COLORADO
Division of Water Resources
Department of Natural Resources

May 13, 2021

Cleave Simpson, General Manager
Rio Grande Water Conservation District
8805 Independence Way
Alamosa, CO 81101

RE: 2021 ANNUAL REPLACEMENT PLAN: SPECIAL IMPROVEMENT SUBDISTRICT NO. 5 OF THE RIO GRANDE WATER CONSERVATION DISTRICT

Dear Mr. Simpson:

Thank you for your April 21, 2021 submission of the Special Improvement District No. 5's proposed Annual Replacement Plan (ARP) for the 2021 Plan Year (**May 1, 2021 through April 30, 2022**).

My staff and I have reviewed the proposed ARP and its appendices. Unfortunately the Proposed ARP, as presented, is insufficient to assure that injurious depletions to Sagauche Creek are remedied.

Therefore I am not able to approve the Proposed 2021 Plan Year ARP.

The attached analysis of the presented Plan is provided so that the Subdistrict can consider taking actions or providing information that would rectify any deficiencies in the Plan. If the Subdistrict can provide actions or information that resolve the deficiencies I will reconsider this denail.

This denail of the ARP will be posted to the DWR website next business week.

Enclosed, is the analysis and denial of the Subdistrict No. 5 2021 ARP.

Kevin Rein, P.E.
State Engineer
Director of Division of Water Resources

cc: Division 3

Delivered electronically: no hardcopy to follow

Review, Findings, and Denial of
Subdistrict No. 5's Proposed 2021 Annual Replacement Plan

Summary:
The Proposed ARP submitted for Subdistrict No. 5 had insufficient ability to remedy all injurious depletions on Saguache Creek to allow groundwater diversions for Plan Year 2021. Therefore the State Engineer is unable to approve the proposed ARP. If the Subdistrict can provide sufficient remedy and/or demonstrate that infrastructure is in place to deliver water from the portfolio to remedy injurious depletions on Saguache Creek the State Engineer will reconsider this denial. Below is DWR's review and analysis of the information provided for the ARP for Plan Year 2021 so that any such reconsideration can proceed efficiently.

Background

Special Improvement District No. 5 ("Subdistrict"), a political subdistrict of the Rio Grande Water Conservation District ("RGWCD"), formed through Saguache County District Court in Case 2017CV30015, timely submitted its proposed Annual Replacement Plan ("ARP") pursuant to its Plan of Water Management ("PWM") approved by the State Engineer and noticed through Division No. 3 Water Court in Case No. 2020CW3002 on March 13, 2020.

On April 14, 2021, the Subdistrict requested a Variance to allow the Subdistrict to submit the 2021 ARP by April 21, 2021. The request was approved by letter on April 15, 2021, indicating action on the proposed ARP may not be completed by May 1, 2021. The 2021 Plan Year ARP and its appendices were available for download through a link on the RGWCD website. The ARP, its appendices, and resolutions were filed with the Court and provided to the State and Division Engineers on April 21, 2021. Copies of the ARP were made available for viewing at the State and Division Engineers' offices. The ARP, its appendices, resolutions, the Subdistrict's Response Functions, and this letter are posted on DWR's website. There were no letters, comments, or other objections submitted regarding the 2021 ARP. My staff and I have conducted this review of the ARP and comments thereon in accordance with the operational timelines specified in the Rules Governing the Withdrawal of Groundwater in Water Division No. 3 (the Rio Grande Basin) and Establishing Criteria for the Beginning and End of the Irrigation Season in Water Division No. 3 for all Irrigation Water Rights ("Rules"), Case 2015CW3024. The Rules were approved as promulgated and were deemed effective as of March 15, 2019 by the Division No. 3 Water Court.

DWR Review

As set forth in the Rules, I must determine whether the ARP presents "sufficient evidence and engineering analysis to predict where and when Stream Depletions will occur and how the Subdistrict will replace or Remedy Injurious Stream Depletions to avoid injury to senior surface water rights." (Rules 11.3). Also, The ARP will include: a database of Subdistrict and Contract Wells that will be covered by the ARP; a projection of the groundwater withdrawals from Subdistrict and Contract Wells during the current Water Administration Year; the amount of

Rio Grande Canal deliveries which will be included as an offset to gross Subdistrict and Contract Well groundwater withdrawals; a calculation of the projected stream depletions resulting from net groundwater withdrawals from Subdistrict and Contract Wells; a forecast of the flows for Division No. 3 streams; detailed information regarding the methods that will be utilized to replace or remedy injurious stream depletions during the ARP Year, including any contractual agreements used for replacement or remedy of injurious stream depletions that will be in place; any information regarding the fallowing of Subdistrict Lands; information to document progress towards achieving and maintaining a Sustainable Water Supply; and, documentation that sufficient funds are or will be available to carry out the operation of the ARP." (Subdistrict PWM, Section 6.1.2). Finally, I must review the ARP pursuant to the statutory mandates, constitutional requirements, rules and regulations adopted in Division No. 3, and any letters, comments, or other objections submitted by water users regarding the adequacy of the ARP.

With the foregoing in mind, I turn to a review of the ARP. It would be unwieldy to include in my review every detail of the thorough ARP, so for the purpose of this letter, I incorporate it and its supplements by reference.

11.1.1 Database of All Wells to be Covered by the ARP

Structure Identification Number (WDID) (Section 1 of 11.1.1 of the ARP)

A comprehensive list of wells included in the ARP is necessary in order to allow DWR to verify which wells are authorized to operate in accordance with the ARP. To that end, the Subdistrict submitted the most current tabulation of the structure identification number (WDID) of each well included in the Subdistrict (see Appendix A of the ARP). The Subdistrict also supplied a spreadsheet to DWR of the list of Subdistrict Wells as a supplement to the 2021 ARP. Appendix A lists 213 wells, the same list included in the 2020 ARP.

The contract wells accepted by the Subdistrict in 2021 were listed in Appendix B of the submittal. Contract wells were reviewed for the terms of the contracts, associated permits and decrees for each well, and historical meter records. Any wells that are not used within the permitted and/or decreed beneficial uses authorized for those structures cannot be covered by the 2021 ARP and the owners would be notified by separate correspondence. Wells that have submitted an SWSP and started the process of changing an existing permitted/decreed use to a Non-Exempt use described in the participation contract could be conditionally accepted. Should the SWSP be denied during an accepted ARP Year, the well could no longer be covered by the accepted ARP and the owners notified.

Should any wells accepted as contract wells for this proposed ARP have permitted and/or decreed limits that historical records indicate have been exceeded, they will only be accepted for groundwater withdrawals up to their respective limits. Owners of these wells would be notified of this conditional acceptance by separate correspondence. The Subdistrict would be copied on all separate correspondence sent for these purposes.

Other Well Identification Information (Section 2 of 11.1.1 of the ARP)

The database of wells the Subdistrict has accepted as part of this ARP was satisfied under 11.1.1.1.

Subdistrict Wells with Plans for Augmentation (Section 3 of 11.1.1 of the ARP)

The ARP Well List does not include any wells that are either fully or partially augmented by an approved plan for augmentation which is administered separately of the Subdistrict's PWM. The Subdistrict accepted a contract to cover the depletions for two wells belonging to the Town of Saguache, as described below, but did not list them as Subdistrict Wells.

Town of Saguache, 2016CW3023

The Town of Saguache contracted with the Subdistrict to provide remedy for the Town's injurious stream depletions occurring to the Rio Grande and San Luis Creek. The Town's injurious depletions to Saguache Creek will be fully augmented by Case No. 16CW3023 and by SWSP 6244 through March 30, 2022. The two wells are WDIDs 2605121 and 2605968, Appendix C.

I have reviewed Appendix A and Appendix C of the ARP and consulted with staff and find it to be an accurate inventory of Subdistrict Wells that meets the requirements of Rule 11.1.1.

Total Projected Annual Diversion for All Subdistrict Wells (Section 4 of 11.1.1 of the ARP)

DWR metered groundwater withdrawals for Subdistrict ARP Wells listed in this Proposed ARP for the 2020 Water Administration Year totaled 40,844 acre-feet as of April 1, 2021. The 2021 forecast is very similar to the stream flows and antecedent conditions observed in 2020. Using this comparison, the Subdistrict ARP Well groundwater withdrawals in 2021 are projected to be 40,844 acre-feet.

Subdistrict Well Metered Pumping (acre-feet) from Table 1.1 of the ARP

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
45,667	42,924	37,873	39,006	35,384	37,424	36,918	44,082	31,819	40,844

The majority, 62 percent, of metered groundwater withdrawals in the Plan Year were used for flood irrigation, approximately 37 percent were applied to irrigation through center pivot sprinklers and 1 percent of groundwater withdrawals to other uses.

Expected Methods of Irrigation, the Combined Projected Number of Acres Irrigated and the Total Projected Acreage by Each Irrigation Method (Section 5 of 11.1.1 of the ARP)

Subdistrict ARP wells were projected to irrigate approximately 11,971 acres during the Plan Year. This include 7,852 acres irrigated by center pivot sprinklers and 4,119 acres irrigated by flood application. The Subdistrict made this estimate based on review of the breakdown of acres in the RGWCD's annual Irrigated Ag Census and information submitted with

Participation or Inclusion Contracts.

Non-Irrigation Subdistrict Wells – Calculation of All Projected Withdrawals and Projected Net Groundwater Consumptive Use (Section 6 of 11.1.1 of the ARP)

Included in the ARP Well List were a number of wells with beneficial uses other than irrigation. The Subdistrict utilized information provided by DWR to estimate consumptive use rates. These rates were the same as those used in the RGDSS Model to calculate stream impacts and returns. Beneficial uses included municipal, domestic, commercial, industrial, and piscatorial. A spreadsheet was prepared by the Subdistrict to calculate the composite Consumptive Use Ratio, which is a necessary input in the Response Functions. A spreadsheet of the calculation prepared for use in the 2021 ARP was submitted as supplement to this ARP.

Other Data Necessary to Support the Projected Stream Depletions (Section 7 of 11.1.1 of the ARP)

No other data was provided.

Other Information Required by the State and Division Engineers and Reasonably Necessary to Evaluate the Proposed ARP (Section 8 of 11.1.1 of the ARP)

An April 20, 2021 Resolution from RGWCD approving the Subdistrict 2021 ARP was provided with this ARP. The approval by RGWCD is contingent upon the Subdistrict securing a sufficient source of remedy for all injurious depletions projected to occur to all streams prior to the State Engineer's approval of the ARP.

The supplemental information requested by DWR to evaluate the 2021 ARP and provided to the State Engineer included:

1. An electronic copy of the Response Functions used to prepare the tables included in this ARP, including calculations derived from the Town of Saguache wells.
2. The list of Subdistrict Wells included in the 2020 ARP in spreadsheet format matching the list presented in Appendix A
3. Spreadsheet showing the Subdistrict's breakdown of "Other" wells used to calculate the composite Consumptive Use Ratio in the Response Function.
4. Resolution from RGWCD approving the Subdistrict 2021 ARP.
5. MOU between the Subdistrict and the San Luis Creek Subdistrict (Subdistrict No. 4) regarding the remedying of the Saguache Subdistrict depletions owed to San Luis Creek. A copy is included as an Exhibit to this letter.
6. MOUs from Subdistricts No. 1, No. 2, No. 3, No. 5, and No. 6 confirming Subdistrict payment of Saguache Subdistrict assessments for Russell Lakes wells.
7. A Well Injury Payment (or Forbearance) Yield Analysis. This is a description of the Subdistrict's approach to estimate the probable yield of replacement sources for the various forbearance contracts with ditches under WIP agreements. A description for San Luis Creek ditches is included as an Exhibit to this letter.

11.1.2 Projected Stream Depletions from the Wells Covered by the ARP based on the Applicable Response Function or Approved Alternative Method

Section 2 of the ARP presents the data utilized to project stream depletions to Saguache Creek, San Luis Creek, and the Rio Grande as a result of the Plan Year's groundwater withdrawals from Subdistrict ARP Wells. The Response Function outputs identify the total projected stream depletions for the Plan Year. This includes a breakdown of the monthly stream depletions for Saguache Creek, San Luis Creek, and one reach on the Rio Grande. There is also a projection of the Post-Plan Stream Depletions resulting from the Plan Year groundwater withdrawals from Subdistrict ARP Wells. The Subdistrict used the current 6P98 Response Functions to calculate projected stream depletions for this ARP.

The April through September streamflow forecasts included in the ARP were made by the United States Department of Agriculture's Natural Resources Conservation Service ("NRCS") as of April 1, 2021 for Saguache Creek and the Rio Grande. (Appendix D of the ARP).

2021 Stream Flow – Saguache Creek and the Rio Grande (Section 1 of 11.1.2 of the ARP)

The April - September flow estimation of 25,000 acre-feet for Saguache Creek and 365,000 acre-feet for the Rio Grande, were used in the Response Functions for 2021 as shown in the table below.

Stream Flow - Saguache Creek, North Crestone Creek, Rio Grande

Saguache Creek Stream Flow Analysis	Apr-Sep (acre-feet)	% of avg	Estimated Additional (acre-feet)	Jan-Dec (acre-feet)
	(1)	(2)	(3)	
Saguache Creek near Saguache	25,000	78%		
Rio Grande	365,000	71%	70,000	435,000

(1) projected 50% exceedance streamflow at the gaging station
(2) NRCS 30-yr Average Flow: Saguache-32,000; Rio Grande 515,000
(3) January through March and October through December
(information from DWR 10-Day 4/8/2021, attached as an Exhibit. The annual flow on the Rio Grande is used in the projection of Recharge that Offsets Groundwater in the Response Function)

Projected Plan Year Stream Depletions (Section 2 of 11.1.2 of the ARP)

Calculation of Recharge that Offsets Groundwater

The ARP next indicates recharge credit as an offset to pumping. The Rio Grande Canal that brings surface water into the Subdistrict has a recharge decree, as detailed in the ARP. The process of calculating recharge credit from the recharge decrees was developed for use in the Subdistrict No. 1 ARPs and is followed for the Saguache Subdistrict ARP. In order to provide a reasonable method for predicting probable recharge credit quantities for 2021, a trend line was developed for the Rio Grande Canal by plotting historical annual river flows

and corresponding recharge credits. A Regression trend line was then developed for the canal with the resulting equation describing the trend line, Appendix F. The annual projected flow in the Rio Grande is 435,000 acre-feet.

In 2021 the total Rio Grande Canal consumable recharge credit is projected to be 80,658 acre-feet. Each share is projected to be worth 11.28 acre-feet, after application of the 5 percent reduction for evapotranspiration outlined in Case W3979. A total of 238.5 shares are associated with ARP Wells, which is 3.34 percent of the total shares in the Rio Grande Canal. For 2021, 10 shares historically used in Subdistrict No. 5 were included by contract in Subdistrict No. 1, and are not included in the total of Subdistrict No. 5 shares.

The recharge credits were reduced based on the pro-rata shares of the ditch within the Subdistrict boundary. Further, the projected recharge credits were reduced by the projected consumption attributable to the surface water directly used through sprinkler irrigation (83%) and flood irrigation (60%). Historical calculations for years 2011-2020 are included as Appendix F.

Table 2.2
Calculated Recharge Decree Credits for
Saguache Subdistrict During Current Irrigation Year
(Units in acre-feet)

	Rio Grande Canal
Total Consumable	80,658.6
% Within Saguache Subdistrict	3.34%
Total Consumable Within Saguache Subdistrict	2,694.0
Surface Water Through Sprinklers @83%	-1,296.7
Surface Water Used for Flood @60%	-609.1
Totals	**788.2**

Projected recharge decree credits for the Subdistrict for 2021 were calculated as 788.2 acre-feet.

Calculations in the Response Functions

To predict stream depletions caused by Subdistrict ARP Wells, Subdistrict staff utilized the Response Functions developed for the Saguache Creek Response Area under the RGDSS Groundwater Model Phase 6P98. For the Plan Year, stream depletions were calculated using these Response Functions.

The Response Function spreadsheet was built to be used for the whole Response Area. Two instruction sheets were prepared by DWR for additional inputs to the Response Functions when there is a need to use it for individual or group of wells. The instruction sheet, “How to Use the Application Workbook for a Subset (individual/group) of Wells” (9/23/2015), describes how to adjust the spreadsheet inputs to stream reaches that have been modeled with point source returns to streams. The instruction sheet, “How to Adjust the Application

Workbook for use with a Subset of Wells" (10/15/2015), describes how to use the "Ratio Method" for Response Areas where it is necessary to apply this method.

The first step in using the current 6P98 Response Function is to input data for the whole Response Area, i.e., historical groundwater withdrawals for sprinkler irrigation, flood irrigation, "Other" pumping with corresponding "Other" consumptive use ratios for the years 2011 through 2020 and predicted values for 2021.

The Subdistrict elected to use the Response Function spreadsheet for the subset of wells represented by the Subdistrict ARP Wells. The Saguache Response Area requires adjustments for the stream ratios, as listed below.

- Saguache: Reach 1 Calculations Ratio, and Reach 3 Calculations Ratio

Using the whole Response Area results, adjustments are made on appropriate pages of the Response Function spreadsheet. Adjustments for the Ratio Method must be made for Reach 1: Saguache Creek and Reach 3: San Luis Creek below Arthur Young and Kerber Creek.

Once these preliminary steps are completed, the next step is updating Table 2.1 to derive the annual net groundwater consumptive use. The consumptive use ratios for sprinkler and flood irrigation used in the Model are standard factors of 83% and 60%, respectively. The consumptive use ratio for "Other" wells is specific to the uses of those wells and can vary widely. This requires that the "Other Consumptive Use Ratio" for the whole Response Area be a composite derived from the individual well withdrawals and consumptive uses.

The Subdistrict provided a spreadsheet of "Other" wells included in the Subdistrict ARP Well list as a supplement to the ARP. The spreadsheet shows the individual well consumptive use factors to explain how the composite ratios were determined for the subset wells represented in Table 2.1 of the ARP.

Historical ARP Well groundwater withdrawal values were entered in Table 2.1 for years 2011 through 2020. No adjustments were made by the Subdistrict for groundwater withdrawals of the subset wells for any years prior to 2011. Projected ARP Well groundwater withdrawal values were used for 2021. Recharge that Offsets Groundwater, as described above, was entered in Table 2.1 for 2011 through 2021. This provided a projected Net Groundwater Consumptive Use for the Plan Year of 27,461 acre-feet.

Following the determination of Net Groundwater Consumptive Use, the data was incorporated in the Response Function Table 2.2 to calculate stream depletions for the Plan Year and projected into the future.

The Response Functions calculated stream depletions to Saguache Creek, San Luis Creek and the Rio Grande during the Plan Year, due to both past ARP Well groundwater withdrawals and the projected Plan Year ARP Well groundwater withdrawals. The total depletions were determined to be 995 acre-feet, with depletions of 482 acre-feet in Saguache Creek, 207 acre-feet in San Luis Creek and 306 acre-feet in the Rio Grande. The locations of the stream depletions and monthly quantities are also tabulated in Table 2.4.

The Subdistrict included depletions attributed to pumping from the Town of Saguache wells in the Response Function output tables for San Luis Creek and the Rio Grande. These depletions are not included in the Saguache Creek output tables since the Town will remedy depletions through their own SWSP and plan for augmentation, as mentioned previously.

Post-Plan Stream Depletions were estimated to accrue to impacted streams for approximately 19 years. Table 2.5 of the ARP shows there would be a total of 6,939 acre-feet of Post-Plan Stream Depletions based on the Response Functions' predictions. This amounts to 3,393 acre-feet to Saguache Creek, 2,354 acre-feet to the Rio Grande, and 1,192 acre-feet to San Luis Creek.

11.1.3 Description of How Injurious Stream Depletions from Groundwater Withdrawals by Wells Included in the ARP would be Replaced or Remedied

Amounts and Sources of Replacement Water for 2021 Plan Year (Section 1 of 11.1.3 of the ARP)

The Subdistrict assembled a portfolio of water supplies for the replacement of Injurious Stream Depletions and remedies other than water. The ARP identifies the included water rights, their availability and their amounts in Table 3.1 of the ARP.

The adequacy of replacement sources for the ARP Year are dependent upon contracted amounts the Subdistrict has acquired as well as the availability of the source to pay depletions in place and time. For purposes of review of adequacy of replacement sources, there are three categories defined below, with examples described for each.

In Storage: Reservoir water in storage under the control of the Subdistrict. This water is available for release at the direction of the Subdistrict.

In Season: Ditch water that will become available to the Subdistrict when in priority during the 2020 irrigation season in the amount of depletion owed to streams daily by the Subdistrict. For some sources, water not used to pay daily depletions may be stored for Subdistrict use later.

On Call: Remedies, such as forbearance, that are available in the amount of depletion owed to streams daily by the Subdistrict, limited to when the forbearance ditch is the calling water right. I note that forbearance depends on climate and actual days when a ditch is the calling water right and the exact yield per year is indeterminate. It is also noted that the amount of forbearance water usable by the Subdistrict is limited by their depletions owed daily to streams. In addition, several Subdistricts are seeking forbearance agreements with the same ditches. DWR considers these potential competing agreements when evaluating forbearance as a replacement source.

Under an approved ARP this replacement water or remedy would be available to replace Injurious Stream Depletions as directed by the Division Engineer. A summary of the proposed portfolio items is shown in the Replacement Sources tables.

Subdistrict No. 5 Replacement Sources
Saguache Creek (acre-feet)

	Water Right Name	Submitted in ARP	Approved in SWSP's	**Approved** for 2021 ARP
	In Storage - None			0
	In Season	**Limit**	**Expected Yield**	**Approved for 2021 ARP**
SWSP	**In Season**			
6244	Case No 16CW3023 Excess Augmentation Credits		10	10
	Quartette & Jeep Scandrett Lease ***(SWSP request submitted 4/19/2021)***		<100	0
	North Star Lease – WDIDs 2605690, 2605685, 2605057 ***(No information submitted as of 5/12/2021 on infrastructure for delivery of the lease water to Saguache Creek.)***		±640	0
	Tarbell Ditch Transmountain Diversion ***(No information submitted as of 5/12/2021 on the status of contracting with the Tarbell owners for use of the facility.)***		200	0
	Total In Season			**10**
	On Call *	**Limit**	**Expected Yield**	**Approved for 2021 ARP**
WDID	**WIP (aka Forbearance)**			
	Saguache Creek			
2600510	Campbell Ditch 4 (Priorities 49, 50, 62, 68)	**No limit**		
2600511	Campbell Ditch 5 (Priorities 47, 49, 66, 68)	**No limit**		
2600512	Campbell Ditch 6 (Priority 50)	**No limit**		
2600616	Nehls Co Ditch (partial of Priorities 32, 55)	**No limit**		
2600654	Roberts Co Ditch (Priority 32)	**No limit**		
2600559	Hearn Ditch (Priority 44)	**No limit**	**5**	
2600675	Slane Scandrett Ditch (Priority 25, 31)	**No limit**		
2600574	Jeep Scandrett Ditch (Priority 25)	**No limit**		
	Total On Call- Forbearance		**5**	**5**

Subdistrict No. 5 Replacement Sources
Rio Grande (acre-feet)

	Water Right Name	Submitted in ARP	Approved in SWSP's	Approved for 2021 ARP
	In Storage - None			0
	In Season - None			0
	On Call	**Limit**	**Expected Yield**	**Approved for 2021 ARP**
	CBP Allocation (as of April 2021)	3,800	306	
	Total On Call- Irrigation & Non-Irrigation Season		**306**	**Up to 306**

Subdistrict No. 5 Replacement Sources
San Luis Creek (acre-feet)

	Water Right Name	Submitted in ARP	Approved in SWSP's	Approved for 2021 ARP
	In Storage - None			0
	In Season - None			0
	On Call *	**Limit**	**Expected Yield**	**Approved for 2021 ARP**
WDID	**WIP (aka Forbearance)**			
	Kerber Creek			
2500747	1920 Ditch	**No limit**		
2500541	Clayton Ditch D (1 cfs of 3.4 cfs) 29.4%	**No limit**		
2500541	Clayton Ditch D (1.7 cfs of 3.4 cfs) 50.0%	**No limit**		
2500693	Clayton Ditch FG	**No limit**		
2500545	Clayton Old Channel Ditch	**No limit**		
2500546	Cody Ditch	**No limit**		
2500551	Daniels Fish Arroya Ditch	**No limit**		
2500552	Daniels Fish Ditch No. 4	**No limit**		
2500583	Hall Ditch 1	**No limit**		
2500680	Wells Kerber Ditch	**No limit**		
2500682	Wells North Ditch	**No limit**		
2500683	White Ditch	**No limit**		
	San Luis Creek			
2500713	Dittrich Steel Ditch	**No limit**		
2500577	Greer Ditch No. 1	**No limit**		
2500578	Greer Ditch No. 2	**No limit**		
2500579	Greer Ditch No. 3	**No limit**		
2500614	Kennedy Ditch 2	**No limit**		
2500641	San Luis Co Ditch - Blumenhein	**No limit**		
2500641	San Luis Co Ditch - Frees	**No limit**		
2500646	Schilling Ditch	**No limit**		
2500647	Schultz Dittrich Ditch (10.3 + 0.2 cfs)	**No limit**		
2500929	Schultz Dittrich Ditch No. 2	**No limit**		
2500695	Schultz Dittrich No. 14 Ditch - Stagner	**No limit**		
2500695	Schultz Dittrich No. 14 Ditch - Ridgely	**No limit**		
2500657	Squires Ditch 1	**No limit**		
2500661	Steel Ditch No. 2	**No limit**		
2500668	Tobler Ditch	**No limit**		
2500669	Tobler Rominger Ditch	**No limit**		
	Kelly Creek			
2500692	Clayton Ditch ABC	**No limit**		
2500822	Clayton Ditch ABC ALT	**No limit**		
	Cottonwood Creek			
2500542	Clayton Ditch E	**No limit**		
	Total On Call- Forbearance		**49**	**Up to 49**

*MOU provides that San Luis Creek Subdistrict remedy depletions of 49 af on behalf of Saguache Subdistrict.

After Acquired Sources of Remedy (Section 2 of 11.1.3 of the ARP)

DWR recognizes the Subdistrict would continue to work to acquire additional sources of remedy and might, with approval from the Division Engineer, use those sources to remedy injury under this ARP.

Operation of the 2021 Annual Replacement Plan (Section 3 of 11.1.3 of the ARP)

The Subdistrict's portfolio of replacement sources does not include any reservoir water.

The Subdistrict has leased 0.9 c.f.s. of Priority No. 24A in the Quartette Ditch and 2.5 c.f.s. of Priority No. 25 in the Jeep Scandrett Ditch and submitted an SWSP 4/19/2021 to use this water as a replacement source. This lease will allow the Subdistrict to use the historical consumptive use of the ditches contingent upon water being available at the headgates. The maximum historical consumptive use of these water rights is +/-110 acre-ft. Upon approval of the SWSP and the Division Engineer, historical consumptive use which becomes available to the Subdistrict under this contract will be used to replace injurious stream depletions through storage, recharge, or direct use, including by exchange.

The Subdistrict has entered into a contract to lease three irrigation wells from North Star Farm and fallow the historically irrigated acres. After consultation with and approval of the Division Engineer and Water Commissioner, the historical consumptive use from those acres will be delivered to Saguache Creek in one or more of the following proposed methods: by direct pipeline to Saguache Creek; multiple pipelines and exchange from Werner Arroyo to Saguache Creek; an alternate point of diversion through an existing or new well; and/or pipeline directly to the injured ditch. The infrastructure to deliver the water from North Star Farm to Saguache Creek has not been completed.

The Subdistrict has worked to contract with the owners of the Tarbell Ditch Trans-mountain Diversion to lease the use of their structure. Under the proposal the Subdistrict would divert a junior water right from Water Division 4 through the Tarbell Ditch. The total daily diversion under the terms of the proposed contract would be 1.5 c.f.s. This water, minus delivery losses, would be delivered to the head of the Saguache Creek reach. This source of water has not been finalized and would be subject to review and approval by the Division Engineer. It was anticipated that the Tarbell would be diverting water from May through July and the expected yield of the 1.5 c.f.s. is +/-200 acre-feet. **However, contracts for use of this ditch have not been finalized.**

The Subdistrict entered into an agreement with the Town of Saguache, to use the Excess Augmentation Credits generated under the Town's Plan for Augmentation, Case No. 16CW3023. This case has not yet been approved by the Water Court. However, the Town received approval for SWSP 6244 for the 2021 irrigation season. Per the court case and SWSP, the Town will provide the Subdistrict with a calculation of the Excess Credits available to the Subdistrict. The amount of credits available were anticipated to be 10 acre-feet for the remaining months of the 2021 ARP Year.

The ARP provides documentation that the Subdistrict has implemented "well injury payment" (WIP) agreements (also known as forbearance agreements) with a number of ditches located on Kelly Creek, Kerber Creek, San Luis Creek, and Saguache Creek for the Plan Year. At times when Kelly Creek, Kerber Creek, and San Luis Creek, are connected, the calling right can be on Kelly Creek or Kerber Creek. The majority of the WIP agreements allow the Subdistrict to exercise these agreements in its sole discretion.

The Subdistrict's allocation of Closed Basin Project (CBP) water allows this source to be used to replace depletions on the Rio Grande for the 2021 ARP Year, both during and outside the irrigation season. The wells in service at Russell Lakes in the Saguache Subdistrict are mitigation for operation of the CBP. Subdistricts No. 1, No. 2, No. 3, No. 5, and No. 6 that use CBP as a replacement source provided MOUs describing their intent to pay Saguache Subdistrict assessments on behalf of the owners of the Russell Lakes wells. The owners are Colorado Parks and Wildlife and the Bureau of Reclamation.

The Response Functions as presented did not predict stream depletions to streams other than Saguache Creek, San Luis Creek, and the Rio Grande in amounts above the minimum threshold to reliably predict impacts. Therefore, no replacements to any stream other than Saguache Creek, San Luis Creek, and Rio Grande are required.

The San Luis Creek Subdistrict (Subdistrict No. 4) will remedy depletions to San Luis Creek on behalf of the Saguache Subdistrict for the 2021 ARP Year. The Subdistrict acquired the same WIP agreements on San Luis Creek as Subdistrict No. 4.

The ARP mentions the Subdistrict plans to make potential requests for aggregation of depletions between Stream Reaches as part of the anticipated operation in 2021. The ARP also mentions the Subdistrict may request to aggregate depletions with other Subdistricts during the 2021 ARP year.

The Subdistrict anticipated a scenario when the depletions owed for all RGWCD Subdistricts combined in any one or more months during the non-irrigation season are greater than the production of the CBP production in those months. Should this occur, the Subdistrict may request the Division Engineer allow a portion of the CBP production that is generated during the irrigation season be used to offset the Subdistrict's non-irrigation season depletions.

The Subdistrict proposed to make requests for these types of changes formally to the Division Engineer, providing details of the request and documentation supporting the need to make a change to the approved ARP depletion schedule. The Division Engineer will consider such a request when it was made, under the protocol of DWR and in light of the conditions on the particular stream at the time and, if deemed appropriate, approve the request. The Subdistrict will not adopt any change until after approval by the Division Engineer.

The Rules require remedies sufficient to also remedy total Post-Plan Stream Depletions caused by current and past years' ARP Wells groundwater withdrawals that deplete the streams after the term of an ARP. Section 4.1.5 of the Subdistrict's PWM recognizes that "The Subdistrict will be required to have a portfolio in place which can sufficiently remedy Post-

Plan Injurious Stream Depletions as a condition of the Division of Water Resources' approval of any ARP". The PWM includes the provision, "the Subdistrict may continue to assess fees until all Post-Plan Injurious Stream Depletions caused by past groundwater withdrawals from Subdistrict Wells have been remedied." This allows the Subdistrict to provide a financial guarantee to assure that all Post-ARP Injurious Stream Depletions will be replaced or otherwise remedied if the Subdistrict were to fail.

Anticipated Funding for Plan Year (Section 4 of 11.1.3 of the ARP)

The Subdistrict submitted sufficient financial information to document the purchase and leases of replacement water for the 2021 Plan Year.

11.1.4 Contractual Arrangements Among Water Users, Water User Associations, Water Conservancy Districts, Subdistricts, and/or the Rio Grande Water Conservation District

Subdistrict No. 4 Memorandum of Understanding (Section 1 of 11.1.4 of the ARP)

The Subdistrict included an MOU with the ARP that provides for the San Luis Creek Subdistrict (Subdistrict No. 4) to remedy depletions to San Luis Creek on behalf of the Subdistrict for the 2021 ARP Year. The Subdistrict will reimburse Subdistrict No. 4 through financial means for the cost of making those replacements. A copy of the MOU is included as an Exhibit to this letter.

Well Injury Payment Agreements (Section 2 of 11.1.4 of the ARP)

Pursuant to section 37-92-501(4)(b)(I)(B), C.R.S., the Subdistrict reached agreement with a multitude of ditches whereby they accept that, subject to the specific provisions of the WIP agreement, injury to their water rights resulting from the use of groundwater by ARP Wells may be remedied by means other than providing water to replace stream depletions, when they are the calling right on the San Luis Creek system. The Subdistrict has reached agreement with a much lesser number of ditches on the Saguache Creek system. The majority of these contracts with individual ditches were made for one-year terms and with both San Luis Creek Subdistrict and Saguache Subdistrict.

The Subdistrict reviewed stream flows on San Luis, Kerber and Crestone Creeks for the current and past years and used the peak and average flows during April to calculate the percent of priorities that have agreed to well injury payments for the partial Plan Year within those stream flow agreements on each river. The Subdistrict has secured WIP agreements with all of the water rights owners on Crestone Creek with water rights senior to the wells. On the San Luis Creek system, WIP agreements have been made for Priorities No 1 through 36. The Subdistrict indicates given the expected stream flows and historical administration of the creek, it is reasonable to assume the calling priority for the season will be senior to Priority No. 36. The Subdistrict does not have a WIP agreement for a portion of Priority 33 in the San Luis Company Ditch, but water cannot physically reach the diversion point for this portion of the priority, so a call could not be made.

The Subdistrict did not provide a yield analysis of agreements on Saguache Creek, but anticipates the yield to be fairly low.

It is noted that the majority of these agreements allow the Subdistrict to remedy injurious stream depletions under the agreement or by providing water at the Subdistrict's sole discretion. Two of the agreements would not allow this flexibility, the Clayton Ditch ABC and the Clayton Ditch D agreements with Mr. Dragos, so are "mandatory" forbearance agreements.

Closed Basin Project Production (Section 3 of 11.1.4 of the ARP)

According to the information provided in the ARP, the projected production of the Closed Basin Project delivered to the Rio Grande is 8,500 acre-feet during calendar year 2021. The allocation of the Closed Basin Project production in accordance with agreements is 60% to the Rio Grande and 40% to the Conejos River basin over the long term with provision for adjustments in the allocation during individual years. The 2021 allocation of the Closed Basin Project production will be 60% to the Rio Grande and 40% to the Conejos River.

Per a letter from the Rio Grande Water Users Association dated March 17, 2021, the Board of Directors passed a motion to specifically allocate 3,800 acre-feet of the Rio Grande's share of the usable yield of the Closed Basin Project to replace the stream depletions under Subdistricts No. 1, No. 2, No. 3, No. 5 and No. 6 Similarly, the Board of Directors of the San Luis Valley Water Conservancy District agreed to the allocation as stated in their letter to the Rio Grande Water Conservation District on March 18, 2021. 306 acre-feet of water was made available to Subdistrict No. 5 under this ARP to remedy the injurious stream depletions on the Rio Grande.

A copy of each letter reporting the approval was provided in Appendix H of the ARP. The resolution from RGWCD allowing the Subdistrict to use CBP water in the 2021 ARP was provided as supplemental information.

Town of Saguache (Section 4 of 11.1.4 of the ARP)

The Town of Saguache entered into a Participation Contract with Subdistrict No. 5, whereby the Subdistrict has agreed to provide remedy for the Town's injurious stream depletions occurring to the Rio Grande and San Luis Creek via the CBP allocation agreement from the RG District and the contract with Subdistrict No. 4. The Town's injurious depletions to Saguache Creek are fully augmented by the plans in SWSP 6244 and/or Case No. 16CW3023. The Subdistrict has also agreed toprovide for the proportional responsibility for achieving and maintaining a sustainable water supply in the confined aquifer. Since the aquifer is in a sustainable condition (see below) there is no concern for the Town's proportional responsibility for this plan year. The Town would provide its Excess Augmentation Credits on Saguache Creek to the Subdistrict. For 2021 the total amount of credits anticipated was 10 acre-feet.

A final ruling has not been made in the Town's court case as of this date, but the Town received approval for an SWSP to operate under the terms of their plan for augmentation in the meantime. Under the approved SWSP, the Town's excess augmentation credits could be made available to the Subdistrict.

Woodard Ranch Lease (Section 5 of 11.1.4 of the ARP)

The Subdistrict has entered into an agreement with Woodard Ranch, LLC to lease 0.9 c.f.s. of the Priority 24A in the Quartet Ditch and 2.5 c.f.s. of the Priority 25 in the Jeep Scandrett Ditch. During the 2021 irrigation season, the historically irrigated acres will be fallowed and no irrigation will take place on those acres. The historical consumptive use credits from those acres will be used under the changed water rights, pending approval of an SWSP. When in priority and within the historical consumptive use limits set forth in the SWSP, the Subdistrict will apply the historical consumptive use credits to remedy injurious depletions from Subdistrict Wells to senior surface water rights either directly by leaving the water in the stream, or by exchanging the water upstream, or by diverting to storage or recharge.

North Star Farms Lease (Section 6 of 11.1.4 of the ARP)

The Subdistrict has entered into an agreement with the owners of North Star Farms to lease three sprinkler irrigated quarter sections. During the 2021 irrigation season, the historically irrigated acres would be fallowed and no irrigation would take place on those acres. The historical consumptive use credits from those acres would be used under the changed water rights, pending approval of an SWSP. Within the historical consumptive use limits set forth in the SWSP, the Subdistrict would apply the historical consumptive use credits to remedy injurious depletions from Subdistrict Wells to senior surface water rights either directly by pumping the water through a pipeline and releasing it into the stream, or by exchanging the water upstream, or by diverting to storage or recharge, withdrawn from an alternate point of diversion, or with delivering water directly to the injured ditch, with permission of the owners. At present no confirmation of infrastructure (pipeline or ditch) for delivery of lease water to Saguache Creek to offset injurious depletions has been received.

11.1.5 Documentation of Progress Towards Achieving and Maintaining a Sustainable Water Supply

Water Levels, Pressure Levels, and/or Groundwater Withdrawals (Section 1 of 11.1.5 the ARP)

Rule 8.1.7 of the Groundwater Rules includes provisions for meeting the requirements for achieving and maintaining a Sustainable Water Supply in the confined aquifer. Per the State Engineer's approval letter for the PWM, dated March 13, 2020, the Saguache Creek Response Area five-year running average groundwater withdrawals were below the 1978-2000 average groundwater withdrawals of 45,592 acre-feet for the Saguache Creek Response Area.

Subdistrict metered groundwater withdrawals account for approximately 97.6 percent of the

total metered groundwater withdrawals annually over the period 2011-2020 in the Saguache Creek Response Area. The current five-year running average groundwater withdrawals for ARP Wells for the period 2016-2020 is 38,218 acre-feet. The previous five-year running average for ARP wells was 37,125 acre-feet.

Based on the trends of both the Saguache Creek Response Area and the Subdistrict's five-year average, the Subdistrict will remain in compliance with the Sustainable Water Supply Requirement of the Rules.

Included in Appendix I is the State Engineer's memo dated July 1, 2020, regarding the Composite Water Head for Confined Aquifer Response Area in Division 3: July 2020 Requirement of Division 3 Groundwater Rules Section 8.1.4. The Composite Water Head for 2020 was 2.15 feet, increasing from the 2019 low of 1.41 feet and still higher than the base year of 2015.

Listing of Irrigated Acres Proposed to be Temporarily or Permanently Fallowed and Associated Water Rights (Section 2 of 11.1.5 the ARP)

The Subdistrict is not currently pursuing fallowing of any irrigated lands within the boundaries of the Subdistrict.

Listing of Water Rights Proposed to be Temporarily or Permanently Retired and Historical Operations of Each Water Right (Section 3 of 11.1.5 the ARP)

No listing of retired water rights was submitted with this ARP.

Other Proposed Actions to be Taken as Applicable (Section 4 of 11.1.5 the ARP)

The Subdistrict is currently engaging in meetings with various surface water users on Saguache Creek to determine if a Groundwater Withdrawal Restriction Program is feasible and workable.

Findings

Based on the information provided in the ARP and discussed above, I make the following findings:

1. The projected groundwater withdrawals are based upon the inventoried Subdistrict Wells, their historical pumping, and projected stream flows. The inventory of wells is consistent with the information in DWR's databases. The historical pumping associated with the Wells is based on diversion records on file with the DWR. The method implemented by the Subdistrict to project groundwater withdrawals for the ARP Wells for 2021 is consistent with historical pumping information and streamflow forecast from the Division Engineer's projection and the NRCS Forecast.

2. Overall, the Subdistrict inputs to the Response Functions produced a calculation of depletions that DWR considers conservative such that the depletions could be covered and no injury will occur if there were sufficient remedies available for delivery to Saguache Creek.

3. Projected stream depletions are calculated based on Response Functions generated from RGDSS Groundwater Model runs. The Response Functions are based on the RGDSS Model version 6P98, which was approved by the PRT. The Subdistrict utilized the 6P98 Response Functions in determining stream depletions for the Subdistrict. The full ARP Year depletion schedule is included as an Exhibit to this letter.

4. The ARP identifies the sources, availability, and amounts of replacement water and remedies that the Subdistrict would use to remedy Injurious Stream Depletions during the coming year and demonstrates the sufficiency of such water to remedy such Injurious Stream Depletions on San Luis Creek and the Rio Grande. The portfolio or remedies is approved. However, the ARP sources of replacement water and remedies available on Saguache Creek are, at present, physically unable to remedy projected Injurious Stream Depletions on Saguache Creek. The proposed ARP contemplates infrastructure (a pipeline or ditch) to deliver North Star Farm lease water to Saguache Creek and/or a new appropriation of water through the Tarbell Ditch. Neither the infrastructure (pipeline/ditch) nor a contract to use the Tarbell ditch to effect the new appropriation have been completed.

5. The comparison of CBP projected deliveries with all Subdistricts operating under 2021 ARPs indicates the CBP production, at least on an annual basis, is adequate to cover the Non-Irrigation season depletions for all the Subdistricts and the irrigation season depletions of the Saguache Subdistrict on the Rio Grande.

Saguache Creek

The Subdistrict depletions are 228.7 acre-feet during the irrigation season and 253.3 acre-feet during the non-irrigation season for a total of 482 acre-feet.

- Irrigation Season: The Subdistrict has no water in storage in the Saguache Creek drainage. The Subdistrict described several contracts for leases of lands that are being temporarily fallowed, lands served by surface water under the Quartette Ditch and Jeep Scandrett Ditch and North Star Farm lands served by three wells. The majority of the remedy will come from the Lease of North Star water which cannot, at present, be delivered to Saguache Creek where needed to remedy injurious depletions. The Subdistrict is also negotiating a contract to use Tarbell TMD water as a replacement source. The Subdistrict has not secured final contracts and/or SWSP approval for these sources in order to consider them for the ARP Year at this time. The Subdistrict indicates the Town of Saguache will provide 10 acre-feet of its Excess Augmentation Credits on Saguache Creek for this ARP. The Subdistrict indicates they expect to yield a total of 5 acre-feet from WIP agreements during the 2021 irrigation season and in April 2022.

My staff reviewed the historical calls on Saguache Creek ditches expected to generate estimated forbearance during the ARP Year. The review indicates the yield of 5 acre-feet estimated by the Subdistrict from WIP agreements is conservative. By themselves the available Excess Augmentation Credits and/or the WIP agreements will not be able to appropriately remedy all the injurious depletions during this ARP Year on Saguache Creek.

- Non-irrigation Season: The Subdistrict is not obligated to pay depletions on Saguache Creek during the non-irrigation season at this time.

San Luis Creek

- The Subdistrict depletions are 47.9 acre-feet during the irrigation season and 159.1 acre-feet during the non-irrigation season for a total of 207.0 acre-feet.

  Irrigation Season: The Subdistrict indicates they expect to yield a total of 49 acre-feet from well injury payment agreements. My staff reviewed the historical calls on San Luis Creek for the ditches expected to generate forbearance amounts during the irrigation season as summarized below. The potential 49 acre-feet needed for well injury payment agreements indicates sufficient water to cover Injurious Stream Depletions for the Plan Year for both Subdistrict No. 4 and Subdistrict No. 5.

  - DWR staff prepared an analysis using the projected stream flow numbers. The focus of the analysis was to determine which ditches would be the calling priorities on all streams where the Subdistrict owes depletions. The Subdistrict secured numerous forbearance contracts for priorities senior and junior to the projected call(s). Based on current snowpack and stream flow's estimated peak, the call on San Luis Creek will most likely be the Priority No. 36 or more senior water right on the river system in the 2021 irrigation season. Even if the stream flows are underestimated, the Subdistrict has contracts with all owners of water rights senior to Priority No. 39 that can divert water, which would reinforce the analysis of forbearance being a valid option. From the first day of the 2022 irrigation season to the end of April 2022, the call on San Luis Creek will most likely be the Priority No. 14 or more senior water right on the river system also allowing for forbearance coverage for the end of the ARP year.

- Non-irrigation Season: The Subdistrict is not obligated to pay depletions on San Luis Creek during the non-irrigation season at this time.

Rio Grande

- The Subdistrict depletions are 180.6 acre-feet during the irrigation season and 125.4 acre-feet during the non-irrigation season for a total of 306.0 acre-feet.

  The Subdistrict has 306 acre-feet of CBP water allocated to pay irrigation season depletions.

6. Section 4.1.5 of the Subdistrict's PWM includes the provision, "the Subdistrict may continue to assess fees until all Post-Plan Injurious Stream Depletions caused by past groundwater withdrawals from Subdistrict Wells have been remedied." This allows the Subdistrict to provide a financial guarantee to assure that all Post-Plan Injurious Stream Depletions will be replaced or otherwise remedied if the Subdistrict were to fail or otherwise not be allowed to continue groundwater withdrawals.

7. Upon approval of the Subdistrict's PWM, it was concluded the Subdistrict is already operating within the 5-year 1978-2000 average as amended by the CAS stipulation. The Subdistrict is in compliance with this metric.

The Subdistrict has presented sufficient evidence and engineering analysis to predict where and when Injurious Stream Depletions will occur and has proposed how they will replace those Injurious Stream Depletions to avoid injury to senior surface water rights.

However review of the replacement or remedy sources for Saguache Creek indicate that there is either insufficient remedy or insufficient infrastructure to convey water to remedy injurious depletions that occur on Saguache Creek. **Therefore I must find that this proposed ARP will not prevent injury and therefore I cannot approve the ARP as submitted.** If the Subdistrict can provide additional remedies or demonstrate that the facilities to deliver water from the portfolio are in place to remedy injurious depletions to Saguache Creek, I will reconsider this denial.

I want to encourage your efforts to continue to secure sufficient remedies and/or infrastructure to deliver remedies for Saguache Creek so that I may reconsider this Denial. Your efforts are greatly appreciated. If you have any questions, do not hesitate to contact any of my staff in Denver or Alamosa.

Sincerely,

Kevin G. Rein, P.E.
State Engineer
Director of the Division of Water Resources

Exhibits:

A: MOU Between Subdistrict No. 4 and Subdistrict No. 5 Regarding Remedy of Injurious Depletions within San Luis Creek Response Area
B: Well Injury Payment Yield Analysis for San Luis Creek Ditches
C: DWR 10-Day Report
D: Table 2.6 for 2021 ARP Year

ec: Craig Cotten, Division Engineer
Chad Wallace, Assistant Attorney General
David W. Robbins, Hill & Robbins
Peter Ampe, Hill & Robbins
Clinton Phillips, Davis Engineering Service, Inc.
DWR electronic notification lists
Division 3 Water Court

Exhibit A

MEMORANDUM OF UNDERSTANDING BETWEEN SUBDISTRICT NO. 4 AND SUBDISTRICT NO. 5 REGARDING REMEDY OF INJURIOUS DEPLETIONS WITHIN SAN LUIS CREEK RESPONSE AREA

February 17, 2021

Groundwater withdrawals from Wells included within Special Improvement District No. 5 ("Subdistrict No. 5) may cause injurious stream depletions to San Luis Creek or other streams within the San Luis Creek Response Area, as that area is defined by the Colorado Division of Water Resources. Subdistrict No. 5 and Special Improvement District No. 4 ("Subdistrict No. 4") agree that it will be more efficient for Subdistrict No. 4 to provide a remedy for injurious depletions to streams within the San Luis Creek Response Area caused by groundwater withdrawals from Wells included in the Subdistrict No. 5 Annual Replacement Plan than have Subdistrict No. 5 attempt to find independent sources to remedy those injurious depletions within the San Luis Creek Response Area.

Subdistrict No. 4 agrees it will provide the remedy for injurious depletions within the San Luis Creek Response Area from Subdistrict No. 5 Well's groundwater withdrawals under the terms contained in this Memorandum of Understanding.

Subdistrict No. 4 and Subdistrict No. 5 anticipate that the vast majority of the injurious depletions within the San Luis Creek Response Area will be remedied through the application of Well Injury Payment contracts between surface water rights and the individual Subdistricts. Subdistrict No. 5 will be responsible for all payments to surface water right holders for any due under any Well Injury Payment Contract and Subdistrict No. 4 will not be responsible for any such payments.

Within 60 days of the end of each ARP Year, Subdistrict No. 4 will determine the total costs it incurred in remediating injurious depletions under its ARP within the San Luis Creek Response Area, not including costs under Well Injury Payment contracts. Subdistrict No. 4 will also determine the calculated depletions within the San Luis Creek Response Area due to groundwater withdrawals from wells within its ARP and the total calculated depletions due to Wells within the Subdistrict No. 5 ARP. Subdistrict No. 4 will then determine Subdistrict No. 5's pro-rata share of the injurious depletions and apply that pro-rata share to its costs incurred as determined above. Subdistrict No. 4 will supply an invoice of that pro-rata share of remedy costs to Subdistrict No. 5 and Subdistrict No. 5 will pay said costs as invoiced within 60 days of receipt.

Term: This Memorandum of Understanding will remain in effect until revoked in writing by either Subdistrict No. 4 or Subdistrict No. 5. Such notice of revocation must be provided at least 180 days prior to the start of an ARP Year.

Signed:

Subdistrict No. 4

By:_____ _____

David Frees, President Date

Subdistrict No. 5

By:_____ _____

David Schmittel, President Date

Exhibit B

Additional documentation of the analysis performed by Subdistrict Staff to determine the range of priorities expected to be the calling right on the San Luis Creek system in 2021.

Snowpack

Snotel data for the three sites closest to the stream system were downloaded on April 11, 2021. The three sites were Sargent's Mesa, Hayden Pass, and South Colony. Hayden Pass and Sargent's Mesa had snow water equivalents (SWE) nearly identical to the 2020 levels. South Colony's SWE was more similar to 2017 levels. All three SWE values were within 10% of the median at that time and ranged from 74-103% of the median peak SWE levels.

Historic Call Analysis

There is limited information available for the San Luis Creek system, so the analysis was limited to a few recent years. The streamflows this year are expected to be similar to those experienced in 2020. In 2020, the Steel Ditch No. 2 was listed as the ditch drying up San Luis Creek for the entire year and the highest priority served on San Luis Creek was priority no. 35 in May and June. From mid-May to mid-June, it appears priority 50 on Kerber Creek was served as a futile call, with the Hall Ditch No. 1 drying up Kerber Creek.

For the analysis the Subdistrict staff also looked at 2019, a year that had the highest streamflows since 2001. In 2019 the stream is shown to have made it down to the Greer Ditch No. 1 from June 6 to July 12, during this time priority 33 in the Squires Ditch No. 1 was listed as the calling priority. This is the highest calling priority in 2019 outside of priority 35, which was only the calling priority when the Steel Ditch No. 2 was drying up the stream.

Historic Diversions

Historic diversions of Greer Ditch No. 1, Greer Ditch No. 2, San Luis Ditch, and Ross Ditch were reviewed to determine the likelihood of them receiving water in 2021. These ditches are all downstream of the normal dry up location around County Road AA.

The San Luis Ditch (priority 37), which is approximately 6 miles south of County Road AA and the normal dry up point, has zero historic diversions listed between 2004 and 2020. There is no information listed between 1993 and 2004, with 1993 being the last known year the San Luis Ditch received water.

The Greer Ditch No. 1 (priority 30) is approximately 2 miles upstream of the San Luis Ditch. This ditch has diversions from 2007 to 2009, but no diversions between 2002 to 2006 and 2010 to 2020. This ditch has a gap in the records from 1993 to 2002, with regular diversions recorded before 1993.

The Greer Ditch No. 2 (priority 35) is approximately 1.75 miles upstream of the San Luis Ditch. This ditch has zero diversions from 2002-2020, except for 48 acre-feet in July 2008. This ditch also has a gap in the records from 1993 to 2002, with regular diversions recorded before 1993.

The Ross Ditch (priority 65) is located immediately south of County Road AA and approximately 6 miles north of the San Luis Ditch. This ditch was analyzed to see if there was potential for them to receive water under a futile call scenario. There were no diversions for this ditch from 2002-2020. Prior to 2002, this ditch does have regular diversion records.

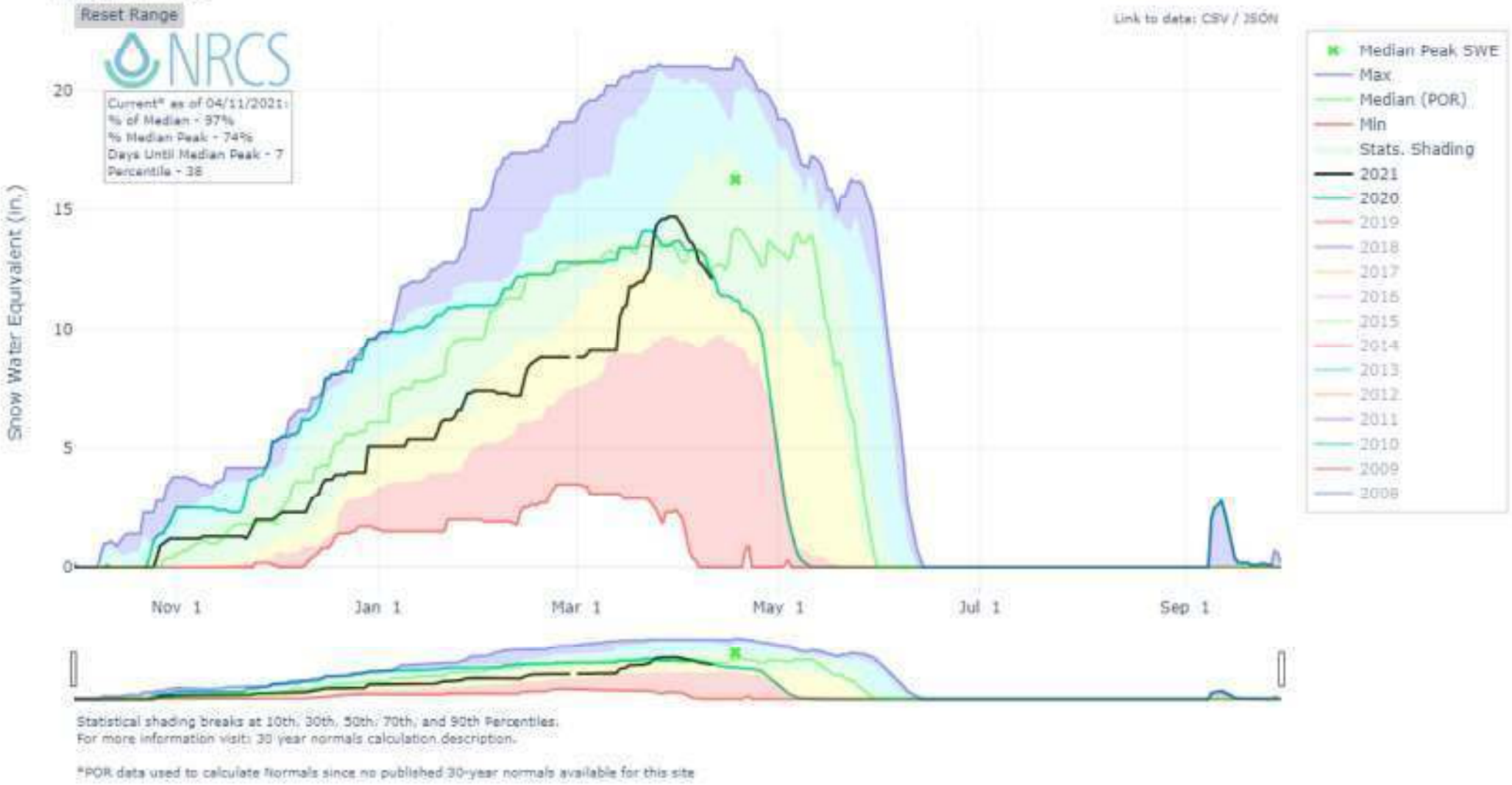
Other Information Considered

Subdistrict staff have engaged in multiple conversations with Division 3 staff and water users on San Luis Creek about how the stream runs and how it is administered. It has been noted by both that it would take many years of above average precipitation or a huge water year for San Luis Creek to flow as far south as priorities in the San Luis Ditch (priority 37) and the Wales San Luis Ditches 1 and 2 (priorities 37, 39, 54, 58, and 68). It has also been noted that it is often extremely difficult to push water as far south as County Road AA to fill priority 23 in the Schilling Ditch.

Conclusions

Given the current snowpack and the NRCS forecast for the rest of the San Luis Valley projecting below average streamflows, it is reasonable to conclude San Luis Creek will have less flows than it did in 2019 and will likely be very similar to 2020. The dry up point on San Luis Creek in 2020 was the Steel Ditch No. 2, which is approximately 14 miles north of the San Luis Ditch (priority 37). If despite the forecast, enough precipitation is received to make flows more similar to 2019, the wettest year since 2001, the farthest the stream reached in that year was Greer Ditch No. 1 (priority 30), which is still 2 miles north of San Luis Ditch. Additionally, priorities 31 through 36 are decreed for a total of 31.6 c.f.s., so if the stream made it as far south as the Greer Ditch No 1, there would need to be about 30 additional c.f.s. in the stream for priority no. 37 to be in priority. The Subdistrict has secured Well Injury Payment Agreements with all of the owners of priorities 1 through 36 which can be the calling right on the San Luis Creek system. Due to the current and projected conditions making it certain priority 37 in the San Luis Ditch will not come into priority during the 2021 ARP year, the Subdistrict has sufficient sources of remedy for its injurious stream depletions occurring to San Luis Creek.

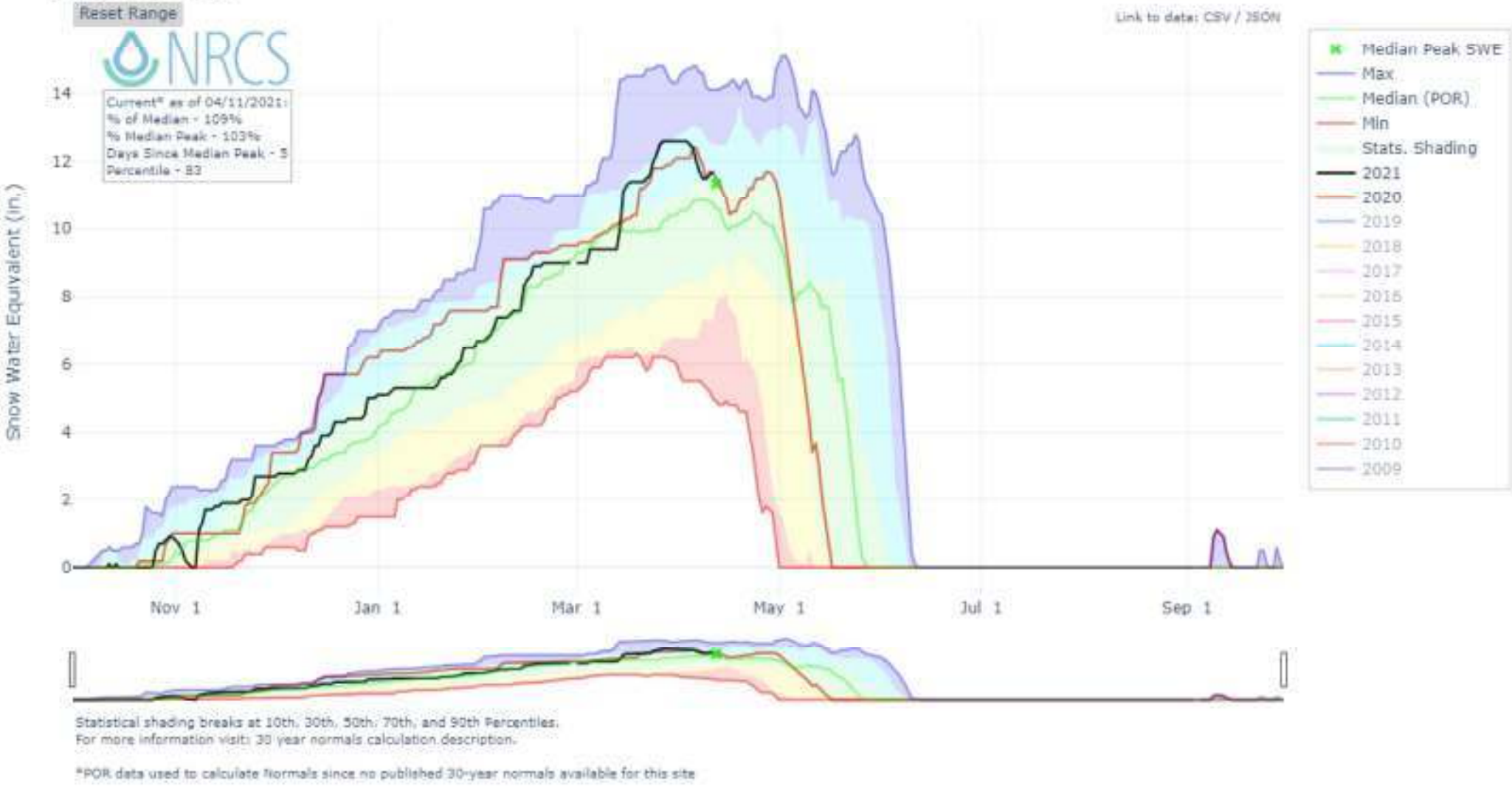
SNOW WATER EQUIVALENT AT HAYDEN PASS



Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th Percentiles.
For more information visit: 30 year normals calculation description.

*POR data used to calculate Normals since no published 30-year normals available for this site

SNOW WATER EQUIVALENT AT SARGENTS MESA



Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th Percentiles.
For more information visit: 30 year normals calculation description.

*POR data used to calculate Normals since no published 30-year normals available for this site

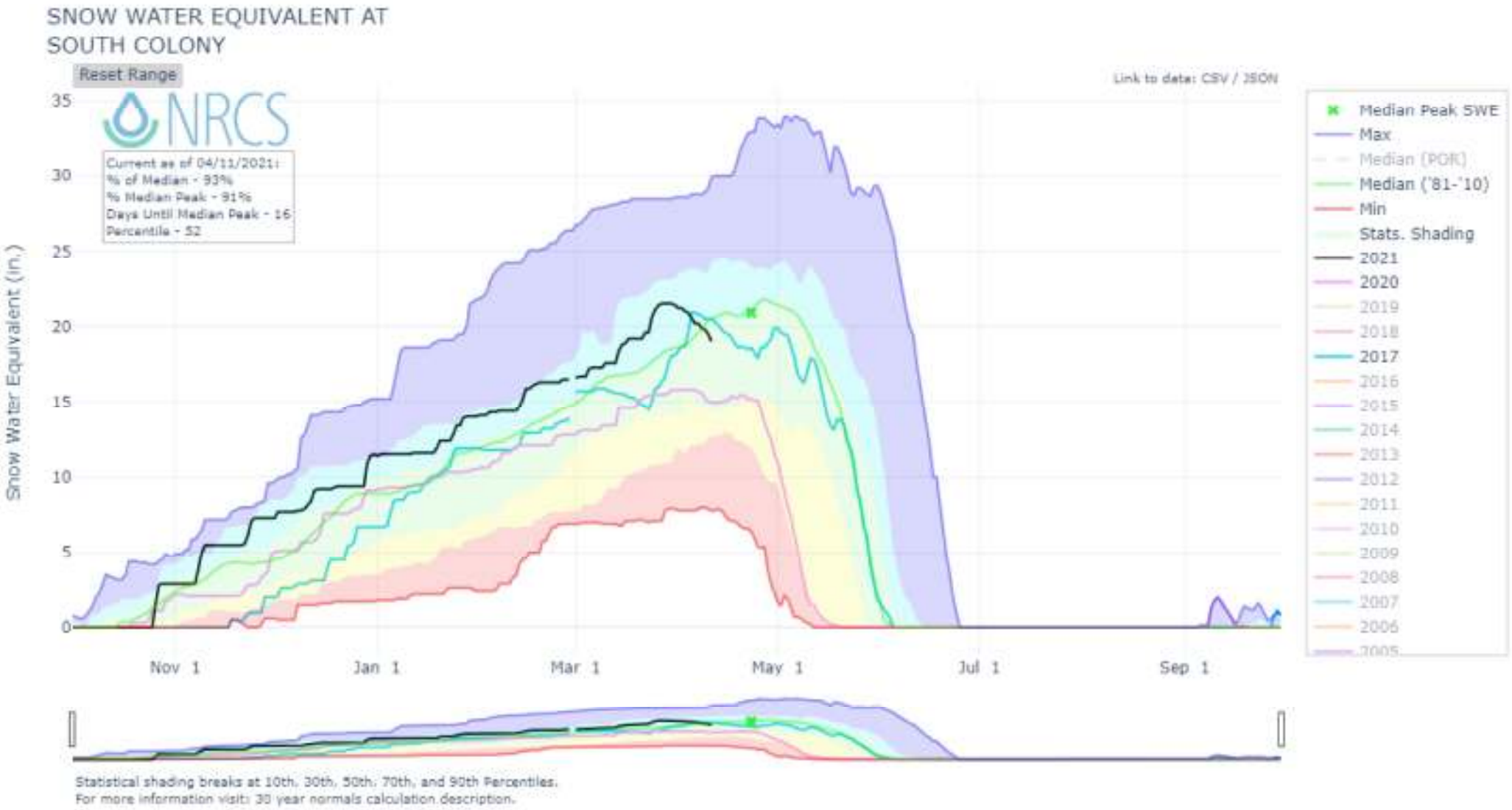

SNOW WATER EQUIVALENT AT
SOUTH COLONY
Reset Range
Link to data: CSV / JSON
NRCS
Current as of 04/11/2021:
% of Median - 93%
% Median Peak - 91%
Days Until Median Peak - 16
Percentile - 52
Snow Water Equivalent (in.)
35
30
25
20
15
10
5
0
Nov 1
Jan 1
Mar 1
May 1
Jul 1
Sep 1
Median Peak SWE
Max
Median (POR)
Median ('81-'10)
Min
Stats. Shading
2021
2020
2019
2018
2017
2016
2015
2014
2013
2012
2011
2010
2009
2008
2007
2006
2005
Statistical shading breaks at 10th, 30th, 50th, 70th, and 90th Percentiles.
For more information visit: 30 year normals calculation description.

Exhibit C

RIO GRANDE COMPACT
April 8, 2021 Analysis (NRCS 50% exceedence)
Closed Basin Project Split: 60/40

RIO GRANDE BASIN

NRCS 4-6-2021 Forecast of
April - September Index
Flows = 365,000

J-M & O-D volume 70,000

Obligation = 107,800

Delivery Obligation

Req Deliv	**42,200**	**11.0%**
Total Index	**383,000**	

Index Supply

January	**8,300**	*
February	**8,500**	*
March	**13,200**	*
April - September	**365,000**	forecast
October	**18,000**	estimate
November - December	**22,000**	estimate
Total	**435,000**	

Deliveries

January	**9,600**	*
February	**11,000**	*
March	**14,600**	*
April - October	**42,200**	needed
Nov - Dec native	**24,000**	estimate
Total	**101,400**	

Adjustments to the Delivery	**Net Carryover Credit in E.B.**	**-**	**estimate**
	Paper Credit	**5,000**	
	SC Norton Drain Flow	**(2,000)**	**estimate**
	Remaining CBP Share	**3,400**	**estimate**
	Delivery Credit	**107,800**	

Expected Dec. 31, 2020 Compact Delivery Status 0

*** = Actual measured flows (Deliveries include Closed Basin Project share)**
- **All values in acre-feet**
- **Assumes 60% of the Closed Basin Project flows are creditable to the Rio Grande (Projected delivery of creditable CBP production to the Rio Grande is 8,500 acre-feet)**
- **Asssumes no recharge diversions after November 1, 2021**
- **Trinchera Creek flow to the Rio Grande will increase delivery**

Exhibit D

Table 2.6

Saguache Response Area Monthly Net Stream Depletions for 2021 Plan Year

(units of ac-ft)

	2021								2022				
Stream Reach	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Saguache Creek	45.1	22.2	18.3	7.8	9.9	30.3	29.7	33.2	31.9	44.9	113.6	95.0	482.0
Rio Grande Del Norte-Excelsior	29.1	24.5	29.2	23.1	23.7	25.9	26.3	27.5	23.9	22.4	24.9	24.9	304.0
San Luis Creek below Arthur Young and Kerber Creek	2.2	1.1	1.2	1.1	1.1	1.2	0.7	9.8	53.2	46.8	47.8	41.0	207.0
Total	76.0	47.0	48.0	32.0	35.0	57.0	57.0	70.0	109.0	114.0	187.0	161.0	**993.0**

Table 2.6

Saguache Area Reponse (Adjusted) Monthly Stream Depletions for 2021 Plan Year

(units of ac-ft)

	Rio Grande Alluvium and Upper Rio Grande Combined Response Areas Totals												
	2021								2022				
Stream Reach	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Saguache Creek	45.1	22.2	18.3	7.8	9.9	30.3	29.7	33.2	31.9	44.9	113.6	95.0	481.9
Rio Grande Del Norte-Excelsior	29.2	24.5	29.3	23.1	23.7	26.0	26.4	27.6	24.0	22.4	25.0	25.0	306.2
San Luis Creek below Arthur Young and Kerber Creek	2.2	1.2	1.2	1.1	1.2	1.2	0.7	9.8	53.5	47.0	48.0	41.1	208.2
Total	76.5	47.9	48.8	32.0	34.8	57.5	56.8	70.6	109.4	114.4	186.6	161.1	**996.3**