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The Need for Codification of Wyoming's Coal Bed Methane Produced Groundwater Laws

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COMMENT

**The Need for Codification of Wyoming's Coal Bed Methane
Produced Groundwater Laws**

*Neal Joseph Valorz**

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I. INTRODUCTION

A high probability exists that below ground, at some depth, there is water.¹ There is an estimated 5.6 million cubic miles of groundwater; 2.5 million cubic miles of the groundwater is freshwater.² These statistics illustrate that freshwater is limited in quantity and indicate how important the capture and development of groundwater resources is to everyday life. Yet, in the Rocky Mountain West,

* Candidate for J.D., University of Wyoming, 2010. I would like to thank my family and friends. In particular, I would like to thank my mother and my fiancé for their support during this venture. Further, I would like to thank the editors of the *Wyoming Law Review* who reviewed the many drafts of this comment, for the countless hours they put into editing and helping develop the document. Lastly, I would like to thank my advisor, Professor Lawrence MacDonnell, for his continuous advice, availability to answer all my questions, and his willingness to review multiple drafts in a quick and timely manner.

¹ United States Geological Survey, *Water Science for Schools*, <http://ga.water.usgs.gov/edu/earthwherewater.html> (last visited Nov. 23, 2009).

² *Id.* The numbers used here are rounded.

the development of coal bed methane results in the production of large quantities of groundwater that remain unused.³ As a result, issues surrounding the quantity and disposal of coal bed methane produced water are becoming more prevalent in the arid western United States.⁴

This comment provides a summary of recent legal developments in Colorado, Montana, and Wyoming related to the legal status of coal bed methane produced water.⁵ Despite the recognition of the valuable character of water in the Rocky Mountain West, none of these states require further use of coal bed methane produced water.⁶ Nevertheless, the Wyoming Supreme Court stated there are perhaps no questions of greater importance than those dealing with water.⁷ This comment pays particular attention to Wyoming's approach for regulating coal bed methane produced water and recommends a statutory change drawn from a review of developments in Colorado and Montana.⁸

Wyoming's current regulatory scheme does not address many of the problems associated with coal bed methane development.⁹ The water law and well permitting system originally adopted and developed in Wyoming did not

³ See *infra* notes 24–27 and accompanying text (discussing the quantities of water coal bed methane production captures).

⁴ Gary Bryner, *Coal Bed Methane Development: The Costs and Benefits of an Emerging Energy Resource*, 43 NAT. RESOURCES J. 519, 520 (2003) [hereinafter Bryner, *Coal Bed Methane Development: The Costs and Benefits*] (“Parties are forced to deal with issues of produced water, conflicts between landowners and those who lease mineral rights, impacts of development on communities, demands for governmental and regulatory services, and other issues in a very compact time frame.”); GARY BRYNER, COALBED METHANE DEVELOPMENT IN THE INTERMOUNTAIN WEST 1 (2002), http://www.colorado.edu/Law/centers/nrlc/CBM_Primer.pdf [hereinafter BRYNER, COALBED METHANE DEVELOPMENT IN THE INTERMOUNTAIN WEST] (“[Coal bed methane] production has expanded tremendously over the past decade, and the rapidity with which development has expanded has resulted in stresses and tension in affected communities.”); Andrew R. Kear, *The Changing and Contested Discourse of Coalbed Methane Policy in the Western U.S.* 4 (Mar. 20, 2008) (unpublished manuscript, on file with All Academic Research, available at http://www.allacademic.com/meta/p237850_index.html) (“[Coal bed methane] conflicts encompass gas ownership and severed rights, water disposal and use rights, overlapping regulatory jurisdictions, environmental law implementation, environmental problems, public land multiple-use mandates and tribal land [coal bed methane] development.”); see also THE RUCKELSHAUS INSTITUTE OF ENVIRONMENT AND NATURAL RESOURCES, WATER PRODUCTION FROM COALBED METHANE DEVELOPMENT IN WYOMING: A SUMMARY OF QUANTITY, QUALITY AND MANAGEMENT OPTIONS, UNIVERSITY OF WYOMING v–vi (Dec. 2005), available at <http://www.powderriverbasin.org/assets/Uploads/files/cbm-studies/CBMWaterFinalReportDec2005.pdf> (providing a comprehensive study of Wyoming's coal bed methane resources and industry) [hereinafter THE RUCKELSHAUS REPORT].

⁵ See *infra* notes 57–125 and accompanying text.

⁶ See *infra* notes 134–52 and accompanying text.

⁷ *Farm Inv. Co. v. Carpenter*, 61 P. 258, 259 (Wyo. 1900).

⁸ See *infra* notes 153–77 and accompanying text.

⁹ THE RUCKELSHAUS REPORT, *supra* note 4, at 2.

treat coal bed methane aquifers as potential sources of future water supply.¹⁰ The regulatory system also does not require reinjection or use after the extraction of water.¹¹ Consequently, Wyoming policy allows the wasting of water by coal bed methane developers in exchange for the development of energy.¹² Wyoming is not alone; in fact, neighboring states have also struggled with this important issue.¹³ Wyoming must look to these states and amend its legal and regulatory structure by enacting statutory provisions to ensure produced water is not wasted.¹⁴

II. BACKGROUND

In the background section, this comment first addresses how coal bed methane is developed.¹⁵ It then provides a brief description of the prior appropriation water law doctrine and the concept of beneficial use.¹⁶ All western states, including Wyoming, Colorado, and Montana, have adopted the doctrine of prior appropriation for the distribution of water found within each state's borders.¹⁷ Lastly, the background section articulates how Colorado, Montana, and Wyoming vary in their determination of whether water produced in association with coal bed methane requires the issuance of an appropriation right and in the required usages of the extracted water.¹⁸

¹⁰ Bryner, *Coal Bed Methane Development: The Costs and Benefits*, *supra* note 4, at 550 (“Water law and the water well permit process simply did not anticipate [coal bed methane] development and the produced water problem. As a result, some of the produced water that could be put to beneficial use is wasted.”).

¹¹ WYOMING STATE ENGINEER, GUIDANCE: CBM/GROUND WATER PERMITS 1 (Mar. 2004), http://seo.state.wy.us/PDF/GW_CBM%20Guidance.pdf; Dennis Stickley & Lawrence J. MacDonnell, *Wyoming's Legal Framework for Management of Water Produced in Conjunction with Coal Bed Methane*, 32 WYO. LAW. 24, 25 (Oct. 2009).

¹² See Kear, *supra* note 4, at 10 (describing how Wyoming's method of regulating coal bed methane produced water is economically driven causing a “drill away” status quo in Wyoming).

¹³ See *infra* notes 57–77 and accompanying text (describing how Colorado regulates coal bed methane produced groundwater); see also *infra* notes 103–125 and accompanying text (describing how Montana regulates coal bed methane produced groundwater).

¹⁴ See *infra* notes 126–77 and accompanying text.

¹⁵ See *infra* notes 19–29 and accompanying text.

¹⁶ See *infra* notes 30–46 and accompanying text.

¹⁷ GEORGE C. COGGINS ET AL., FEDERAL PUBLIC LAND AND RESOURCE LAWS 488 (6th ed. 2007) (“[G]enerally speaking, the prior appropriation doctrine now holds sway in all states west of the 100th meridian.”).

¹⁸ Compare *infra* notes 57–77 and accompanying text (describing Colorado's approach), with *infra* notes 103–125 and accompanying text (describing Montana's approach), and *infra* notes 78–102 and accompanying text (describing Wyoming's approach).

A. *The Coal Bed Methane Capturing Process*

In the western United States, many of the coal bed seams that contain methane gas also hold groundwater aquifers.¹⁹ To drop the pressure in the seam and capture the gas, the water from the aquifer first must be pumped out of the aquifer.²⁰ Thus, the production of water is an essential requirement of the coal bed methane development cycle.²¹ Water extraction is not the goal of the coal bed methane development; rather, the methane gas is the desired resource.²² Once the gas is released, developers deal with the captured coal bed methane water in a number of ways: discharging it onto the surface, reinjecting it back into the aquifer, or placing it into impoundments.²³

The process of coal bed methane production captures an overwhelming amount of groundwater.²⁴ For example, in Wyoming, one coal bed methane well produces an average of 15,000 gallons of water.²⁵ Furthermore, from 1987 to 2004, the Powder River Basin produced an estimated 380,000 acre-feet of groundwater.²⁶ Indeed, over the expected timeframe of coal bed methane production in the Powder River Basin, the total water produced could exceed 5.7 million acre-feet.²⁷

Because coal bed methane produces vast amounts of groundwater in the western United States, to the casual observer it appears these sources of water are infinite; however, all water sources, including coal bed methane aquifers, are

¹⁹ Anne MacKinnon & Kate Fox, *Demanding Beneficial Use: Opportunities and Obligations for Wyoming Regulators in Coalbed Methane*, 6 WYO. L. REV. 369, 370 (2006) (stating that in the western United States many of the “coal seams which hold the gas are also aquifers”).

²⁰ *Id.* (“[W]ater is pumped from the aquifers in order to release and recover the target methane gas.”); Thomas F. Darrin, *Waste or Wasted?—Rethinking the Regulation of Coalbed 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 (2002).

²¹ WYOMING STATE ENGINEER, *supra* note 11, at 1.

²² *Id.*

²³ OFFICE OF FOSSIL ENERGY & NAT’L ENERGY TECH. LAB. STRATEGIC CTR. FOR NATURAL GAS, U.S. DEP’T OF ENERGY, POWDER RIVER BASIN COALBED METHANE DEVELOPMENT AND PRODUCED WATER MANAGEMENT STUDY 1–13, *available at* <http://www.netl.doe.gov/publications/EPreports/PowderRiverBasin.pdf> [hereinafter NAT’L ENERGY TECH. LAB. STRATEGIC CTR. FOR NATURAL GAS].

²⁴ *See infra* notes 25–27 and accompanying text.

²⁵ Robert J. Duffy, *Political Mobilization, Venue Change, and the Coal Bed Methane Conflict in Wyoming and Montana*, 45 NAT. RESOURCES J. 409, 416 (2005).

²⁶ MacKinnon & Fox, *supra* note 19, at 371–72.

²⁷ THE RUCKELSHAUS REPORT, *supra* note 4 at 10, tbl. 2.

finite.²⁸ The doctrine of prior appropriation is designed to protect and govern finite water resources.²⁹

B. Prior Appropriation: The Doctrine of Western Water Law

Western states use the system of prior appropriation for distributing water, and states in the Rocky Mountain Region use only this system.³⁰ An appropriation right is the right to use a specified amount of water for a specified purpose.³¹ The prior appropriation system allows one to legally apply a specific quantity of water to a particular beneficial use.³² The state entity that grants the appropriation must consider whether granting the new water right will adversely impair existing water rights.³³ Thus, prior appropriation provides protection of existing water rights from adverse interference by newer appropriators.³⁴

Under the prior appropriation doctrine, the amount of water an appropriator can divert is typically limited to the amount of water needed for a specified beneficial use.³⁵ The appropriation is limited to a pre-determined amount; for example, in Wyoming, irrigators are allowed to divert up to one cubic foot per second for every 70 acres needed for irrigation.³⁶ Thus, the doctrine of prior

²⁸ Alex C. Sienkiewicz, *Instream Values Find Harbor in Bean Lake III, Drown in Prior Appropriation*, 25 PUB. LAND & RESOURCES L. REV. 131, 132 (2004) (“The volume in any particular body of water is finite.”).

²⁹ See *infra* notes 30–37 and accompanying text.

³⁰ E.g., COGGINS, *supra* note 17, at 488 (“[G]enerally speaking, the prior appropriation doctrine now holds sway in all states west of the 100th meridian.”); Duffy, *supra* note 25, at 423 (“All of the mountain states have adopted the prior appropriation approach to water rights.”).

³¹ E.g., 78 AM. JUR. 2D *Waters* § 350 (2009).

³² Sienkiewicz, *supra* note 28, at 131.

³³ E.g., Kevin J. Smith, *Permitting a Natural Flow in a Prior Appropriation System: Dekay v. United States Fish and Wildlife Service*, 1 GREAT PLAINS NAT. RESOURCES J. 97, 104 (1996) (“To receive a water permit two initial questions must be addressed: (1) would this appropriation impair existing rights, and (2) is there water available for appropriation.”); A. DAN TARLOCK, *LAW OF WATER RIGHTS AND RESOURCES* § 5:30 (2009).

³⁴ E.g., 78 AM. JUR. 2D *Waters* § 351 (2009) (“It is the very essence of the doctrine of prior appropriation that as between persons claiming water by appropriation, he or she has the best right who is first in time, and that the prior appropriator is entitled to the water to the extent appropriated to the exclusion of any subsequent appropriator.”); see also *Empire Lodge Homeowners’ Ass’n v. Moyer*, 39 P.3d 1139, 1149 (Colo. 2001) (stating senior appropriators’ rights are superior to the rights of junior appropriators).

³⁵ E.g., 78 AM. JUR. 2D *Waters* § 350; *United States v. Alpine Land & Reservoir Co.*, 27 F. Supp. 2d 1230, 1243 (D. Nev. 1998).

³⁶ Wyoming State Engineer, *About the SEO*, <http://seo.state.wy.us/about.aspx> (last visited Nov. 23, 2009); see also MacKinnon & Fox, *supra* note 19, at 376.

appropriation intertwines with the concept of beneficial use, and one cannot discuss appropriation without discussing beneficial use as well.³⁷

C. Beneficial Use

States located in the dry western part of the United States use the doctrine of beneficial use to prevent wasting scarce water resources within their borders; consequently, beneficial use is the single most important public policy underlying western water law.³⁸ The requirement of a beneficial use for the acquisition and use of the state's surface water is statutory in prior appropriation states.³⁹ Similarly, Wyoming also requires, by statute, a permit for the beneficial use of groundwater.⁴⁰

³⁷ See MacKinnon & Fox, *supra* note 19, at 375–78; C. Stephen Herlihy, Comment, *Trading Water For Gas: Application of the Public Interest Review to Coalbed Methane Produced Water Discharge in Wyoming*, 9 WYO. L. REV. 455, 463–65 (2009).

³⁸ E.g., *Alpine Land & Reservoir Co.*, 27 F. Supp. 2d at 1243; Santa Fe Trail Ranches Prop. Owners Ass'n v. Simpson, 990 P.2d 46, 53 n.7 (Colo. 1999); Mark Squillace, *A Critical Look at Wyoming Water Law*, 24 LAND & WATER L. REV. 308, 323–24 (1989); Herlihy, *supra* note 37, at 463.

³⁹ Compare WYO. STAT. ANN. § 41-3-101 (2009):

Beneficial use shall be the basis, the measure and limit of the right to use water at all times, not exceeding the statutory limit except as provided by W.S. 41-4-317. In addition to any beneficial use specified by law or rule and regulation promulgated pursuant thereto, the use of water for the purpose of extracting heat therefrom is considered a beneficial use subject to prior rights. Water being always the property of the state, rights to its use shall attach to the land for irrigation, or to such other purposes or object for which acquired in accordance with the beneficial use made for which the right receives public recognition, under the law and the administration provided thereby.

with COLO. REV. STAT. ANN. § 37-92-103(4) (West 2009):

Beneficial use is 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 and, without limiting the generality of the foregoing, includes the impoundment of water for recreational purposes, including fishery or wildlife. For the benefit and enjoyment of present and future generations, "beneficial use" shall also include the appropriation by the state of Colorado in the manner prescribed by law of such minimum flows between specific points or levels for and on natural streams and lakes as are required to preserve the natural environment to a reasonable degree.

⁴⁰ WYO. STAT. ANN. § 41-3-930(a) (2009).

Any person who intends to acquire the right to beneficial use of any underground water in the state of Wyoming, shall, before commencing construction of any well or other means of obtaining underground water or performing any work in connection with construction or proposed appropriation of underground water or any manner utilizing the water for beneficial purposes, file with the state engineer an application for a permit to make the appropriation

In Wyoming, the fact a beneficial use is a necessity for the acquisition of any water right is vital to the state's ownership of the water.⁴¹

The Wyoming State Engineer's Office declared a beneficial use of water results in facilitating the development of coal bed methane.⁴² It also recognizes the possibility of subsequent beneficial uses after extraction of the water, although it does not currently require a further use.⁴³ Clearly, Wyoming recognizes the water extracted during coal bed methane production can be used for a further recognized beneficial use and, when so used, the State Engineer requires another water right.⁴⁴

As mentioned, when one requests a right to appropriate water, the state entity issuing such rights must take into consideration the harm to other water right holders and whether there is water to appropriate from the water source.⁴⁵ One such potential harm resulting from coal bed methane production involves the interference with existing water rights resulting from removal of the produced water from groundwater aquifers.⁴⁶

and shall not proceed with any construction or work until a permit is granted by the state engineer The application shall contain the name and post-office address of applicant or applicants, a detailed description of the proposed use, the location by legal subdivision of the proposed well or other means of obtaining underground water, the estimated depth of the proposed well, the quantity of water proposed to be withdrawn and beneficially utilized in gallons per minute and acre-feet per calendar year, the location by legal subdivision of the area or point of use shall be provided, and such other information as the state engineer may require.

Id.

⁴¹ MacKinnon & Fox, *supra* note 19, at 375; Herlihy, *supra* note 37, at 464–65.

⁴² WYOMING STATE ENGINEER, *supra* note 11, at 1 (“The intentional production, or appropriation, of ground water for the [coal bed methane] production led to the designation of [coal bed methane] as a *beneficial use* of water and subsequently, to a requirement for a permit to appropriate the ground water.”).

⁴³ *Id.* “Coal seams in many areas of Wyoming have been and continue to be important sources of ground water to appropriators for uses including, but not limited to, stock and domestic.” *Id.* However, “[n]o additional permitting is required if there is no additional beneficial use other than [coal bed methane] production.” *Id.*

⁴⁴ *Id.* (“[W]ater that is discharged to the surface or discharged to a new or existing reservoir may have additional permitting requirements through the [State Engineer's Office].”).

⁴⁵ *E.g.*, Smith, *supra* note 33, at 104 (“To receive a water permit two initial questions must be addressed: (1) would this appropriation impair existing rights, and (2) is there water available for appropriation.”); *see also* TARLOCK, *supra* note 33 (“Water is distributed by state or local water officials who are generally limited to the enforcement of previously established rights.”).

⁴⁶ *See* Duffy, *supra* note 25, at 416 (explaining how coal bed methane development hinders aquifer recharge).

D. Lowering of Groundwater Aquifers

The coal seams where methane is found are technically considered aquifers.⁴⁷ Coal bed methane reserves lead to problems involving the lowering of aquifer water levels and the ability to recharge such aquifers.⁴⁸ The removal of water in connection with coal bed methane production directly affects the recharge of aquifers and the lowering of water tables.⁴⁹ According to one commentator, “In addition to lowering water tables and drying up household and livestock wells, such massive pumping would hinder the ability of aquifers to recharge, a critical issue in any circumstance, but certainly in the middle of a . . . drought.”⁵⁰ The point of recharge for coal bed methane aquifers may be miles away from the diversion and well sites.⁵¹ Consequently, recharge typically takes between a few years to twenty years.⁵² The ability of aquifers to recharge is of particular concern in states whose water resources are all, or almost all, appropriated because when groundwater sources are not recharged, individual appropriation rights are adversely affected.⁵³ Water found in the coal bed methane development process is in every way groundwater, and the implications and issues surrounding the recharging of aquifers trickle down to coal bed methane production.⁵⁴

⁴⁷ Montana State University, The Department of Land Resources and Environmental Sciences, Water Quality and Irrigation Management, Coal Bed Methane Frequently Asked Questions, http://waterquality.montana.edu/docs/methane/cbmbfaq.shtml#are_coal_seams_aquifers (last visited Nov. 23, 2009).

⁴⁸ Duffy, *supra* note 25, at 416.

⁴⁹ JAMES R. KUIPERS ET AL., COAL BED METHANE-PRODUCED WATER: MANAGEMENT OPTIONS FOR SUSTAINABLE DEVELOPMENT 26–30 (draft, Aug. 2004), http://www.northernplains.org/files/Coal_Bed_Methane_Water_Study_8_25_04.pdf (stating that as a result of rapid coal bed methane development in the Powder River Basin, and in other basins throughout the west, thousands of water wells will experience drops in water levels and springs flow rates will decrease or totally dry up).

⁵⁰ Duffy, *supra* note 25, at 416.

⁵¹ Montana State University, *supra* note 47 (defining aquifer recharge as the process by which surface water and precipitation is absorbed into the ground and penetrates the aquifer system).

⁵² *Id.*

⁵³ Sienkiewicz, *supra* note 28, at 132 (“It is thus possible that the entire volume of water in a river, stream or lake [or underground aquifer] may be allocated to appropriators at any given period in time”); see also *Fundingsland v. Colo. Ground Water Comm’n*, 468 P.2d 835, 839 (Colo. 1970) (stating when more water is withdrawn from an aquifer than is recharged, mining conditions occur).

⁵⁴ See KUIPERS *supra* note 49, at 30. (“Dropping water levels and decreased hydrostatic pressure in confined aquifers decreases the discharge to springs, streams, ponds, and wetlands connected to the aquifers. Springs, streams, ponds, and wetlands that are hydraulically connected to aquifers that are being pumped heavily may experience reduced recharge or may even dry up if they rely mainly on groundwater as their water source.”).

This comment next provides a summary of recent legal developments related to the legal status of coal bed methane produced water in Colorado, Montana, and Wyoming.⁵⁵ First, a relatively new development in Colorado is addressed.⁵⁶

E. Colorado's Approach: The Case of Vance v. Wolfe

In April of 2009, the Colorado Supreme Court issued its opinion in the case of *Vance v. Wolfe*.⁵⁷ The court considered whether the water produced in association with coal bed methane extraction was a beneficial use and whether water captured as part of the coal bed methane process should be brought under the supervision of Colorado's prior appropriation system.⁵⁸

In *Vance*, the plaintiff ranchers used the water obtained via their water rights for the recognized beneficial uses of irrigation, stock watering, domestic uses, farming, and maintaining fisheries.⁵⁹ The ranchers' water rights were close to an area of substantial coal bed methane production, and, at the time, no water right was required prior to extracting groundwater for coal bed methane development.⁶⁰ The ranchers argued the water produced from the coal bed methane development constituted an out of priority appropriation causing harm to their senior water rights, and the water produced in coal bed methane development was a beneficial use requiring permitting.⁶¹ In contrast, the coal bed methane producers argued water production was merely a byproduct, or nuisance, of obtaining the methane and, therefore, not a beneficial use subject to state permitting.⁶²

First, the Colorado Supreme Court rejected the coal bed methane producers' nuisance argument.⁶³ Second, the court declared the production of water in coal bed methane extraction is a beneficial use because the capture of water is a vital

⁵⁵ See *infra* notes 57–125 and accompanying text.

⁵⁶ See *infra* notes 57–77 and accompanying text.

⁵⁷ 205 P.3d 1165 (Colo. 2009).

⁵⁸ *Id.* at 1168.

⁵⁹ *Id.*

⁶⁰ See *id.* (discussing the ranchers' claims that their water rights were being harmed by the coal bed methane producers capturing the groundwater out of priority).

⁶¹ *Id.* (arguing water diverted in association with coal bed methane production constituted a beneficial use requiring a water right for the capture of the water).

⁶² *Id.* at 1169.

⁶³ *Id.* at 1169–70. The Colorado Supreme Court held precedent from a line of gravel cases demonstrated that the fact water may become a nuisance after it has been captured (that is, after it has been beneficially used) does not prevent the finding that the process of groundwater retrieval is a beneficial use. See *id.* at 1169–70. Citing the gravel case of *Three Bells*, and making an inference from the gravel case of *Zigan*, the Colorado Supreme Court recognized the gravel pits were not dug for the purposes of capturing groundwater, and the diverted water affected the different aspects of the mining operation. *Id.* at 1170 (citing *Three Bells Ranch Assocs. v. Cache La Poudre Water Users*

and necessary part of the methane retrieval process.⁶⁴ Furthermore, the presence and subsequent control of the diverted water made the capture of methane gas possible.⁶⁵ The *Vance* Court held the dewatering of coal bed methane aquifers by coal bed methane companies without an appropriation right to remove water harmed senior water right holders.⁶⁶

Since Colorado had never viewed this use of water as an appropriation, the finding of a beneficial use placed coal bed methane produced water into the priority system.⁶⁷ Under the prior appropriation doctrine, junior users cannot interfere with the rights of a senior water right holder; if the senior water right holder is not getting his entire allotment, the junior water right holder must stop using the water.⁶⁸ Thus, based on the court's decision, Colorado law no longer allows for the removal of produced groundwater out of priority; when a developer wants to remove the water, the developer must first get an appropriation right from the Colorado State Engineer.⁶⁹

The Colorado Supreme Court's holding provides some protection for water appropriators affected by coal bed methane production.⁷⁰ As a result of this holding, Colorado does not allow the removal of this groundwater out of priority by coal bed methane producers; thus, when one wants to remove such water, one must obtain an appropriation and use the water accordingly.⁷¹ However, the

Ass'n, 758 P.2d 164 (Colo. 1988); *Zigan Sand & Gravel, Inc. v. Cache La Poudre Water Users Ass'n*, 758 P.2d 175 (Colo. 1988)). The Colorado Supreme Court drew from these gravel cases because the court found the capturing of groundwater resulted in "the inevitable result of the excavating pits to a depth below the water table." *Id.* In *Vance*, the coal bed methane producers set forth a temporal argument for distinguishing the gravel cases: in the gravel cases, the beneficial use occurred *after* the capture of the water (after the water was captured in the gravel cases, the water was used for wildlife and recreation) whereas the water use in coal bed methane development occurs *simultaneously* to the capture. *Id.* The court held the gravel cases did not impose a requirement that beneficial use occur subsequent to or collateral to the withdrawal of water. *Id.* The *Vance* Court found a beneficial use in the production of water in coal bed methane extraction because the use of water in the coal bed methane process, which is coincidental to the extraction, is a vital and necessary part of the methane retrieval process. *Id.* Furthermore, it is the presence and subsequent control of the diverted water that makes the capture of methane gas possible. *Id.*

⁶⁴ *Id.* at 1170.

⁶⁵ *Id.*

⁶⁶ *Id.* at 1171–72.

⁶⁷ *See id.* at 1170 (explaining the result of finding the producers must acquire a water right, is that the producers would take their water right subsequent (junior) to the ranchers' rights).

⁶⁸ *E.g.*, *Sienkiewicz*, *supra* note 28, at 132.

⁶⁹ *Vance*, 205 P.3d at 1167.

⁷⁰ *See supra* notes 67–69 and accompanying text.

⁷¹ *Vance*, 205 P.3d at 1167.

Colorado Supreme Court failed to provide additional protection by addressing what should happen to the water after its extraction from the methane seam.⁷²

The dissent in *Vance* agreed with the majority that coal bed methane produced groundwater is a beneficial use and requires an appropriation right; however, the dissent did not believe such a conclusion should end the court's analysis.⁷³ The dissent argued the majority should have taken the next step by requiring a further beneficial use of the captured water; indeed, never before in Colorado could extraction alone satisfy the beneficial use requirement.⁷⁴

The Colorado Supreme Court's decision leaves the future unclear.⁷⁵ The Colorado State Engineer's Office has proposed legislation to remedy some of the problems addressed by the *Vance* dissent.⁷⁶ The wisdom of Colorado's experience is important because Wyoming's regulation of coal bed methane produced groundwater faces a problem similar to the problem in Colorado.⁷⁷

⁷² See *id.* at 1165.

⁷³ See *id.* at 1174 (Coats, J., concurring in part and dissenting in part).

⁷⁴ *Id.*

⁷⁵ Ken Wonstolen, *Vance Decision Throws Oil and Gas Into Uncharted Waters*, ENERGY NEWS ALERT, at 1–3, <http://www.bwenergy.com/News/documents/VanceDecisionThrowsOilandGasIntoUnchartedWaters.pdf> (last visited Nov. 23, 2009) (“[T]he decision of the [*Vance*] water court did not turn on proof of tributary status, or evidence of injury to the plaintiffs’ water rights. Instead, it began with the assumption, as did the [Colorado] Supreme Court, that the case involved tributary water.”); see also *Vance*, 205 P.3d at 1174 (stating a further use of water is not required).

⁷⁶ Wonstolen, *supra* note 75, at 2 (claiming the Colorado General Assembly enacted House Bill 1303 to address some of the issues raised by the *Vance* decision). The Colorado State Engineer is permitted to engage in rulemaking proceedings concerning the “dewatering of geologic formations by withdrawing nontributary ground water to facilitate or permit mining of minerals.” COLO. REV. STAT. ANN. § 37-90-137(7)(c) (West 2009). Rulemaking proceedings are now occurring by means of House Bill 1303, which has three major components:

- First and foremost, the bill establishes a “timeout” from the application of water well permitting and water rights administration to oil and gas wells until March 31, 2010.
- During this timeout period, the [State Engineer’s Office] is authorized to conduct a rulemaking to establish criteria for determining the (non)tributary status of oil and gas produced water.
- Those [coal bed methane] wells determined to be tributary must be permitted as water wells as of April 1, 2010, but will be allowed to operate pursuant to temporary “substitute water supply plans” until 2013, when such plans must be converted to water court-approved augmentation plans.

Wonstolen, *supra* note 75, at 2–3; see also HOUSE BILL 1303 SUMMARY, COLORADO STATE LEGISLATURE 2 (March 30, 2009), [http://www.leg.state.co.us/CLICS/CLICS2009A/commsumm.nsf/b4a3962433b52fa787256e5f00670a71/25ef23eae1d23b288725758b007ce0a5/\\$FILE/090401AttachS.pdf](http://www.leg.state.co.us/CLICS/CLICS2009A/commsumm.nsf/b4a3962433b52fa787256e5f00670a71/25ef23eae1d23b288725758b007ce0a5/$FILE/090401AttachS.pdf) (last visited Nov. 23, 2009) [hereinafter COLORADO STATE LEGISLATURE].

⁷⁷ See *infra* notes 147–52 and accompanying text (describing the similarities between Colorado and Wyoming).

F. *Wyoming's Water Permitting System and Coal Bed Methane*

In Wyoming, the doctrine of prior appropriation applies, and the application of water to a beneficial use is an element of a water right.⁷⁸ Wyoming delegates the responsibility of considering and approving water use applications to the State Engineer's Office.⁷⁹ The State Engineer's Office is not to prefer one beneficial use over another and must give equal consideration to all beneficial uses.⁸⁰

According to the Wyoming State Engineer's Office, extracting coal bed methane groundwater is a beneficial use because the water is intentionally produced in the development process.⁸¹ The intentional production of this water is also the reason why coal bed methane producers must get a permit before appropriating groundwater.⁸² Producers must also obtain a permit when disposing of produced water by storing it because the State Engineer recognizes storage as another beneficial use requiring its own permit.⁸³

The State Engineer's Office requires the submission and approval of an application for appropriation of groundwater for each coal bed methane well before the drilling of the coal bed methane well begins.⁸⁴ The State Engineer

⁷⁸ WYOMING STATE ENGINEER, *supra* note 11, at 1 ("Wyoming water law requires that water rights be administered on the basis of prior appropriation, giving rise to the necessity of permitting all beneficial uses from the water source in question.").

⁷⁹ WYO. STAT. ANN. § 41-4-503 (2009).

[I]t shall be the duty of the state engineer to approve all applications made in proper form, which contemplate the application of the water to a beneficial use and where the proposed use does not tend to impair the value of existing rights, or be otherwise detrimental to the public welfare. But where there is no unappropriated water in the proposed source of supply, or where the proposed use conflicts with existing rights, or threatens to prove detrimental to the public interest, it shall be the duty of the state engineer to reject such application and refuse to issue the permit asked for.

Id.; Wyoming State Engineer, *supra* note 36.

⁸⁰ THE RUCKELSHAUS REPORT, *supra* note 4, at 33.

⁸¹ WYOMING STATE ENGINEER, *supra* note 11, at 1. This type of use is considered a non-consumptive beneficial use "similar to water used for hydropower and instream flow in that the full amount of the water remains available for appropriation after the initial use has been completed." THE RUCKELSHAUS REPORT, *supra* note 4, at 35.

⁸² WYOMING STATE ENGINEER, *supra* note 11, at 1 ("The intentional production, or appropriation, of ground water for the [coal bed methane] production led to the designation of [coal bed methane] as a beneficial use of water and subsequently, to a requirement for a permit to appropriate the ground water."); *see also* THE RUCKELSHAUS REPORT, *supra* note 4, at 35.

⁸³ *See* MacKinnon & Fox, *supra* note 19, at 385 (stating the storage of water may be a beneficial use); WYOMING STATE ENGINEER, GUIDANCE FLOW CHART FOR PERMITTING OF CBM PRODUCED WATER BY THE WYOMING STATE ENGINEER'S OFFICE (SEO) (Apr. 27, 2004), http://seo.state.wy.us/PDF/CBM_FlowChart.pdf.

⁸⁴ WYOMING STATE ENGINEER, *supra* note 11, at 2.

considers all information provided in the application when considering whether to approve the application and issue a permit, and the State Engineer also considers what conditions to attach to the water right.⁸⁵ Wyoming's permitting system is supposed to consider whether a coal bed methane producer's well interferes with the wells of other water appropriators in the area.⁸⁶ However, the permitting process allows for the disposal of captured water and does not require a further beneficial use.⁸⁷

The Wyoming State Engineer is the only state entity regulating the quantity of coal bed methane produced water.⁸⁸ The Wyoming state legislature has been reluctant to address issues surrounding this produced water; between 1997 and 2007, 39 bills were proposed, 12 were passed, none of which focused on beneficial use or re-use of produced water.⁸⁹ Similarly, the Wyoming Supreme Court recently had an opportunity to articulate additional guidelines for the regulation of coal bed methane water but never reached the merits of the claim.⁹⁰

G. *The Case of William F. West Ranch, L.L.C. v. Tyrrell*

In December 2008, the Wyoming Supreme Court heard the coal bed methane groundwater case of *William F. West Ranch, L.L.C. v. Tyrrell*.⁹¹ The plaintiffs sought a judgment declaring the Wyoming State Engineer's management of coal bed methane was in violation of the state constitution.⁹² The plaintiffs owned property in the Powder River Basin in northeastern Wyoming.⁹³ They claimed their property and water rights were adversely affected by coal bed methane water production because their wells dried up and they suffered other injuries.⁹⁴ The

⁸⁵ *Id.*

⁸⁶ MacKinnon & Fox, *supra* note 19, at 373 ("Wyoming's water rights permitting process keeps an eye out to be sure CBM wells don't produce water by interfering with neighbors' wells . . .").

⁸⁷ MacKinnon & Fox, *supra* note 19, at 373 ("Wyoming's water right permitting process . . . accepts a producer's choice simply to dispose of the water once it reaches the surface."); see Kear, *supra* note 4, at 9 ("Wyoming does not require [coal bed methane] discharge water to be reinjected, treated, or measured for impacts to fisheries and wildlife.").

⁸⁸ See WYOMING STATE ENGINEER, *supra* note 11, at 1 (requiring a permit to extract coal bed methane produced water because it is a beneficial use of water).

⁸⁹ Kear, *supra* note 4, at 9 (examining the different proposed bills in Wyoming for regulating coal bed methane produced water; only a few bills concerning taxation of coal bed methane were enacted).

⁹⁰ See *William F. West Ranch, L.L.C. v. Tyrrell*, 206 P.3d 722 (Wyo. 2009).

⁹¹ *Id.*

⁹² *Id.* at 725.

⁹³ *Id.*

⁹⁴ *Id.*

plaintiffs claimed the State Engineer failed to administer the coal bed methane produced water as Wyoming water law required.⁹⁵ The state filed a motion to dismiss claiming the plaintiffs lacked standing.⁹⁶ The district court concluded there was no justiciable controversy present because the four-part test for a justiciable controversy was not satisfied in light of current legislative efforts in the area.⁹⁷ The Wyoming Supreme Court agreed with the decision and reasoning of the district court and reiterated the plaintiffs' claims for relief were too vague to be justiciable.⁹⁸

The Wyoming Supreme Court did not resolve whether water taken from coal bed methane production is a beneficial use or whether the process of capturing water in order to mine coal bed methane affected the groundwater rights of the plaintiffs.⁹⁹ Nevertheless, the Wyoming Supreme Court recognized it may need to address this issue in the future:

By ruling that the Court does not have jurisdiction over this case, we do not want to leave the impression that we approve of the State's administration of [coal bed methane] water. West and Turner [the plaintiffs] raise serious allegations of damages to their property from [coal bed methane] water and failures on the part of the State to properly regulate [coal bed methane] water statewide. The plaintiffs' failure to connect any particular state action to their harm prevents them from establishing justiciability here. Nevertheless, in the event we are presented with a true justiciable controversy in another case, we will not hesitate to determine whether the State's processes meet the constitutional and statutory directives.¹⁰⁰

⁹⁵ *Id.* at 725. ("State is not regulating [coal bed methane] water production in compliance with Wyoming's constitution or statutes and that their property has been damaged by [coal bed methane] water.")

⁹⁶ *Id.* at 725–26 ("[Plaintiffs] 'intend this to be a public interest lawsuit' and they had not alleged individual harms that would be remedied by their requested relief.")

⁹⁷ *Id.* at 726–27 (citing *Brimmer v. Thomson*, 521 P.2d 574, 578 (Wyo. 1974)) ("[The Wyoming Supreme Court] adopted a four-part test for determining whether a party presents a justiciable controversy to maintain a declaratory judgment action in Wyoming."). The four-part test was not satisfied because the Wyoming state legislature and the executive branch were exploring different avenues concerning regulation of coal bed methane groundwater. *Id.*

⁹⁸ *Id.* at 730 ("[The plaintiffs'] claims and requests for relief are simply too amorphous to be justiciable.")

⁹⁹ *Id.* at 725.

¹⁰⁰ *Id.* at 737.

Without providing answers to these questions, however, the status of coal bed methane produced water in Wyoming is still in limbo.¹⁰¹ In the meantime, the Wyoming state legislature must take steps to address this problem.¹⁰²

H. Montana's Statutory Approach to Coal Bed Methane Groundwater

Montana's state legislature acted on the coal bed methane groundwater issue by statutorily providing methods for regulating the water captured in coal bed methane production and protecting water right holders.¹⁰³ In Montana, water is defined as a byproduct of coal bed methane production and developers are not required to secure an appropriation water right before operating the coal bed methane well and extracting the water.¹⁰⁴ Montana, however, requires developers to use the produced water in a limited number of ways.¹⁰⁵ According to the applicable statute, the water must be: (1) used in other beneficial uses, such as irrigation; (2) reinjected into the coal bed methane aquifer; (3) discharged to the surface subject to permitting regulations; or (4) managed in another way allowable by state law.¹⁰⁶

Montana also requires the developer, prior to the drilling the well, to notify and offer a mitigation agreement to each water right holder affected by the removal of coal bed methane groundwater.¹⁰⁷ This provision of the statute ensures qualified water right holders some protection against developers capturing huge quantities of water.¹⁰⁸ The mitigation agreement must address the loss of the water

¹⁰¹ For the Wyoming Supreme Court to make a determination on this issue, petitioners must have adequate standing by showing a justiciable controversy. *See id.* at 730. The petitioners must also exhaust all administrative remedies before bringing the case to the district court. *Id.* at 735–36. Furthermore, a petitioner must not make any of the same procedural errors the plaintiffs in *William West Ranch* made when bringing their declaratory judgment action. *Id.* at 730–33. *See generally* Amy M. Staehr, Case Note, *The Wyoming Supreme Court Constricts the Public Interest Exception of the Declaratory Judgments Act*, 10 WYO. L. REV. 141 (2010).

¹⁰² *See infra* notes 160–77 and accompanying text (recommending statutory change to address the issues surrounding coal bed methane produced groundwater).

¹⁰³ *See* MONT. CODE ANN. §§ 82-11-175, 76-15-902 to -905 (2008).

¹⁰⁴ Duffy, *supra* note 25, at 423.

¹⁰⁵ MONT. CODE ANN. § 82-11-175(2)(a)–(d).

¹⁰⁶ *Id.*

¹⁰⁷ § 82-11-175(3).

¹⁰⁸ *See* § 82-11-175(3)(a)(i)–(ii) (“Prior to the development of a coal bed methane well that involves the production of ground water from an aquifer that is a source of supply for appropriation rights or permits to appropriate . . . the developer of the coal bed methane well shall notify and offer a reasonable mitigation agreement to each appropriator of water who holds an appropriation right or a permit to appropriate . . . that is for ground water and for which the point of diversion is within: (i) 1 mile of the coal bed methane well; or (ii) one-half mile of a well that is adversely affected by the coal bed methane well.”).

and provide for replacement water of the appropriation right adversely affected by the coal bed methane well.¹⁰⁹ A mitigation agreement is required only for the loss of groundwater production, typically in the form of reduced groundwater well productivity, directly caused by the coal bed methane production.¹¹⁰ If the loss of production from the water source is not caused by the coal bed methane development, the mitigation agreement need not address nor supplement the lost water or well productivity.¹¹¹ Consequently, when drilling for coal bed methane there is always the requirement of a mitigation agreement; however, the producer need not supplement lost water productivity of a well when the decreased activity of the well is not the result of the coal bed methane production.¹¹²

Montana also established by statute the Coal Bed Methane Protection Program—a program to compensate affected water rights for particular injuries.¹¹³ The legislature delegated administration of this program to conservation districts.¹¹⁴ These districts must either have coal bed methane within their boundaries or water in their boundaries that is, or will be, adversely affected by coal bed methane production.¹¹⁵ The Montana legislature stated the purpose of the Coal Bed Methane Protection Program is to compensate “private landowners or water right holders for damage caused by coal bed methane development.”¹¹⁶ The conservation districts impose grievance procedures for those whose water rights are adversely affected by coal bed methane production.¹¹⁷ Even when a coal

¹⁰⁹ § 82-11-175(3)(b) (“The mitigation agreement must address the reduction or loss of water resources and must provide for prompt supplementation or replacement of water from any natural spring or water well adversely affected by the coal bed methane well.”).

¹¹⁰ *Id.* (“The mitigation agreement is not required to address a loss of water well productivity that does not result from a reduction in the amount of available water because of production of ground water from the coal bed methane well.”).

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ § 76-15-905.

¹¹⁴ § 76-15-905(1).

¹¹⁵ *Id.*

¹¹⁶ *Id.*; see also Montana Department of Natural Resources & Conservation, Montana Coal Bed Methane, <http://www.dnrc.mt.gov/cardd/CBM/default.asp> (last visited Nov. 15, 2009) (“The Program was established by the 2001 Legislature for the purpose of ‘compensating private landowners and water right holders for damage to land and to water quality and availability that is attributable to the development of coal bed methane wells.’”).

¹¹⁷ MONT. CODE ANN. § 76-15-905(2)(a)–(d). Grievance procedures must include:

- (a) a method for submitting an application for compensation for damages caused by coal bed methane development;
- (b) a process for determining the cost of the damage to land, surface water, or groundwater, if any, caused by coal bed methane development;
- (c) the development of eligibility requirements for receiving compensation that include an applicant’s access to existing sources of state funding, including state-mandated payments, that compensate for damages; and
- (d) criteria for ranking applications related to available resources.

Id.

bed methane producer complies with the Coal Bed Methane Protection Program, the statute does not relieve the producers of their liability or of their responsibility to comply with any other applicable provision of law found in Montana's legal code.¹¹⁸

Eligibility for compensation under Montana's Coal Bed Methane Protection Program requires a demonstration of damage caused by coal bed methane production.¹¹⁹ Compensation for damages is awarded only when the harm resulted from "the contamination, diminution, or interruption of surface water or groundwater."¹²⁰ Under this program, an eligible landowner may be compensated for damages under three scenarios: loss of value in the land, loss of value in improvements the affected party made to the land, or the loss of agricultural production and income caused by coal bed methane development.¹²¹ However, the receipt of compensation and damages under this statute requires the affected party to show the particular producer that caused the harm, in all likelihood, will not adequately compensate the adversely affected party.¹²² Further, Montana limits the damages allowable under this statute by providing that damages rewarded may not exceed 75% of the cost of the harm caused and may not be greater than \$50,000.¹²³

¹¹⁸ § 76-15-902(5)–(6).

(5) The legislature . . . declares that the provisions of this part do not relieve coal bed methane developers or operators that own, develop, or operate coal bed methane wells and collection systems of their legal obligation to compensate landowners and water right holders for damages caused by the development of coal bed methane. (6) The legislature further declares that the provisions of this part do not relieve coal bed methane developers or operators from: (a) any liability associated with the exploration or development of coal bed methane; or (b) the responsibility to comply with any applicable provision of Titles 75, 82, and 85 and any other provision of law applicable to the protection of natural resources or the environment.

Id.

¹¹⁹ § 76-15-905(3)(a)–(c) ("An eligible recipient for compensation includes private landowners and water right holders who can demonstrate as the result of damage caused by coal bed methane development: (a) a loss of agricultural production or a loss in the value of land; (b) a reduction in the quantity or quality of water available from a surface water or ground water source that affects the beneficial use of water; or (c) the contamination of surface water or ground water that prevents its beneficial use."). It is unclear upon whom the burden of demonstrating this will fall. *See id.*

¹²⁰ § 76-15-905(4)(b).

¹²¹ § 76-15-905(4)(a) ("A payment made under section 4(a) may only cover land directly affected by coal bed methane development.").

¹²² § 76-15-905(5).

¹²³ § 76-15-905(6).

In addition to the mentioned statutory scheme, Montana requires another water right when groundwater taken from coal bed methane production is used for further beneficial uses such as for stock ponds, wildlife ponds, or irrigation.¹²⁴ In that sense, Montana is building on its prior appropriation water law by requiring an appropriation for the further use of coal bed methane produced water.¹²⁵

III. ANALYSIS

The current Wyoming regulatory scheme for coal bed methane produced water does not adequately address many of the problematic issues regarding quantity and quality of water.¹²⁶ Wyoming's only stride regarding the management and use of this extracted water is recognizing the production of this water as a beneficial use.¹²⁷ The Wyoming Legislature, Wyoming Supreme Court, and Wyoming State Engineer's Office have all failed to provide satisfactory methods for the management and use of this water after extraction and for the protection of other water appropriators. As a result, coal bed methane producers are allowed to let the produced water sit in storage pits, evaporate, or be discharged.¹²⁸ Because of Wyoming's arid nature, Wyoming is a prior appropriation state and the waste of water is heavily disfavored.¹²⁹ Nevertheless, water produced incident to coal bed methane development is being wasted.¹³⁰

To sufficiently address the issues surrounding the quantity of coal bed methane produced water, Wyoming must continue to find the coal bed methane production process falls within the constraints of its water law system.¹³¹ However, Wyoming's beneficial use analysis cannot end at this juncture because such an analysis only leads to problems regarding the use of this water and uncertainty concerning the protection of this resource and of other appropriators.¹³² This

¹²⁴ Montana Department of Environmental Quality, Coal Bed Methane, http://www.deq.state.mt.us/coalbedmethane/Laws_regulations_permits.asp (last visited Nov. 15, 2009).

¹²⁵ See *id.* (stating another water right is required when putting produced water to further beneficial uses).

¹²⁶ THE RUCKELSHAUS REPORT, *supra* note 4, at 2.

¹²⁷ See WYOMING STATE ENGINEER, *supra* note 11, at 1 (discussing the Wyoming State Engineer's Office's determination that the production of coal bed methane is a beneficial use of water).

¹²⁸ See *id.* (listing some methods of disposing of produced water); WYOMING STATE ENGINEER, *supra* note 83.

¹²⁹ See 78 AM. JUR. 2D *Waters* § 350 (2009) (“[In a prior appropriation system] an appropriation will not be sustained in the wasteful use of the water.”).

¹³⁰ Darrin, *supra* note 20, at 323–34 (“[Prior appropriation] does not fit [coal bed methane] production primarily because . . . only a small percentage of [coal bed methane] byproduct water in Wyoming can be beneficially used itself. As a result, the rest is wasted.”).

¹³¹ See WYOMING STATE ENGINEER, *supra* note 11, at 2–3 (discussing the Wyoming State Engineer's Office current method of dealing with coal bed methane).

¹³² See *Vance v. Wolfe*, 205 P.3d 1165, 1174 (Colo. 2009) (Coats, J., concurring in part and dissenting in part) (explaining the requirement of using the water disappears).

comment first addresses the issues associated with solely treating produced water as a beneficial use; thereafter, this comment recommends Wyoming statutorily change its produced water laws to protect other water right holders and promote fuller uses of produced water.¹³³

A. The Inadequacy of Wyoming's Coal Bed Methane Laws: More Than Just a Finding That a Beneficial Use Exists in the Coal Bed Methane Production is Needed

When produced water is withdrawn from groundwater aquifers, the water stored in these systems is completely lost.¹³⁴ There is very little recharge of water; as a result, future opportunities to develop and use groundwater in these areas vanish.¹³⁵ Viewing the mere extraction of water alone as a beneficial use removes any obligation to make further beneficial use of the water, as explained by the dissent in the Colorado case of *Vance*.¹³⁶

As the *Vance* dissent points out, never before could extraction alone satisfy the beneficial use requirement.¹³⁷ Yet the Colorado Supreme Court interpreted beneficial use to include any purpose, so long as a successful and efficient diversion of water occurred.¹³⁸ Justice Coats's dissent raises the important question of whether the efficient diversion of water in coal bed methane production should end the beneficial use analysis.¹³⁹

In both Wyoming and Colorado, the mere extraction of water incident to coal bed methane development is a beneficial use; however, neither state requires a further beneficial use.¹⁴⁰ The *Vance* dissent correctly would force an additional

¹³³ See *infra* notes 134–77 and accompanying text.

¹³⁴ See KUIPERS, *supra* note 49, at 30 (articulating that surface water is interconnected with groundwater and the heavy pumping of aquifers will affect recharge and may cause the aquifer to dry up).

¹³⁵ See Montana State University, *supra* note 47 (stating recharge of coal bed methane aquifers can take up to twenty years).

¹³⁶ *Vance*, 205 P.3d at 1174 (Coats, J., concurring in part and dissenting in part) (articulating the problems of the majority holding in the Colorado case of *Vance v. Wolfe*).

¹³⁷ *Id.*

¹³⁸ *Id.* (“It appears . . . that the Majority interprets ‘beneficial use’ so broadly as to encompass virtually any diversion of the waters of the state that is not an inefficient way of accomplishing its purpose, whatever that purpose may be.”).

¹³⁹ See *id.* (“By so loosening the requirement of beneficial use for valid appropriations, and by tying its expanded definition of ‘beneficial use’ to constitutional protections against curtailing the right to appropriate unappropriated waters, I fear the Majority not only authorizes appropriation under the existing statutory scheme for virtually any reason but also inadvertently implies a constitutional limitation on the power of the legislature to limit this protection in the future.”).

¹⁴⁰ Compare *id.* at 1174 (claiming that a further beneficial use is not required), with WYOMING STATE ENGINEER, *supra* note 11, at 1–3 (articulating that a further beneficial use of this produced water is not required).

beneficial use of the produced groundwater whenever possible.¹⁴¹ The Colorado Supreme Court's failure to require a more traditional beneficial use—such as stock watering, irrigation, recreation, instream flows—for the water taken in coal bed methane production may create problems in the future.¹⁴² It is imperative Wyoming heed the *Vance* dissent's reflection on the possible lack of use of water and take steps to ensure water is put to a further beneficial use or reinjected into aquifers.¹⁴³

Wyoming's coal bed methane laws favor, and are designed to encourage, coal bed methane development because methane brings high revenues to the state.¹⁴⁴ The effect, however, is the loss of substantial quantities of water in a state with a limited water supply.¹⁴⁵ Requiring additional use of produced water may add to the cost of production, but it would also encourage more efficient water uses and would promote fuller use of the water resource.¹⁴⁶

Post-extraction management of produced water from coal bed methane development is similar in Colorado and Wyoming.¹⁴⁷ In Colorado, when water is disposed of by injecting it into a well or pit, those disposal methods fall under the jurisdiction of the Colorado Oil and Gas Conservation Commission.¹⁴⁸ Water discharged into the environment falls under the jurisdiction of the Colorado Department of Public Health and Environment: Water Quality Control

¹⁴¹ *Vance*, 205 P.3d at 1174 (Coats, J., concurring in part and dissenting in part).

¹⁴² *Id.* (stating never before was an efficient diversion the sole requirement for a beneficial use determination, thus implying new uses of water having an efficient diversion will be viewed as a beneficial use, and thereby making it imminent that the sole requirement of efficient diversion will be challenged in court or in the legislature).

¹⁴³ *Id.* (claiming a sole requirement of efficient diversion will be challenged in court or in the legislature); see also THE RUCKELSHAUS REPORT, *supra* note 4, at 52–54 (claiming beneficial use can be achieved by requiring additional beneficial uses of water).

¹⁴⁴ Duffy, *supra* note 25, at 431 (“The state’s laws, institutions, and regulatory procedures grant privileged access to oil and gas interests and facilitate [coal bed methane] exploration and development.”); see *id.* at 438 (“[T]he political environment in [Wyoming] has been very supportive of energy exploration.”); Kear, *supra* note 4, at 9 (“[Wyoming] State revenues from [coal bed methane] development totaled \$26 million in 2001 and the royalties projected from [coal bed methane] development could reach an estimated \$7.5 billion over the next 35 years.”) (citations omitted).

¹⁴⁵ See KUIPERS, *supra* note 49, at 30 (“Not only is the drawdown and removal of groundwater (aquifer depletion) . . . of concern, but the consequences related to . . . dewatering are vast.”); see also Sienkiewicz, *supra* note 28 (discussing the finite nature of the water resource).

¹⁴⁶ NAT’L ENERGY TECH. LAB. STRATEGIC CTR. FOR NATURAL GAS, *supra* note 23, at 5–4 to 5–9 (explaining the potential costs and current economic feasibility of the different coal bed methane disposal methods).

¹⁴⁷ See *infra* notes 148–52 and accompanying text.

¹⁴⁸ COLORADO STATE ENGINEER, COALBED METHANE STREAM DEPLETION ASSESSMENT STUDIES (2006), http://water.state.co.us/pubs/presentations/dwolfe_022806.pdf.

Division.¹⁴⁹ In Wyoming, the State Engineer's Office, the Wyoming Department of Environmental Quality, and the Wyoming Oil and Gas Conservation Commission currently share supervision of the water captured from coal bed methane production.¹⁵⁰ The Department of Environmental Quality is involved with water quality regulation, and the State Engineer's Office is involved with water right permitting.¹⁵¹ If further beneficial uses of coal bed methane water occur, further permitting under other administrative agencies is required.¹⁵²

B. Ensuring Protection of Existing Water Rights

In both Wyoming and Colorado, the lack of legislative and regulatory solutions to coal bed methane problems has led to litigation in search of remedies.¹⁵³ The Wyoming state legislature must actively take steps to address the issues surrounding the management of coal bed methane produced water and the potential harm to other water right holders and property owners.¹⁵⁴

The primary purpose of declaring a beneficial use in the production of coal bed methane is to ensure protection of other water rights.¹⁵⁵ Yet, the Wyoming State Engineer's Office is violating its statutory mandate in regulating coal bed methane produced water because its permitting process promotes groundwater development without clearly accounting for the possibility such development can

¹⁴⁹ *Id.*

¹⁵⁰ MacKinnon & Fox, *supra* note 19, at 373; Herlihy, *supra* note 37, at 461; THE RUCKELSHAUS REPORT, *supra* note 4, at 2.

¹⁵¹ MacKinnon & Fox, *supra* note 19, at 373; THE RUCKELSHAUS REPORT, *supra* note 4, at 2.

¹⁵² See WYOMING STATE ENGINEER, *supra* note 11, at 2–3.

¹⁵³ Compare *Vance*, 205 P.3d 1165 (addressing whether water captured in association with coal bed methane production constituted a beneficial use), with *William F. West Ranch, L.L.C. v. Tyrrell*, 206 P.3d 725 (Wyo. 2009) (failing to reach the merits on whether the State Engineer was adequately managing Wyoming's water law in regards to coal bed methane production). See generally THE RUCKELSHAUS REPORT, *supra* note 4, at 2 (claiming Wyoming's current regulatory scheme for coal bed methane produced water "has led to difficulties with respect to management of [coal bed methane] water, including gaps and overlays in regulatory coverage," lack of agency harmonization, and a "lack of regulatory certainty").

¹⁵⁴ See THE RUCKELSHAUS REPORT, *supra* note 4, at 52 (stating statutory revisions could remedy coal bed methane issues); see also Duffy, *supra* note 25, at 436 ("[C]ritics [of coal bed methane development] have been pushing the state to mandate surface owner agreements that would give ranchers and other landowners more input into the location of pipelines, roads, and other aspects of [coal bed methane] activity on their land.").

¹⁵⁵ See WYO. STAT. ANN. § 41-4-503 (2009) ("[W]here the proposed use conflicts with existing rights, or threatens to prove detrimental to the public interest, it shall be the duty of the state engineer to reject such application and refuse to issue the permit asked for."); see also WYOMING STATE ENGINEER, *supra* note 11, at 1 ("Wyoming water law requires that water rights be administered on the basis of *prior appropriation*, giving rise to the necessity of permitting all beneficial uses from the water source in question.").

impair existing surface and groundwater uses.¹⁵⁶ Presumably, those with water rights near the proposed site of groundwater extraction for methane production could file a protest.¹⁵⁷ After that, it does not appear there is consideration of potential harm in the permitting process.¹⁵⁸ The State Engineer needs legislative direction to address such potential problems, especially considering that studies on Wyoming's coal bed methane produced water have specifically determined the current regulatory structure for coal bed methane produced water is insufficient.¹⁵⁹

C. *Recommendation to Wyoming for Codification of Its Coal Bed Methane Laws Related to Water*

Montana is the only state with a statutory regime for dealing with coal bed methane groundwater.¹⁶⁰ Montana avoids many of the issues involved with the extraction of coal bed methane groundwater by providing statutory guidance on

¹⁵⁶ *Contra* WYO. STAT. ANN. § 41-4-503 (“[W]here the proposed use conflicts with existing rights . . . it shall be the duty of the state engineer to reject such application and refuse to issue the permit asked for.”).

¹⁵⁷ *William West Ranch*, 205 P.3d at 735. The court stated:

[I]f the appropriate circumstances were presented, the Plaintiffs could petition the Board of Control for a determination of the quantity of water another water right holder is entitled to use. The Plaintiffs could also petition the district court . . . for review of a particular administrative action, such as the granting of a well permit or an adjudication order, so long as they could show that they were “aggrieved or adversely affected” by the agency action or inaction. Under such circumstances, the Plaintiffs could challenge the processes used by the State in making its decision and/or the legal and factual basis for the decision.

Id.

¹⁵⁸ *See generally id.* (discussing the Wyoming Supreme Court's reluctance to hear cases that have not presented a justiciable controversy). *See also* Duffy, *supra* note 25, at 438 (“The policymaking venues provide few opportunities for citizen input and few chances to litigate successfully in state court.”).

¹⁵⁹ Wyoming CBM Water Management Task Force, Final Recommendations, Power Point, <http://governor.wy.gov/Media.aspx?MediaId=214> (last visited Nov. 15, 2009) [hereinafter Wyoming CBM Water Management Task Force, Final Recommendations] (recommending the legislature develop a new statute for the management of water produced from coal bed natural gas operations requiring the limitation of discharged water to match the natural capacity of the channel); *see* THE RUCKELSHAUS REPORT, *supra* note 4; *see also* *William West Ranch*, 206 P.3d at 725. The Wyoming Supreme Court recognized:

[T]he Interim Report from the Wyoming Coal Bed Natural Gas Water Management Task Force (2006) . . . concluded: a. The State Engineer has determined that water production for CBM extraction is a beneficial use[;] b. The current regulatory structure is inadequate to protect downstream landowners; and c. The State Engineer lacks specific authority to regulate quantity of water discharge.

William West Ranch, 206 P.3d at 725 n.1.

¹⁶⁰ MONT. CODE ANN. §§ 82-11-175, 76-15-902 to -905 (2008); BRYNER, COALBED METHANE DEVELOPMENT IN THE INTERMOUNTAIN WEST, *supra* note 4, at 32.

the management options for the water captured.¹⁶¹ Montana protects its water right appropriators by providing for mitigation agreements and compensation to affected water right appropriators, despite not subjecting the produced water to the water permitting system.¹⁶² Wyoming should follow this approach to protect its own water appropriators.¹⁶³ Moreover, Wyoming should take a stricter stance than Colorado's legislative response to *Vance*.¹⁶⁴

Many in the legal and environmental communities advocate in favor of statutory control of coal bed methane produced water.¹⁶⁵ Statutorily mandating a further beneficial use or reinjection of produced water would provide for more efficient and long-term beneficial use of Wyoming's water.¹⁶⁶

D. The Benefits of Statutory Change

Several legal and environmental commentators argue Wyoming's method of regulating produced water is problematic because only a small fraction of the produced water is actually used.¹⁶⁷ Issues will continuously arise concerning the

¹⁶¹ MONT. CODE ANN. § 76-15-905 (requiring the offering of a mitigation agreement by coal bed methane producers to those presumed affected by the operation, determining how grievance procedures are to be set up and administered, and determining the extent of damages that may be awarded to adversely affected parties).

¹⁶² *Id.*

¹⁶³ See THE RUCKELSHAUS REPORT, *supra* note 4, at 52 (describing why statutory change would be valuable in Wyoming).

¹⁶⁴ The Colorado State Engineer is currently in the rulemaking stages with House Bill 1303 to address some of the problems of the *Vance* holding. Holland & Hart LLP, Publications, Produced Water Rulemaking Announced by State Water Officials, <http://www.westernwaterlaw.com/articles/ProducedWaterRulemaking.html> (last visited Nov. 15, 2009). However, the Colorado State Engineer will not address the issue of requiring a further beneficial use nor always require water permitting in coal bed methane production because current Colorado water law does not require a permit for those oil and gas wells that produce nontributary water, as nontributary water is not part of the appropriation system. COLORADO STATE LEGISLATURE, *supra* note 76, at 4. "Therefore, if produced groundwater can be shown to be nontributary, the need for water well permitting can be avoided for wells producing that ground water." *Id.* Coal bed methane producers want the water they produce classified as nontributary water because they will not have to get a water permit. Wonstolen, *supra* note 75, at 3.

¹⁶⁵ *E.g.*, BRYNER, COALBED METHANE DEVELOPMENT IN THE INTERMOUNTAIN WEST, *supra* note 4, at 33 ("Given the value of the water which many believe is at least as valuable as the gas, if not more so, state legislatures may decide to fashion provisions expressly aimed at defining who owns [coal bed methane] produced water and what should happen to it."); see also THE RUCKELSHAUS REPORT, *supra* note 4, at 52 ("It seems that the [coal bed methane] industry needs to be regulated as a unique kind of development. This would require statutory revisions or an entirely new statute that addresses [coal bed methane] specifically.").

¹⁶⁶ See THE RUCKELSHAUS REPORT, *supra* note 4, at 52 (creating a "set of statutory revisions that specifically addressed regulation of [coal bed methane] . . . could help remedy the kinds of challenges . . . related to [coal bed methane] water, . . . [and] all issues unique to [coal bed methane]").

¹⁶⁷ Darrin, *supra* note 20, at 293; Kear, *supra* note 4, at 15 ("Wyoming has actively promoted the pro-development status quo by: creating institutions that foster [coal bed methane] develop-

limited use, or the nonuse of coal bed methane produced water, and the lack of mitigating harm to senior water right holders and property owners.¹⁶⁸

Many of the current methods for disposal of produced water treat this water as a waste product; for example, it is common to leave produced water in storage pits, or similar reservoirs, to evaporate.¹⁶⁹ The storage of water for the purpose of letting it evaporate, or recharge on its own accord back into the environment, eliminates the water and does not constitute a beneficial use in and of itself.¹⁷⁰ Wyoming should take steps to ensure produced water is further beneficially used or reinjected and should make certain other water appropriators are protected from harms resulting from the production of coal bed methane.¹⁷¹

The Wyoming state legislature must take steps to address the aforementioned problems.¹⁷² It should formalize the State Engineer's initial requirement of a water right for drilling coal bed methane wells and set up procedures for protecting other water right appropriators. It should then take the next step by requiring produced water to be put to an additional beneficial use or reinjected into underground formations for future potential use.¹⁷³

ment; providing little environmental protections; maintaining tight control over [coal bed methane] revenues; and enacting the weakest surface owner protection act.”); THE RUCKELSHAUS REPORT, *supra* note 4, at 35.

¹⁶⁸ See Kear, *supra* note 4, at 15 (stating Wyoming regulations for the protection of other water right holders and surface owner are less than those in Montana, Colorado, and New Mexico).

¹⁶⁹ See MacKinnon & Fox, *supra* note 19, at 385 (claiming the coal bed methane reservoirs and pits used by the developers are created for the storage and disposal of this water through infiltration, evaporation, or release); COLORADO STATE ENGINEER, *supra* note 148, at 17 (mentioning the methods of disposal include discharge and injection into storage tanks or reservoirs/pits, commercial disposal, and waste management facilities); National Energy Technology Laboratory Strategic Center for Natural Gas, *supra* note 23, at 5-6 to 5-8 (stating that in the Powder River Basin of Wyoming, water disposal methods include infiltration impoundment, shallow re-injection, and active treatment using reverse osmosis).

¹⁷⁰ MacKinnon & Fox, *supra* note 19, at 385 (“Storage for its own sake is not a beneficial use.”).

¹⁷¹ See Wyoming CBM Water Management Task Force, Final Recommendations, *supra* note 159 (recommending the adoption of a statute on the management of water produced from coal bed methane wells limiting the discharge of water to the channel's natural capacity and “recommend[ing] that the state engineer add a condition to [State Engineer's Office] ground water permits establishing a threshold water-to-gas ratio necessary for establishing or continuing beneficial use after a period of time”).

¹⁷² THE RUCKELSHAUS REPORT, *supra* note 4, at 42 (“Beneficial use . . . can be achieved by minimizing water production in the first place . . . or by finding additional beneficial uses for water once it is produced.”).

¹⁷³ *Id.*

There are some in the legal and environmental communities who claim fixing the coal bed methane produced groundwater issue requires regulatory change and not statutory change.¹⁷⁴ Nonetheless, statutory change would bring desperately needed closure to the issues of managing the water captured from the production of coal bed methane.¹⁷⁵ As evidenced in *William West Ranch*, the Wyoming Supreme Court is reluctant to step in and provide a concrete determination on this issue.¹⁷⁶ Thus, it is time for the Wyoming Legislature to clarify state law and policy related to coal bed methane produced water.¹⁷⁷

IV. CONCLUSION

The issue surrounding the status of coal bed methane produced groundwater is of great importance, especially in the arid west.¹⁷⁸ As a prior appropriation state, Wyoming should continue to find groundwater diverted in association with the coal bed methane production process is an appropriation of water for a beneficial use.¹⁷⁹ However, Wyoming's beneficial use analysis cannot end with a simple finding that a beneficial use exists in coal bed methane production because production incident to coal bed methane development is not enough—application of the water to some other use or reinjection of the water is necessary.¹⁸⁰ Wyoming's current regulatory system inadequately addresses potential aspects of groundwater extraction during the coal bed methane production and management process, and, therefore, Wyoming should codify laws requiring a further beneficial

¹⁷⁴ MacKinnon & Fox, *supra* note 19, at 398 (“In order to effectively address this reality, both agencies [State Engineer’s Office and Department of Environmental Quality] need to abandon their rigid adherence to the regulatory division between water quantity and water quality, which has resulted in leaving the intersection of quantity and quality unregulated.”); Herlihy, *supra* note 49, at 482 (articulating that a public interest review needs to occur with coal bed methane permitting by the State Engineer).

¹⁷⁵ See THE RUCKELSHAUS REPORT, *supra* note 4, at 52–54 (explaining the benefits of a Coal Bed Methane Management Act and how such an act could be structured for Wyoming); see also MONT. CODE ANN. §§ 82-11-175, 82-11-905 (providing for the protection of adversely affected water rights holders and property owners).

¹⁷⁶ See *William West Ranch*, 206 P.3d at 737 (“The plaintiffs’ failure to connect any particular state action to their harm prevents them from establishing justiciability here. Nevertheless, in the event we are presented with a true justiciable controversy in another case, we will not hesitate to determine whether the State’s processes meet the constitutional and statutory directives.”).

¹⁷⁷ See THE RUCKELSHAUS REPORT, *supra* note 4, at 52 (referring to the benefits of and the need for statutory change in Wyoming’s regulation of coal bed methane produced water).

¹⁷⁸ E.g., BRYNER, COALBED METHANE DEVELOPMENT IN THE INTERMOUNTAIN WEST, *supra* note 4, at 1; Kear, *supra* note 4, at 1–2.

¹⁷⁹ WYOMING STATE ENGINEER, *supra* note 11, at 1 (discussing Wyoming’s finding of a beneficial use of water in producing coal bed methane).

¹⁸⁰ See *Vance v. Wolfe*, 205 P.3d 1165, 1174 (Colo. 2009) (Coats, J., concurring in part and dissenting in part) (explaining how, in Colorado, only an efficient diversion is needed to constitute a beneficial use and the requirement the water actually be used is nonexistent).

use or reinjection of the water and requiring protection of other water right appropriators.¹⁸¹

Since the Wyoming Supreme Court is reluctant to rule on the issue, as demonstrated by *William West Ranch*, it is time the Wyoming Legislature address coal bed methane produced groundwater.¹⁸² The Wyoming Legislature must build on the finding of the State Engineer's Office that a water right is required to mine for coal bed methane.¹⁸³ The legislature must codify the State Engineer's Office's beneficial use determination, require management of this produced water in the form of further beneficial uses or reinjection, and impose protections for affected water appropriators.¹⁸⁴

¹⁸¹ *E.g.*, Wyoming CBM Water Management Task Force, Final Recommendations, *supra* note 159; *see also* THE RUCKELSHAUS REPORT, *supra* note 4, at 52.

¹⁸² *See generally* *William F. West Ranch, L.L.C. v. Tyrrell*, 206 P.3d 722 (Wyo. 2009) (failing to reach a determination on the issue of harm to the plaintiffs and on how coal bed methane produced water should be managed).

¹⁸³ *See* WYOMING STATE ENGINEER, *supra* note 11, at 1 (stating the Wyoming State Engineer has already made the determination coal bed methane production is a beneficial use of water).

¹⁸⁴ *See supra* notes 126–77 and accompanying text (setting forth arguments to codify the beneficial use determination and recommending statutory change in how Wyoming administers coal bed methane produced water).