

STATE OF COLORADO

Colorado Water Conservation Board Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Linda Bassi, Section Chief
Jeff Baessler, Deputy Section Chief
Stream and Lake Protection Section

DATE: May 10, 2010

SUBJECT: **Agenda Item 34, May 18-19, 2010, Board Meeting**
Stream and Lake Protection Section – New Appropriation Recommendations
Big Dominguez and Little Dominguez Creeks, Water Division 4

Bill Ritter, Jr.
Governor

Mike King
DNR Executive Director

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CWCB Director

Summary

This memo outlines the background of the Dominguez Canyon Wilderness Area legislation and the instream flow (“ISF”) recommendations from the U.S. Bureau of Land Management (“BLM”) to support the wilderness management purposes and preserve the water resources of the wilderness area. This memo provides an overview of the technical analyses that were performed by both the BLM and CWCB staff to provide the Board with sufficient information to declare its intent to appropriate in accordance with the Instream Flow Rules. Detailed analyses of each stream segment are contained in the accompanying notebook to provide the Board with the necessary technical bases for these appropriations. Finally, this memo also addresses various issues that have arisen that are related to the atypical nature of these ISF recommendations.

Staff Recommendation

Staff recommends that the Board:

1. Pursuant to ISF Rule 5d., declare its intent to appropriate an ISF water right on each segment of Big Dominguez Creek and Little Dominguez Creek listed on the attached Tabulation of Instream Flow Recommendations, in the amount of all the annually available flow on the subject streams, minus the development allowance described in this memo.
2. Direct Staff to publicly notice the Board’s declaration of its intent to appropriate, including the Board’s intent to include the following non-precedent language in the water court decree for these ISF water rights: “This ISF water right appropriation is based upon the facts and circumstances particular to this situation and to these stream reaches, and shall have no precedential effect on future ISF appropriations.”

3. Establish the following initial schedule for the notice and comment procedure pursuant to ISF Rule 5c.:

Date	Action
May 19, 2010	Board declares its intent to appropriate and hears public comment
June 14, 2010	Notice to Contest due
June 24, 2010	Deadline for notification to ISF Subscription Mailing List of Notices to Contest (no notification necessary if no NTCs received)
July 5, 2010	Notices of Party Status and Contested Hearing Participant Status due At the July Board meeting, if necessary, Staff informs Board of Parties and Participants; Board sets hearing date

A. Background

The Dominguez Canyon Wilderness was created on March 30, 2009 as part of the 2009 Omnibus Public Lands Management Act (“Act”). The legislation provides an opportunity for the Board to appropriate ISF water rights to support wilderness management purposes, in lieu of creating a federal right for wilderness management purposes. The stated purpose of the Act, among other things, is to “conserve and protect for the benefit and enjoyment of present and future generations . . . the water resources of area streams, based on seasonally available flows, which are necessary to support aquatic, riparian, and terrestrial species and communities.” The Act provides that the Secretary of the Interior “may appropriate and seek adjudication of water rights to maintain surface water levels and stream flows on and across the Wilderness to fulfill the purposes of the Wilderness.” However, the Act goes on to provide that the Secretary “shall not pursue adjudication of any Federal instream flow water rights if . . . the Secretary determines, upon adjudication of the water rights by the Colorado Water Conservation Board, that the Board holds water rights sufficient in priority, amount and timing to fulfill the purposes of the Act.” Pursuant to this legislation, the BLM has worked with the CWCB staff and stakeholders to develop ISF recommendations for Big Dominguez Creek and Little Dominguez Creek, which are the two primary stream systems located within the Wilderness Area.

On January 25, 2010, the BLM submitted a formal written recommendation to the CWCB for ISF appropriations on Big Dominguez Creek and Little Dominguez Creek within the Wilderness Area boundaries. The BLM’s recommendation differs from standard ISF recommendations in that it does not identify specific flow rates and seasons. Rather, the BLM recommends that the CWCB develop a quantified estimate of future water use related to private property parcels located in and immediately adjacent to the two watersheds (“development allowance”), and then appropriate all of the flow that is annually available in each creek after the development allowance is satisfied. The goal of this approach is to protect variability in flows that includes base flows, snow melt runoff flows, annual flood flows from thunderstorm events, and less frequent large flood events. The volume of water protected by these ISF water rights would vary substantially in response to natural variations in hydrologic conditions. The BLM has recommended this approach to fulfill the broad purposes of the Act outlined above.

The CWCB holds an ISF water right on Big Dominguez Creek for 1.5 cfs from the headwaters to the confluence with the Gunnison River, appropriated and decreed in 1984. That ISF water right was quantified using R2Cross. The subject ISF recommendation on Big Dominguez Creek should not be deemed an increase to the existing ISF water right because it has been developed to preserve various aspects of the wilderness area natural environment.

B. Natural environment

To appropriate ISF water rights on Big and Little Dominguez Creeks, the Board must determine that there is a natural environment on these streams. The BLM has conducted field surveys and studies of the natural environment resources on these streams and has found natural environments that can be preserved. To quantify the resources and to evaluate ISF requirements, the BLM collected biologic, hydrologic, hydraulic, geomorphic and water quality data that were analyzed by CWCBC staff.

The legislation that created the Dominguez-Escalante National Conservation Area and Dominguez Canyon Wilderness Area (“DCWA”) expressly refers to the natural environment in its definition of the purpose of the Act:

to conserve and protect for the benefit and enjoyment of present and future generations—

*(1) the unique and important resources and values of the land, including the **geological**, cultural, archaeological, paleontological, **natural**, **scientific**, **recreational**, **wilderness**, **wildlife**, **riparian**, historical, educational, and **scenic resources** of the public land; and*

(2) the water resources of area streams, based on seasonally available flows, that are necessary to support aquatic, riparian, and terrestrial species and communities (emphasis added).

The Act also references the Wilderness Act, 16 U.S.C 1131 et seq., to further define its purpose. The Wilderness Act defines a wilderness as:

... an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

The BLM has undertaken extensive field surveys, studies and literature reviews to identify specifically the unique characteristics of the area’s water dependent natural environment as well as the associated flows that would be required to reasonably maintain the natural environment in its present wilderness state. The survey and study of the DCWA resulted in six separate reports that are included in the appendices of the Recommendation Summary Report. These reports include: 1) Fisheries Report; 2) Aquatic Macro invertebrate Report; 3) Riparian Report; 4) Water Quality Report; 5) Hydrology Report; and 6) Hydraulic Modeling Report, and are attached at Tabs 9 through 14 respectively.

The natural environment studies and surveys indicate that these creeks possess many unique attributes, summarized below:

- These creeks are two of very few examples in Colorado of mid-to-low elevation perennial streams with largely unaltered natural hydrology.
- The creeks support
 - several plant communities that are becoming increasingly rare in the intermountain west, including naturally reproducing cottonwood galleries, willow and poplar species, red-osier dogwood, cattails, equisetum, and various grasses and sedges;
 - high quality examples of fully functioning aquatic ecosystems, including robust fish and amphibian populations;
 - three distinct fish populations separated by natural barriers: rainbow trout at high elevation; specked dace at mid-elevation; and roundtail chub (a BLM Sensitive Species and a State Species of Concern) in the lowest portions of the creek; and

- a highly diverse and abundant aquatic macro-invertebrate community.
- The creeks support very high water quality.
- The unique geologic formations through which the creeks flow have created numerous waterfalls, plunge pools, spring outcrops, and a well-defined canyon.
- The creeks exhibit a wide variety of channel types (ranging from very narrow and straight reaches to reaches with shallow broad meanders), which have created a large number of terrestrial microclimates and a variety of aquatic habitats that support an atypical quality and abundance of water dependent species. Further, the sediment regime created by the eroding sandstone within the canyon provides a dynamic environment for continued change and rejuvenation of the canyon riparian communities.

The significance of the riparian community to these stream systems cannot be overstated. The ecological importance of cottonwoods is especially great in arid regions of the western United States because in most areas, no native replacement tree species occur. (See Tab 18). Riparian cottonwood forests “provide prime habitat for a range of terrestrial animals and abundant and diverse bird species,” and “are linked to and benefit the adjacent riverine aquatic ecosystems by providing shade that reduces water temperature and by contributing organic matter, leaves and woody debris that provide a basis for the aquatic food web.” The maintenance of these cottonwood populations depends on periodic recruitment to compensate for ongoing mortality. (See Tab 19).

C. Amount required to preserve the natural environment to a reasonable degree

The BLM asserts that the attributes of the natural environment listed above depend upon a natural and seasonally variable flow regime, requiring most of the unappropriated flows that currently exist in the basin. The BLM has provided extensive scientific justification for protecting the entire range of flow rates and timing found in the two stream systems as necessary to preserve the natural environment to a reasonable degree. The hydrology of the streams was scientifically quantified, and maximum upper limits were verified by the Hydrologic Modeling Report, which linked the larger flow events on the hydrograph to the maintenance of pristine riparian communities. Although the recommendation does not identify specific flow amounts, the hydrology of the streams can be defined by four separate flow periods.

Flow Period	Big Dominguez Creek (cfs)	Little Dominguez Creek (cfs)	Ecological Function
Base Flows (typically July through February)	1.53 to 3.86	1.20 to 2.15	Support of fish and macro-invertebrate life cycles including rainbow trout, speckled dace, & roundtail chub*
Snow Melt Runoff Flows (typically March through June)	75	65	Recharge of the aquifer for support of riparian vegetation
Annual Flood Flows (typically short-term thunderstorm events July through September)	250	200	Periodic inundation of shrubby riparian zone
Less Frequent Large Flood Events (thunderstorm driven events recurring on 3 to 10 year intervals)	725	500	Sediment deposition and subsequent establishment of cottonwood seedlings

* It is important to note that the higher flow amounts identified in the table above also support the ecological function of fish and macro-invertebrate life cycles.

While the BLM's scientific analyses are sound, Board members have questioned whether the BLM's recommendation will result in ISF water rights that are the minimum amount necessary to preserve this unique natural environment to a reasonable degree. ISF water rights that protect the full regime of flow, including its natural variability, would achieve the Act's goal of protecting seasonally available flows that are necessary to support aquatic, riparian, and terrestrial species and communities. The various aspects of the natural environment that these ISF water rights will preserve, particularly the riparian plant community, coupled with the fact that these ISF water rights will preserve the natural environment of a Wilderness Area, support the conclusion that all annually available flows (minus the development allowance) constitutes the minimum amount necessary to preserve this natural environment to a reasonable degree. The scientific literature and BLM reports indicate that without this natural and seasonally variable flow regime, the natural environments on these Wilderness Area streams would not be preserved in their current state, as intended by the Act. Virtually all aspects of natural hydrology would be required to maintain a channel, its biota and its adjacent riparian community. For example, a thunderstorm event on Big Dominguez Creek that has an occurrence of once every 3—10 years produces 725 cfs, which inundates the floodplain and supports the establishment of cottonwood seedlings. Without this periodic floodplain deposition, the riparian community would diminish. Flows that occur very rarely are as essential to the preservation objective as the seasonal base flows that preserve fish and macro-invertebrate populations.

Further, since 1993, the natural hydrology of wilderness streams has been protected in other Wilderness Areas in Colorado. This has been accomplished through carefully crafted administrative approaches that have been negotiated in stakeholder discussions. To maintain wilderness streams in their natural condition, water user interests and environmental interests have agreed to legislative language that expressly denies any new federal water right to support wilderness values, while simultaneously prohibiting federal agencies from approving any new water facilities that would divert water from wilderness streams. It is important to note that this approach has been used in Wilderness Areas that are located in the headwaters of the affected streams, and did not address situations in which private property or private water rights are located upstream from designated wilderness areas. This approach has been used in about 21 Wilderness Areas in Colorado, including Black Ridge Canyons Wilderness, Spanish Peaks Wilderness, and the James Peak Wilderness.

D. Water Availability

Staff has conducted an evaluation of water availability for the streams listed. To determine the amount of water physically available for the Board's appropriations, staff reviewed the BLM's hydrology report, analyzed available USGS gage records, performed independent verification of the BLM hydrology using standard USGS procedures and analyzed pressure transducer data to identify the amount of water physically available in each stream. In addition, staff analyzed the water rights tabulation for each stream and has consulted with the Division Engineer's Office to identify any potential water availability problems. Based upon its analyses, staff has determined that water is available for appropriation on each stream to preserve the natural environment to a reasonable degree without limiting or foreclosing the exercise of valid water rights.

E. Correlating the activities of mankind with reasonable preservation of the natural environment

The DCWA is located in the lower portion of both the Big Dominguez and Little Dominguez Creek watersheds. The upper portion of the watershed is comprised primarily of USFS lands interspersed with 16 private parcels that comprise approximately 2227 acres. These parcels are located on the Uncompahgre Plateau at the headwaters of the watersheds. There are a number of existing private and federal water rights in these watersheds that consist primarily of springs and stock ponds decreed for stock watering, domestic purposes and wildlife/fish uses.

Recognizing that the Board must correlate the activities of mankind with some reasonable preservation of the DCWA natural environment, the BLM has proposed that a development allowance be established that would allow for additional water development on both the private and federal parcels to “maintain existing land uses and viable agricultural practices.” Such a development allowance should take into account relevant factors such as elevation, climate, soils, water availability and historic water use practices, and should be developed in a manner that ensures that the proposed rate and volume of the allowance would not interfere with the natural hydrologic variability in the streams that is required to preserve the DCWA natural environment.

As a first step in identifying the amount of water needed for such an allowance, the Colorado River Water Conservation District, in coordination with CWCB staff, sent letters to landowners and water rights holders of record upstream of the Wilderness Area informing them of these potential ISF water rights and inquiring about their current and projected water supply needs. In addition, staff contacted the U.S. Forest Service (“USFS”) and requested that it also attempt to identify any future water supply needs. This correspondence resulted in a number of additional water rights applications by private landowners sufficient to meet much of the potential water demands for grazing and livestock watering. In addition, the USFS sent a letter (Tab 7) to the CWCB quantifying its projected water needs and requested that these needs also be recognized as part of the development allowance. BLM also quantified a small amount of additional water needs that are included in the allowance.

To provide the Board with a technical basis for the development allowance, the CWCB staff retained DiNatale Water Consultants, Inc. to evaluate the potential for additional water development in the Big Dominguez and Little Dominguez basins upstream of the Wilderness Area. The complete report is included in the notebook at Tab 5. The following table takes into account all the correspondence and analyses, and identifies the best estimate of the maximum potential direct flow and volumetric limits associated with the development allowance:

	Maximum Storage Volume Allowed - AF (Total of all new water rights)	Max Diversion Rate (cfs) (April 15 – June 30)*	Max Diversion Rate (cfs) (July 1 – October 31)*
Big Dominguez			
Private Parcels	100	3.30	0.198
USFS	1.14	.066	
BLM	1.0	0.11	

Little Dominguez			
Private Parcels	1	0.033	0.033
USFS	.76	.066	
BLM	2.0	0.22	

* The diversion rates are further limited to the maximum storage volume allowed in each case.

Staff and BLM analyses indicate that these development allowance volumes and rates are sufficiently small so as not to affect the natural hydrologic variability on Big and Little Dominguez Creeks.

F. Issues

Two legal/policy issues have arisen resulting from the BLM's recommendation of all of the annually available flow in Big and Little Dominguez Creeks minus a development allowance to preserve the natural environment of Big and Little Dominguez Creeks within the Wilderness Area. These issues are: (1) whether the Board has the authority to determine what constitutes a natural environment as well as the authority to establish the minimum amount of water that would be necessary for its reasonable preservation; and (2) whether the Board has ever successfully used the ISF program to address other atypical natural environment preservation goals.

1. Board Authority

It has been questioned whether the recommended ISF water rights fit within the Board's statutory authority to appropriate ISF water rights, both in the context of what aspects of the natural environment the ISF water rights will preserve, and the amount of the proposed ISF water rights.

In May 1979, the Colorado Supreme Court's ruling in the Crystal River case¹ recognized the Board's authority and discretion to interpret its enabling statutes. In particular, the Court found that the CWCB has the required expertise and access to expert scientific opinion (through the Colorado Division of Wildlife, and subsequently, other recommending entities such as the BLM) to determine the habitat and life forms to be preserved and the amount of water needed for instream flow water rights on a case-by-case basis. The Court specifically stated, "To require an enumeration of the forms of plant and animal life, as well as natural formations, which the legislature wished to preserve, would be to impose an impossible task. The legislative objective is to preserve reasonable portions of the natural environment in Colorado. Factual determinations regarding such questions as which areas are most amenable to preservation and what life forms are presently flourishing or capable of flourishing should be delegated to an administrative agency which may avail itself of expert scientific opinion. This is particularly true, considering that the General Assembly undoubtedly anticipated that the considerations for each locale might vary. . . . The General Assembly clearly intended to have the Colorado Water Board preserve various life forms." Consequently, the Board has discretion under the statute to appropriate ISF water rights to preserve aspects of the natural environment other than fish, such as rare riparian plant communities.

Because the science supports the need for seasonally available flows (snowmelt runoff, flood flows, base flows, storm events) to maintain the riparian plant community and other aspects of the natural environments of Big and Little Dominguez Creeks, there is a rational connection

¹ Colorado River Water Conservation Dist. v. Colorado Water Conservation Bd., 594 P.2d 570, 478 (Colo. 1979).

between preserving those aspects of the natural environment with all of the annually available flow minus a development allowance and preserving the natural environment to a reasonable degree as contemplated by the statutes governing the ISF Program.

2. Existing non-traditional ISF appropriations made by the CWCB

The CWCB has appropriated ISF water rights in the past that preserve aspects of the natural environment other than cold water fisheries. On numerous occasions, the CWCB has relied upon methodologies and science-based approaches that have resulted in large minimum flow appropriations up to and including all of the unappropriated flow. Such appropriations demonstrate the Program's flexibility in addressing reasonable preservation of the natural environment where there are competing factors and interests. In addition, these appropriations strengthen the state's authority to determine the allocation of Colorado's water resources, and allow for collaborative solutions to challenging natural resource issues involving diverse stakeholders. A summary of non-traditional ISF appropriations by the CWCB is included in the notebook at Tab 6.

G. Alternative Approach

In an attempt to address concerns expressed by some Board members, CWCB staff investigated an alternative quantification approach. Using this approach, a set of flows defined by season would be computed to achieve the wilderness preservation objectives. For example, flows would be computed for a specified duration in amounts that would protect low flow fish habitat or in amounts that would maintain annual in-channel sediment transport (snowmelt bankfull discharge and duration). The identified flows could be displayed against a hydrograph that depicts the "typical" flow regime (e.g., mean daily, median, geometric mean, etc). The resulting recommendation would look like most of the recommendations the Board routinely encounters. However, this recommended flow regime would not include rare flow events or even common high intensity – short duration thunderstorm events that play an important role in developing and maintaining the morphology of the stream, along with the bed and overbank disturbance needed for the regeneration of riparian vegetation. To meet the intent of preserving the "natural wilderness environment," the ISF water rights must also protect these rare short-term highly variable flow events. Because the alternative approach would not result in full preservation of the natural wilderness environment, staff elected to not pursue it.

H. Stakeholder Collaboration and Support

Numerous stakeholders have expressed support for the appropriation of ISF water rights for protection of the DCWA. Letters of support received to date are included at Tab 27. Staff will provide additional letters of support in the Board notebook and at the Board meeting. Staff heard many expressions of support for a CWCB appropriation on Big and Little Dominguez Creeks during its outreach efforts. This support attests to the work and collaboration that occurred between diverse stakeholder interests in the drafting of the DCWA legislation. Local support has been especially strong, and the Grand Junction Sentinel took a supportive position in its March 12, 2010 editorial (Tab 25). Additionally, these ISF appropriations implement the Memorandum of Understanding entered into by the BLM, Colorado Department of Natural Resources, and CWCB in September 2005 (Tab 8). The MOU's purpose was to establish a framework for the parties to work together in a cooperative manner on issues regarding the management of water and water uses on BLM lands in Colorado. Among other things, the parties agreed to seek innovative ways to achieve instream flow protection.

Staff Recommendation

Staff recommends that the Board:

1. Pursuant to ISF Rule 5d., declare its intent to appropriate an ISF water right on each segment of Big Dominguez Creek and Little Dominguez Creek listed on the attached Tabulation of Instream Flow Recommendations, in the amount of all the annually available flow on the subject streams, minus the development allowance described in this memo.
2. Direct Staff to publicly notice the Board's declaration of its intent to appropriate, including the Board's intent to include the following non-precedent language in the water court decree for these ISF water rights: "This ISF water right appropriation is based upon the facts and circumstances particular to this situation and to these stream reaches, and shall have no precedential effect on future ISF appropriations."
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Attachments