged under the doctrine of maximum utilization.¹⁴

THE HOW

The easiest way to explain exchanges is through illustration (see pages 209-211). Start with the premise that a water user has water stored in Reservoir B but his principal diversion facility is ten miles upstream at Reservoir A.¹⁵ Assuming river conditions are amenable, he can divert a certain portion of out-of-priority river water at Reservoir A's Intake *provided that* he supplies an equivalent amount of water to the downstream senior calling right — such as an 1871 irrigation priority. This water user has no intake at Reservoir B, so he maximizes the storage pool in Reservoir B by exchanging water upstream to Reservoir A's Intake where he can divert this water to beneficial use. Now, given this background, look at the following examples:

9. COLO. REV. STAT. §§ 37-83-101, -102 (1997).

10. *City & County of Denver v. Englewood*, 826 P.2d 1266, 1273 (Colo. 1992). However, a non-simultaneous release and diversion may only effectuate an exchange when proper notification has been given to the state or division engineer and water is available for the release; and that prior notification is necessary to protect the rights of downstream appropriators by ensuring that water will be available to downstream priorities.

11. "A call is placed on a river when a senior appropriator forces upstream juniors to let sufficient water flow to meet the requirements of the senior priority." *USI Properties East Inc. v. Simpson*, 938 P.2d 168, 171 n.2 (Colo. 1997).

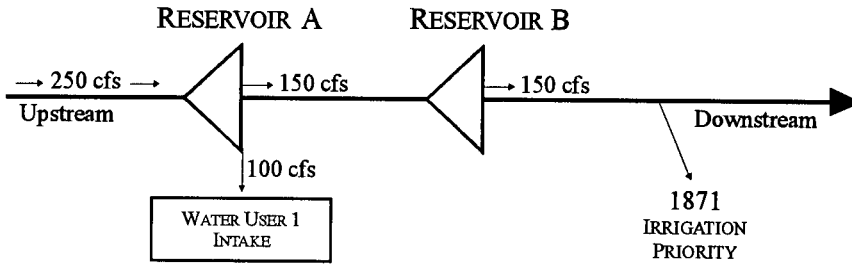
12. *See* COLO. REV. STAT. §§ 37-83-101, -104 (1997) (asserting that there is no requirement for a downstream call).

13. COLO. REV. STAT. § 37-82-106(1) (1997); *City of Florence v. Board of Waterworks*, 793 P.2d 148, 154 (Colo. 1990).

14. *Fellhauer v. People*, 447 P.2d 986, 994 (Colo. 1968) (stating that a diverter must establish some reasonable means of effectuating a diversion and that the right to use water does not include the right to waste it).

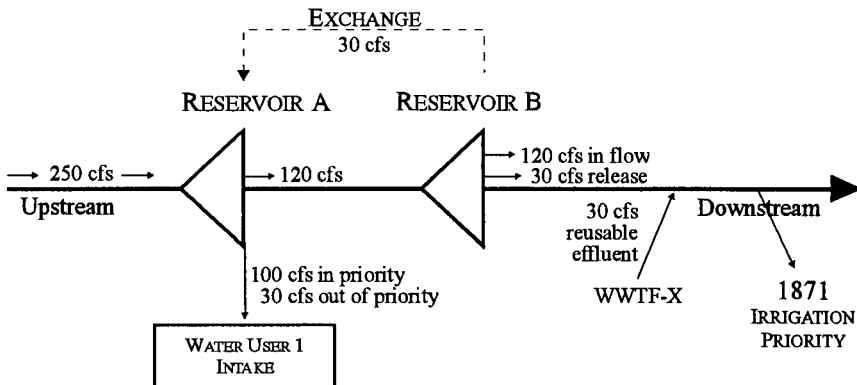
15. At Reservoir A and Intake, Water User 1 diverts water to its treatment plant.

Figure 1: No Exchange



Without an exchange, Water User 1 can only divert River water in decreed amounts and in priority. For example, when 250 cfs¹⁶ is flowing in the River at Reservoir A and Water User 1's water rights are in priority to divert 100 cfs, Water User 1 can divert 100 cfs, but must bypass the remaining 150 cfs.

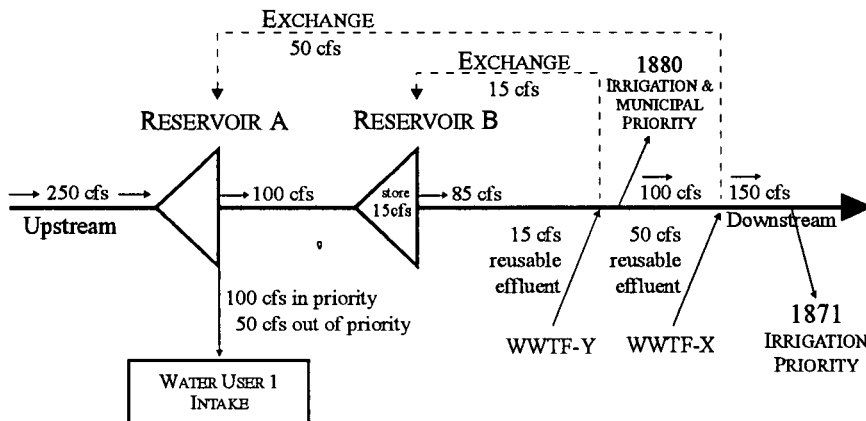
Figure 2: Simple Exchange



16. Cubic feet per second (cfs) is a rate of flow of water passing a given point that amounts to one cubic foot for each second of time. One cfs diverted for twenty-four hours correlates to approximately two acre feet. GEORGE A. GOULD & DOUGLAS L. GRANT, CASES AND MATERIALS ON WATER LAW 14 (5th ed. 1995).

By operating an exchange, Water User 1 can divert more than the 100 cfs. In this situation, Water User 1 diverts by exchange 130 cfs, even though only 100 cfs is in priority. The 30 cfs diverted out of priority is allowed if Water User 1 performs an exchange. Water User 1 can take credit for 30 cfs of reusable effluent discharging from a Wastewater Treatment Plant X (“WWTP-X”), release 30 cfs from Reservoir B, or use some combination of both. The exchange is administered by state water officials. Now, let’s get more complicated.

Figure 3: Complex Exchange



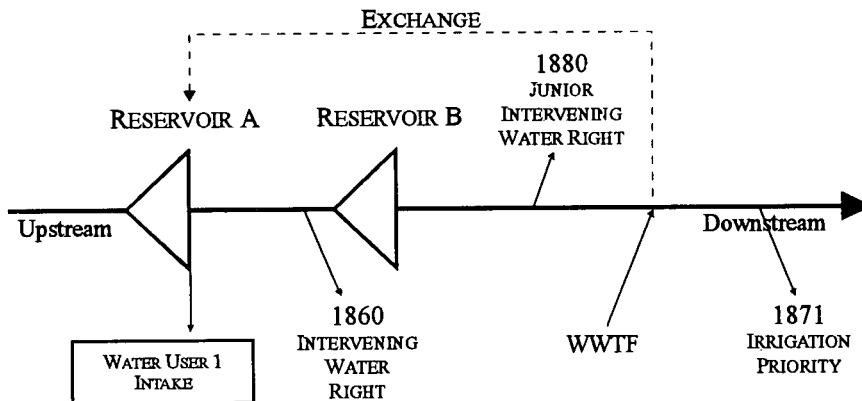
The controlling downstream call is for irrigation under a priority of 1871. All water rights junior to 1871 are curtailed by the state water officials. Water User 1 can still divert 100 cfs under its rights senior to 1871, but the additional 50 cfs must be covered by an exchange using a source of substitute supply upstream of the 1871 calling right, including effluent from upstream wastewater treatment plants. In Figure 3, Water User 1 stores 15 cfs in Reservoir B and then performs an exchange to Reservoir B using 15 cfs of reusable effluent being discharged from Wastewater Treatment Facility Y (“WWTF-Y”). Water User 1 also exchanges 50 cfs of reusable effluent being discharged from WWTP-X to Reservoir A. Thus, Water User 1 diverted by exchange a total of 65 cfs. Water User 1, however, can use only effluent from a reusable source. To do so, Water User 1 must distinguish reusable return flows¹⁷ from native return flows (which cannot be reused).¹⁸

17. See *City & County of Denver v. Fulton Irrigating Ditch Co.*, 506 P.2d 144, 149 (Colo. 1972) (stating in dicta that Denver must demonstrate dominion and control).

18. See *Pulaski Irrigating Ditch Co. v. City of Trinidad*, 203 P. 681, 682 (Colo. 1922); see also *Water Supply & Storage Co. v. Curtis*, 733 P.2d 682, 683-84 (Colo. 1987) (holding that return flow is not subject to further appropriation independent of the priority system unless a non-speculative intent is demonstrated to appropriate by reuse).

The next day the call is from a more junior 1880 irrigation and municipal priority located upstream from the WWTR-X outfall. Here, effluent from WWTF-X cannot be used as a source of substitute supply. Water User 1 must now provide a replacement source for any out of priority diversions with a substitute supply located upstream of the 1880 calling priority. Water User 1 may choose to increase the release from Reservoir B and take credit for Water User 1's reusable effluent discharging from WWTF-Y.¹⁹

Figure 4: Intervening Water Right



An intervening water right is a water right that diverts within the exchange reach (i.e., between the point of withdrawal and the point where the substitute supply is introduced). If the intervening right is junior to the calling priority, it is not affected by the exchange; it is called out by the senior downstream priority. The source, amount, and quality of the substitute supply for Water User 1's exchange should not be a factor. If the intervening water right is senior to the calling right, the division engineer will curtail the exchange or reduce the amount exchanged in order to satisfy the senior intervening water right.

The intervening right, whether senior or junior, has no recourse if the exchange impacts water quality. Colorado law does not recognize water quality injury to an intervening right because the intervening water right does not receive the substitute supply.²⁰

19. Water User 1 may exchange upon any wastewater which is reusable and which it can distinguish from other sources. See *Fullon Irrigating Ditch Co.*, 506 P.2d at 149.

20. *City of Thornton v. Bijou Irrigation Co.*, 926 P.2d 1, 91 (Colo. 1996) (stating in dicta that the court is explicitly required to consider water quality issues only in the case of an exchange whereby water is being actively substituted into the stream for the use of other appropriators).

COLORADO LAW GOVERNING EXCHANGES

Although exchanges have been operated in Colorado for over a hundred years, very little statutory or case law exists regarding exchanges. Indeed, the exchange statutes were first enacted in 1897,²¹ and remain relatively unchanged to date.²² However, the legal issues involving exchanges have evolved over time. During the early part of this century, exchange cases focused on injury to downstream seniors. It was in 1899 that the Twelfth General Assembly promulgated a law recognizing the lawful practice of exchanges:

It shall be lawful, however, for the owners of ditches and water rights taking water from the same stream, to exchange with, and loan to, each other, for a limited time, the water to which each may be entitled, for the purpose of saving crops or of using the water in a more economical manner; Provided, that the owner or owners making such loan or exchange, shall give notice in writing signed by all the owners participating in said loan or exchange, stating that such loan or exchange has been made, and for what length of time the same shall continue, whereupon said water commissioner shall recognize the same in his distribution of water.²³

Pursuant to this statute, upstream seniors were loaning water by diverting it from the creek and then transporting it through ditches and laterals to downstream juniors.²⁴ However, removal of this loaned water from the creek injured intervening juniors²⁵ who were senior to the junior water right receiving the water by lateral. These types of loans or exchanges were disallowed because they injured downstream intervening water rights which were not called out by the receiving water right.²⁶

The early cases of *Ft. Lyon Canal Co. v. Chew*²⁷ and *Bowman v. Virdin*²⁸ focused on the constitutionality of the 1899 exchange statute.²⁹ These cases held that the new exchange statutes were constitutional as long as the exchanges were exercised in such a way, at such times, and under such circumstances that the vested rights of others were not injured.³⁰ These cases also stated that a temporary exchange could be operated without first obtaining a decree.³¹

21. 1897 Colo. Sess. Laws 177.

22. COLO. REV. STAT. §§ 37-83-104 to -106 (1997).

23. 1899 Colo. Sess. Laws 236 (codified as amended at COLO. REV. STAT. § 37-83-105 (1997)).

24. See *Bowman v. Virdin*, 90 P. 506 (Colo. 1907).

25. For exchange purposes, intervening juniors are those water users in between the place where the water is diverted out of the stream and where it is replaced upstream of the calling senior. See, e.g., *City of Thornton*, 926 P.2d at 80.

26. See *Ft. Lyon Canal Co. v. Chew*, 81 P. 37, 39 (Colo. 1905).

27. *Ft. Lyon Canal Co. v. Chew*, 81 P. 37 (Colo. 1905).

28. *Bowman v. Virdin*, 90 P. 506 (Colo. 1907).

29. *Ft. Lyon Canal Co.*, 81 P. at 39-40; *Bowman*, 90 P. at 507.

30. *Id.*

31. *Ft. Lyon Canal Co.*, 81 P. at 40; *Bowman*, 90 P. at 507.

As time passed and more water users began vying for limited quantities of water, water users saw the value of decreeing their exchanges, both conditionally and absolutely. For example, the first exchange adjudicated in Water Division 1 was the Boulder White Rock/Panama Exchange, adjudicated in 1926 with an appropriation date of 1904.³² Despite this early adjudication date, other Water Division 1 exchanges are administered as senior in priority to the Boulder White Rock/Panama Exchange. Colorado Revised Statutes section 37-92-305(10) states:

If an application filed under section 37-92-302 for approval of an existing exchange of water is approved, the original priority date or priority dates of the exchange shall be recognized and preserved unless such recognition or preservation would be contrary to the manner in which such exchange has been administered.³³

Therefore, the postponement doctrine³⁴ does not apply to existing exchanges. Exchanges existing prior to the Boulder White Rock/Panama Exchange, but adjudicated afterwards, may be administered as senior in priority.³⁵

Pursuant to the Adjudication Act of 1943,³⁶ and later the Water Right Determination and Administration Act of 1969,³⁷ exchanges are adjudicated as appropriative rights.³⁸ This means that the holder of an exchange right may put a specified amount of water to beneficial use in order of the decreed priority.³⁹ Like other appropriative water rights, exchanges may be adjudicated as either *conditional* or *absolute* rights. A conditional water right means "a right to perfect a water right with a certain priority upon the completion with reasonable diligence of the appropriation upon which such water right is to be based."⁴⁰ A conditional exchange right must make showings of reasonable diligence, just like a direct flow right.⁴¹ A conditional water right matures into an absolute water right through the application of water

32. State Engineer's Tabulation of Decreed Exchanges in Water Division 1. The appropriation date for this exchange was 1904.

33. COLO. REV. STAT. § 37-92-305(10) (1997).

34. "Priority of appropriation determines the relative priority among water rights or conditional water rights awarded in one calendar year, but, regardless of the date of appropriation, water rights or conditional water rights decreed in one year are necessarily junior to all priorities awarded in decrees in prior years." *United States v. Bell*, 724 P.2d 631, 641-42 (Colo. 1986).

35. State Engineer's Tabulation of Decreed Exchanges in Water Division 1.

36. COLO. REV. STAT. §§ 148-9-1 to -27 (1963), *repealed by* 1969 Colo. Sess. Laws 1223.

37. COLO. REV. STAT. §§ 37-92-101 to -602 (1997).

38. *Id.* § 37-80-120(4); *see also*, David C. Hallford, *Water Reuse and Exchange Plans*, 17 COLO. LAW. 1083, 1084 (1988) (discussing the adjudication of exchanges, the date of decree, and potential effects on existing water rights).

39. COLO. REV. STAT. § 37-92-103(3)(a) (1997).

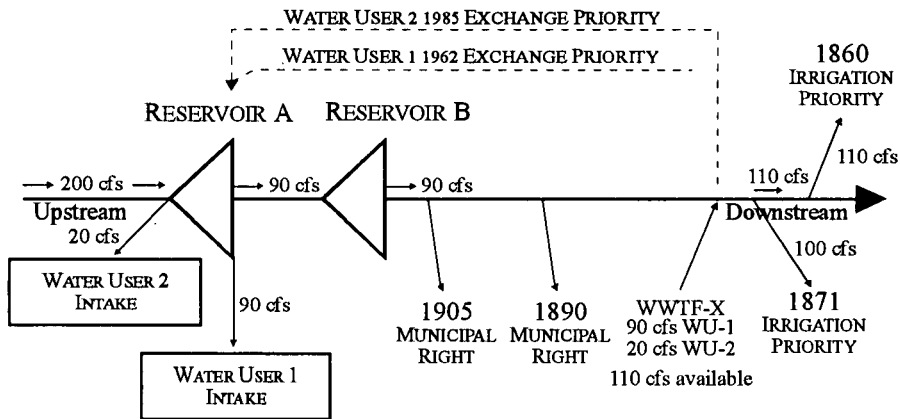
40. *Id.* § 37-92-103(6).

41. *Id.* § 37-92-301(4).

to beneficial use.⁴² A conditional exchange right ripens into an absolute exchange right when the exchange is exercised in accordance with state law.

An interesting nuance of exchange rights is the nature of the exchange priority. Although an exchange is decreed a priority just like any other absolute or conditional water right,⁴³ in practice the exchange's priority applies only against other exchange decrees. Figure 5 illustrates the point:

Figure 5



In this example, both Water User 1 and Water User 2 can operate exchanges from Reservoir A to WWTF-X. Because Water User 1's exchange decree is senior to Water User 2's exchange decree, Water User 1 may operate its exchange to its full decreed amount before Water User 2 can exchange any water. Even if Water User 2's decreed exchange allows it to exchange 60 cfs, it may only exchange 20 cfs in this example because Water User 1 has already used the remainder of the effluent for exchange.

This example also demonstrates the position of the downstream junior direct flow rights in relation to the exchanges. If there is a senior downstream call, it calls out all upstream juniors, including juniors that may be senior to the exchange right. Even if the exchange is junior to downstream users, the exchange may be run, so long as the calling senior is satisfied.

The important issues in operating an exchange are: (1) where the water will be diverted; (2) how much water will be diverted; and (3)

42. *Purgatoire River Water Conservancy Dist. v. Witte*, 859 P.2d 825, 832 (Colo. 1993).

43. *Public Serv. Co. of Colo. v. Bd. of Water Works*, 831 P.2d 470, 475 (Colo. 1992).

the priority of the calling right. Therefore, the priority of the exchange is only relevant against other exchange rights that might seek to run an exchange at the same time in the same reach. The exchange with the earlier priority date will be administered as senior to other exchange rights with lower priority dates.

In 1969, the Colorado Legislature added a significant piece of law to the exchange process. Codified at Colorado Revised Statutes section 37-80-120, this statute specifies the State Engineer's duties regarding undecreed exchanges.⁴⁴ The first cases to address this statute were *A-B Cattle Co. v. United States*⁴⁵ and *Purgatoire River Water Conservancy District v. Kuiper*.⁴⁶ The *Purgatoire River* case interpreted section 37-80-120(1), which allows out-of-priority upstream storage subject to regulation by the State Engineer. The court deferred to the State Engineer to determine if the out-of-priority storage was proper, stating: "[t]his is the type of matter in which the water authorities and not the court have the right to make the initial determination."⁴⁷ This case marked the beginning of deference to the State Engineer concerning the operation of exchanges done exercised pursuant to section 37-80-120(1).

In *A-B Cattle*, the argument centered around Colorado Revised Statutes section 37-80-120(3) which states that the substitute supply must be of a quality and continuity to meet the requirements of use to which the senior appropriation had normally been put.⁴⁸ In this case, the Plaintiffs claimed they had been harmed by an exchange operated by the United States.⁴⁹ Historically, Plaintiffs received silty water, but the United States' exchange resulted in a substitution of clear water instead of silty water.⁵⁰ Plaintiffs argued that more of the clear water seeped from their ditch than did the silty water, and that clear water did not spread as far as silty water when applied to the land for irrigation.⁵¹ The court held that the original appropriation was for water, not silty water.⁵² Therefore, the quality of the substituted water met the requirements of section 37-80-120(3).⁵³

As technology improved and the need to maximize transmountain water increased due to agreements with Colorado's Western Slope,⁵⁴ the issues concerning exchanges shifted focus to the source of substi-

44. 1969 Colo. Sess. Laws 1196, amended by 1989 Colo. Sess. Laws 1425.

45. *A-B Cattle Co. v. United States*, 589 P.2d 57 (Colo. 1978).

46. *Purgatoire River Water Conservancy Dist. v. Kuiper*, 593 P.2d 333 (Colo. 1979).

47. *Kuiper*, 593 P.2d at 340.

48. *A-B Cattle*, 589 P.2d at 59.

49. *Id.*

50. *Id.*

51. *Id.*

52. *Id.* at 62.

53. *Id.* at 59.

54. See, e.g., Findings of Fact, Judgment and Decree (commonly referred to as the Blue River Decree), *United States v. Northern Colo. Water Conservancy Dist.*, Consolidated Nos. 2782, 5016, 5017 (D. Colo. October 12, 1955) (requiring Denver to utilize return flows by exchange or otherwise so as to maximize use of Blue River water); Congressional authorization to implement the Decree is codified at 43 U.S.C. § 620(j) (1994) (Act of April 11, 1956, ch. 203, § 12, 70 Stat. 110).

tute supply. In 1972, the case of *City and County of Denver v. Fulton Irrigating Ditch Co.*⁵⁵ held that, subject to contrary contractual obligations, imported transmountain water could be reused or successively used, and that delivery to a sewage plant did not constitute abandonment of the water.⁵⁶ The court held that as long as the transmountain effluent could be identified, it could be reused.⁵⁷ Reuse of transmountain effluent by exchange became accepted practice, was approved by the Colorado Supreme Court,⁵⁸ and is used by municipalities throughout Colorado.

The most recent exchange litigation in Colorado concerns the use of municipal effluent as a substitute supply. Downstream seniors are asserting that Colorado Revised Statutes sections 37-80-120(3) and 37-92-305(5) require that the substitute supply meet stringent quality requirements.⁵⁹

THE ROLE OF THE STATE ENGINEER

AUTHORITY OVER UNDECREED EXCHANGES

Pursuant to Colorado Revised Statutes section 37-80-120, the State Engineer has the authority to regulate undecreed exchanges and determine if the substitute supply meets "the requirements of use to which the senior appropriation has normally been put."⁶⁰ However, this statute must be read in conjunction with section 25-8-202, which delineates the duties of the Water Quality Control Commission ("WQCC"). The WQCC is solely responsible for the adoption of water quality standards and classifications for state waters affected by discharges, such as effluent from wastewater treatment plants.⁶¹

Section 25-8-202 defines the State Engineer as an "implementing agenc[y]."⁶² In its role as an implementing agency, the State Engineer is charged with implementing classifications and standards adopted by the WQCC:

The commission shall be solely responsible for the adoption of water quality standards and classifications for state waters affected by such discharges. Except as set forth in paragraph (b) of this subsection

55. *City and County of Denver v. Fulton Irrigating Ditch Co.*, 506 P.2d 144 (Colo. 1972)

56. *Fulton Irrigating Ditch Co.*, 506 P.2d at 149.

57. *Id.* at 149-50.

58. *See City and County of Denver v. City of Englewood*, 826 P.2d 1266, 1272-73 (Colo. 1992); *City of Florence v. Board of Waterworks of Pueblo*, 793 P.2d 148, 152 (Colo. 1990).

59. COLO. REV. STAT. §§ 37-80-120(3), 37-92-305(5) (1997).

60. *Id.* § 37-80-120(1).

61. *Id.* § 25-8-202(7)(a),(b)(I).

62. *Id.* § 25-8-202(7).

(7), such classifications and standards shall be implemented by the implementing agencies, after consultation with the division and the commission, through their own programs.

...

(b)(I) The division shall be solely responsible for the issuance and enforcement of permits authorizing point source discharges to surface waters of the state affected by such discharges.⁶³

For undecreed exchanges, the State Engineer must first implement the standards adopted by the WQCC, and then determine if those standards are adequate to meet the requirements of use to which the senior appropriation has normally been put. For exchanges using effluent as a substitute supply, the State Engineer must determine if the effluent discharge is meeting its discharge permit and if the use of the effluent as a substitute supply impedes the historical use of the calling senior. To aid in these determinations, the State Engineer adopted rules and regulations⁶⁴ implementing section 25-8-202(7). These rules apply when the State Engineer has water quality authority under a statute other than the Colorado Water Quality Control Act, such as section 37-80-120.⁶⁵

Rule 6 of the regulations delineates the authority of the State Engineer to implement standards and classifications for nondecreed exchanges and substitute supply plans.⁶⁶ This rule obligates the State Engineer to make a determination as to the quality of the substitute supply such that it complies with section 37-80-120(3). To make this determination, the State Engineer may require that the applicant provide water quality data to allow for proper analysis and evaluation of the substitute supply.⁶⁷ However, during the analysis and evaluation, the State Engineer must apply the following provision:

If appropriate water quality standards and/or classifications have been established by the Water Quality Control Commission, they shall be considered in determining water requirements of senior appropriators and the State Engineer shall consider the water quality standards for the use which is appropriate to the senior appropriator. For example, if the senior beneficial use is agricultural in nature, then the appropriate standards for agricultural use may be applied, if such criteria have some factual correlation to the particular use of the senior appropriator.⁶⁸

The Colorado Supreme Court recently reiterated that section 37-80-120 confers certain authority on the State Engineer to regulate exchanges in the absence of adjudication.⁶⁹ The court explained:

63. COLO. REV. STAT. §§ 25-8-202(7)(a), -202(7)(b)(I) (1997).

64. See 2 COLO. CODE REGS. § 402-8 (1992).

65. *Id.* ¶ 3.2.

66. *Id.* ¶ 6.1 to 6.5.

67. *Id.* ¶ 6.3.

68. *Id.* ¶ 6.5.2.

69. *City of Thornton v. Bijou Irrigation Co.*, 926 P.2d 1, 97 (Colo. 1996).

[u]nder both the statute and the regulations, the mandate of the State Engineer in reviewing the quality aspects of an exchange is clear: the substitute supply must be of a quality to meet the requirements of use to which the senior appropriation has normally been put. The regulations are sufficiently broad to allow the State Engineer's office to exercise its professional judgment in adopting a method of regulation that will ensure that the statutory standard is met, and the absence of more specific direction will not compromise the protective goals of the statute. Accordingly, we hold that the State Engineer is capable of ensuring compliance with these provisions without specific instructions on where to measure the quality of the substituted water.⁷⁰

AUTHORITY OVER DECREED EXCHANGES

The State Engineer's authority over decreed exchanges is limited to administration of the decreed water rights.⁷¹ The general duties of the State Engineer are described at Colorado Revised Statutes section 37-80-102.⁷² The State Engineer determines which exchange is senior in priority and administers exchanges in accordance with sections 37-92-301(1) and (3).⁷³ The State Engineer must ensure that all calling seniors are satisfied.⁷⁴

The State Engineer's authority over the water quality of substitute supply in a decreed exchange is minimal. Neither section 37-80-120 nor 2 Colorado Code of Regulations 402-8, Rule 6 is applied by the State Engineer to a decreed exchange. Rather, 2 Colorado Code of Regulations 402-8, Rule 7 applies. Rule 7, which addresses the implementation of standards and classifications for decreed exchanges and plans for augmentation, limits the State Engineer's participation on water quality issues to the filing of a *Statement of Opposition*, *Protest to a Referee's Ruling*, or *Motion to Intervene*. Once the State Engineer has filed such a pleading, the State Engineer may present evidence that evaluates the proposed exchange.

THE ROLE OF THE WATER COURT REGARDING DECREED EXCHANGES

APPROPRIATION OF AN EXCHANGE RIGHT

To obtain an exchange decree, an *Application for a Water Right* must be filed in the appropriate water court. An exchange application must contain the following elements: the priority date, the location of the diversion at the source of supply, and the amount of water for application to beneficial uses.⁷⁵ The *Application* should also give inquiry notice

70. *Id.* at 97.

71. COLO. REV. STAT. §§ 37-92-301(3), -501, -503 (1997).

72. *Id.* § 37-80-102.

73. *Id.* § 37-92-301(1), (3).

74. *Id.* § 37-92-301(3).

75. *Dallas Creek Water Co. v. Huey*, 933 P.2d 27, 38 (Colo. 1997).

of the source of substitute supply.⁷⁶ The water clerk prepares a monthly resume of the applications filed in each water division that is designed to give all water users notice of applications that may affect their water rights.⁷⁷ "The reasonableness of the notice is judged on an inquiry standard: whether the notice is sufficient to reveal to potential parties the nature of the claim being made, so that they may determine whether to participate in the proceedings and conduct further inquiry into the full extent of those claims."⁷⁸

In the *City and County of Denver v. City of Englewood*,⁷⁹ the court addressed the extent of inquiry notice required regarding the source of substitute supply. In *Englewood*, Denver sought to appropriate conditional water rights to divert by exchange from the South Platte River. The statement of claim⁸⁰ and resulting decree specified the uses to include "effectuating an exchange or transfer of water by the use of any public stream or its water . . ."⁸¹ Englewood and Thornton claimed that the decree failed to give notice that transmountain effluent could be used as a source of substitute supply.⁸² The Colorado Supreme Court held that Denver's statement was sufficient to put interested parties on inquiry notice that sources other than the South Platte might be introduced as a substitute supply.⁸³ The Colorado Supreme Court recently reaffirmed this broad standard of inquiry notice for the source of substitute supply in *City of Thornton v. Bijou Irrigation Co.*⁸⁴

NEW LEGAL ISSUES REGARDING EXCHANGE

THE ISSUE: WHAT QUALITY STANDARD SHOULD BE APPLIED TO SUBSTITUTE SUPPLY IN A DECREED EXCHANGE?

The required quality of the substitute supply in a decreed exchange has yet to be determined by either statute or case law. This issue is the basis for the new battleground of exchange litigation. Recently, municipalities downstream on the South Platte River opposed

76. *City and County of Denver v. City of Englewood*, 826 P.2d 1266, 1272 (Colo. 1992).

77. *City of Thornton v. Bijou Irrigation Co.*, 926 P.2d 1, 24 (Colo. 1996).

78. *Dallas Creek Water Co.*, 933 P.2d at 38.

79. *City of Englewood*, 826 P.2d 1266 (Colo. 1992).

80. This decree was adjudicated pursuant to the 1943 Adjudication Act requiring a statement of a claim rather than an application for a water right. Adjudication Act of 1943, ch. 190, § 7, 1943 Colo. Sess. Laws, 613, 618, *repealed by* Water Right Determination and Administration Act of 1969, COLO. REV. STAT. §§ 37-92-101 to -602 (1997).

81. *City of Englewood*, 826 P.2d at 1269.

82. *Id.* at 1272.

83. *Id.*

84. *City of Thornton v. Bijou Irrigation Co.*, 926 P.2d 1, 29 (Colo. 1996) (finding that "Thornton's statements in its application and resume . . . are directly analogous to the description used by Denver . . . This description was far from detailed or specific but . . . the information provided was sufficient to alert potential objectors . . .").

applications for exchanges and plans for augmentation,⁸⁵ as well as diligence applications for existing conditional exchanges and plans for augmentation on quality grounds. They claimed that Colorado Revised Statutes sections 37-80-120(3) and 37-92-305(5)⁸⁶ require that the substitute supply satisfy the "senior's water quality requirements."

These municipalities interpreted sections 37-80-120(3) and 37-92-305(5) to mean that all substituted water must meet the numerical standards developed and imposed by any downstream senior. As argued by these municipalities, the senior's requirements are subject to no external guidance or limitation, only to the creativity of the senior. Thus, a senior could ask for substitute water far superior in quality to the water diverted upstream by the exchanging junior or to the water received by the senior in the absence of an exchange. Conversely, it is the authors' position that neither section 37-80-120 nor section 37-92-305(5) applies to decreed exchanges. Instead, decreed exchanges should be adjudicated in strict compliance with the Water Right Determination and Administration Act of 1969⁸⁷ and in accordance with the common law.

THE APPLICABLE LAW

Colorado Revised Statutes section 37-92-302(1)(a) states that "[a]ny person who desires a determination of a water right or a conditional water right and the amount and priority thereof, including . . . approval of a proposed or existing exchange of water under section 37-80-120 or 37-83-104 . . . shall file with the water clerk in quadruplicate a verified application . . ."⁸⁸ To adjudicate the water right, the water court must apply certain standards delineated at sections 37-92-305. The standards applicable to exchange decrees concern priority dates,⁸⁹ application to beneficial use,⁹⁰ and anti-speculation constraints.⁹¹ There is no applicable standard regarding the quality of substitute supply for an exchange. The quality standard set forth in section 37-92-305(5)⁹² applies only to "plans for augmenta-

85. *City of Florence v. Bd. of Waterworks*, 793 P.2d 148, 151-52 (Colo. 1990) (citing COLO. REV. STAT. § 37-92-103(9)(1989)) (explaining that exchanges and plans for augmentation including exchange are not necessarily the same; that an exchange is not part of a plan for augmentation where it is not part of a "detailed program to increase the supply of water available for beneficial use in a division.").

86. COLO. REV. STAT. § 37-92-305(5) (1997) (applying only to plans for augmentation including exchange).

87. *Id.* §§ 37-92-101 to -602.

88. *Id.* § 37-92-305(1)(a).

89. *Id.* § 37-92-305(1), (10).

90. *Id.* § 37-92-305(9)(a).

91. *Id.* § 37-92-305(9)(b).

92. "In the case of plans for augmentation including exchange, the supplier may take an equivalent amount of water at his point of diversion or storage if such water is available without impairing the rights of others. Any substituted water shall be of a quality and quantity so as to meet the requirements for which the water of the senior appropriator has normally been used, and such substituted water shall be accepted by the senior appropriator in substitution for water derived by the exercise of his decreed

tion including an exchange.” As discussed, *supra*, an exchange is distinct from a plan for augmentation including exchange.⁹³ Therefore, the water court has no statutory standard to apply to the substitute supply in a decreed exchange.

The only applicable case law regarding statutory quality standards is confusing at best. In dictum, the Colorado Supreme Court recently stated that, “[t]he court is explicitly required to consider water quality issues only in the case of an exchange whereby water is being actively substituted into the stream for the use of other appropriators, *see, e.g.*, § 37-80-120(3), 15 C.R.S. (1990).”⁹⁴ The court *did not* explain why this standard should be applied by the water court as section 37-80-120 is found in an Article dealing solely with the responsibilities of the State Engineer. Furthermore, the court did not explain why the legislature chose to give the water court a specific water quality standard for substitute supply in plans for augmentation in section 37-92-305(5), but remained silent regarding a standard for the substitute supply of exchanges. Put simply, the Colorado Supreme Court cited the wrong statute. However, it did so only in the context of “*see, e.g.*,” which is not a holding. This dictum cannot be construed to apply section 37-80-120(3) to all decreed exchanges. In contrast, it has long been the common law in Colorado that a water right does not include the right to detrimentally affect downstream users by discharging pollutants not normally found in a stream.⁹⁵ Therefore, an alien substitute supply may not be introduced which detrimentally affects downstream users.

The time is ripe for a judicial decision that specifically addresses the standard to be applied to the substitute supply in a decreed exchange. There is no question that the water court must apply some quality standard to the substitute supply; however, this standard must be consistent with the doctrine of prior appropriation as well as existing statutes addressing water quality. The water court’s primary concern is limited to aspects of appropriations unrelated to water quality.⁹⁶ Conversely, “water quality regulations can and must restrict or prohibit discharges of pollutants that impair other uses of water.”⁹⁷ To make this decision, the water court must choose between an ad hoc approach and reliance on the standards promulgated by the WQCC.

rights.”

93. *City of Florence v. Bd. of Waterworks*, 793 P.2d 148, 152 (Colo. 1990).

94. *City of Thornton v. Bijou Irrigation Co.*, 926 P.2d 1, 91 (Colo. 1996).

95. *City of Thornton*, 926 P.2d at 91 (citing *Suffolk Gold Mining & Milling Co. v. San Miguel Consol. Mining & Milling Co.*, 48 P. 828 (Colo. Ct. App. 1897)); *Wilmore v. Chain O’Mines, Inc.*, 44 P.2d 1024 (Colo. 1934).

96. *Id.*

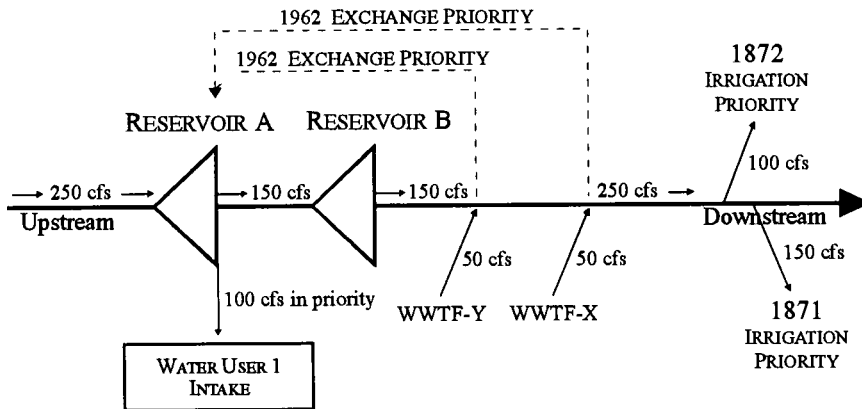
97. Gregory J. Hobbs, Jr. & Bennett W. Raley, *Water Rights Protection in Water Quality Law*, 60 U. COLO. L. REV. 841, 888 (1989).

RELIANCE ON AN AD HOC APPROACH: A RECIPE FOR DISASTER

The ad hoc approach presented by the downstream municipalities calls for either: (1) downstream seniors to set their own substitute supply quality “requirements,” which presumably could be modified on an exchange by exchange basis; or (2) the water court to set “requirements” for each downstream senior, which must be met before an exchange could be exercised. In either scenario, downstream seniors could, at a minimum, change their “requirements” periodically as the upstream water user files for diligence on conditional exchange water rights. Because courts would have no guidelines to apply, either system would be both chaotic and unconstitutional. A court would not be required to consider history, precedent, existing standards, or even reasonableness.

If one appropriator were allowed to enforce his own “requirements,” the effect on the stream could be disastrous. For example, before allowing an exchange in a stream segment classified for both aquatic use and municipal drinking water, the municipality might require elevated levels of chlorine to aid in treatment. However, the addition of chlorine would most likely adversely impact the aquatic life in the stream. The protection of a stream’s water quality simply cannot be effectuated on an ad hoc basis; rather, careful consideration of the uses of the stream as a whole must be evaluated. Figure 6 illustrates this point:

Figure 6



The 1871 irrigation right might have “requirements” of increased ammonia levels and decreased chlorine levels. The 1872 municipal use right might have “requirements” of increased chlorine and decreased benzene. These “requirements” are mutually exclusive. Therefore, if

both these rights are in priority and diverting, only the "requirements" of one downstream senior can be met. Presumably, the senior priority would take precedence. Regardless, the exchange could not be operated because the "requirements" of the other senior would be unsatisfied.

The outcome of such an ad hoc system would be the impairment of vested water rights, in derogation of the Colorado Constitution.⁹⁸ Effluent is discharged into streams on a daily basis, regardless of the operation of exchanges. If exchanges are halted because effluent cannot meet the arbitrary "requirements" of a downstream user, the only possible benefit to the downstream user is dilution from upstream sources. Therefore, it is obvious that the downstream concern is not the quality of the substitute supply, which would be present in the stream regardless of the exchange, but rather the lack of dilution flows. As the authors of one article note: "No matter how it is dressed up, the protection of the assimilative capacity of a stream for the purpose of diluting pollutants is nothing more than the allocation of a portion of the waters of the natural stream outside the doctrine of prior appropriation."⁹⁹

The protection of these dilution flows is unconstitutional, and was recently disapproved by the Colorado Supreme Court: "the legislative water quality scheme is not designed to protect against quality impacts unrelated to discharges or substitute water and specifically prohibits the water court from imposing the protective measures necessary to remedy depletive impacts of upstream appropriations"¹⁰⁰ The *Thornton* language concerned the situation of an intervening water user discharging into the exchange reach. In that case, the water user incurred additional treatment costs to continue to meet its discharge permit standards.

Unlike the *Thornton* case, downstream seniors are now claiming that the quality impacts are related to substituted water that is released to satisfy their senior water right. However, the legislative water quality scheme referenced by the court was not intended to protect dilution flows in any case. Rather, the legislative scheme was intended to stop the introduction of pollutants which would not otherwise be present in the stream. The only entity in Colorado which can legally protect an instream flow right is the Colorado Water Conservation Board.¹⁰¹ The dilution flows sought by downstream seniors are simply unconstitutional.

This ad hoc system presents other issues as well. Colorado Revised Statutes section 37-80-120(3) states that the substitute supply must meet the requirements of use to which the senior appropriation has normally been put.¹⁰² Similarly, section 37-92-305(5) states that substi-

98. COLO. CONST. art. XVI, § 6.

99. Hobbs and Raley, *supra* note 97, at 892 (citation omitted).

100. *City of Thornton*, 926 P.2d at 93.

101. COLO. REV. STAT. § 37-92-102(3) (1997).

102. *Id.* § 37-80-120(3).

tute water must be of such a quality "to meet the requirements for which the water of the senior appropriator has normally been used."¹⁰³ For purposes of determining the quality of substitute supply, what is the senior appropriation and who is the senior appropriator? It is logical to assume that the senior appropriation/appropriator would be the calling right. However, the argument has been made that all senior appropriators have the right to set water quality standards for substitute supply, regardless of whether the senior is diverting at the time of exchange.

This cannot be. Such an interpretation is contrary to a hundred years of established Colorado water law and the constitutional requirement of maximum beneficial use of Colorado's scarce water resources.¹⁰⁴ If a downstream senior is not diverting or in priority during the operation of an exchange, it cannot be injured. Curtailment of the exchange simply because the substitute supply does not meet the arbitrary "requirements" of a downstream non-diverting water user does not promote the doctrine of prior appropriation or maximum utilization.

How does one determine the normal use of the senior appropriation? Is the normal use fixed by the original use of the water right, or can there be a change in the use of a water right which then becomes the "normal use"? Is it more appropriate to fix the "normal use" on the date the exchange is decreed, or should the "normal use" be allowed to change on a daily and yearly basis?

A downstream senior should not be allowed to force upstream users to stop their historical exchange practices because it impedes a new water use downstream. Upstream exchange rights are junior water rights with a vested right in the continuance of conditions existing on the stream at the date of their appropriation.¹⁰⁵ Upstream exchange rights should be entitled to the same certainty as direct flow rights. However, equally important is the need for substitute supplies to comply with the common law and changing water quality regulations. The ad hoc approach does not provide a solution to these concerns; it only raises additional questions.

RELIANCE ON THE WATER QUALITY CONTROL COMMISSION STANDARDS: THE ONLY REASONABLE METHOD OF MEETING BOTH COMMON LAW AND STATUTORY STANDARDS

A logical, supportable solution is found in the application of water quality standards set by the Water Quality Control Commission ("WQCC"). The WQCC sets standards to take into account the many uses of each river or stream.¹⁰⁶ Moreover, the WQCC process is not a

103. COLO. REV. STAT. § 37-92-305(5) (1997).

104. COLO. CONST. art. XVI, § 6; *In re Hines Highlands Ltd. Partnership*, 929 P.2d 718, 724 (Colo. 1996).

105. *City and County of Denver v. Colorado Land & Livestock Co.*, 279 P. 46, 47 (Colo. 1929).

106. COLO. REV. STAT. § 25-8-203 (1997).

static system. Permit standards change as federal regulations change and more information becomes available regarding water uses, hazards and treatments.¹⁰⁷ By implementing WQCC standards, the water court ensures that downstream users of all types are protected from unreasonable discharges. This system also takes into account the changing uses of a stream. At least every three years, classifications of waters, water quality standards and control regulations are reevaluated.¹⁰⁸ The public is invited to comment and expertise is offered in the area of water quality regarding the uses of a particular stream.¹⁰⁹ No court or agency in the state of Colorado is better qualified to set water quality standards than the WQCC.

The Colorado Water Quality Control Act, enacted in 1981, delegates sole authority to the WQCC and the Colorado Department of Public Health and Environment to protect the quality of Colorado's waters by developing and maintaining a comprehensive program for prevention, control and abatement of water pollution and for water quality protection.¹¹⁰ The General Assembly designated the WQCC to implement the federal Clean Water Act.¹¹¹ Under this comprehensive program of water quality protection, the WQCC classifies state waters and establishes water quality standards for stream segments (based in part on present and future beneficial uses of the stream),¹¹² and also establishes standards and issues permits for discharges into streams.¹¹³ The WQCC is solely responsible for these functions.¹¹⁴ Water quality standards adopted by the WQCC are designed to protect the competing uses of surface water¹¹⁵ and result from a lengthy public process which provides significant rights to the interested public for input,¹¹⁶ and for judicial review.¹¹⁷ The WQCC's water quality standards are promulgated pursuant to the state's police powers.¹¹⁸

In establishing this comprehensive program, the General Assembly was very explicit in ensuring that the exercise of water rights under the state's appropriation system would not be adversely affected:

No provision of this article shall be interpreted so as to supersede, abrogate, or impair rights to divert water and apply water to beneficial uses in accordance with the provisions of sections 5 and 6 of article XVI of the [state constitution]. . . or the provisions of articles 80 to 93 of title 37, C. R. S. . . . Nothing in this article shall be construed, en-

107. COLO. REV. STAT. § 25-8-204 (1997).

108. *Id.* § 25-8-202(f).

109. *Id.* §§ 25-8-202(3), -502(3), -503(8).

110. *Id.* §§ 25-8-202, -301.

111. *Id.* § 25-8-202(6).

112. *Id.* §§ 25-8-203(2)(c), -204(4)(f).

113. *Id.* § 25-8-205.

114. *Id.* § 25-8-202(7)(a).

115. *Id.* § 25-8-203(2)(e).

116. *Id.* § 25-8-402.

117. *Id.* § 25-8-404.

118. Melinda Kassen, *The Burden of Maintaining Colorado's Water Quality*, 18 COLO. LAW. 23, 24 (1989).

forced,¹¹⁹ or applied so as to cause or result in material injury to water rights.

As the Supreme Court has said:

The legislature's primary emphasis in enacting this scheme is to maximize beneficial use and to minimize barriers to further beneficial appropriation. The result of this policy decision is essentially to focus water quality regulation on uses culminating in *unreasonable discharges*, as such discharges¹²⁰ are not part of any appropriative right under common law.

Thus, in protecting water quality, the General Assembly struck a careful balance so as to protect water rights as well.

In the absence of a specific statutory water quality standard for exchanges, the water court should apply the appropriate standards adopted by the WQCC. In the case of effluent used as substitute supply, discharge permit requirements should apply. It is the function of the WQCC to set standards pursuant to Colorado Revised Statutes sections 25-8-101 to 25-8-705,¹²¹ and the function of the water court to apply those standards. If effluent satisfies its discharge permit standards, it satisfies the common law requirement regarding water quality.

CONCLUSION

An exchange is a tool used to achieve the maximum beneficial use of water. Exchanges work only because they fit within the doctrine of prior appropriation. Although a junior is allowed to divert out of priority, the calling senior must be satisfied so there is no injury to the senior's water right. If a calling senior will not receive his allotted appropriation due to the exchange, the exchange cannot be operated.

Exchanges have been operated in the same manner for over a hundred years: an upstream water user diverts under its junior priority and then replaces the diverted water with a substitute supply at some point upstream of the senior's place of diversion. Until recently, that operation has gone unchallenged.

The latest legal issue regarding exchanges has the potential to change the nature of an exchange water right, or even stop the operation of exchanges altogether. If the substitute supply must meet the arbitrary "requirements" of every downstream senior to the exchange right, it is likely that most exchanges will become inoperable. Mutually

119. COLO. REV. STAT. § 25-8-104(1) (1997).

120. *City of Thornton v. Bijou Irrigation Co.*, 926 P.2d 1, 92 (Colo. 1996) (emphasis added).

121. The Colorado Water Control Commission did, in fact, promulgate standards for the South Platte River. *See AMAX, Inc. v. Colorado Water Quality Control Comm'n*, 790 P.2d 879 (Colo. Ct. App. 1989) (upholding standards for the South Platte River).

exclusive or outrageously onerous requirements could bring all exchanges in Colorado to a halt and improperly provide dilution flows. Such an interpretation of the Colorado statutes directly contradicts the doctrines of prior appropriation and maximum beneficial use. Instead, water quality regulations must be read such that they are consistent with the tenets of the prior appropriation doctrine and the Constitution of Colorado.