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REPUBLICAN RIVER COMPACT ADMINISTRATION (RRCA)

**SUMMARY OF HISTORICAL CHANGES TO THE
RRCA’S ACCOUNTING PROCEDURES AND REPORTING REQUIREMENTS**

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I. Background and Purpose

The Republican River Compact Administration (RRCA) Accounting Procedure and Reporting Requirements (Accounting Procedures) describes the definitions, procedures, basic formulas, specific formulas, and data requirements and reporting formats to be used by the RRCA to compute the Virgin Water Supply, Computed Water Supply, Allocations, Imported Water Supply Credit, Resolution Water Supply Credits, and Computed Beneficial Consumptive Use (CBCU). These computations are used to determine supply, allocations, use and compliance with the Compact according to the Final Settlement Stipulation (FSS) and RRCA Resolutions. The Accounting Procedures may be changed by consent of the RRCA and formally adopted with an update to the RRCA Rules and Regulations. Since the FSS, the computations described in the Accounting Procedures have been implemented primarily through an accounting spreadsheet shared among the states.

The Accounting Procedures have been the subject of numerous assignments to the RRCA Engineering Committee (EC) with subsequent actions by the RRCA including the formal adoption of amended versions with update of the RRCA Rules and Regulations. In addition, the

RRCA has instructed the EC to make certain accounting adjustments in particular years, which allowed the accounting to be changed without changing the Accounting Procedures.

At the August 27, 2015, RRCA annual meeting, the RRCA assigned the EC the task of summarizing historical changes that have been made to the Accounting Procedures. This document serves to fulfill this assignment. This document is only intended to summarize changes to the Accounting Procedures for educational purposes to aid in understanding the changes. Any omissions or characterizations contained in this document shall not supersede or alter the official actions taken by the RRCA to amend the Accounting Procedures or be used as evidence by any RRCA member state in future disputes.

This tracking document will continue to be updated with future changes to the Accounting Procedures or Groundwater Model Versions as a means to provide a general summary of relevant changes through time. Future updates to this document are the responsibility of the RRCA Engineering Committee Chair and will be reviewed and agreed upon by all three states.

This document includes the following sections: First Version of the Accounting Procedures, Changes to the Accounting Procedures, RRCA Groundwater Model Versions, and Accounting Adjustments. Many of the referenced documents are located on the RRCA official website, specifically on the Documents webpage (<http://republicanriver.org/rcca-documents-2/>) as well as on the Annual Reports webpage (<http://republicanriver.org/rcca-documents-2/rcca-documents/rcca-annual-reports-1960-to-present/>).

II. First Version of the Accounting Procedures

The first version of the Accounting Procedures was agreed upon by the States on December 15, 2002, as Appendix C to the Final Settlement Stipulation (FSS), replacing previous methods of the RRCA to determine virgin water supplies and consumptive use by the States.

As provided in the FSS, the States agreed on June 30, 2003, to accept the RRCA groundwater model developed by the Groundwater Model committee formed for this purpose.

At the 2003 annual meeting, the RRCA formally adopted the Accounting Procedures and the RRCA groundwater model as the official procedures for calculating water supplies and water consumption, including approving changes to its rules and regulations that specifically cited them. *Republican River Compact Administration Forty-Second Annual Report for the Year 2002. Alma, Nebraska. August 22, 2003. Pages 7-9, New Business section.*

III. Changes to the Accounting Procedures

January 2005 Accounting Procedures Update

At the 2003 Annual Meeting, the RRCA, in addition to adopting the initial Accounting Procedures, assigned its Engineering Committee to review the Accounting Procedures and make

recommendations for needed corrections and improvements. The recommended assignments were then approved by the administration. *Republican River Compact Administration Forty-Second Annual Report for the Year 2002. Alma, Nebraska. August 22, 2003. Pages 7-9, Engineering Committee Report section.*

At the 2004 annual meeting, the Engineering Committee reported progress on the Accounting Procedure assignment. The Engineering Committee and technical representatives from the States of Colorado, Kansas, and Nebraska participated in numerous collaborative work activities and phone conferences and met May 3-4, 2004. Based upon a review of the Accounting Procedures and Formulas, the EC recommended the adoption of eleven editorial changes. *Republican River Compact Administration. Forty-Third Annual Report for the Year 2004. Burlington, Colorado. June 9, 2004. Pages 32 & 33, Engineering Committee Report.*

The Commissioners approved the EC's report at the 2004 annual meeting, specifically noting that the RRCA was approving the changes to the Accounting Procedures as recommended in the report. However, no revised Accounting Procedures document was provided or adopted until January 2005.

At the January 12, 2005, Special Meeting of the RRCA the Engineering Committee produced a revised version of the Accounting Procedures with all recommended changes to date. *Republican River Compact Administration. Forty-Fourth Annual Report for the Year 2004. Special Meeting Denver, Colorado. January 12, 2005. Annual Meeting Burlington, Colorado June 9, 2005. Page 2.*

The revised version of the Accounting Procedures dated January 12, 2005, was approved and attached to the Minutes of the Special Meeting of the RRCA. Also, at the 2005 Special Meeting, the RRCA Administration approved a change in the RRCA Rules and Regulations that specifically adopted the 2005 version of the Accounting Procedures and Groundwater Model version 12s (discussed below).

August 2006 Accounting Procedures Update

At the RRCA's regular annual meeting on July 27, 2005, the RRCA Engineering Committee developed a recommendation for proportioning annual net evaporation from Harlan County Lake to Kansas and Nebraska CBCU in years when no irrigation releases are made from Harlan County Lake, a situation that was not previously addressed in the Accounting Procedures. The specific language is detailed in the Engineering Committee's July 27, 2005, report, which is attached to the RRCA 44th Annual Report. The 2005 Engineering Committee report was approved by the RRCA. However, there was no official change to the Accounting Procedures, with revision date January 12, 2005.

The Accounting Procedures, containing this language, with revision date August 10, 2006, was officially adopted by the Commissioners at the next annual meeting in Phillipsburg, Kansas. *Annual Report August 10, 2006 pages 8 & 9 – Engineering Committee report to the Commissioners.*

August 2007 Annual Meeting Discussion

At the August 15, 2007, annual meeting in Junction City, Kansas, the Engineering Committee report stated that during the committee's work, it was discovered that Table 5B, *Kansas Compliance During Water-Short Year Administration*, in the Accounting Procedures did not allow Kansas to use 51.1% of any unused portion of Colorado's allocations as per Settlement Stipulation in the water-short year test. The Engineering Committee recommended that this change be made in the accounting spreadsheet. The Table 5B issue was remedied in the new business section of the annual meeting when the RRCA assigned the Engineering Committee to make the necessary change in the accounting spreadsheet. *Republican River Compact Administration. Forty-Sixth Annual Report for the Year 2006. Junction City, Kansas. August 15th, 2007. Pages 10 and 12 of the report.*

August 2010 Accounting Procedures Update

Two changes to the Accounting Procedures occurred in 2010 via RRCA resolution titled "Changes to the RRCA's Accounting Procedures and Reporting Requirements," signed by the Compact commissioners on August 12, 2010. The Engineering Committee recommended in its August 12, 2010, report to amend the Accounting Procedures to correct the formulas used to compute the Virgin Water Supply for both Frenchman Creek and the Main Stem to properly account for return flows from the Riverside Canal. The Engineering Committee also recommended in the same report to amend the Accounting Procedures to include the groundwater impact attributed to Kansas well pumping (GWk), as calculated by the RRCA Groundwater Model, in the formula to compute the Main Stem Virgin Water Supply. The proposal by the Engineering Committee was included as Attachment A to the August 12, 2010, Engineering Committee report and formally adopted by the RRCA Administration on August 12, 2010. The Accounting Procedures were updated with these changes and approved by the RRCA as the August 12, 2010 version, which replaced the January 12, 2005 version.

August 2015 Accounting Procedures Update

The August 2015 Accounting Procedures changes were implemented due to the United States Supreme Court decision of February 24, 2015, that accepted the recommendations contained in the November 15, 2013, Report of the Special Master, including modification of the Accounting Procedures. The EC provided a memorandum dated May 14, 2015, where the State of Nebraska proposed a revised version of the Accounting Procedures to include the changes stipulated in Appendix F, Exhibit A of the Report of the Special Master dated November 15, 2013, as well as proposed changes to Attachment 7 regarding spill to waste-way data.

The changes to the Accounting Procedures were enacted via resolution adopted by the RRCA at the RRCA annual meeting on August 27, 2015, and are attached to the 2015 RRCA annual report. The resolution is titled "Resolution of the Republican River Compact Administration Regarding Required Changes to the RRCA Accounting Procedures and Reporting Requirements

Document Proposed in the Report of the Special Master and Proposed Edits to Attachment 7 Regarding Spill to Waste-Way Data.”

The changes contained in the Report of the Special Master were enacted for accounting years 2007 and forward, while the changes to Attachment 7 were enacted for accounting years 2015 and forward.

August 2016 Accounting Procedures Update

At the August 24, 2016, annual meeting of the RRCA, the Administration approved three resolutions that resulted in changes to the Accounting Procedures.

The first resolution, “Resolution of the Republican River Compact Administration Regarding Required Changes to the RRCA Accounting Procedures and Reporting Requirements Regarding Non-Irrigation Season Canal Diversions for Groundwater Recharge Purposes”, approved August 24, 2016) required changes to the Accounting Procedures for non-irrigation season canal diversions for groundwater recharge purposes. The State of Nebraska provided documentation, reformed Accounting Procedures, and edits to the implementation of Attachment 7 in the accounting spreadsheet in a memorandum dated July 7, 2016, attached to the resolution. The proposed changes documented in the memorandum were approved with an additional provision. That provision was that non-irrigation season canal recharge diversions shall be limited to 10,000 acre-feet. If canal recharge diversions exceed 10,000 acre-feet, then the method established for irrigation season canal diversion shall apply. Amended RRCA Rules and Regulations were approved to enact the Accounting Procedures proposed in the non-irrigation season canal diversions for groundwater recharge purposes resolution.

The second resolution approved a long-term agreement related to the operation of Harlan County Lake for Compact Call Years. The RRCA previously enacted temporary resolutions to modify the operations of Harlan County Lake and the Accounting Procedures for the years 2014, 2015, and 2016. The long-term resolution includes 15 provisions, including specifications for the timing and location of Nebraska’s compliance activities, creation of additional terms for the accounting, and modification to the application of Nebraska’s compliance tests.

The third resolution approved a long-term agreement related to operation and accounting for the Colorado Compact Compliance Pipeline (CCP) and Colorado compliance efforts in the South Fork Republican River Basin. The RRCA approved terms and conditions for CCP operations and the related accounting procedures changes, provided as an appendix to the resolution. For Bonny Reservoir, the agreement was to develop options to maximize the use of the reservoir. Colorado agreed to work with state and federal partners to maintain the flow of water through Bonny Reservoir. The resolution described how Colorado plans to utilize the USDA (Conservation Reserve Enhancement Program (CREP) or other programs to retire up to 25,000 acres in the South Fork Republican River basin by 2027. The resolution also included plans for the States to meet to resolve the Beaver Creek issue for all Water Short Years with unapproved accounting. The resolution concluded with details about how to resolve any disputes between

the states that may arise, procedure for termination of the agreement and reviewing the resolution and progress in 2024.

May 2017 Accounting Procedures Update

At a special meeting of the RRCA on May 25, 2017, the RRCA approved and adopted the revised Accounting Procedures and a resolution specifying that the changes should be used for accounting for 2007 and subsequent years until amended by the RRCA.

The same resolution also clarified that if a state provides a notice of intent to terminate for the August 24, 2016, resolution related to Harlan County Lake for Compact Call Years or the resolution related to operation of Colorado Compact Compliance Pipeline and Colorado's Compliance efforts in the South Fork Republican River Basin, then Nebraska or Colorado, respectively, shall not receive Resolution Water Supply Credit after December 31 of the second full year following the RRCA's receipt of a Notice of Intent to Terminate.

August 2020 Accounting Procedures Update

An update to the Accounting Procedures was made at the August 21, 2020, annual meeting in recognition that the Accounting Procedures do not properly implement the Flood Flow provisions at the Hardy gage with respect to the calculations of the Computed Water Supply above and below Guide Rock, a solution for which had not been obtained prior to the annual meeting. The Engineering Committee's annual report included an attachment documenting the exchanges between the states that had occurred to date towards resolution of the issue. (Reference 2020 annual report when available).

The update to the Accounting Procedures included footnotes to Section III.B.1. – the section describing Flood Flows in the calculation of Computed Water Supply, Section III.H. – the section describing calculations above and below Guide Rock during Water-Short Years, and Attachment 6 – a table outlining the calculations for computing water supplies and consumptive use above Guide Rock. The footnotes reflect the Engineering Committee's findings as described in their annual report.

IV. Groundwater Model Versions

Three versions of the RRCA Groundwater Model, officially designated as 12p, 12s and 12s2, have been used by RRCA to compute each state's CBCU and imported water supply credit. The three versions differ in how streams and reservoirs and associated accounting points are represented. The model versions are listed below, starting with the first version designated 12p. That version was replaced by version 12s in 2005 and then by the current version 12s2 in 2010. Follow the provided links for full details on each version of the model.

1. Original model version 12p was adopted as the final version for the accounting years 1918-2000; click the link for full details on this original model version.
<http://www.republicanrivercompact.org/v12p/index.html>.
2. The next model version 12s, approved January 12, 2005 and used for accounting years 2001-2006, corrected stream routing errors discovered in the 12p version along Medicine Creek above Harry Strunk Reservoir; click the link for full details on this model update for 2005. <http://www.republicanrivercompact.org/2003/index.html>.
3. Currently used (2010) model version 12s2, approved August 12, 2010 and used for accounting years 2007 to present day, involved only changes to accounting point locations for Guide Rock and the North Fork Republican River, and did not involve model changes to how streams and reservoirs are represented; click the link for full details on this current model version.
<http://www.republicanrivercompact.org/2007/index.html>.
 - a. Parameter-elevation Regressions on Independent Slopes Model (PRISM) (August 30, 2011) - Missing Precipitation Data for RRCA Groundwater Model 2008-Onward. Beginning in 2008, monthly precipitation data became unavailable for several of the 34 National Weather Service weather stations used in the RRCA groundwater model. For years 2009 and 2019, the RRCA agreed to use monthly PRISM data as a substitute for missing months used to calculate the annual sums. The RRCA approved using this method for missing precipitation data at the RRCA annual meeting on October 16, 2012. The entire PRISM discussion is found as Exhibit A to the Engineering Committee report to RRCA on pages 801-822 in the 52nd annual report.
 - b. After the 2019 accounting was approved at the 2020 annual meeting, PRISM revised precipitation data for 2019 for nine stations used in generating ground water model inputs. A corrected 2019 groundwater model run was executed for the purpose of generating corrected 2020 starting heads. The corrected groundwater model run was not applied to the 2019 accounting results since the accounting had already been approved by the RRCA. At the 2021 annual meeting, the RRCA approved 2020 accounting using the 2020 ground water model runs with starting heads from the corrected 2019 groundwater model.
 - c. The initial heads for the RRCA Groundwater Model 2022 Update are the ending heads from a groundwater model generated using corrected 2021 pumping data from the NCORPE augmentation project wells rather than the RRCA

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Groundwater Model 2021 Update used for approved 2021 accounting. After the ~~2021~~2021 update was approved, Nebraska provided updated pumping for NCORPE wells. The corrected 2021 groundwater model run used to generate the 2022 initial heads has 2,264.63 acre-feet of NCORPE pumping rather than 38,438.22 acre-feet used in the approved 2021 groundwater model runs. The updated 2022 initial heads will serve as the basis for future RRCA Groundwater Model updates.

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V. Accounting Adjustments

This section provides an overview of accounting provisions impacted by a series of agreements implemented by the states starting in December 2013 and continuing through until the adoption of long-term agreements approved at the 2016 annual meeting, which were incorporated into the August 24, 2016, version of the Accounting Procedures. While the official accounting of the RRCA did not ultimately reflect the accounting provisions contained in the interim agreements, this section outlines those accounting provisions that were impacted through each successive agreement to provide context to the preliminary accountings that were being developed and reviewed by the states during this timeframe.

- December 2013 – At a special telephonic meeting on December 19, 2013, the States approved a resolution for a Temporary Augmentation Plan and Related Accounting Procedures for the Colorado Compact Compliance Pipeline for 2014.
- October 2014 – At a special telephonic meeting on October 22, 2014, the States approved a resolution that included adding water to the “Imported Water Supply Credit” and the “Imported Water Supply Credit Above Guide Rock” and reducing the “Virgin Water Supply” of Rock Creek and Medicine Creek for 2014 only. An account was established in Harlan County Lake for use by Kansas during the irrigation season.
- October 2014 – At a special telephonic meeting on October 22, 2014, the States approved a resolution for a Temporary Augmentation Plan and Related Accounting Procedures for the Colorado Compact Compliance Pipeline. The plan description and related changes to the accounting procedures and groundwater model were attached as exhibits. There were twenty-three terms and conditions outlined in the resolution.
- November 2014 – The next Harlan County Lake agreement was signed at a special telephonic RRCA meeting on November 19, 2014. The States approved a resolution detailing how Nebraska’s 2015 compliance operations shall be recorded in the “Imported Water Supply Credit” and the “Imported Water Supply Credit Above Guide Rock” while at the same time reducing the “Virgin Water Supply” of Rock Creek and Medicine Creek by the amount of 2015 augmentation discharges to those creeks. Water delivered to Harlan County Lake and deposited into a Kansas account would be assessed a portion of the monthly evaporation charges based on the amount of water in the account.

- March 2015 – On March 6, 2015, at a special telephonic RRCA meeting the States approved an addendum to the November 19, 2014, resolution that provided Nebraska additional flexibility to achieve compact compliance if there is a shortfall as well as detailing adjustments to the compact accounting as a result of compliance actions.
- August 2015 – A resolution was approved on August 27, 2015, regarding accounting adjustments and agreements related to the operation of Harlan County Lake for Compact Year 2016. Specifically, the accounting offset for Nebraska’s 2016 compliance operations shall be recorded in the “Imported Water Supply Credit” and “Imported Water Supply Credit Above Guide Rock” columns of Nebraska’s Take 3 and Table 5c respectively, which, for the 2016 Compact Accounting for Nebraska, will be increased by the amount of augmentation water delivered into the Kansas Account pursuant to Provisions 3 and 5 of the resolution. In 2016 and, as necessary, the 2015 and 2017 Virgin Water Supply of Rock Creek and Medicine Creek will be reduced by the amount of augmentation water supplied between October 1, 2015, and April 1, 2017, in the year pumped.