

COLORADO Colorado Water Conservation Board Department of Natural Resources 1313 Sherman Street, Room 718 Denver, CO 80203 P (303) 866-3441

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Jared Polis, Governor Dan Gibbs, DNR Executive Director Rebecca Mitchell, CWCB Director

TO: Colorado Water Conservation Board Members

FROM: Robert Viehl, Chief Stream and Lake Protection Section

DATE: May 17, 2022

AGENDA ITEM: 15 c. 2022 Instream Flow Appropriation: Spring Creek (Water Division 4)

Staff Recommendation: Informational item no Board action required.

Background:

Div	Stream	Watershed	County	Length (miles)	Upper Terminus	Lower Terminus	Flow Rate cfs/ Timing
4	Spring Creek	San Miguel	Montrose	7.47	headwaters	Crabtree Ditch headgate	1.1 (03/15 - 05/31)

At the January 2017 instream flow (ISF) workshop the Bureau of Land Management (BLM) submitted an ISF recommendation on Spring Creek for consideration by the CWCB. Spring Creek is located within Montrose County and is approximately 14 miles northwest from the town of Nucla. To assist in its water availability analysis CWCB staff installed a temporary streamgage on Spring Creek in fall 2016 and maintained it until fall of 2020. Having reviewed and analyzed the available data CWCB staff were prepared to commence the appropriation process on Spring Creek in January 2020. CWCB staff pulled the recommendation for consideration in 2020 with the intent to conduct additional outreach because concerns were raised about undecreed uses occurring on Spring Creek that needed to be recognized.

Difficulties contacting landowners and the pandemic delayed outreach efforts. in May of 2021, staff from the CWCB, BLM, DWR and a consultant representing Southwestern Water Conservation District (SWCD) met with land and water right owners. At this meeting the consultant working for SWCD agreed to assist these individuals in documenting their current undecreed uses for recognition under statute 37-92-102 3 (b).

Staff had email and telephone conversations with DeeAnna Burbridge in January 2022 to get an update on the status of documenting undecreed uses. On January 24, 2022, the CWCB formed its intent to appropriate ISF water rights on Spring Creek. No notices to contest were submitted in this matter before the deadline of March 31, 2022. On May 2, 2022 CWCB staff received documentation from the SWCD consultant of some current undecreed uses occurring on Spring Creek. On May 4, 2022, CWCB staff received a letter dated April 25, 2022 from current water users on Spring Creek, some of whom attended the May 2021 meeting, demanding that all efforts cease and that no further efforts be taken on the ISF appropriation on Spring Creek.

Interstate Compact Compliance • Watershed Protection • Flood Planning & Mitigation • Stream & Lake Protection

CWCB staff needs additional time to coordinate with the recommending entity and determine how to proceed. Therefore staff is delaying any recommendation for further action on the Spring Creek ISF appropriation, and no Board action is being requested at this time.

Attachment: April 25, 2022 Letter from DeeAnna Burbridge, et al. regarding the Spring Creek ISF

P.O. Box 40 Nucla, CO 81424

April 25, 2022

Robert Viehl Deputy Section Chief Colorado Water Conservation Board Division of Natural Resources 1313 Sherman St., Rm. 718 Denver, CO 80203

RE: CWCB Spring Creek Instream Flow (ISF) Recommendation and and the sonak

Dear Mr. Viehl:

This letter is submitted in protest of the inclusion of Spring Creek in the proposed ISF appropriation. Although the letter is written and submitted by me, DeeAnna Burbridge; we, the undersigned, respectfully <u>demand</u> that all actions to include Spring Creek in the proposed ISF appropriation <u>cease</u> and that <u>no further future efforts be taken</u> to include Spring Creek in the proposed ISF. Please know that we, the undersigned, fully agree with and support the contentions and findings submitted in this letter. We will collectively combine our available resources to fight the inclusion of Spring Creek in the proposed ISF.

We contend that CWCB will be unable to prove two of the three statutory findings necessary to appropriate an ISF:

- That water is available for appropriation.
- That there is no material injury to existing water rights.
- I. **Water is available for appropriation**: Assuming the basis of Spring Creek being included in the ISF recommendation is in the following documents:
 - the BLM recommendation letter (dated 12-17-2019 from Megan Gilbert, Deputy State Director, Resources) and accompanying data; shared with DeeAnna Burbridge, by Robert Viehl, on Jan. 6, 2021 via email. We challenge the data and validity of conclusions presented. Generally, the document is filled with all sorts of spreadsheets full of numbers extrapolated into stream flow profiles, and pretty colored graphs and 142 colored photographs.
 - A letter dated 12-21-2020 from Linda Bassi, Section Chief, Stream and Lake Protection Section to DeeAnna Burbridge with attachments identifying the Spring Creek ISF recommendation: upper and lower terminus of the 7.47 miles, appropriation amount of 1.1 cfs from March 15 to May 31.
 - An email dated 5-2-2021 to DeeAnna Burbridge from Rob Viehl answering specific questions asked in emails dated 1-6-21 and 1-13-21.
 - Included for our purposes, we are adding DWR Daily Diversion Record Reports for the period of 11-1-15 through 10-31-21.

Our only interests are: the dates, locations, actual cfs measurements, and the accuracy of those measurements to prove that there is water available for appropriation. We contend that there is NO water available for appropriation. After a review and analysis of the information presented as the basis for inclusion of Spring Creek in the ISF, we challenge and declare the documentation provided invalid/inaccurate/incomplete and unacceptable for the following reasons which are in no particular order:

- a. Data input & proofing is incomplete. Documentation is not signed nor dated, who checked it, nor who was assigned. And this for the year of 2016 only. Data for subsequent years is in a different format, and only provides spreadsheet data with extrapolation. There little or no recourse information provided to challenge any of the specific data.
- b. Measurement location/site names are inconsistent and/or not precisely described throughout the documentation data from the time period from 6-16-16 to 10-22-19. By the unique nature of a "spring creek", the water levels/measurements will vary significantly dependent upon the underlying geological strata thus the appearance of springs along the creek. The location/site names must be consistent and precisely described in order to allow for verification of data. The measurement location/site names include, but are not limited to:
 - 1.100 ft below confluence with Burro Creek as a second call wold meet and been proved a 2014/01/38
 - 2.100' upstr fr fence at BLM-private boundary

3. Spring Cr blw Burro

- 4. Spring Creek A Temp gage
- 5. Temp gage more that become an experience of the relation of the relation of the relation of the second second
- 6. Spring Creek gage set being sebau ert ev is bound if ann Aeeff ert ut being due bis nettre al
- soleto 7. Near confluence with Tabeguache Creek and the School and School and
 - 8. Spring Creek near Spring Creek Ranch below temp gage
 - 9. Spring Creek above Spring Creek temp gage
 - 10. Spring Creek above Spring Creek Ranch
 - 11. Spring Creek at confluence with Tabeguache Creek
 - 12. Spring Creek near Spring Creek Ranch 10 ft downstream of PT
 - 13. Spring Creek near Spring Creek Ranch
 - 14. Spring Creek at Tabeguache confluence
 - 15. Spring Creek at temporary gage
 - 16. Spring Creek @Stream Mile 6.27
 - 17. Directly ds of gage

18. Latitude: 38.35842 Longitude: 108.6951-measurement located in pool below CWCB temp gage

19. Latitude: 38.35842 Longitude: 108.6951-measurement location near confluence with Tabeguache

Creek

We contend that there is no way verify the accuracy of the measurements, nor their consistency, based upon the 19 location descriptions, therefore making this data invalid and unsuitable to prove that water is available for appropriation.

NOTE: The five locations highlighted in blue above are in one way or another associated with the Tabeguache confluence. Two measurements taken on 5-29-2017, 3:07 PM-2.10 cfs and 12:11 PM-1.82 cfs appear to be below the lower terminus (Crabtree Ditch head gate: Lat: N38 24.884 Long: W108 39.321. These coordinates were taken by Chas Burbridge while physically standing at the site on 4-15-22). At least three other measurements were taken in the same area on various dates.

c. Reference the recommendation letter (dated 12-17-19) from Megan Gilbert: "1.1 cubic feet per second is recommended for the high temperature period from March 15 through May 31." The dates included in the recommended time period are highlighted in various colors by year and are below.

Water measurement readings taken per the BLM recommendation data from 6-16-16 to 10-22-19 clearly indicate that there is no water available for appropriation. Of the 24 measurement readings taken

over the 3 year period, 12 of these readings were taken outside of the recommended time period from March 15 through May 31; leaving 12 measurements for the time period from 6-16-16 to 10-22-19. Additionally, the 5 measurements generally indicating a Tabeguache confluence location and the potential of an additional one taken indicating the same flow measure but not there is no clear location description are excluded because they are below the lower terminus of the proposed ISF. This leaves only 6 measurements with valid parameters. Measurement readings were taken on these dates:

- 1. 6-16-16:Spring Creek @Stream Mile 6.27, 1.13 cfs (head Filment Harres 13) S-2 ent of bedimeter
- 2. 6-16-16: 100' below confluence w Burro Creek, 1.79cfs
- 3. 10-24-16: Spring Creek Gage, 0.22cfs
- 4. 10-24-16: SPRING CR BLW BURRO, 0.2168cfs
- 5. 4-28-17: Spring Creek Gage, 3.3csf
- 5-29-17: Latitude: 38.35842 Longitude: 108.6951-measurement located in pool below CWCB temp gage, 2.10cfs
- 5-29-17: Latitude: 38.35842 Longitude: 108.6951-measurement location near confluence with Tabeguache Creek, 1.82cfs
- 8. 5-29-17: Spring Creek near Spring Creek Ranch below temp gage, 2.1cfs
- 9. 7-26-17: Spring Creek gage, 0.47cfs
- 10. 11-17-17: Spring Creek above Spring Creek Temp Gage, .01cfs
- 11. 11-17-17: SPRING CREEK a TEMP GAGE, .0003 (Measurement results indicate a Quality Control Warning)
- 12. 4-3-18: Spring Creek gage, 0.0cfs
- 13. 7-3-18: Spring Creek above Spring Creek Ranch, 0.0cfs
- 14. 4-9-19: Spring Creek above Spring Creek Ranch, 5.635cfs
- 15. 4-9-19: Spring Creek at confl with Tabeguache Creek, Temp Gage on separate Discharge
 - Measurement Summary, and At Tabeguache Creek, 4.4564 all with the same cfs
- 16. 4-26-19: Spring Creek near Spring Creek Ranch-10 ft downstream of PT, 7.4cfs
- 17. 5-7-19: (per DWR Daily Diversion Record Reports): Tilton Ditch, 1.84cfs
- 5-8-19: Spring Creek near Spring Creek Ranch & Temp Gage on separate Discharge Measurement Summary, 10.5763cfs
- 19. 8-1-19: Spring Creek at Cr confluence, 0.0 cfs
- 20. 8-1-19: Temp Gage on separate Discharge Measurement Summary, 0.6421 cfs
- 21. 8-1-19: Spring Creek at temporary gage, 0.6421cfs
- 22. 10-22-19: Directly ds of gage & Temp Gage on separate Discharge Measurement Summary, 0.0395cfs

These measurements are per the DWR Daily Diversion Record Reports to document an update for 2020 and 2021. They clearly show that the creek has been basically dry for the last two years.

- 23. 4-8-20 (per DWR Daily Diversion Record Reports): Tilton Ditch, .35cfs
- 24. 5-20-20 (per DWR Daily Diversion Record Reports): Tilton Ditch, 0.00cfs
- 25. 5-12-21 (per DWR Daily Diversion Record Reports): Tilton Ditch, 0.00cfs

26. 6-16-21 (per DWR Daily Diversion Record Reports): Tilton Ditch, 0.00cfs

NOTE: The Tilton Ditch Structure (head gate / weir) is a permanent accurate measuring apparatus on the creek.

The recommendation letter (dated 12-17-2019) also identifies the following diversion structures and associated decreed rights located within the proposed ISF reach:

- Crabtree Ditch 6.0 cfs
- et . Tilton Ditch 1.0 cfs eg en bed an en en este an en este a render to velk navord at norde
 - Spring Creek Ditch No. 2 1.0 cfs
 - Spring Creek Ditch No. 3 1.74 cfs

Other decreed rights located within the proposed ISF not included in the BLM recommendation letter, but identified in the 5-2-21 email from Robert Viehl:

- Burro Creek Ditch 0.87 cfs
- Thormalen Spring 0.0569 cfs
- Turkey Feather Spring 0.0044

Given the fact that at least 10.6713 cfs is already decreed to the existing senior water right holders, there is only one year, and for that matter **one date (5-8-19)** and location that would even come close to supporting an ISF appropriation. We contend that this is insufficient data to prove that water is available for appropriation.

We further challenge the data: A reading taken on 5-7-19 (highlighted in red), per DWR Daily Diversion Records Report, documents the flow at the Tilton Ditch to be 1.84 cfs. The reading on 5-8-19 (highlighted in red) per the BLM recommendation data documents the flow at a virtually unknown location – Spring Creek near Spring Creek Ranch - to be 10.5763 cfs. This clearly and significantly calls into question the accuracy/validity of <u>any</u> measurements in the recommendation data... again, the **one and only date/location** that could support an ISF recommendation. We contend that this recommendation data documentation measurement is invalid based upon the measurement taken by the DWR the prior day at the permanent Tilton Ditch Structure. This again supports our contention... there is **insufficient data to prove that water is available for appropriation.** The Devil is in the Details.

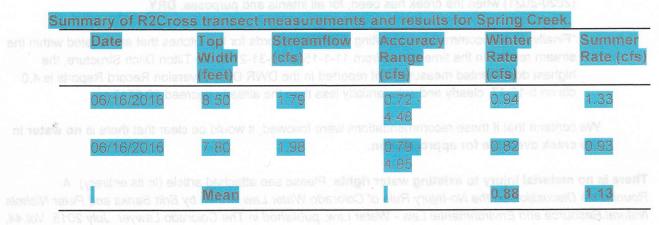
- d. Quality control warnings were indicated in the Summary Overview Section in Discharge Measurement Summary Reports dated 10-24-16, 11-17-17, 4-9-19, and 5-8-19. These Quality control warnings are not defined. What does this mean? Again specifically calling into question the accuracy and validity of the 5-8-19 reading.
- e. Reference the email dated 5-2-2021 to DeeAnna Burbridge from Rob Viehl answering a specific question: Viehl DNR, Rob rob.viehl@state.co.us

To:DeeAnna Burbridge Sun, May 2, 2021 at 12:09 PM DeeAnna: Located below is information that I hope will provide answers to your questions. Let me know if anything needs further clarification. I look forward to meeting with everyone on the 12th. Thanks, Rob

• The letter I received contained a document titled "Instream Flow Tabulation - Streams Water Division 4" for Spring Creek. The amount suggested on this document was 1.1 CFS from 3/15-5/31. I would like to know how this measurement was determined? BLM staff used the R2Cross methodology to develop the initial ISF recommendation. The R2Cross method is based on a hydraulic model and uses field data collected in a stream riffle. Riffles are most easily visualized as the stream habitat types that would dry up first should streamflow cease. The data collected consists of a streamflow measurement, survey of channel geometry and features at a single transect, and survey of the longitudinal slope of the water surface.

The field data is used to model three hydraulic parameters: average depth, average velocity, and percent wetted perimeter. Maintaining these hydraulic parameters at adequate levels across riffle habitat types also will maintain aquatic habitat in pools and runs for most life stages of fish and aquatic macro-invertebrates. BLM staff interprets the model results to develop an initial recommendation for summer and winter flows. The summer flow recommendation is based on meeting 3 of 3 hydraulic criteria. The winter flow recommendation is based on meeting 2 of 3 hydraulic criteria. The model's suggested accuracy range is 40% to 250% of the streamflow measured in the field. Recommendations that fall outside of the accuracy range may not give an accurate estimate of the hydraulic parameters necessary to determine an ISF rate.

The recommending entity uses the R2Cross results and its biological expertise to develop an initial ISF recommendation. CWCB staff then evaluates water availability for the reach, typically based on median. The water availability analysis may indicate less water is available than the initial recommendation. In that case, the recommending entity either modifies the magnitude and/or duration of the recommended ISF rates if the available flows will preserve the natural environment to a reasonable degree, or withdraws the recommendation.



1.1 cubic feet per second is recommended for the high temperature period from March 15 through May 31. The BLM concludes that meeting all three instream flow criteria will maintain a wetted root zone in the alluvial aquifer during the key part of growing season for the riparian community. Meeting all three instream flow criteria will also provide suitable conditions in the stream substrate for the aquatic macroinvertebrate community.

We generally question the methodology used to measure the flows in Spring Creek. We question the statements highlighted in yellow. The model's suggested accuracy range is 40% to 250% of the streamflow measured in the field. 40% accuracy is too low; and how can you have 250% accuracy?

It appears that the 1.1 cfs ISF appropriation recommendation (highlighted in blue) is based on ONE day (**6-16-16: five years ago**) of measurements taken in **two unknown locations**, with an **accuracy**

range of 40-250% and not during the recommended high temperature period from March 15 through May 31.

We contend that the 1.1 cfs ISF appropriation recommendation is not acceptable based upon the given parameters highlighted in this answer.

f. Further, Reference the BLM recommendation letter (dated 12-17-2019). It is stated in the letter, that "The BLM recommends consulting several data sources to confirm water availability. First, Streamstats should be consulted to determine the general range and magnitude of snowmelt runoff flows. Second, on-site data measurements taken over time may be able to confirm base flows in the creek. Finally, BLM recommends consulting diversion records for the ditches that are located within the stream reach."

We contend that at least two, if not all three, of these recommendations were clearly not followed:

- "First, Streamstats should be consulted to determine the general range and magnitude of snowmelt runoff flows." The first recommendation is in question and unknown to us by data presented.
 - "Second, on-site data measurements taken over time to confirm base flows in the creek": **We contend that the period of time of 3 years (2016-2019) is insufficient to determine base flows.** Not when we have watched the surface water pulse down the creek in daily 10' linear increments only to have it disappear before it gets to a diversion. And not for the last two years (2020-2021) when the creek has been, for all intents and purposes, <u>DRY</u>.
- "Finally, BLM recommends consulting diversion records for the ditches that are located within the stream reach." In the time period from 11-1-15 to 10-31-21 at the Tilton Ditch Structure, the highest documented measurement reported in the DWR Daily Diversion Record Reports is 4.0 cfs on 5-12-17, clearly and substantially less than the already decreed 10.6713 cfs.
- We contend that if these recommendations were followed, it would be clear that there is **no water in the creek available for appropriation.**
- II. There is no material injury to existing water rights. Please see attached article (in its entirety). A Roundtable Discussion on the No-Injury Rule of Colorado Water Law written by Britt Banks and Peter Nichols. Natural Resource and Environmental Law Water Law, published in The Colorado Lawyer, July 2015, Vol.44, No.7.

through May 31. The BLM concludes that meeting all three instream flow criteria will maintain a worked root zone in the alluvial equiter during the key part of growing search for the spariar community. Meeting all three instream flow orteola will also provide autaide conditiona in the stream substrate for the aguatic macroinvertebrate community.

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N appears that the 1-1 ofs ISF appropriation recommendation (highlighted in blue) is based on ONE day (6-16-16; five years ago) or measurements taken in two unknown locations, with an accuracy.

An excerpt:

The No-Injury Rule

Under Colorado water law, a water right cannot be changed unless the applicant can demonstrate that such action will not "injuriously affect" water rights held by others. This is the no-injury rule:

Injury involves diminution of the available water supply that a water right holder would otherwise enjoy at the time and place and in the amount of demand for beneficial use under the holder's decreed water right operating in priority.⁵

Moreover, "a change of water right proceeding precipitates quantification based on actual historical consumptive use, in order to protect other appropriators."⁶

As currently implemented, any type of impact, no matter how small or distant in the future, is deemed to be injurious. Thus, satisfying other water right owners' allegations of injury usually requires applicants to prove they can maintain the stream conditions that existed before the change—that is, they must guarantee that essentially every drop of water is present at the same "time, location, and amount" as before the change. Too often, the result is costly, years-long litigation over small amounts of water—so-called "teacup changes to stream conditions"—given overcrowded dockets and the extensive expert disclosure process in the court rules. Complicating matters for the applicant, it is hard to propose mitigation without a clear and accepted approach to evaluate injury. It is accordingly often easier and cheaper for applicants to simply relinquish or transfer part of their water right to the stream or objectors than to prove no injury.

a. We contend that an ISF flow appropriation and decree would be injurious. Based upon:

- CWCB must prove that it can maintain the stream conditions that existed before the ISF appropriation and decree;
- that CWCB "must guarantee that essentially every drop of water is present at the same "time, location, and amount" as before the change."
- "Any type of impact, no matter how small or distant in the future, is deemed to be injurious."

The BLM recommendation data includes 142 photographs, 53 of which are full page showing nice green riparian areas, gages in the creek, flora and fauna, dry creek bed, diversion structures, etc. There is no identification of location or dates on these photographs. To a person driving a desk under fluorescent lights, these photographs portray justification for an ISF appropriation recommendation. To those of us, Stewards of the Land, who are intimate on a daily basis with actual life on Spring Creek... we know these locations by sight/site; we know that they are a result of nature and cannot be controlled by anyone including the CWCB; we know that water runs downhill whether above or below the surface but only in the amounts provided by nature, and in part, we know they are a result of <u>our efforts</u> to support our domestic and wildlife creatures right down to the aquatic macroinvertebrate community. Our livelihood and quality of life depend on these efforts.

We contend material injury based upon the following:

 Costly, years-long litigation over small amounts of water – so-called teacup changes to stream conditions-given overcrowded dockets and the extensive expert disclosure process in the court rules.

- That the 1.1 cfs ISF appropriation recommendation is based on ONE day (6-16-16: five years ago) of measurements taken in two unknown locations, with an accuracy range of 40-250% and not during the recommended high temperature period from March 15 through May 31.
 We contend that the 1.1 cfs ISF appropriation would be injurious to decreed water right holders based upon the given and unjustified parameters.
- An ISF appropriation/decree and a "normal" decreed water right appear to be and are different in their basis and administered in an unequal way. But they carry the same weight for purposes of use. We contend this to be injurious. A normal decreed water right: there must be a point of diversion and a measuring device. The decreed water right holder must prove use. Use it or lose it. An ISF appropriation/decree does not have specific a point of diversion. How and where would the CWCB measure the water on the 7.47 mile section between the upper and lower terminus to prove measurement and justify a call on water? To further complicate matters, Spring Creek is a series of springs flowing down a common drainage. How could CWCB prove and request a call for the ISF appropriation/decree?
- Further that CWCB will be unable to propose mitigation without a clear and accepted approach to evaluate injury.
- That the CWCB cannot substantially guarantee that essentially every drop of water is present at the same "time, location, and amount" as before the change given all of the issues with the current recommendation data. Another point in case: The Bull Draw Fire that occurred in 2018. The effects of the fire on the upper drainage surface and sub-strata of Spring Creek cannot be determined at this point in time. The flora is drastically changed in the upper drainage. Is the new emerging flora sucking up water that would have been running down the creek prior to the fire? The tree canopy is gone. Did EXTREME temperatures affect the sub-strata? Is there some sort of fissure opened up by these temperatures sending water into some sort of sub-surface cavern or aquifer? 2020 and 2021 show insufficient runoff (basically 0.0 cfs) to provide any conclusive data as to these effects. Begging these questions: Are there any current studies as to these effects? What is an acceptable period of time to determine the long term effects of the fire upon the proposed ISF recommendation?
- That we cannot know how the types of impacts, <u>no matter how small or distant in the future</u>, of the ISF appropriation/decree will affect our efforts (decreed senior water right holders) to support our domestic and wildlife creatures right down to the aquatic macroinvertebrate community and maintain our livelihood and quality of life. Case in point: <u>Could ANY and ALL ISF appropriations</u> /decrees be used as a blanket means to usurp existing senior water rights by passage of laws at whatever governmental level to maintain water levels in drainages far downstream i.e. Utah, <u>Arizona, and California?</u> Stranger things have happened....

Therefore, based upon the contentions and findings in this letter, we, the undersigned, respectfully <u>demand</u> that all actions to include Spring Creek in the proposed ISF <u>cease</u> and that <u>no further future efforts be taken</u> to include Spring Creek in the proposed ISF.

Respectfully Submitted,

DeeAnna Burbridge Owner/Operator Spring Creek Ranch of the Uncompangre, LLC. P.O. Box 40 Nucla, CO 81424

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Zene Weimer – Co-Owner/Operator Weimer Ranches P.O. Box 590 Nucla, CO 81424

Page 9 of 9

Attachment Agenda Item 15c

Chan A. Burlerley

Chas Burbridge – Son of Owner/Operator Spring Creek Ranch of the Uncompany LLC. P.O. Box 40 Nucla, CO 81424

Candace allen

Candace Allen – Daughter of Owner/Operator Spring Creek Ranch of the Uncompahgre, LLC. P.O. Box 40 Nucla, CO 81424

Ryan Weimer – Co-Owner/Operator Weimer Ranches P.O. Box 590 Nucla, 90 81424

See attached Signature page.

Jim Wade – Current Owner/Operator Burro Mesa Ranch 8869 National Road SW Etna, OH 43062

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Jody Weimer Sr. – Co-Owner/Operator Weimer Ranches P.O. Box 590 Nucla, CO 81424

Joseph Weimer – Co-Owner/Operator Weimer Ranches P.O. Box 590 Nucla, CO 81424

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Matt Weimer – Co-Owner/Operator Weimer Ranches P.O. Box 590 Nucla, CO 81424

See attached signature page.

Charles Jackson, Jr. – Future Owner/Operator Burro Mesa Ranch Under Contract 327 Greene Street Cheraw, SC 29520

CC: Mark Ragsdale, Water Commissioner, Division 4, District 60, Colorado Division of Water Resources mark.ragsdale@state.co.us

Bob Hurford, Division Engineer, Division 4, District 60, Colorado Division of Water Resources Bob.hurford@state.co.us

Attachments: A Roundtable Discussion on the No-Injury Rule of Colorado Water Law written by Britt Banks and Peter Nichols. Natural Resource and Environmental Law - Water Law, published in The Colorado Lawyer, July 2015, Vol.44, No.7.

Attachment Agenda Item 15c

Chas Burbridge – Son of Owner/Operator Spring Creek Ranch of the Uncompanyer, LLC. P.O. Box 40 Nucla, CO 81424 Jody Weimer Sr. – Co-Owner/Operator Weimer Ranches P.O. Box 590 Nucla, CO 81424

Candace Allen – Daughter of Owner/Operator Spring Creek Ranch of the Uncompanyer, LLC. P.O. Box 40 Nucla, CO 81424 Joseph Weimer – Co-Owner/Operator Weimer Ranches P.O. Box 590 Nucla, CO 81424

Ryan Weimer – Co-Owner/Operator Weimer Ranches P.O. Box 590 Nucla, CO 81424 Matt Weimer – Co-Owner/Operator Weimer Ranches P.O. Box 590 Nucla, CO 81424

Jim Wade – Current Owner/Operator Burro Mesa Ranch 8869 National Road SW Etnar OH 43062

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Charles Jackson, Jr. – Future Owner/Operator Burro Mesa Ranch Under Contract 327 Greene Street Cheraw, SC 29520

 CC: Mark Ragsdale, Water Commissioner, Division 4, District 60, Colorado Division of Water Resources mark.ragsdale@state.co.us
 Bob Hurford, Division Engineer, Division 4, District 60, Colorado Division of Water Resources
 Bob.hurford@state.co.us

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Burro Mesa Ranch 327 Greene Street Cheraw, SC 29520

Charles Jackson, Jr. Future Owner/Operator **Under Contract**

CC: Mark Ragsdale, Water Commissioner, Division 4, District 60, Colorado Division of Water Resources mark.ragsdale@state.co.us Bob Hurford, Division Engineer, Division 4, District 60, Colorado Division of Water Resources Bob.hurford@state.co.us

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NATURAL RESOURCE AND ENVIRONMENTAL LAW— WATER LAW

A Roundtable Discussion on the No-Injury Rule of Colorado Water Law

by Britt Banks and Peter Nichols

This article reports on a workshop on the no-injury rule of Colorado water law sponsored by the Getches– Wilkinson Center for Natural Resources, Energy & the Environment of the University of Colorado School of Law.

olorado, like many arid places in the world, faces an uncertain water future. Demand for water is projected to continue to accelerate due to an expanding economy, a growing population and associated urbanization, growth in the tourism and oil and gas sectors, and increasing international demand for agricultural products.

At the same time, pressures on water supplies are also expected to continue to accelerate, due in part to climate change impacts for example, longer growing seasons, reduced average flows, increasingly frequent droughts, higher temperatures, and earlier melting of high-country snow pack—and ongoing depletion of groundwater aquifers. Increasing demand for water from powerful downstream states, such as California and Arizona, could also negatively affect future supplies available to Colorado users.

The potential for a water crisis in the Centennial State is real and growing every day. At some point soon, demands for water could substantially exceed available supplies, threatening significant economic, social, and environmental consequences. The fact that there are legal claims for more water than falls on Colorado in all but the snowiest years underscores the challenges facing the state. As the Colorado Supreme Court presciently observed:

As administration of water approaches its second century the curtain is opening upon the new drama of *maximum utilization* and how constitutionally that doctrine can be integrated into the law of vested rights.¹

The goal of maximizing the use of our waters, however, must sometimes yield to the protection of vested rights.² That said, there is increasing discussion regarding whether Colorado water law, as it currently stands, is flexible enough to accommodate unmet current and forecast water demands to avoid a crisis, while at the same time protecting vested water rights.

Working within the system often requires hiring expensive engineering and legal advisors, and—in the view of some—overcoming a hard-wired resistance to the changes needed to promote maximum utilization, efficiency, conservation, and sustainable use.

In October 2014, the Getches–Wilkinson Center sponsored a roundtable discussion featuring a diverse group of expert water jurists, water lawyers, water engineers, state water officials, and academics on Colorado water law and Colorado water policy.³ The workshop discussed one aspect of the state's water law that is seen by some as impeding the type of flexibility needed to avoid a crisis—namely, the "no-injury rule." The rule is of overriding importance because appropriators have claimed virtually all of the water available; therefore, accommodating new or additional demands generally requires adjudicating changes to existing irrigation water rights.⁴

The No-Injury Rule

Under Colorado water law, a water right cannot be changed unless the applicant can demonstrate that such action will not "injuriously affect" water rights held by others. This is the no-injury rule:

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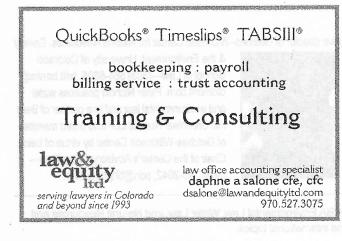
Injury involves diminution of the available water supply that a water right holder would otherwise enjoy at the time and place and in the amount of demand for beneficial use under the holder's decreed water right operating in priority.⁵

Moreover, "a change of water right proceeding precipitates quantification based on actual historical consumptive use, in order to protect other appropriators."⁶

As currently implemented, any type of impact, no matter how small or distant in the future, is deemed to be injurious. Thus, satisfying other water right owners' allegations of injury usually requires applicants to prove they can maintain the stream conditions that existed before the change—that is, they must guarantee that essentially every drop of water is present at the same "time, location, and amount" as before the change. Too often, the result is costly, years-long litigation over small amounts of water—so-called "teacup changes to stream conditions"—given overcrowded dockets and the extensive expert disclosure process in the court rules. Complicating matters for the applicant, it is hard to propose mitigation without a clear and accepted approach to evaluate injury. It is accordingly often easier and cheaper for applicants to simply relinquish or transfer part of their water right to the stream or objectors than to prove no injury.

A number of Colorado water lawyers, engineers, and managers—certainly not all—are concerned that this doctrine, as currently implemented in the state, limits the flexibility needed to manage water in a supply-constrained environment, especially in the South Platte and Arkansas river basins. Many of the participants in the roundtable noted that, under current law, there is no material or *de minimis* standard for injury. One participant cited an example of terms and conditions to protect a downstream water right from a stream depletion of less than a cup of water more than five years in the future.

Proving a lack of injury can lead to costly engineering and expensive and lengthy litigation, and can result in the imposition of burdensome terms and conditions. Many feel that recent changes in the court rules regarding expert disclosures have exacerbated this problem. And too often, and many times long after the objecting water users have settled with the applicant, the State and Division Engineers challenge changes irrespective of injury.⁷ Increasingly, the risk of these negative effects can deter applicants from even attempting to change the use of a water right, and in other cases changes that would foster maximum utilization of the state's water



resources do not proceed because the costs required are simply too high.

Some roundtable participants expressed the view that the noinjury rule must be reformed to permit and promote the flexibility and innovation that is needed now and will become critical to manage Colorado's water to meet future needs. As one jurist observed, we are boxed into a corner by climate change; preserving the past means a lack of flexibility to address the future.

Participants focused on three topics related to the no-injury rule in change cases in particular: (1) the role of data collection and modeling in determining injury; (2) whether a material or *de minimis* injury standard should be developed and how it could be applied; and (3) whether rules governing the burden of proof and standing in water court proceedings should be altered in some way. The discussion of each of these three topics follows.

Engineering and Data

To calculate whether a proposed change will reduce return flows of water to other holders of water rights, engineers employ various formulae, computerized spreadsheets, and mathematical models for example, GLOVER, AWAS, State CU, or MODFLOW (models). These models produce long-term predictions of impacts, with results often quantified at a very high level of detail—for example, daily time steps extending for decades into the future. Although the science and the models are widely accepted, their application can be problematic. Modeled effects are highly dependent on data and assumptions. Whether the application of a model to any given hydrological setting accurately captures its essential behavior is often the subject of contention among applicants, opposers, and the State and Division Engineers.

Many workshop participants expressed concern that the models currently being used are simply incapable of the level of precision that is implicitly attributed to them by courts and the Division of Water Resources (DWR). Some participants expressed skepticism that any model could measure a natural system, such as stream flows and groundwater, to the degree of accuracy that is needed or presumed to address injury at the level recently specified in water court decrees and DWR approvals. One noted in particular that groundwater is extremely hard to model, especially deep groundwater, due to complex geology, and that one key variable is at best accurate at an order of magnitude. Others stated that the results of these models are often only correct within plus-or-minus 10%, and that this level of uncertainty needed to be understood and recognized by the lawyers, courts, and DWR using these models to approve terms and conditions to prevent injury to other water rights. Implicit in these criticisms was the idea that it makes no sense to spend months or years, and tens or hundreds of thousands of dollars, arguing over the accuracy of models that are by their nature incapable of being as accurate as objectors demand where simpler models could suffice.

The limitations on the accuracy of the modeling and in river administration have been implicitly recognized by the water courts and the State Engineer. For example, numerous decrees of water courts and substitute water supply plans approved by the State Engineer provide for "folding" the final 5% to 10% "tail" of calculated return flows obligations back into earlier years to address tiny amounts of water calculated to be owed to the river in distant years.

For some participants, the bigger issue is the over-reliance on these models by engineers, lawyers, courts, and DWR. The concern is that the models are used as a substitute for professional judgments that, in decades past, were commonplace in water court cases. One participant asked, "What happened to the application of professional engineering judgment?" In fact, this may be a manifestation of a larger issue—that is, the interface between engineering and the law, and engineers and lawyers, who see things through different lenses.

For example, when lawyers see a number, say 0.1 acre-feet, they tend to treat it as fact, whereas engineers understand the limitations inherent in the supporting science and data—for example, while 0.1 acre-feet may be the answer from the model and data, the actual effect on the system could be 1 or 0.01 acre-feet, or even more or less. Jurists, however, seem to understand that it is not possible to get the desired accuracy because there will be errors in modeling naturally non-uniform and often complex hydrogeology, and scientific understanding will improve and change over time. That said, everyone agreed that generally accepted models would give the courts better information to make good decisions.⁸

Many participants also pointed to the limited data feeding into the models, and noted that this lack of data limits the precision of any model. In addition, many noted that it can be prohibitively expensive for individual applicants, objectors, or DWR to collect the data needed in any particular case, necessitating the use of simplifying assumptions, which introduce uncertainty into the modeled results. All agreed on the need to collect more data, on a basin- or subbasin-wide basis where possible. The San Luis Valley was mentioned as an example where basin-wide data collection efforts have worked well; the South Platte Basin was mentioned as an example where more localized data is needed.

The Water Court Committee of the Colorado Supreme Court recognized these problems in 2008 when it recommended, "The Colorado General Assembly should continue to foster the development of publicly usable river basin computational models, predictive tools, and model data transparency."⁹ There are a couple of promising recent examples of accepted computational models and predictive tools.¹⁰

Out of this discussion came a number of proposals for reform:

- The State Engineer's Office should develop through rulemaking (a few thought through policy) computational models and predictive tools to determine historical consumptive use, return flows, injury, and compact compliance for basins or sub-basins where their use would facilitate resolution of numerous, complex or broadly contested applications.
 - Although some think the State Engineer has the authority to undertake this now, others disagreed. Most thought that legislative direction would be very useful.
 - Some suggested that there should be a statutory rebuttable presumption for an applicant that uses a model developed through State Engineer's rulemaking, because that process would provide everyone an opportunity to participate in adjudication of the validity of the model, like ISAM or RGDSS.¹¹
- The state legislature or the Colorado Water Conservation Board (CWCB) should provide funding for expanded basin and sub-basin data collection in each of the state's water divisions.
- The water courts and DWR should recognize the inherent uncertainty in computational models and predictive tools and stop applying the results to impose terms and conditions that

are beyond the scientific accuracy of the models, tools, and data.

Some thought that as more data is collected and the models are improved, there should be some provision for reopening

decisions or decrees based on earlier, less-accurate modeling. The last recommendation was controversial and highlights the tension between the certainty needed by individual water users in decrees and administrative action on the one hand, and the need for flexibility and reliance on sound science on the other.

Everyone agreed we should "follow the science," although all did not agree on how to do that. Because science is not static, some thought decrees and administration should adjust in some manner as data, science, and engineering improve. One participant posed the dilemma between wanting decrees now and certainty for the future, or providing for the incorporation of better science and engineering in fifty years. Another participant noted that the legal concepts of *res judicata* and collateral estoppel are not well suited to Colorado water law, given the technical and scientific uncertainty behind many prior decisions, which seemingly opens the door for future modifications.

Defining a Material or De Minimis Injury Standard

As stated above, most participants felt that as Colorado law is currently applied, any impact appears to constitute injury and there is no *de minimis* or other practical materiality standard to define injury. There was a lengthy discussion about whether a material or *de minimis* injury standard could or should be defined by statute. Many participants argued that the state legislature, or perhaps the State Engineer, should define an acceptable range of impact to apply to changes of water rights.

It was noted that, in certain specific instances, the legislature has statutorily declared that certain water uses do not constitute injury, effectively legislating findings of *de minimis* injury. Examples include gravel pits,¹² small-capacity household wells,¹³ groundwater depletions,¹⁴ and stormwater retention.¹⁵ It was also noted that, on a cumulative basis, the impacts from these types of activities can be quite significant—for example, exempt wells consume 20,000 to 40,000 acre-feet/year statewide, and South Platte gravel pits consume 10,000 acre-feet/year. These examples were advanced to support the proposition that the legislature has the authority to define what constitutes injury, and could define what constitutes a *de minimis* injury. A few, however, thought that such legislation might interfere with the constitutional right to appropriate or could constitute an unconstitutional taking or inverse condemnation.

One participant noted that the Idaho Supreme Court adopted a materiality standard of 10%, although many thought this too high.¹⁶ Others threw out numbers ranging from 1/10 of 1% to 1% to 5%, or 50 acre-feet. For comparison, Colorado statute defines non-tributary groundwater using a depletion standard of 1/10 of 1% within 100 years,¹⁷ although one participant reminded everyone that water engineers and lawyers had recommended 1% and the legislature reduced that by a factor of 10, perhaps enacting a preference in 1985 for protecting vested rights. The Colorado Water Conservation Board has a 1% *de minimis* rule, although the CWCB may still object to a change.¹⁸ And Colorado statute requires the user of not non-tributary groundwater more than a mile from a stream to relinquish 4% of the annual withdrawal per year.¹⁹ Still another example is the State Engineer's confidence level in

stream depletions modeled by the Rio Grande Decision Support System (RGDSS), which is currently 50 acre-feet per year.²⁰ Other than these and a few other isolated exceptions, any other diminishment of stream flow resulting from a change of water right would constitute injury. Some argued that a range of acceptable percentage impact should be implemented, while others argued for a fixed quantitative standard or a combination.

A statutory definition of injury could relate to depletion of the river (return flow), to a limitation on the yield (CU) of the applicant's water right, or to a reduction of yield (CU) of an objector's water right. Basing a standard on a percent of applied-for change or objector's water right would be different for every application (1% of 1 cfs is 0.01 cfs, 1% of 100 cfs is 1 cfs), however, and might not be equitable because the standard would be more stringent for small changes than for larger ones. Furthermore, the cumulative effects of multiple changes on individual water rights complicates application of a *de minimis* standard and requires consideration. These considerations may favor a methodology that results in an applicant relinquishing water to ensure no injury—effectively formalizing the *ad hoc* approach of innumerable historical decrees.

Some participants felt that any standard needed to address the frequency and duration of impacts. A few also favored a multitiered approach, with different standards related to the size of the change, perhaps relative to the native stream flow.

Applying a Material or De Minimis Injury Standard

While many participants agreed on the need for an injury standard, there was less agreement on how such a standard should be applied. Some thought proposed changes that are within an injury standard should be allowed to proceed. Others argued that proposed changes within an injury standard should still be required to mitigate predicted depletions, but that there should be much more flexibility or discretion as to how that should be done, such as through cash payments, structure improvements, or stream improvements.

One proposed approach would be to give the water court explicit direction and flexibility to make a finding of no injury within some statutorily defined parameters.²¹ However, that approach may not address the issue, but could instead merely recast the argument between the applicant and the objectors in water court. Others proposed that the General Assembly should create a framework approach on injury, and then charge the State Engineer's Office with exercising technical judgment within that framework, similar to his authority to administer futile calls.²² Many others, however, did not favor giving the State Engineer this additional authority, given widespread concern over legal positions taken by his office in recent cases.

Burden of Proof and Standing

Finally, there was a robust discussion on burden of proof and standing in change of water rights proceedings. Currently,

An applicant seeking a change of water right decree bears the burden of showing that injury to other adjudicated water rights will not result. *Weibert v. Rothe Bros., Inc.* If the applicant successfully meets this burden, objectors have the burden of going forward with evidence of injury to other adjudicated water rights. *City of Thornton v. Bijou Irrigation Co.*²³

The burden shifts back to the applicant if the objectors provide evidence of injury to their vested water rights. Although this is a straightforward three-step process in theory, it is not simple in practice. For example, some decisions have held that on an overappropriated stream, there is a presumption of injury the applicant must overcome.²⁴ Moreover, objectors do not have to show that a depletion actually causes an injury to their water right. Instead, the applicant must prove a negative—that its proposed action will not cause injury. Proving a negative is, of course, extremely difficult. Complex change cases regularly generate myriad terms and conditions and accounting obligations designed to assure objectors there will be no diminution of their water rights. In practical effect, such terms and conditions usually mean that applicants leave water court with significantly less wet water than when they entered.

Many participants accordingly felt that the rules on burden of proof need to change, because they give too much power to objectors and lead applicants to acquiesce to onerous conditions simply out of fear of litigation. This is a particular concern of asset-rich cash-poor applicants, such as owners of irrigation rights. Many believed that injury is seldom the real issue but becomes the proxy to force resolution of other matters between an objector and the applicant.

Some felt that the burden of proof should squarely shift to an objector, and that objectors should be required to prove that their water rights would be actually harmed by a proposed change, at least after an initial showing by the applicant of non-injury.²⁵ Another suggestion was that the burden of proof rules should work in tandem with a statutory injury standard. So, for example, if the injury standard were 1% of an objector's water right, and the applicant's modeling shows that its proposed action would fall below that standard, the burden of proof would shift to the objector to prove injury to their water right.

One participant advanced a different approach, proposing that once a water right holder objects in a change case, the applicant should be able to question whether the objector is wasting water or using water inefficiently. If the applicant can demonstrate waste or inefficient use by the objector of an amount equal to or more than the alleged impact of the proposed action, the proposed change would be allowed to proceed.

With respect to standing, many noted and some objected to the State Engineer's recent practice of objecting to changes purportedly to protect the state's water supply and represent the "little guys," perceived by some to be on behalf of future appropriators.²⁶ Many felt that only the holders of actual water rights should be allowed to file objections and assert injury in change cases. Standing to assert injury requires the objector to show a legally protected interest in a vested water right or a conditional decree.²⁷ Anyone, however, can oppose a change and insist on strict proof of all elements of the application, even if they do not own any water rights.²⁸

Conclusion

Climate change, growth, and evolving social values pose major challenges for Colorado's water future. Addressing these issues through reallocation of existing water rights will be particularly challenging within a generally over-appropriated system. One participant posed this issue as a question of philosophy: Should the law err on the side of protecting existing users, provide a level playing field, or err on the side of facilitating reallocation to meet changing social needs? There was vigorous advocacy during the roundtable on all sides of this issue. Most seemed to agree, however, that the current system is generally too costly and too rigid. In Colorado, all surface and ground water is a public resource.²⁹ Shifting some legal burden onto opposers could establish a balance that is lacking, whereby opposers have the upper hand in maintaining the status quo. Although some cautioned about approaching the General Assembly, most participants did seem to agree that everyone would benefit from more statutory guidance on what constitutes injury to water rights.

Notes

1. Fellhauer v. People, 167 Colo. 320, 336 (Colo. 1968).

2. State Eng'r v. Castle Meadows, 856 P.2d 496, 505 (Colo. 1993).

3. Approximately twenty judicial officers, state officials, private and public practicing attorneys, and water engineers participated in the five-hour workshop in Boulder on October 20, 2014. The workshop followed the Chatham House Rule to encourage openness and the sharing of information—*i.e.*, "participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed." *See* www.chathamhouse.org/about/chathamhouse-rule#sthash.VjRHwmAF.dpuf.

4. See, e.g., Orr v. Arapahoe Water & Sanitation Dist., 753 P.2d 1217, 1217-22 (Colo. 1988).

5. Farmer's Reservoir and Irrigation Co. v. Consolidated Mut. Water Co., 33 P.3d 799, 807 (Colo. 2001). See also Burlington Ditch Reservoir & Land Co. v. Metro Wastewater Reclamation Dist., 256 P.3d 645, 661 (Colo. 2011).

6. Burlington Ditch, 256 P.3d at 674-75. David Taussig argues that the Court added this second test to the traditional no-injury rule in Santa Fe Trail Ranches Prop. Owners Ass'n v. Simpson, 990 P.2d 46 (Colo. 1999), and that "requantification" of historical consumptive use has eclipsed the issue of injury in change cases. Taussig, "The Devolution of the No-Injury Stand in Changes of Water Rights," 18 U. Denver Water L. Rev. 116 (Fall 2014).

7. See Taussig, supra note 6 at 141-42 (citing State Eng'r v. Bradley (In re Application for Water Rights in Rio Grande County), 53 P.3d 1165, 1167 (Colo. 2002)); Opening Brief of the State Engineer and the Division Engineer for Water Division 1 at 45, Wolfe v. Sedalia Water & Sanitation Dist., No. 14SA12 (Colo., filed April 25, 2014); Order Re: Black Hawk and Coors' Motion for Determination of Questions of Law Concerning Previously Changed Water Rights at 2, In re Application for Water Rights of City of Black Hawk, No. 12CW303 (Colo. Water Ct. Div. No. 1, May 29, 2014).

8. See, e.g., Concerning The Matter Of The Rules Governing New Withdrawals Of Ground Water In Water Division No. 3 Affecting The Rate Or Direction Of Movement Of Water In The Confined Aquifer System Aka "Confined Aquifer New Use Rules For Division 3," No. 04CW24 (Water Div. No. 3, Nov. 9, 2006).

9. Report of the Water Court Committee of the Colorado Supreme Court to the Chief Justice at 1 (Aug. 1, 2008).

10. The Irrigation Systems Analysis Model (ISAM) is a peer-reviewed computer program developed by DWR to compare monthly water budgets of surface water irrigation systems with and without an improvement to evaluate the impacts of an improvement to a surface water irrigation system located in the Lower Arkansas Basin. DWR developed ISAM over a couple of years with input from an advisory committee of more than a dozen water engineers. It has been in use for four years to analyze irrigation changes for more than 100 farms annually, and eliminated the need for individual modeling of each farm. *In the Matter of the Proposed Compact Rules Governing Improvements to Surface Water Irrigation Systems in the Arkansas River Basin in Colorado*, Case No. 09CW110 (Water Div. No. 2, Oct. 25, 2009).

The Lease Fallowing Tool (LFT) is another computational model and predictive tool developed by DWR and the CWCB with a technical com-

mittee consisting of approximately twenty water engineers. The LFT is used to implement ag-municipal water sharing pursuant to HB 13-1248. It employs a number of conservative assumptions—e.g., irrigation efficiency, surface runoff and deep percolation, and specific aquifer yield that together underestimate historical consumptive use (HCU) and overestimate return flows by at least 5% to 10% according to the consulting water engineers involved in its development. The use of the LFT for the Catlin Pilot Project dramatically reduced the engineering costs and disputes over injury, especially as compared to a nearly identical substitute water supply plan (SWSP) proposed in 2012 using traditional engineering modeling. CWCB and DWR, "Criteria and Guidelines for Fallowing-Leasing Pilot Projects," cwcb.state.co.us/water-management/water-proj ects-programs/Documents/FallowLease/FallowingLeasingCriteria%2020 131119.pdf.

11. In the Matter of the Proposed Compact Rules Governing Improvements to Surface Water Irrigation Systems in the Arkansas River Basin in Colorado, Case No. 09CW110 (Water Div. No. 2, Oct. 25, 2009); Concerning The Matter Of The Rules Governing New Withdrawals Of Ground Water In Water Division No. 3 Affecting The Rate Or Direction Of Movement Of Water In The Confined Aquifer System Aka "Confined Aquifer New Use Rules For Division 3," Case No. 04CW24 (Water Div. No. 3, Nov. 9, 2006).

12. CRS § 37-92-305 (12) (exempting from replacement historical natural depletion cased by preexisting vegetative cover).

13. CRS §§ 37-90-105(1) and 37-92-602(1) and -602(3)(b)(II)(A).

14. CRS §§ 37-90-103(10.5) (defining nontributary ground water) and -137(9)(c.5) (requiring augmentation of Denver Basin wells).

15. See CRS § 37-92-602(8).

16. Clear Springs Foods, Inc. v. Spackman, 252 P.3d 71 (Id. 2011) (noting that the margin of error was probably much higher than 10%, but the conflicting testimony supported use of a 10% margin of error as a minimum).

17. CRS § 37-90-103 (10.5).

18.2 CCR 408-2 8e.

19. CRS § 37-90-137(9)(c.5).

20. Draft Rules Governing the Withdrawal of Ground Water in Water Division No. 3 at ¶ 7.2 (Aug. 11, 2014), water.state.co.us/DWRIPub/ San%20Luis%20Valley%20Advisory%20Committee/Ground%20Water %20Rules%20for%20Division%203%20Working%20Draft%20August% 2011,%202014.pdf.

21. The water court has considerable authority regarding terms and conditions to prevent injury to vested water rights. CRS § 37-92-305(3) and (4).

22. CRS § 37-92-502(2)(a).

23. Burlington Ditch Reservoir & Land Co. v. Metro Wastewater Reclamation Dist., 256 P.3d 645, 662 (Colo. 2011) (citing Weibert v. Rothe Bros., Inc., 618 P.2d 1367, 1370 (Colo. 1980) and City of Thornton v. Bijou Irrigation Co., 926 P.2d 1, 88 (Colo. 1996)).

24. See, e.g., Empire Lodge Homeowners' Ass'n v. Moyer, 39 P.3d 1139, 1158 (Colo. 2001).

25. A recent example is SB 15-212 (enacted in May 2015), which requires, for stormwater detention and infiltration facilities, objectors to prove material injury to their water right by the modification of the amount or timing of water that would have been available for diversion by the water right under hydrologic conditions that existed as of the water right's priority date. *See* CRS § 37-92-602(8)(c).

26. See, e.g., Taussig, supra note 6 at 141-42.

27. Shirola v. Turkey Cañon Ranch Ltd. Liab. Co., 937 P.2d 739, 747 (Colo. 1997).

28. CRS § 37-92-302(b).

29. *Kobobel v. State Dep't of Natural Res.*, 249 P.3d 1127, 1134 (Colo. 2011) (citing Colo. Const. art. XVI, § 5). ■