

ARKANSAS RIVER COMPACT ADMINISTRATION

Lamar, Colorado 81052

For Colorado

Chair and Federal Representative

For Kansas

Rebecca Mitchell, Denver
Lane Malone, Holly
Scott Brazil, Vineland

James T. Rizzuto, Swink

Earl Lewis, Manhattan
Randy Hayzlett, Lakin
Troy Dumler, Garden City

December 1, 2021

Mr. Lane Malone, Chairman
Mr. Troy Dumler, Member
Operations Committee
Arkansas River Compact Administration

Re: Compact Year 2021 Summary
Assistant Operations Secretary Report

Gentlemen,

In this report, I will provide my perspective as Assistant Operations Secretary on operations that have occurred over the past Compact Year (CY), including communications, Kansas delivery, the Pueblo Winter Water Storage Program (PWWSP), pass-thru & status accounting, and the water issues matrix. Staff from both Kansas and Colorado (States) have been working remotely which has added some complexity. As I noted last year, working remotely has afforded some opportunities like attending meetings remotely but that lacks the in-person communications.

It is with heavy heart that I note the passing of John Van Oort, who was the River Operation Coordinator for the Colorado Division 2 (Division 2) office. I first met John when he was the District 14/15 Water Commissioner when we were reviewing dryup many years ago near Pueblo, Colorado. In his position as River Coordinator, we worked on many issues including those related to Kansas releases and the split of water between PWWSP and Compact conservation storage at Arkansas River at Las Animas. There were numerous other projects that we worked on and in each John always represented the interests of Colorado well. There were times we did not agree, but we generally found ways to compromise so we could move on to the next issue. He also found time to relate to people he worked with, including me, on a personal level. We talked about our kids and life in general. He will be missed.

Communications

The Operations Secretary (OS), Assistant Operations Secretary (AOS), and their respective staffs pursue the goal of open and frequent communications regarding Arkansas River operational issues to foster a positive, collaborative, and productive working relationship. General communications are described below, and some topics will be addressed in more detail later in this report.

The OS and AOS met remotely on April 27th. Besides Garden City Field Office and Division 2 staff, U.S. Army Corps of Engineers (Corps), U.S. Geological Survey (USGS), and Colorado Parks and Wildlife (CPW) attended. At this meeting, various topics were discussed including the PWWSP, John Martin Reservoir maintenance issues, CO DWR's installation of a new mainstem gage above the Amity headgates, and a proposal to temporary gage Consolidated canal wasteways to the Purgatoire River. The Arkansas River gage installed above the Amity headgates should help identify water coming into the river below John Martin Reservoir and should improve utilization of water stored in John Martin Reservoir. Due to scheduling issues, the OS and AOS did not meet in November as we normally do.

The States continue to communicate on a regular basis on a variety of topics including John Martin Accounting System (JMAS) data updates, PWWSP operational issues, Offset Account operations, Kansas releases, and runoff conditions within the Arkansas River Basin.

Compact and John Martin Reservoir 75th Anniversary

The first meeting between the States to negotiate the Compact occurred 75 years ago this past January 7th. The Compact was negotiated over 17 documented meetings leading to the Compact which was signed by those negotiators on December 14, 1948. In just two years from now, it will be the Compact's 75th anniversary. Given the pace of decisions in the water world, I would offer we may want to consider if ARCA would like to recognize this 75th anniversary in any significant way.

On a related note, the construction of John Martin Reservoir began in the Fall of 1939 and was completed in October 1948. So, John Martin Reservoir will also celebrate its 75th anniversary in 2023. I was recently reminded of the cooperation of the States that laid the groundwork for both the Compact and allowed for the use of JMR before its completion. That cooperation I believe continues today.

John Martin Reservoir

JMR Accounts: The attached Figures 1 and 2 show the daily account balances through the CY. Figure 1 is at the same scale as previously reported for comparison purposes and shows that JMR is operating at the lower end of its capacity. Figure 2 is provided at a scale that the finer

details can be seen. More details about the operations can be found in the Operations Secretary’s Report.

Kansas Deliveries

Kansas began the irrigation season on April 1st with 2,343 AF in its Section II Account and ended the season on October 31st with 262 AF in that account. Kansas made two releases that will be described below.

First release (6/18-7/7/2021): Kansas began a 250 cfs release from the Offset Account on June 18th. The release rate varied over the approximately twenty (20) days. The Offset Account was effectively exhausted on July 4th after which the release continued with the addition of Kansas Section II Account release. After the Offset Account had been exhausted, it continued to receive daily inflows. Those daily inflows were released as they came in, effectively reducing the release from the Kansas Section II Account by that amount each day through the end of the release. The release was stopped on July 7th with a precipitation runoff event. A graphic of this release is shown in Figure 3 attached.

The first release spreadsheet was reviewed and accepted by the States to arrive at the final delivery numbers shown in the Table 1 below.

Kansas II & Offset Account Release (6/18-7/7/2021)	
Kansas Section II Account release	1,517 AF
ESF Delivery Efficiency	89.2%
Section II Delivery	1,354 AF
Section II Delivery Transit Loss	164 AF
Offset Account released	
- consumable	7,711 AF
- nonconsumable	1,521 AF
Offset Account delivery efficiency	79.71%
Offset net delivery	7,359 AF
Offset consumable delivery	6,146 AF

Table 1 - Kansas First Release

Second release (7/9-8/7/2021): On July 9th Kansas began a second release of 300 cfs from both the Offset and Kansas Section II Accounts. As described in the first release, daily inflows into the Offset Account were released first and the remainder of the release came from the Kansas Section II Account. The release rate varied over the approximately thirty (30) days of this release. Releases from both accounts continued uninterrupted until August 8th. A graphic of this release is shown in Figure 4 attached.

The second release spreadsheet was reviewed and accepted by the States to arrive at the final delivery numbers shown in Table 2 below.

Kansas II & Offset Account Release (7/9-8/7/2021)	
Kansas Section II Account release	17,283 AF
ESF Delivery Efficiency	96.5%
Section II Delivery	16,674 AF
Section II Delivery Transit Loss	609 AF
Offset Account released	
- consumable	1,122 AF
- nonconsumable	0 AF
Offset Account delivery efficiency	88.5%
Offset net delivery	993 AF
Offset consumable delivery	993 AF

Table 2 - Kansas Second Release

Kansas Release Spreadsheet: As noted above, the release spreadsheets for this CY were reviewed by the States with some issues identified and resolved. However, the States were not able to resolve two issues related to the target flow at Granada. Specifically, whether the inclusion of the full Transit Loss Account release is appropriate in the average the release rate. Bill Tyner was willing to accept the delivery numbers as shown above with the condition that the States work through this. The second issue identified was whether the target flow should be varied with the changes in the release rate. It appears that the States should review other aspects of the release spreadsheet that may need to be updated to better match our experiences since this spreadsheet has been implemented.

Pueblo Winter Water Storage Program

As noted in past reports, the States have committed to continue to work on this issue and build upon the work that has already been done. PWWSP issues have held up approval of the Operations Secretary’s annual reports since 2007. PWWSP remains a topic of discussion and we need to provide each State’s work product to advance this discussion. Additionally, both States have collectively worked on guidelines on how the river flow at the Arkansas River at Las Animas gage should be split between PWWSP and Compact conservation storage.

Also noted in previous reports was the issue of water being diverted by the Consolidated Ditch and returned to the Purgatoire River through waste ways on this ditch. For the CY2021, these waste ways were ungagged and the only way to know what was occurring was to visually check the waste ways. In CY 2021, travel restrictions prevented both States from doing this visual inspection as was done in previous years.

In November 2020, Lonnie Spady, Division 2, visited the Consolidated Ditch where he found weed issues were preventing surface water from getting to lands served east of the Purgatoire River. Mr. Spady reported that the Consolidated tried dumping the weeds to the Purgatoire River which can be seen in the initial flow spike in Figure 4. The Consolidated Ditch continued to run water into the Purgatoire River. I expressed concern about this water not being included in the determination of the Compact baseflow for the Arkansas River at Las Animas flows. Mr. Spady also reported that the seep ditch and tail end of the Consolidated ditches had very little water returning to the Arkansas River. He reported his findings during the November 20, 2020, meeting between the OS and AOS and in an email exchange earlier in November. The States worked to include this water into the Compact baseflow determination for the Arkansas River at Las Animas gage during CY2021.

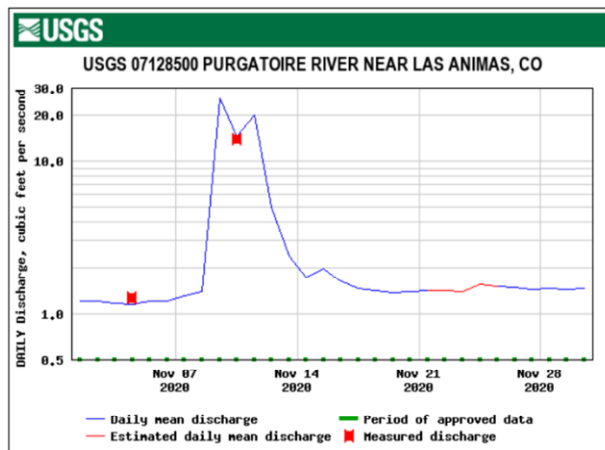


Figure 1 November 2020 flows in Purgatoire River near Las Animas, Colorado (from USGS website)

CY2022 PWWSP: In order to answer the questions of if and how much water was being passed thru the Consolidated Ditch, Division 2 installed temporary measuring gages on two Consolidated waste ways and on the tail-end of ditch for the period of November 1st to the 14th. The hydrographs below show the Consolidated Ditch diversions and the impacts of diversions and returns through the waste ways on the flows for the Arkansas River at Las Animas and the Purgatoire River near Las Animas. These measuring stations were in operation and showed that water was released through the two waste ways between November 1st to November 14th period. The Division 2 office has provided me with the flows for the waste ways and the flow out the end of the ditch. We are still evaluating that flow information. As in previous years, the States will work together to establish the Compact baseflow for this year.

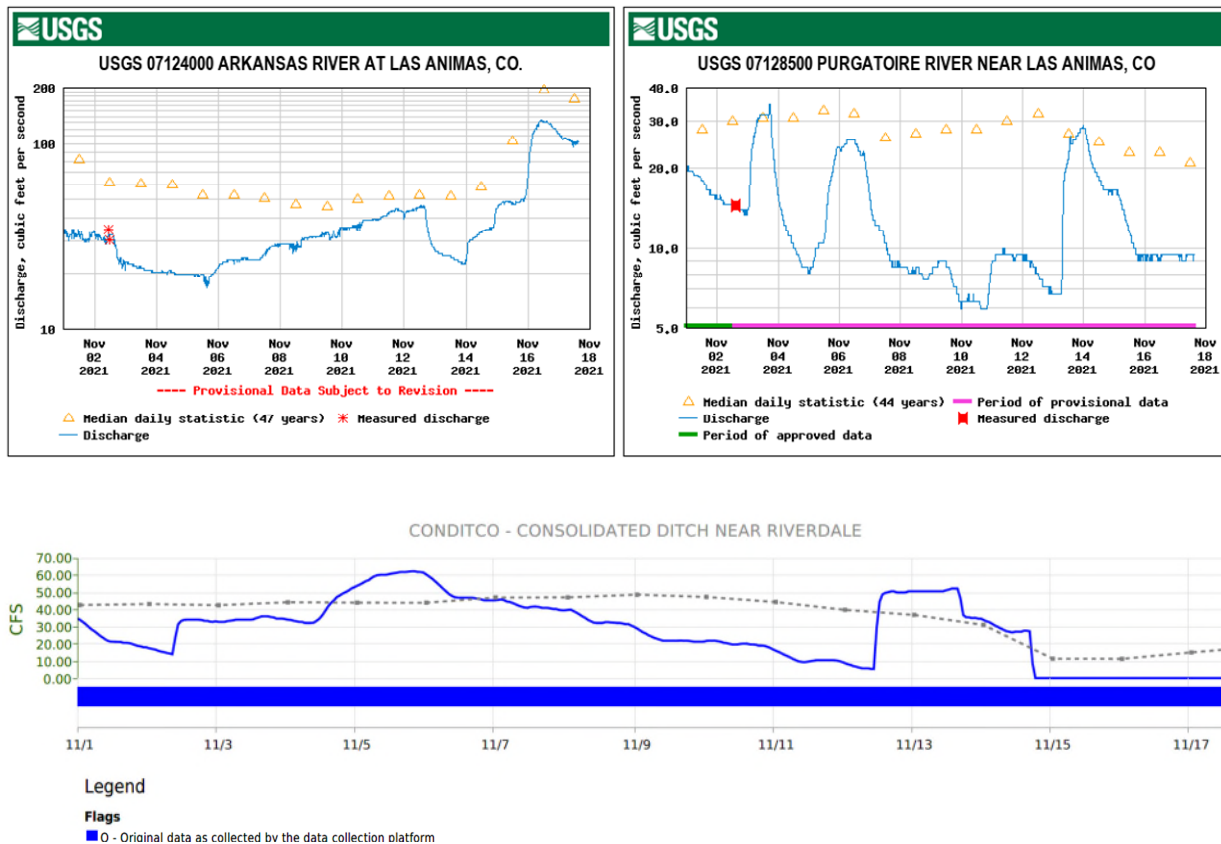


Figure 4 November 1st through November 17th flows for Arkansas River at Las Animas, Purgatoire near Las Animas (graphics from USGS website) and the Consolidated Ditch diversions (graphic from CDWR Stations website).

Pass-thru and Status Accounting

A spreadsheet is used to track: river flows; JMAS (John Martin Accounting System) inflows and releases; and Corps JMR evaporation, storage, & releases. The spreadsheet calculates: (a) gaged and ungaged inflows, (b) pass-thru, and (c) the reservoir “status.” The pass-thru represents that amount of JMR inflows which are not stored in any account and are released downstream. The reservoir “status” represents the difference between the amount considered stored in JMAS and the Corps JMR content. This spreadsheet was updated by Garden City Field Office staff and was provided to the OS on November 23rd for inclusion in the Operations Secretary’s report. When reviewing this spreadsheet, I noticed an unusual circumstance of having a “status” account balance while there was Compact conservation storage. Usually, Compact conservation storage takes any adjustments to balance the reservoir to the Corps content. I will take a closer look at this period later.

ARCA Special Engineering Committee

Both States remain active in the Special Engineering Committee (SEC) over the past Compact Year. Meetings with the primary focus on the proposed Colorado multi-purpose account will continue throughout this Compact Year. The States are identifying potential water sources and specific purposes for this account with an emphasis on water quality improvements.

Water Issues Matrix

As previously reported, this matrix is a joint work product of the States which is designed to track various disputed issues. These disputed issues are primarily concerned with JMR related operations and accounting, of which approximately half have been resolved. An updated Water Issues Matrix was not produced for this report but given new staff in both States it might be appropriate to update this document as it remains a useful tool to track issues.

Summary

This past Compact Year has offered its challenges. Communication between the States has been valuable to work through issues that arose and to continue to work on those long-standing issues. Communication was also essential when dealing with our federal partners with flow measurements along the Arkansas River and other issues. I look forward to working with the Operations Secretary and others on the issues before us in this upcoming year.

Sincerely,



Kevin L. Salter, P.E.
Assistant Operations Secretary

Figure 1 Graphical representation of JMR Accounts over CY2021 showing top of conservation storage

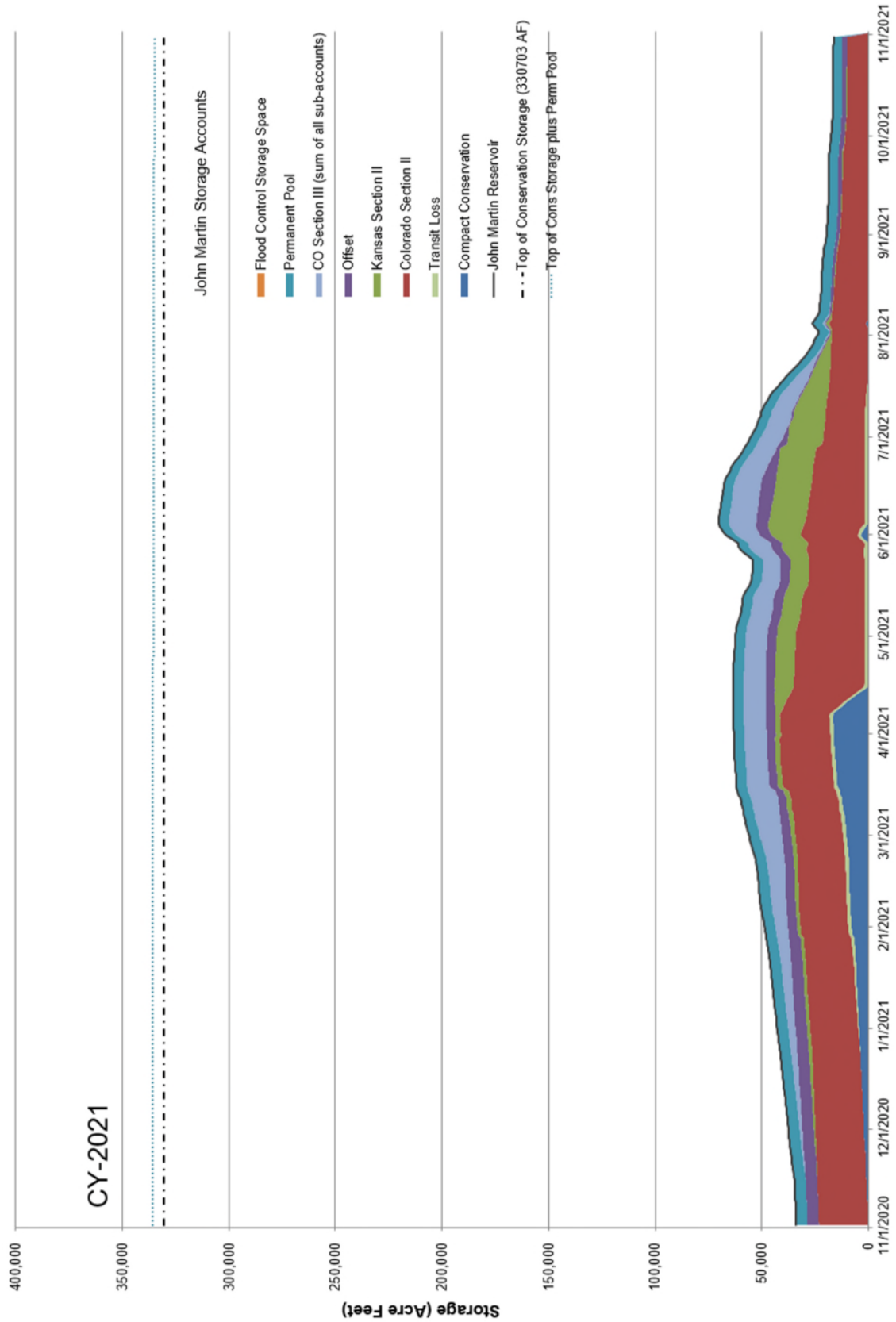


Figure 2 Graphical representation of John Martin Accounts over CY2021

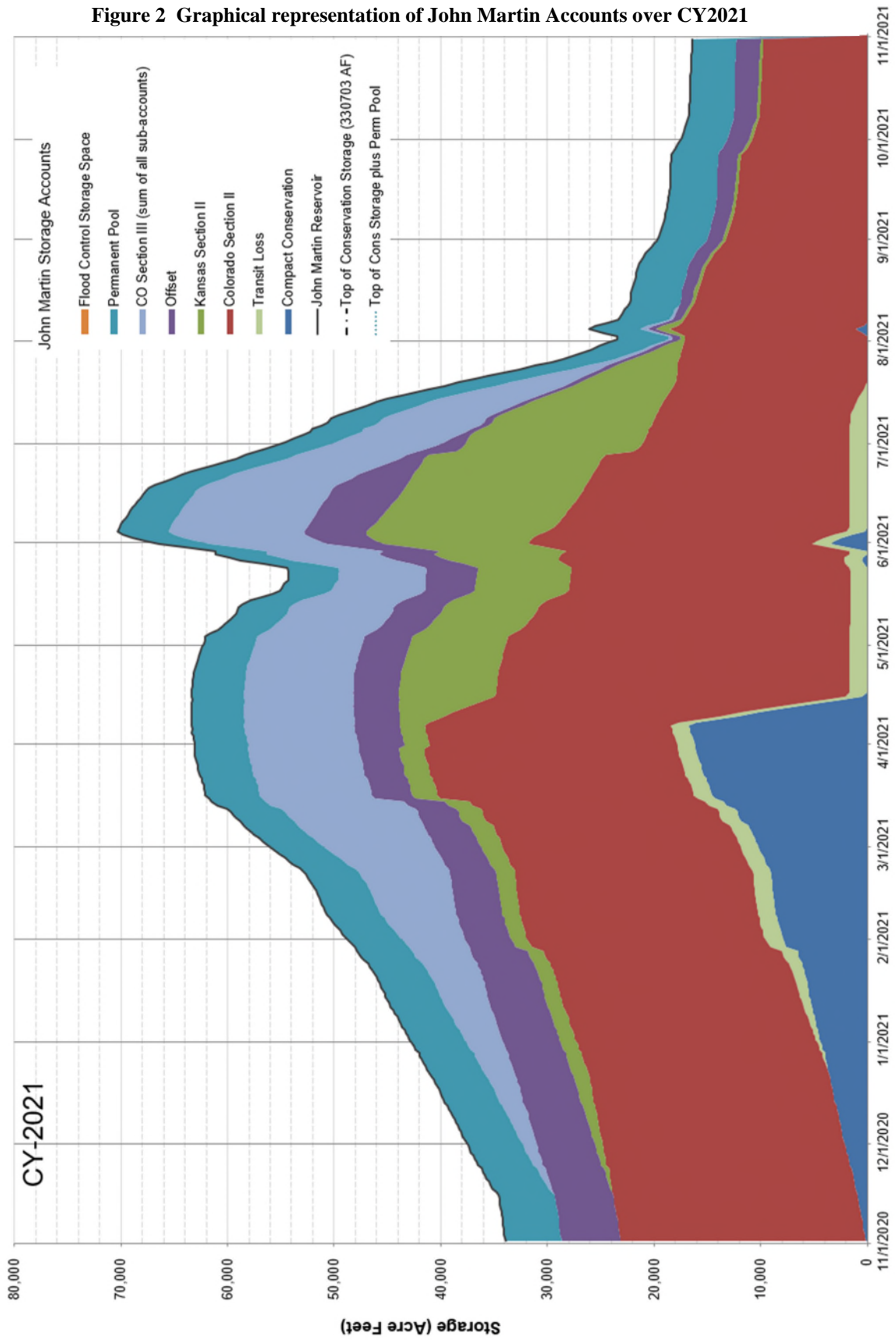


Figure 3 Hydrograph of the Kansas CY2021 First release (6/18-7/7/2021) at the Stateline

