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Vance v. Wolfe: Beneficial Use or Beneficial Byproduct? - An Analysis of Produced Water in Colorado

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CASE NOTES

VANCE V. WOLFE: "BENEFICIAL USE" OR "BENEFICIAL BYPRODUCT?" - AN ANALYSIS OF PRODUCED WATER IN COLORADO

I. INTRODUCTION

The enduring legacy of the seventeen states west of the 100th meridian is their need for water.[1] Cyclical water shortage,[2] intense competition between water users, and fragmented water allocation policies[3] demand a flexible and adaptive water management system.[4] In 1969, the Colorado General Assembly made just such an observation: "the future welfare of the state depends upon a sound and flexible integrated use of all waters of the state...."[5] Perhaps the most fundamental mechanism that provides flexibility to the Colorado system is the continuously evolving and notoriously amorphous concept of

1. DONALD J. PISANI, TO RECLAIM A DIVIDED WEST: WATER, LAW, AND PUBLIC POLICY 1848-1902, ix (1992).

2. JUSTICE GREGORY J. HOBBS, THE PUBLIC'S WATER RESOURCE: ARTICLES ON WATER LAW, HISTORY, AND CULTURE, 24 (2007).

3. PISANI, *supra* note 1, at xvi.

4. Dave Owen, *Law, Environmental Dynamism, Reliability: The Rise and Fall of CALFED*, 37 ENVTL. L. 1145, 1214 (2007) ("Whether the resource is water, energy, fisheries, forests, clean air, coastal wetlands, or something else, we are inescapably in a world where management schemes must address dynamism and scarcity, no matter how difficult that task may be.").

5. COLO. REV. STAT. § 37-92-102(2) (2008).

"beneficial use."[6]

In Colorado, "[n]o principle in connection with the law of water rights . . . is more firmly established than that the application of water to beneficial use is essential to a completed appropriation."[7] However, the Colorado Constitution and General Assembly have failed to define "beneficial use" as a limiting term.[8] Instead, the list of beneficial uses depends almost entirely on the circumstances of the particular case[9] and grows with every court decree.[10] After more than a century of Colorado Supreme Court decisions, the term now includes hydropower,[11] mine reclamation,[12] dust abatement,[13] augmentation,[14] recreational water features,[15] fisheries,[16] as well as the more traditional uses including irrigation, stock watering, and municipal consumption.[17] In April 2009, the Colorado Supreme Court may have stretched the definition of "beneficial use" to its absolute limit when it issued a decision regarding coalbed methane development in *Vance v. Wolfe*.[18] Indeed, the *Vance* court may have erased the distinction between "beneficial use" and "beneficial byproduct" under both the Ground Water Management Act (the "Ground Water Act") and the Water Right Determination and Administration Act of 1969 (the "1969 Act").

Coalbed methane ("CBM") gas is a "natural gas that is associated with, and sourced by, coal."[19] CBM gas is trapped in the porous crystal surface of the coal by the hydrostatic pressure created by surrounding ground water.[20] In order to release the CBM gas, CBM producers must first reduce the hydrostatic pressure by dewatering the coal seams.[21] As such, extracting CBM gas necessarily entails removing the ground water that holds CBM gas in place.[22] It is precisely this inextricably connected

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6. JAMES N. CORBRIDGE JR. & TERESA A RICE, VRANESH'S COLORADO WATER LAW, 43 (Rev. ed. 1999).

7. Denver v. Sheriff, 96 P.2d 836, 839 (Colo. 1939).

8. COLO. CONST. art. XVI, §§ 5-6; Colo. Rev. Stat. § 37-92-103(4).

9. *Sheriff*, 96 P.2d at 842.

10. HOBBS, *supra* note 2 at 331.

11. Larimer & Weld Reservoir Co. v. Ft. Collins Milling & Elevator Co., 152 P.2d 1160 (Colo. 1915).

12. Three Bells Ranch Assoc. v. Cache La Poudre Water Users Ass'n., 758 P.2d 164 (Colo. 1988).

13. State v. Southwestern Colo. Water Conservation Dist., 671 P.2d 1294, 1322 (Colo.1983) (overturned on other grounds).

14. Cache Law Poudre Water Users Ass'n v. Glacier View Meadows, 550 P.2d 288 (Colo. 1976).

15. Thorton v. Fort Collins, 830 P.2d 915 (Colo. 1992)

16. May v. United States, 756 P.2d 362 (Colo. 1988)

17. HOBBS *supra* note 2 at 70.

18. Vance v. Wolfe, 205 P.3d 1165 (Colo. 2009).

19. National Assessment of Oil and Gas Fact Sheet: Coal-Bed Gas Resources of the Rocky Mountain Region, *available at* http://pubs.usgs.gov/fs/fs-158-02/fs-158-02.html.

20. DICK WOLFE & GLEN GRAHAM, WATER RIGHTS AND BENEFICIAL USE OF COAL BED METHANE PRODUCED WATER IN COLORADO, 3 (2002), http://water.state.co.us/pubs/Rule_reg/coalbedmethane.pdf.

21. *Id.*

22. Thomas F. Darrin, *Waste or Wasted? - Rethinking the regulation of Coalbed*

relationship that created the legal issue addressed in *Vance v. Wolfe*: does the withdrawal of ground water during the CBM process constitute a "beneficial use" giving rise to an appropriative water right subject to the administration of both the State and Division Engineer? The Colorado Supreme Court unequivocally answered in the affirmative.

II. THE FACTS

William S. Vance, Elizabeth S. Vance, James G. Fitzgerald, and Theresa Fitzgerald (collectively, the "Ranchers") appropriated water rights in both the Piedra River and the Pine River. Defendant-Intervenor, BP American Production Company ("BP"), conducted a CBM operation in the vicinity of the Vance and Fitzgerald Ranch.[23] As part of the CBM operation, BP produced ground water that BP later re-injected into deeper ground water formations.[24] Relying heavily on a depletion study completed by the State and Division Engineers (the "Engineers") in 2006, [25] the Ranchers believed their senior rights in the Pine and Piedra Rivers were materially injured by BP's out of priority diversion of nearly 155 acre feet of tributary ground water.[26]

The Ranchers first tried to persuade the Engineers to require BP to obtain well permits or an augmentation plan.[27] Following the Engineer's rejection, the Ranchers sought a declaration from the District Court, Water Division 7 (the "Water Court"), that water withdrawn during the CBM production process constitutes a "beneficial use" and is therefore subject to the administration and regulation of the Engineers.[28]

III. PROCEDURE

The Ranchers sought a declaratory judgment from the Water Court ruling that the water used in CBM production materially injured their

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Methane Byproduct Water in the Rocky Mountains: A Comparative Analysis of Approaches to Coalbed Methane Produced Water Quantity Legal Issues in Utah, New Mexico, Colorado, Montana and Wyoming, 17 J. ENVTL. L. & LITIG. 281,283 (2002).

23. Memorandum from Kate Meyer, Office of Legislative Legal Services, Colorado General Assembly, on *Vance v. Simpson*, 2 (June 18, 2008), http://www.state.co.us/gov_dir/leg_dir/lcsstaff/2008/comsched/08WaterResourcesVanceSimpson.pdf.

24. *Id.*; BP owns nearly 30% of the total CBM production in the San Juan Basin and operates 1,300 CBM wells producing more than 900 million cubic feet of CBM gas per day. BP plans to increase its share of CBM recovery from the San Juan Basin by approximately 1.9 trillion cubic feet net in the next 13 years. *See* BP American Production Company Coal Bed Methane Home Page, *available at* www.bp.com (follow "About BP" hyperlink; then follow "BP and technology" hyperlink; then follow "Meeting energy demand, efficiently"; finally follow "Coal bed methane" hyperlink) (last visited Dec. 28, 2009).

25. *See* S.S. PAPADOPULOS & ASSOCIATES, INC., COALBED METHANE STREAM DEPLETION ASSESSMENT STUDY – NORTHERN SAN JUAN BASIN, COLORADO, *available at* http://water.state.co.us/pubs/pdf/CMSDA_Study.pdf.

26. Answer Brief of Appellee at 5, Vance v. Wolfe, 205 P.3d 1165, No. 07SA293 (Colo. 2009); *see also* PAPADOPULOS *supra* note 25 at ES-2.

27. Brief for the Appellee *supra* note 26 at 5.

28. *See* Water Court Order: Motions For Summary Judgment, 2005CW063, 1.

water rights.[29] The Ranchers claimed that the Engineers must permit CBM wells as ground water wells under the Ground Water Act because CBM produced water is a "beneficial use."[30] The Water Court granted summary judgment in the Ranchers' favor because it found CBM wells to be "wells" under the Ground Water Act and similarly, an "appropriation" under the 1969 Act.[31] Specifically, the Water Court found that "the removal of water... is not incidental" but "occurs as the result of the active and intentional pumping of water to accomplish the intended purpose."[32] Thus, according to the Water Court, CBM produced water is a "beneficial use" and requires a well permit for tributary water, and where necessary to prevent injury, an augmentation plan. The Engineers appealed.

IV. THE COLORADO SUPREME COURT DECISION

A. BENEFICIAL USE

As noted above, the Colorado Supreme Court addressed the central issue of whether "CBM production obtains water for a 'beneficial use,' such that it requires a well permit under the Ground Water Act in connection with an appropriation under the [Water Right Determination and Administration Act of 1969]."[33] If CBM produced water is a "beneficial use," the producer in this case, BP, would have to comply with the Ground Water Act by obtaining a well permit and in some instances, creating an augmentation plan.[34] Conceptually, a CBM well would also be a water well if the water produced in connection with the production of CBM gas is a "beneficial use."[35]

The *Vance* court began by briefly restating the definition of a "well" under the Ground Water Act.[36] The court noted that a "well" is "any structure or device used for the purpose or with the effect of obtaining ground water for a *beneficial use* from an aquifer," and then turned their attention to the primary issue of whether CBM production acquires water for a "beneficial use."[37] Quoting from the 1969 Act, the court defined "beneficial use" as "that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made."[38] The court then implicitly reduced the 1969 definition of "beneficial use" to two elements: (1) the use of a reasonable amount of water, and (2) to

29. *Id.*
30. *Id.* at 14.
31. *Id.* at 16.
32. *Id.*
33. Vance v. Wolfe, 205 P.3d 1165, 1169 (Colo. 2009).
34. COLO. REV. STAT. § 37-90-137(7).
35. Darrin, *supra* note 22, at 17.
36. *Vance*, 205 P.3d at 1168-69.
37. *Id.* (quoting COLO. REV. STAT. § 37-90-103(21)(a)) (emphasis in original).
38. *Id*; COLO. REV. STAT. § 37-92-103(4).

accomplish a certain purpose.[39] Under this bifurcated reading, the court concluded that the "CBM process 'uses' water – by extracting it from the ground and storing it in tanks – to 'accomplish' a particular 'purpose' – the release of methane gas," and therefore constitutes a "beneficial use."[40]

The Engineers argued that produced water is not a "beneficial use" because it is merely a byproduct to the primary purpose of the CBM well.[41] The court disagreed. Relying heavily on *Three Bells Ranch Assoc. v. Cache La Poudre Water Users Ass'n* and *Zigan Sand & Gravel, Inc. v. Cache La Poudre Water Users Ass'n*, the court reasoned that "[w]hile the purpose of the mining operation is to obtain gas, not water, the withdrawal of water and its accumulation in the storage tanks is the 'inevitable result' of the CBM process."[42] In fact, the court determined that produced water is an "integral component to the entire CBM process." [43] Even if the water "becomes a nuisance *after* it has been extracted," the inextricably connected relationship between the water and the CBM gas gave the *Vance* court enough reason to find a "beneficial use."[44] As such, CBM produced water in *Vance* did not need to be put to a subsequent beneficial use.[45] *Three Bells*, *Zigan*, and the statutory definition of "beneficial use" do not contain such an element urged by the Engineers and BP.[46]

The court also found that protecting the Ranchers' water rights from material injury supported a finding of "beneficial use."[47] BP re-injected CBM produced water into geologic formations that were deeper than the original CBM producing aquifer.[48] Thus, BP made the produced water inaccessible and, as a result, diminished the Ranchers' and other water users' legally appropriated supply.[49] The Engineers and BP argued that it is wholly unnecessary to designate CBM produced water as a "beneficial use" because the Engineers must protect water right holders from material injury.[50] The court rejected BP's argument and reaffirmed the necessity for water permits and permanent augmentation plans to fully protect vested water rights.[51]

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39. *Vance*, 205 P.3d at 1169.
40. *Id.*
41. *Id.*
42. *Id.* at 1170 (misquoting Zigan Sand & Gravel, Inc. v. Cache La Poudre Water Users Ass'n, 758 P.2d 175 (Colo. 1988)). *Zigan* held that water removed for gravel mining purposes, *and* beneficially used as a recreational and wildlife pond is a "well" and thus requires a well permit under the Ground Water Management Act. *See also* Three Bells Ranch Assoc. v. Cache La Poudre Water Users Ass'n., 758 P.2d 164 (Colo. 1988).
43. *Vance*, 205 P.2d at 1170.
44. *Id.*
45. *Id.*
46. *Id.* at 1171; *see Three Bells*, 758 P.2d at 170; *see also Zigan*, 758 P.2d at 182.
47. *Vance*, 205 P.2d at 1171.
48. *Id.*
49. *Id.*
50. *Id.* at 1172
51. *Id.* "Permitting is a comprehensive process that provides notice to potentially injured parties and involves the determination of whether there is unappropriated

B. REGULATORY AUTHORITY OVER CBM PRODUCED WATER

The *Vance* court also addressed the argument that the Colorado Oil and Gas Conservation Commission had exclusive regulatory authority over CBM wells and the water produced as a result thereof.[52] The court found that there is no provision in the Oil and Gas Conservation Act that would "exempt oil and gas production from the 1969 Act or the Ground Water Act...."[53] Thus, although the production of oil and gas is subject to the extensive regulation of the COGCC, "it is also subject to the 1969 Act and Ground Water Act."[54]

V. DISCUSSION

The *Vance* court concluded that: (1) water produced in conjunction with CBM mining is a "beneficial use;" and thus (2) CBM wells are subject to the Engineers' well permitting authority.[55] The first conclusion rests on a fundamental misconception of the statutory definition of a "beneficial use." Consequently, the second conclusion is wholly unnecessary. In reality, CBM produced water does not need to be construed as a "beneficial use" in order to fit Colorado's water administration system. Instead, the State Engineer can regulate CBM water pursuant to its authority to prevent injury.[56] Regardless of whether the *Vance* court's logic is sound, the implications of the decision are significant.

This section will first evaluate the definition of "beneficial use" and the supporting reasoning offered by the *Vance* court under the Ground Water Act and the 1969 Act. Following this comparison, the discussion will address the implications of the *Vance* court's definition of "beneficial use."

A. BENEFICIAL USE: THE GROUND WATER ACT

Under the Ground Water Act, water users outside the boundaries of any designated ground water basin[57] must apply to the State Engineer for a well permit prior to the construction of any "well."[58] Pursuant to this Act, a "well" is "any structure or device used for the purpose or with the effect of obtaining ground water for beneficial use from an

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water available for appropriation and whether an appropriation can be made without injury. (Citation omitted). The statutory design places the determination of the presence or absence of a water right with the water court, not the Engineers." *Id.*

52. *Id.* (emphasis added).

53. *Id.* at 1173.

54. *Id.*

55. *Id.*

56. COLO. REV. STAT. § 37-92-502.

57. There are eight designated ground water basins in Colorado: Kiowa-Bijou Basin, Southern High Plains Basin, Upper Black Squirrel Creek Basin, Lost Creek Basin, Camp Creek Basin, Upper Big Sandy Basin, Upper Crow Creek Basin, and Northern High Plains Basin. *See* Colorado Ground Water Commission, *available at* http://water.state.co.us/cgwc/DB-GWMgmtDist.htm (last visited Dec. 29, 2009).

58. COLO. REV. STAT. § 37-90-137(1).

aquifer."[59] Thus, if a CBM well constitutes a "well" for the purposes of the Ground Water Act, then the Engineers must regulate CBM produced water under its Article 90 permitting authority.[60] As a result, the central task is to identify the criteria that define a "well."

Determining what constitutes a "well" is a matter of statutory construction. A court should interpret the Ground Water Act to give each word the meaning that the General Assembly intended.[61] But more importantly, a court should interpret each word or provision as consistent with the next.[62] These two rules reduce the definition of a "well" to four statutory elements: (1) any structure or device, (2) used for the purpose or with the effect of obtaining ground water, (3) for beneficial use, (4) from an aquifer. Each element should be harmonized as part of the whole.[63]

The *Vance* court found that CBM wells satisfied the definition of a "well" under the Ground Water Act, but read the second statutory element to trump the third.[64] Necessarily, a CBM well is a structure or device that has the effect of obtaining ground water under the second element.[65] It is not so clear that the water pumped out of the CBM well is "for a beneficial use" under the third. The *Vance* court found that because removing water was necessary in order to produce CBM gas, pumping water to the surface was a "beneficial use" even though the water was not actually used in the process.[66] Thus, obtaining or moving water under the second statutory element seems to automatically satisfy the third if a party moves the water to further some purpose even though it is not actually applied at any point. By collapsing these two elements, the *Vance* court turned "beneficial use" into "beneficial byproduct."

The *Vance* court never addressed this statutory argument.[67] Instead, the court relied entirely on two previous Gravel Pit cases: *Zigan* and *Three Bells*.[68] Using *Zigan* and *Three Bells*, the Ranchers' argued that the removal of CBM water was analogous to water diverted during a gravel pit operation because water is essential to the production of both gravel and CBM gas.[69] Indeed, the *Zigan* court stated and the *Vance* court restated that the interception of ground water is the "unavoidable

59. COLO. REV. STAT. § 37-90-103(21)(a).

60. *Id.*

61. Golden Animal Hosp. v. Horton, 897 P.2d 833, 836 (Colo.1995).

62. Welby Gardens v. Adams County Bd. of Equalization, 71 P.3d 992, 995 (Colo. 2003).

63. Frank M. Hall & Co. v. Newsom, 125 P.3d 444, 448 (Colo. 2005) ("[A] provision existing as part of a comprehensive statutory scheme must be understood, when possible, to harmonize the whole.").

64. *See* Vance v. Wolfe, 205 P.3d 1165, 1169-70 (Colo. 2009). The court never employed a statutory construction analysis but instead relied entirely on language provided by *Zigan* and *Three Bells* to conclude that CBM water is "for a beneficial use."

65. Darrin, *supra* note 22 at 283.

66. *Vance*, 205 P.3d at 1170.

67. *See id.* at 1169-71.

68. *Id.*

69. *Id.* at 1170

result" of each activity.[70] The *Vance* court, however, failed to acknowledge the *Zigan* court's subsequent clarification that "in order to classify the gravel pits as wells, we must also determine that the water is obtained 'for beneficial use.'"[71] Thus, the court in *Zigan* recognized that diverting water into gravel pits was simply not enough to constitute an appropriation under the Ground Water Act.[72] Instead, water diverted into a gravel pit needed to be actually applied to a further beneficial use.[73] In *Zigan,* the operators turned the gravel pits into wildlife and recreational ponds.[74] The operators in *Vance* made no such effort; thus, *Vance* and *Zigan* are markedly distinct.

Recognizing this discrepancy, the *Vance* court stated that neither the Gravel Pit cases nor the statutory definition of "beneficial use" "set the *requirement* that the beneficial use always be subsequent or collateral to the withdrawal and collection of water."[75] It is indisputable that the court is correct as to the plain language of the statute and the holding of the Gravel Pit cases, but the fact remains the same: "[b]eneficial use refers not only to merely taking steps to obtain water, but to *actually using the water to accomplish the purpose for which it was appropriated.*"[76] "Beneficial use" refers to the actual use of water, not merely the incidental production of water as a necessary incident to a water-related activity.[77]

Furthermore, the Ground Water Act itself distinguishes pumping ground water to facilitate mining, and pumping ground water for a separate "beneficial use."[78] Specifically, in the "case of dewatering geologic formations by removing nontributary ground water to facilitate or permit mining of minerals," "[n]o well permit shall be required unless the nontributary ground water being removed will be beneficially used."[79] In this provision, the introductory language speaks solely of dewatering geologic formations to facilitate mining.[80] Subsection (a) of the statute then introduces a "beneficial use" element to pumping water during the dewatering process.[81] Thus, in a single provision, the Ground Water Act differentiates merely removing water from a mine from

70. Zigan Sand & Gravel, Inc. v. Cache La Poudre Water Users Ass'n, 758 P.2d 175, 181 (Colo. 1988); *Vance*, 205 P.3d at 1170.

71. *Zigan*, 758 P.2d at 181.

72. *Id.*; *see also* Three Bells Ranch Assoc. v. Cache La Poudre Water Users Ass'n., 758 P.2d 164, 174 (Colo. 1988).

73. "Far from holding that the diversion of water occurring as a by-product of gravel mining would be a beneficial use in itself, we discovered an intent to appropriate in the miners' proposals to put the diverted water to approved wildlife and recreational uses." *Vance*, 205 P.3d at 1174 (Coats, J., dissenting)

74. *Zigan*, 758 P.2d at 182.

75. Vance v. Wolfe, 205 P.3d 1165, 1170-71 (Colo. 2009).

76. Danielson v. Milne, 765 P.2d 572, 575 (Colo. 1988) (emphasis added).

77. Santa Fe Trail Ranches Prop. Owners Ass'n v. Simpson, 990 P.2d 46, 53 (Colo. 1999).

78. COLO. REV. STAT. 37-90-137(7).

79. *Id.*

80. *Id.*

81. *Id.*

removing water from a mine that will also be beneficially used. If CBM produced water is a "beneficial use" as the *Vance* court concluded, why would the Ground Water Act only require a well permit for producing water during mining operations only if that water was put to a further beneficial use? The *Vance* decision may have rendered section 37-90-137(7) of the Colorado Revised Statutes meaningless.

Several conclusions are apparent at this point. First, moving or "obtaining" water as a byproduct of a water-related activity is simply not enough to satisfy the statutory definition of a "well" under the Ground Water Act. Second, the *Vance* court never described how CBM water is actually applied. Rather, the *Vance* court only stated that the water is produced *with*, and is in fact a product of, CBM gas mining, precluding a CBM well from becoming a "well" under the Ground Water Act. Third, the *Vance* court's conclusion that CBM produced water is a "beneficial use" blatantly ignores the provision in the Ground Water Act that distinguishes between removing water from a mine and removing water from a mine that is put to a further beneficial use. Thus, CBM produced water is at least arguably not a "beneficial use" under the Ground Water Act and as a result, the State Engineer should not regulate CBM well's as ground water wells.

B. BENEFICIAL USE: THE WATER RIGHT DETERMINATION AND ADMINISTRATION ACT OF 1969

Much like the conclusion reached under the Ground Water Act, moving or obtaining water as a byproduct of a water-related activity is not enough to constitute an appropriation under the 1969 Act. To acquire a water right under the 1969 Act, a water user must "[apply] a specified portion of the water... to a beneficial use pursuant to the procedures prescribed by law."[82] Actual application of water to a "beneficial use" is the central element of an appropriation.[83] Thus, a diversion by itself without an "actual beneficial use" will not constitute an appropriation.[84]

The 1969 Act defines a "beneficial use" as "the use of that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made."[85] Broken into its elements, the definition requires: (1) a use, (2) of a reasonable amount of water, (3) to accomplish the purpose for which the appropriation was made, (4) without waste. This definition seems to put "no limit on the range of possible uses"[86] because the circular nature of the definition places

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

83. Archuleta v. Gomez, 200 P.3d 333, 342 (Colo. 2009).

84. Pagosa Area Water and Sanitation Dist. v. Trout Unlimited, 170 P.3d 307, 314 (Colo. 2007).

85. COLO. REV. STAT. § 37-92-103 (4).

86. CORBRIDGE, *supra* note 6, at 44.

particular emphasis on the purpose of the appropriation.[87] As a result, new water uses are encouraged so long as the use accomplishes the purpose or reason for the appropriation.

The *Vance* court concluded that the "CBM process 'uses' water - by extracting it from the ground and storing it in tanks - to 'accomplish' a particular 'purpose' - the release of methane gas," and, therefore, is a beneficial use.[88] However, this broad interpretation ignores an implicit requirement of the statute as made clear by Colorado Supreme Court precedent: "beneficial use" requires *actual application*.[89] Irrigation, stock watering, dust abatement, recreational water features, municipal consumption, snow making, storage releases for boating and fishing, power generation, fire protection, and wildlife preservation[90] are all distinguishable from CBM development in one significant respect: water is actually *applied* to accomplish each use. Thus, "extracting [water] from the ground and storing it in tanks - to 'accomplish' a particular 'purpose' - the release of methane gas" cannot be a "beneficial use" because the water is never actually applied.[91] As mentioned above, CBM producers merely remove water from the ground.

The *Vance* court cited *Pueblo West Metropolitan District v. Southeastern Colorado Water Conservancy District* for the proposition that Colorado law does not require the molecule-for-molecule application of water to a beneficial use.[92] *Pueblo West* held that the "capture and storage of flood water is a beneficial use."[93] Here, the *Vance* court tried to argue that because the capture and storage of floodwater furthered a coinciding purpose without an actual application, the definition of "beneficial use" does not require a "subsequent" or "collateral" use.[94] This response, however, completely misses the point, and more importantly, misapplies *Pueblo West*.

First, it does not matter when the water is put to a "beneficial use," it matters that the water be actually applied to accomplish a particular purpose.[95] Admittedly, a "beneficial use" does not need to bear a certain temporal relationship to the application.[96] However, the water must still be applied. Secondly, the Colorado Supreme Court in *Pueblo West*

87. *See* High Plains A&M, LLC v. Southeastern Water Conservancy Dist., 120 P.3d 710, 718 (Colo. 2005).

88. Vance v. Wolfe, 205 P.3d 1165, 1170.

89. *High Plains*, 120 P.3d at 717 (citing Farmers' High Line Canal & Reservoir Co. v. Southworth, 21 P. 1028, 1029 (Colo. 1889) ("[t]o make [a diversion of water into a constitutional appropriation] it must be ... actually applied to the land"); Thomas v. Guiraud, 6 Colo. 530, 533 (1883)("The true test of appropriation of water is the successful application thereof to the beneficial use designed.")).

90. Gregory J. Hobbs, *Colorado Water Law: An Historical Overview*, 1 U. DENV. WATER L. REV. 1, 9 (1997).

91. *Vance*, 205 P.2d at 1170.

92. *Id.* at 1171 (citing Pueblo West Metropolitan District v. Southeastern Colorado Water Conservancy District, 689 P.2d 594, 603 (Colo.1984)).

93. *Id.*

94. *Id.*

95. Archuleta v. Gomez, 200 P.3d 333, 342 (Colo. 2009).

96. *Vance*, 205 P.2d at 1171.

stated that the "capture and storage of flood waters *may be* a 'beneficial use' underlying an appropriation of water."[97] But, *Pueblo West* "dealt with the limited situation of relocation and storage for a public purpose, implicitly approved by the General Assembly in its provision for the creation of conservancy districts, having both the right and duty to acquire and hold water rights as necessary to prevent flooding."[98] Thus, the General Assembly treated flood prevention similar to instream flow rights, designating it as a "beneficial use" specifically reserved to conservancy districts.[99] Since *Pueblo West* is inapplicable to private water users and did not address the statutory definition of "beneficial use," the *Vance* court should not have used the case to support its holding that CBM developed water is a "beneficial use."

The conclusion under the 1969 Act is almost identical to that reached according to the Ground Water Act: a "beneficial byproduct" is not a "beneficial use" because the water must actually be applied to form a water right under Colorado law. Additionally, the Colorado Supreme Court has not decided any case that would refute the fundamental requirement that water be actually applied in order to constitute a beneficial use.

C. IMPLICATIONS: COLORADO WATER LAW POST-VANCE

The significance of the *Vance* decision cannot be understated. Certainly, one important implication is the development of the Engineers' new role as administrators of CBM wells.[100] However, depending how *Vance* is interpreted, the Engineers may also be required to regulate traditional oil and gas wells and any other activity that requires the removal of water for a related purpose under the Ground Water Act and the 1969 Act.[101] The *Vance* decision may also have other incidental effects. Specifically, CBM producers may relocate to other states that do not require well permits for CBM wells, which could detrimentally affect Colorado's energy market. To fully understand the implications of the *Vance* decision, it is necessary to understand *Vance's* practical requirements for CBM producers and, correspondingly, the State Engineer.

A water user must obtain a well permit from the State Engineer in

97. *Pueblo West*, 689 P.2d at 603 (emphasis added).

98. "Similarly, Whether the General Assembly chooses to authorize the displacement of waters of the state for the production of methane gas, and if so, in what manner it chooses to best regulate that process, I consider to be matters entirely within its purview. I do not believe, however, it has yet done so." *Vance*, 205 P.2d at 1174 (Coats J., dissenting).

99. COLO. REV. STAT. §§ 37-2-101, 37-3-103(1)(h).

100. *Vance*, 205 P.2d at 1173.

101. Interview with John Cyran, First Assistant Attorney General, Colorado Office of the Attorney General, in Denver (Sept. 21, 2009); *see also Vance*, 205 P.2d at 1174 (Coats J., dissenting).

order to pump both tributary and nontributary ground water.[102] If a well withdraws tributary water, the applicant must also acquire a substitute water supply plan and, eventually, an augmentation plan.[103] If a well withdraws nontributary water, the applicant does not need to provide an augmentation plan or substitute water supply plan unless the Engineers determine that injury will result.[104] Finally, pumping nontributary ground water from a geologic formation to facilitate a mining operation does not require a permit unless that water is also beneficially used.[105]

Before issuing a permit in any of the circumstances above, the State Engineer must make four findings: "(1) there [must be] unappropriated water available, (2) the vested water rights of others [cannot] be materially injured, (3) hydrological and geological facts [must] substantiate the proposed well, and (4) the proposed well [must] be located over 600 feet from any other existing wells."[106] Furthermore, the State Engineer must "take into account all vested water rights of which he has notice, whether or not adjudicated, in determining the impact of a proposed non-exempt well."[107] If the definition of "beneficial use" applied in the *Vance* decision is applied beyond CBM wells to conventional oil and gas wells, these well permitting criteria may apply to all of the nearly 34,000 oil and gas wells in Colorado.

Certain ironies about conventional oil and gas development make this conclusion even more frustrating. First, the amount of water produced as result of a CBM operation is much greater than that of a conventional oil and gas operation.[108] Second, the quality of the water produced as a result of conventional oil and gas production is generally lower due to its high concentrations of sodium, benzene, carbonates, phosphates, borates, sulfates, magnesium, potassium, iron, fluorine and organic chemicals.[109] Thus, not only may the State Engineer have to evaluate each oil and gas well according to the four requirements set out above, but he or she may be required to do so when the water being

102. COLO. REV. STAT. § 37-90-103(21)(a); § 37-90-137(1); Water in Colorado is presumed to be tributary absent clear and convincing evidence to the contrary. Safranek v. Limon, 228 P.2d 975, 977 (Colo. 1951).

103. COLO. REV. STAT. § 37-92-308(11); Simpson v. Bijou Irrigation Co., 69 P.3d 50, 57 n. 7 (Colo. 2003).

104. COLO. REV. STAT. § 37-90-137 (9)(c)(I).

105. COLO. REV. STAT. § 37-90-137 (7). Despite the logical inconsistency discussed in section B above, CBM producers do not need to obtain a well permit for nontributary water unless the water produced as a result of the CBM operation is also subsequently or collaterally put to a beneficial use.

106. Buffalo Park Development Co v. Mountain Mutual Reservoir Co., 195 P.3d 674, 686 (Colo. 2008).

107. Concerning Application for Water Rights of Turkey Canon Ranch Ltd. Liability Co., 937 P.2d 739, 752 (Colo. 1997).

108. UNITED STATES GEOLOGICAL SURVEY, WATER PRODUCED WITH COAL-BED METHANE 1 (Nov. 2000), http://pubs.usgs.gov/fs/fs-0156-00/fs-0156-00.pdf.

109. Oil and Gas Accountability Project, Oil and Gas at Your Door: A Landowners Guide to Oil and Gas Development, I-58 (July 2005), *available at* http://www.earthworksaction.org/LOguidechapters.cfm (follow "download the entire book" hyperlink) (last visited Dec. 29, 2009).

produced is substantially dissimilar in quantity and quality than that considered by the *Vance* court.[110]

The Colorado General Assembly recognized these implications and tried to soften the impact of the *Vance* decision by passing House Bill 09-1303 ("HB 1303").[111] HB 1303 has three primary elements. First, it gives CBM producers a grace period to comply with the well permitting and application process.[112] Second, the State Engineer must permit CBM wells that withdraw tributary water by April 1, 2010, and those CBM wells must have a valid augmentation plan by 2013, if necessary.[113] Finally, and most importantly, HB 1303 gives the State Engineer rulemaking authority to "draw lines in the sand" outlining tributary areas and nontributary areas to assist CBM producers in applying for a well permit.[114] The third element gives the State Engineer the authority to designate areas of the state, and the wells within those areas, as tributary or nontributary for purposes of permitting CBM and oil and gas wells, thereby preventing a well-by-well analysis.[115]

The effect of HB 1303 is simple. If a CBM well falls within a tributary area as designated by the State Engineer, then the CBM producer must obtain a permit, and if the well is in an over-appropriated basin, then the producer must obtain a substitute water supply plan or an augmentation plan.[116] If a CBM well falls within a nontributary area, the CBM producer must obtain a well permit,[117] but does not need a substitute water supply plan or augmentation plan because nontributary water is administered outside of the prior appropriation system.[118] Nonetheless, the State Engineer will still face a massive influx of well permits and substitute water supply plan applications for tributary CBM wells.[119] Similarly, despite HB 1303's line-drawing effect, the State Engineer will still have to confirm thousands of CBM wells as tributary or nontributary wells.[120] Because of the *Vance* decision and HB 1303, the Engineers' role has expanded both conceptually and practically.

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110. Telephone Interview with Dick Wolfe, State Engineer, Colorado Department of Water Resources, (Oct. 6, 2009).

111. H.B. 09-1303, 67th Gen. Ass., 1st Reg. Sess. (Colo. 2009).

112. *See id.*

113. *Id.*

114. *Id.*; Interview with John Cyran, First Assistant Attorney General, Colorado Office of the Attorney General, in Denver (Sept. 7, 2009).

115. *Id.*

116. COLO. REV. STAT. § 37-92-308(11); Simpson v. Bijou Irrigation Co., 69 P.3d 50, 60-61 (Colo. 2003).

117. *See, e.g.* COLO. REV. STAT. § 37-90-103(21)(a); § 37-90-137(1); § 37-90-137(4). CBM produced water is a beneficial use which is why § 37-90-137(7) does not preclude a permit from the State Engineer.

118. COLO. REV. STAT. § 37-92-305(11) ("Nontributary ground water shall not be administered in accordance with priority of appropriation.")

119. Interview with John Cyran, First Assistant Attorney General, Colorado Office of the Attorney General, in Denver (Sept. 7, 2009).

120. DIVISION OF WATER RESOURCES, OFFICE OF THE STATE ENGINEER, 2 CCR 402-17, PROPOSED STATEMENT OF BASIS, PURPOSE, AND SPECIFIC AUTHORITY: PRODUCED NONTRIBUTARY GROUND WATER RULES, (AUG. 31, 2009).

Less obvious implications further compound the State Engineers' new responsibilities. For example, uranium[121] and oil shale[122] operations both utilize ground water and may need to acquire well permits and substitute water supply plans or augmentation plans in order to comply with *Vance* and HB 1303. Perhaps even more strikingly, under the court's reasoning in *Vance*, the common household sump-pump may require a well permit from the State Engineer because moving water to accomplish a beneficial purpose (i.e., watering lawns, dewatering a flooded basement, etc.) may create a "well" under the *Vance* court's reasoning.

The implications of the *Vance* decision extend beyond the duties of the State Engineer. Specifically, CBM producers now have good reason to look to other jurisdictions to produce CBM gas.[123] By unnecessarily requiring CBM producers to acquire a well permit from the State Engineer when the State Engineer already has the authority to regulate those CBM producers pursuant to its curtailment authority, the *Vance* court has intensified the regulatory framework, and therefore, increased the transaction costs of producing CBM within Colorado.[124] Indeed, the San Juan Basin considered in the *Vance* decision, which is the most productive CBM basin in North America, stretches across the Colorado-New Mexico state line.[125] New Mexico does not consider CBM produced water to be a beneficial use of water and, as such, does not require a well permit.[126] As a result, BP America, Pioneer Natural Resources Co., MarkWest Hydrocarbon Inc. and other CBM producers need only move CBM production to New Mexico to produce the same CBM gas without having to apply for well permits, augmentation plans, and substitute water supply plans now necessary in Colorado.

VI. CONCLUSION

The *Vance* decision unmistakably changed the landscape of Colorado water administration both legally and practically. By defining "beneficial use" without an "actual application" element, the *Vance* court has implicitly adopted a "beneficial byproduct" rule that drastically expands the duties of the State Engineer. Such a definition may also affect the energy market in Colorado and perhaps even the Colorado

121. United States Geologic Survey, Uranium Sources and Environmental issues, *available at* http://energy.cr.usgs.gov/other/uranium/more.html(last visited Dec. 29, 2009).

122. LAWRENCE J. MACDONNELL, WESTERN RESOURCE ADVOCATES, WATER ON THE ROCKS: OIL SHALE WATER RIGHTS IN COLORADO (2009), http://www.westernresourceadvocates.org/land/wotrreport/wotrreport.pdf.

123. Samuel S. Bacon, *Why Waste Water? A Bifurcated Proposal For Managing, Utilizing, and Profiting From Coalbed Methane Discharged Water*, 80 U.COLO.L.REV. 571, 587 (2009) (noting that additional restrictions increase transaction costs and thus prevent the formation of an efficient market).

124. *Id.*

125. PAPADOPULUS, *supra* note 25 at ES-1

126. N.M. STAT. § 70-2-12.1 (2006); *see also* Rebecca Watson & Holly Franz, *Produced Water Rights and Water Quality - 'A Meeting of the Waters,'* 52 ROCKY MT. MINERAL L. INST. 12-1, 12-24 (2006) (concluding the same).

Supreme Court's own docket. Regardless of the reasoning behind the *Vance* decision, it is clear that the drama of maximum utilization is only beginning to unfold.[127]

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127. Fellhauer v. People, 447 P.2d 986, 994 (Colo. 1968) ("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.*").