COLORADO
Division of Water Resources
Department of Natural Resources

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

RE: 2020 ANNUAL REPLACEMENT PLAN APPROVAL: SPECIAL IMPROVEMENT SUBDISTRICT NO. 2 OF THE RIO GRANDE WATER CONSERVATION DISTRICT

Dear Mr. Simpson:

Thank you for your April 15, 2020 submission of the Special Improvement District No. 2's proposed Annual Replacement Plan (ARP) for the 2020 Plan Year (**May 1, 2020 through April 30, 2021**).

My staff and I have reviewed the proposed ARP and its appendices. A number of the referenced documents will not be attached to this letter but are available on the DWR website at:

http://water.state.co.us/DivisionsOffices/Div3RioGrandeRiverBasin/Pages/Subdistrict2ARP.aspx

All information and data related to this approved ARP are available on our website.

Enclosed, please find my approval of the 2020 ARP.

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

cc: Division 3

Review, Findings, and Approval of Subdistrict No. 2's 2020 Annual Replacement Plan

Background

Special Improvement District No. 2 ("Subdistrict"), a political subdistrict of the Rio Grande Water Conservation District ("RGWCD"), formed through Rio Grande County District Court in Case 2015CV30050, 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. 2018CW3010.

The 2020 Plan Year ARP and its appendices were available for download through a link on the RGWCD website. The ARP, its appendices, and resolutions were provided to the State and Division Engineers on April 15, 2020. 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 2020 ARP. My staff and I have conducted this review of the ARP 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 by the March 15, 2019 ruling of 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 list of Subdistrict Wells that will be covered by the ARP; a projection of the groundwater withdrawals from Subdistrict Wells during the current Water Administration Year; a calculation of the projected stream depletions resulting from ground water withdrawals from Subdistrict Wells; a forecast of the flows for the Rio Grande; 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; 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 2020 ARP. Appendix A lists **244** wells which includes seven contract wells for 2020, three of which are in the Upper Rio Grande (URG) Response Area.

Contract wells were reviewed for the terms of the contracts, associated permits and decrees for each well, and historical meter records. A number of wells will be accepted as contract wells for this ARP approval, but where there are permitted and/or decreed limits that historical records indicate have been exceeded, will only be accepted for ground water withdrawals up to their respective limits. Owners of these wells, including WDID 2013903, will be notified of this conditional acceptance by separate correspondence.

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 includes some wells that are either fully or partially augmented by an approved plan for augmentation which is administered separately of the Subdistrict's PWM. These plans for augmentation associate surface rights with these Subdistrict Wells and other non-Subdistrict wells to remedy some portion or all of each well's injurious stream depletions. These wells are included in the Subdistrict's ARP Well List, and if any portion of their legally decreed groundwater withdrawals is not remedied by an individual plan for augmentation, it is subject to Subdistrict fees and the Subdistrict will remedy injurious stream depletions and post-plan injurious stream depletions attributable to the non-

augmented portion of a well's total groundwater withdrawals as part of this ARP. "The Subdistrict and this Plan of Water Management or ARP cannot be used as a source of water for new or expanded plans for augmentation or other replacement plans." (PWM at 2.4.6)

San Luis Valley Water Conservancy District Augmentation Certificates No. 784 & No. 690

The ARP lists two wells as Subdistrict Wells that are partially or fully augmented for the existing uses through SLVWCD. Both wells have water rights for irrigation and the augmentation through SLVWCD covers other uses including out-of-season irrigation, commercial, and in-house.

I have reviewed Appendix A and Appendix B 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 Combined Projected Annual Diversion for All Subdistrict Wells (Section 4 of 11.1.1 of the ARP)

For Subdistrict ARP Wells listed in this ARP, DWR total metered groundwater withdrawals as of April 1, 2020, for the 2019 Water Administration Year were **9,924.05** acre-feet. In 2011, stream flows were very similar to the 2020 forecast and in that year, Subdistrict ARP Wells withdrew 14,089 acre-feet. Using this comparison, the Subdistrict ARP Well groundwater withdrawals in 2020 are projected to be **14,120** acre-feet.

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

2011	2012	2013	2014	2015	2016	2017	2018	2019
14,089	14,917	13,996	12,438	11,779	10,459	10,333	14,566	9,924

The majority of metered groundwater withdrawals in the Plan Year will be used for irrigation through center pivot sprinklers, **88.7** percent. Approximately **4.4** percent and **6.9** percent of groundwater withdrawals will be applied to flood irrigation and other uses, respectively.

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)

The Subdistrict ARP Wells are projected to irrigate approximately 9,200 acres during the Plan Year including 8,200 acres irrigated by center pivot sprinklers and 1,000 acres irrigated by flood application. The Subject made this projection based on a review of the breakdown of acres within the Rio Grande Alluvial Response Area (RGA) under each irrigation type prepared by DWR for inclusion in the RGDSS Groundwater Model. No irrigation wells from the URG Response Area contracted with the Subdistrict for 2020.

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 are a number of wells with beneficial uses other than irrigation. The Subdistrict utilized information provided by DWR to calculate the consumptive use rates used in the RGDSS Model to calculate stream impacts and returns. Beneficial uses include potato washing, commercial, domestic (subdivision), lawn irrigation and fish. A spreadsheet was prepared by the Subdistrict to calculate the composite Consumptive Use Ratio that is a necessary input in the Response Functions. A spreadsheet of the calculation prepared for use in the 2020 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)

The supplemental information needed to evaluate the 2020 ARP and provided to the State Engineer included:

1. Resolution from RGWCD approving the Subdistrict 2020 ARP.
2. Resolution from RGWCD to act as a financial guarantor for the Subdistrict.
3. The list of Subdistrict Wells included in the 2020 ARP in spreadsheet format matching the list presented in Appendix A
4. Resolution from RGWCD to allow the Subdistrict to allocate Closed Basin Project water in the 2020 ARP.
5. Spreadsheet showing the Subdistrict's breakdown of "Other" wells used to calculate the composite Consumptive Use Ratio in the Response Function.
6. Electronic copy of the Response Functions used in this ARP.

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 the Rio Grande as a result of the Plan Year's groundwater withdrawals from Subdistrict ARP Wells. The Response Function's outputs identify total projected stream depletions for the Plan Year, a breakdown of the monthly stream depletions for the Plan Year for each of the three reaches of the Rio Grande and a projection of the Post-Plan Stream Depletions calculated as

a result of the Plan Year groundwater withdrawals from Subdistrict ARP Wells. The Subdistrict was directed by DWR to use the current 6P98 Response Functions to calculate projected stream depletions for this ARP.

The April through September streamflow forecasts included in the ARP are made by the United States Department of Agriculture's Natural Resources Conservation Service ("NRCS"). The annual streamflow forecasts included in the ARP for the Rio Grande are those included in the April 6, 2020 Division Engineer's Rio Grande Compact Ten Day Report (Appendix D of the ARP).

2020 Stream Flow Forecast – Rio Grande (Section 1 of 11.1.2 of the ARP)

There was a difference between the NRCS and the Division Engineer's forecasts as shown in the following table. The Subdistrict selected the NRCS estimate of the April - September flow for the Rio Grande of 415,000 acre-feet for use in the Response Functions for 2020.

Rio Grande Stream Flow Forecast

Analysis	Apr-Sep Forecast (acre-feet)	% of avg	Estimated Additional (acre-feet)	Annual Estimated Flow (acre-feet)
	(1)	(2)	(3)	
NRCS, 4/6/2020	415,000	80%		
Division Engineer, Ten Day, 4/6/2020	454,000	88%	96,000	550,000

(1) projected 30% exceedance streamflow at the gaging station
(2) NRCS 30-year average of 515,000 acre-ft used for this calculation
(3) January through March and October through December

Projected Plan Year Stream Depletions for RGA ARP Wells (Section 2.1 of 11.1.2 of the ARP)

Subdistrict staff was instructed by the State Engineer's Office to predict stream depletions to the Rio Grande utilizing the Response Functions developed for the Rio Grande Alluvium Response Area under the RGDSS Groundwater Model Phase 6P98.

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 Subdistrict included these instruction sheets with their ARP.

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 2019 and predicted values for 2020.

The Subdistrict has elected to use the Response Function spreadsheet for the subset of wells represented by the Subdistrict ARP Wells. The Rio Grande Alluvium Response Area requires adjustments for point source return flows, as shown below.

- Rio Grande Alluvium Response Area - Reach 1 (Rio Grande from Del Norte to Excelsior Ditch) from the Town of Del Norte and the City of Monte Vista.

Using the whole Response Area results, adjustments are made on appropriate pages of the Response Function spreadsheet. The Subdistrict removed all return flows attributable to the Town of Del Norte and the City of Monte Vista's wells from Reach 1(Rio Grande from Del Norte to Excelsior Ditch) from the appropriate sheets within the RGA Response Function spreadsheet.

Once these preliminary steps are completed, the next step in calculating stream depletions using the Response Functions 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. The "Other Consumptive Use Ratio" for the whole Response Area is 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 groundwater withdrawals and consumptive use factors to explain how the composite ratios were determined for the subset wells represented in Table 2.1.1 of the ARP.

Historical ARP Well groundwater withdrawal values were entered in Table 2.1.1 for years 2011 through 2019. Projected ARP Well groundwater withdrawal values were used for 2020. The Subdistrict has no Recharge that Offsets Groundwater for calculation of the Net Groundwater Consumptive Use. The projected Net Groundwater Consumptive Use for the Plan Year is 10,857 acre-feet.

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

The Response Functions calculated total stream depletions to the Rio Grande during the Plan Year, due to both past ARP Well groundwater withdrawals and the projected Plan Year ARP

Well groundwater withdrawals, are **1,779 acre-feet**. The locations of the stream depletions and monthly quantities are also tabulated in Table 2.1.3.

Post-Plan Stream Depletions are estimated to accrue to impacted streams for approximately 7 years. Based on predictions from the Response Functions, the Post-Plan depletions in Table 2.4 are a total of 2,860 acre-feet.

Projected Plan Year Stream Depletions for URG ARP Wells (Section 2.2 of 11.1.2 of the ARP)

The Subdistrict prepared a separate analysis of the stream depletions for Subdistrict Wells that lie within the URG Response Area. Historical groundwater withdrawal values for URG wells included in the ARP Well List were entered in Table 2.2.1 for years 2018 through 2019. Projected groundwater withdrawal values were used for 2020. The Subdistrict has no Recharge that Offsets Groundwater for calculation of the Net Groundwater Consumptive Use.

The projected URG Net Groundwater Consumptive Use for the Plan Year is 10 acre-feet.

The URG Response Function calculation of total stream depletions to the Rio Grande during the Plan Year due to both past ARP Well groundwater withdrawals and the projected Plan Year ARP Well groundwater withdrawals is 6 acre-feet. Depletions are owed to the same stream reaches as the RGA Response Function, the three reaches of the Rio Grande.

Post-Plan Stream Depletions are estimated to accrue to impacted streams for approximately 2 years. Based on predictions from the Response Functions, the Post-Plan depletions are a total of 2 acre-feet.

Combined Total Projected Plan Year Stream Depletions for Subdistrict ARP Wells (Section 2.3 of 11.1.2 of the ARP)

Table 2.3.3 of the ARP is the combined output from the RGA and URG Response Functions. Total stream depletions to the Rio Grande during the Plan Year due to both past ARP Well groundwater withdrawals and the projected Plan Year ARP Well groundwater withdrawals are 1,785 acre-feet. The volume of water required to replace the combined Post-Plan Stream Depletions is 2,862 acre-feet

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

Amounts and Sources of Replacement Water for 2019 Plan Year (Section 1 of 11.1.3 of the ARP)

The Subdistrict has assembled a portfolio of water supplies for the replacement of Injurious Stream Depletions and remedies other than water. The ARP identifies the 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.

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. This further complicates the availability of a firm supply under these agreements.

This replacement water or remedy will be available to replace Injurious Stream Depletions as directed by the Division Engineer. A summary of the portfolio items is shown in the Replacement Sources tables on the following pages. I will approve up to the full amount itemized in the Replacement Sources tables and stated in the following sections for use in the 2020 ARP.

Subdistrict No. 2 Replacement Sources
Rio Grande (acre-feet)

Section	Water Right Name	Submitted in 2020 ARP	Approved in SWSP's	Remaining & Approved for 2020 ARP
	In Storage			
	SWSP 6062- Williams Cr Squaw PassTM- Parker	332.5	332.5	
	SMRC – Monte Vista Canal Leased 2019 (150 shares @ 1.942 af)	291.3	291.3	
	Total In Storage			**623.8**

Section	Water Right Name	Submitted in 2020 ARP	Expected Yield	Remaining & Approved for 2020 ARP
	On Call- Irrigation Season**			
	On Call- Subdistrict No. 1 SMRC	**Contract**		
	Rio Grande Canal		389	
	Farmers Union			
	San Luis Valley Canal		32	
	Prairie Ditch			
	Billings Ditch			
ψ	**Total On Call- Subdistrict No. 1 SMRC**	**1500**	**550**	
	On Call- Forbearance	**Contract**		
	Centennial Ditch (3-yr term)	No limit	4	
ψ	Commonwealth-Empire (3-yr term)	500	138	
ψ	Excelsior Ditch	154.47	11	
	Monte Vista Canal	300	104	
	Rio Grande Canal	400		
ψ	RG Lariat Ditch (3-yr term)	500	9	
ψ	RG Piedra Valley Ditch (3-yr term)	No limit	13	
ψ	RG San Luis Ditch (3-yr term)	No limit	13	
	San Luis Valley Canal	250		
	Total On Call- Forbearance		**292**	
	Total On Call- Irrigation Season			**Up to 842**
	CBP Allocation, March 2020	840	850	
	Total On Call- Non-Irrigation Season			Up to 850

***Note: The On-Call Irrigation Season expected yield excludes ditches that appear on both the SMRC and Forbearance lists.*

ψ Note: The Contract limits for these Subdistrict No 1 SMRC & Forbearance Agreements is for Subdistricts 2, 3, & 6

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

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

Operation of the 2020 Annual Replacement Plan (Section 3 of 11.1.3 of the ARP)

The Subdistrict's replacement water will be released from Rio Grande, Santa Maria or Continental Reservoirs, located in the Upper Rio Grande, at the direction of the Division 3 Division Engineer, to offset injurious stream depletions on the Rio Grande during the Plan Year. All Plan Year injurious stream depletions will be replaced in the time, location and

amount that they occur, beginning May 1, 2020**.** These releases of water from storage will be performed under the provisions contained in section 37-87- 103, C.R.S.

The ARP notes that Sections 37-80-120, 37-83-104, and 37-83-106, C.R.S., allow exchanges to occur between reservoirs without a decree and if recognized by the Division Engineer. Appropriate accounting between the Division Engineer's Office and Subdistrict No. 2 will occur on a regular and routine basis if these exchanges do occur. Any reservoir exchanges done in the Plan Year will be documented and reported in the 2020 Annual Report. The Division Engineer's Office will be notified in advance of any reservoir exchanges.

The ARP provides a Memorandum of Understanding that at times when the calling water right is in either the Rio Grande Canal, Farmer's Union Canal, San Luis Valley Canal, Prairie Ditch, or the Billings Ditch, Subdistrict No. 2 will pay Subdistrict No. 1 to release Santa Maria Reservoir Company water it currently has in storage to remedy ARP Well injurious stream depletions, pursuant to the decree issued in case 2013CW3002.

The ARP provides documentation that the Subdistrict has implemented Forbearance Agreements with nine major canals located on the Rio Grande, some of them for multiple year terms. At its sole discretion, the Subdistrict will exercise these agreements.

The ARP includes a resolution by the Centennial Ditch in Appendix N. The resolution allows replacement water to be carried through the Centennial ditch for delivery when the Rio Grande is dry below the Excelsior Ditch. The water will be measured and delivered directly to the Rio Grande at the point the Centennial Ditch can return water directly to the Rio Grande. That point is above any water right that may be injured while in priority. The Centennial Ditch must be adequate to efficiently deliver water around the dry stretch of river to the satisfaction of the Division Engineer prior to this being considered a viable option. The Centennial Ditch Company's water rights are senior enough to accomplish this carriage in any foreseeable situation (Priority Nos. 32 and 173).

The Response Functions did not predict stream depletions to streams other than the Rio Grande in amounts above the minimum threshold to reliably predict injury. Therefore, no replacements to any stream other than the Rio Grande will be made.

Further, the ARP indicates that at times when there is no requirement to deliver water to the Lobatos Gage to meet the requirements of the Rio Grande Compact, no water will be delivered to the lower reach of the Rio Grande for replacement of Injurious Stream Depletions to the Rio Grande Compact from the Subdistrict. The ARP indicates that the Closed Basin Project may continue to deliver salvaged water to the stream as directed by the CBP Operating Committee or other laws or policies.

In the alternative, the DWR agrees that the Subdistrict may replace these Injurious Stream Depletions after the irrigation season or when Compact deliveries are being made. The only

instances where the Subdistrict is not required to replace these Stream Depletions are when there is an excess of 150,000 acre-feet of credit for Colorado or Elephant Butte Reservoir has spilled. In these instances, water passing the Lobatos Gage will not result in Compact credit to Colorado. In all other circumstances, the replacement of Injurious Stream Depletions to the Rio Grande Compact will result in credit being given to Colorado, either for the current year or for future years.

The ARP mentions the Subdistrict plans to make potential requests for aggregation of depletions between Stream Reaches as part of the anticipated operation in 2020. The ARP also mentions the Subdistrict may request to aggregate depletions with other Subdistricts during the 2020 ARP year. Further, the Subdistrict describes the situation in which the preliminary annual review of the ARP year, reported March 1, 2021, determines one Subdistrict has underpaid depletions and another Subdistrict has overpaid depletions during the prior months of the ARP Year. The Subdistrict proposes they may make a request to the Division Engineer to aggregate the prior months' depletions between Subdistricts to remedy a Subdistrict's underpayment.

The Subdistrict anticipates 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 Closed Basin Project 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 may 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 is 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 Rio Grande Water Conservation District Board of Directors has passed a resolution to act as a financial guarantor for Subdistrict No. 2 to assure that all Post-Plan Injurious Stream Depletions will be replaced or otherwise remedied if Subdistrict No. 2 were to fail or otherwise be unable to replace Post-Plan Injurious Stream Depletions.

If Subdistrict No. 2 were to fail, the individual well owners in Subdistrict No. 2 would have to obtain plans for augmentation or take other measures to comply with the Groundwater Rules. Presumably, those plans would be required to replace these Post-Plan Injurious Stream Depletions into the future. In the interim, Subdistrict No. 2 or the Rio Grande Water Conservation District will remedy those Post-Plan Injurious Stream Depletions by supplying water or through agreements of the type contemplated by Colo. Rev. Stat. § 37-92-

501(4)(b)(I)(B), pursuant to which injury to water rights is remedied by means other than providing water to replace stream depletions.

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 2020 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. 1 Santa Maria Reservoir Company Shares (Section 1 of 11.1.4 of the ARP)

As of April 1, 2020, the Subdistrict reports that Subdistrict No. 1 has a balance of 15,250 acre-feet of fully consumable water held in Santa Maria and Continental Reservoirs. This water was accumulated from the lease of Santa Maria shares from 2011-2019. Subdistrict No. 2 has reached an agreement with Subdistrict No. 1, whereby Subdistrict No. 1 will release Santa Maria Reservoir Company water currently in storage to remedy injurious stream depletions caused by Subdistrict No. 2 ARP Wells when the calling right is a ditch that primarily serves Subdistrict No. 1 and recharges the Closed Basin unconfined aquifer. Subdistrict No. 2 will then pay Subdistrict No. 1 per acre-foot released. This agreement with Subdistrict No. 1 is projected to account for 550 acre-feet of injurious stream depletion replacement during the Plan Year, based on current hydrologic conditions. The agreement is provided as a Memorandum of Understanding as part of the ARP.

Rio Grande Water Conservation District Santa Maria Shares Currently Held in Santa Maria Reservoir (Section 2 of 11.1.4 of the ARP)

The Rio Grande Water Conservation District currently has a balance of 291.3 acre-feet of fully consumable water held in Santa Maria Reservoir. This water was accumulated from the lease of Santa Maria shares owned by members on the Monte Vista Canal in 2019. Subdistrict No. 2 is allowed to release up to 291.3 acre-feet from Santa Maria Reservoir to remedy injurious depletions caused by Subdistrict No. 2 ARP Wells. This is not a purchase of water in storage by the Subdistrict, but an agreement to use the water to pay depletions during the ARP Year.

Forbearance Agreements (Section 3 of 11.1.4 of the ARP)

Pursuant to section 37-92-501(4)(b)(I)(B), C.R.S., the Subdistrict has reached agreement with six ditches whereby they accept that, subject to the specific provisions of the forbearance 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 Rio Grande.

The projected acre-feet of forbearance is based on an analysis of the number of days each ditch was historically the calling right in years of similar hydrologic conditions as those predicted in 2020. The average number of days each ditch was estimated to the calling right was then multiplied by the average daily acre-feet of injurious stream depletions during the Plan Year, excluding months outside the irrigation season. This is not a limit, but a conservative estimate of their potential yield to show the Subdistrict's ability to remedy injurious stream depletions. It noted that these agreements allow the Subdistrict to remedy injurious stream depletions under the agreement or by providing water at the Subdistrict's sole discretion.

Closed Basin Project Production (Section 4 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 2020. 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 2020 allocation of the Closed Basin Project production will be 60% to the Rio Grande and 40% to the Conejos River.

At a meeting of Rio Grande Water Users Association held on March 25, 2020, the Board of Directors passed a motion to specifically allocate 4,000 acre-feet of the Rio Grande's share of the usable yield of the Closed Basin Project to replace the stream depletions under this ARP and in conjunction with Subdistrict No. 1, Subdistrict No. 2, Subdistrict No. 3 and Subdistrict 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 24, 2020. 855 acre-feet of water is available to Subdistrict No. 2 under this ARP to remedy the injurious stream depletions outside the irrigation season.

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 Closed Basin Project water in the 2020 ARP was provided as a supplement to the ARP.

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

Rule 8.4 of the Rules states that there is no Sustainable Water Supply requirement of the wells that withdraw groundwater from the alluvium of the Rio Grande within the Rio Grande Alluvium Response Area.

The letter of February 28, 2020 from the State Engineer regarding the Upper Rio Grande Model Domain notes that the "the aquifer in the area represented in the URG is an alluvial aquifer that has little to no storage capacity for use of the aquifer as a reservoir. The URG meets the presumption of Rule 8.5 and, therefore, a plan to achieve a Sustainable Water Supply for the wells within the URG will not be required as part of any Annual Replacement Plan(s)."

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

Requirements of this Rule are satisfied per Rule 8.4.

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

No listing of fallowed irrigated acres was submitted with this ARP.

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)

No listing of other proposed actions was submitted with this ARP

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 2020 is consistent with historical pumping information and streamflow forecast from the Division Engineer's projection and the NRCS Forecast.

2. 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. DWR directed the Subdistrict to utilize the 6P98 Response Functions in determining stream depletions for the Subdistrict.

3. The Upper Rio Grande Response Function was used to calculate the projected stream depletions for wells in that Response Area. The Subdistrict received approval from the State Engineer to use this Response Function.

4. The ARP identifies the sources, availability, and amounts of replacement water and remedies that the Subdistrict will use to remedy Injurious Stream Depletions during the coming year and demonstrates the sufficiency of such water to remedy such Injurious Stream Depletions:

Rio Grande

- The Subdistrict depletions are **923 acre-feet** during the irrigation season on the Rio Grande. The Subdistrict has 624 acre-feet available in storage in Continental, Santa Maria, and Beaver Reservoirs. The Subdistrict indicates they expect to yield 550 acre-feet of Subdistrict No. 1 SMRC water deliverable to Subdistrict No. 1 ditches and 292 acre-feet from forbearance agreements during the 2020 irrigation season. The total of On-Call replacement sources is 842 acre-feet. The submitted portfolio of water from storage in the 2020 Plan Year ARP indicates there is a deficit of 299 acre-feet of firm water to cover Injurious Stream Depletions *in the unlikely event that no Subdistrict No. 1 SMRC water or forbearance is available*. To resolve this concern my staff reviewed the historical calls on the Rio Grande for the ditches expected to generate forbearance amounts during the irrigation season for years similar in stream flow to the projection for 2020. A reasonable figure for potential available water under these circumstances is between 370 and 600 acre-feet.

- The Subdistrict depletions are **856 acre-feet** during the non-irrigation season on the Rio Grande. The Subdistrict has 855 acre-feet of Closed Basin Project water available to pay non-irrigation season depletions.

5. The Rio Grande Water Conservation District Board of Directors has passed a resolution to act as a financial guarantor for Subdistrict No. 2 to assure that all Post-Plan Injurious Stream Depletions will be replaced or otherwise remedied if Subdistrict No. 2 were to fail or otherwise be unable to replace Post-Plan Injurious Stream Depletions.

6. Rule 8.4 of the Rules states that there is no Sustainable Water Supply requirement of the wells that withdraw groundwater from the alluvium of the Rio Grande within the Rio Grande Alluvium Response Area.

7. The URG meets the presumption of Rule 8.5 and, therefore, a plan to achieve a Sustainable Water Supply for the wells within the URG will not be required as part of any Annual Replacement Plan

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

This ARP is hereby approved pursuant to the following Terms and Conditions:

1. This ARP shall be valid for the period of **May 1, 2020 through April 30, 2021**, unless otherwise revoked, modified, or superseded by me, a decree, or order of the court.

2. Contract wells will be covered to the extent of their permitted/decreed uses.

3. The Subdistrict must replace or remedy the Injurious Stream Depletions resulting from Subdistrict ARP Well groundwater withdrawals.

4. Deliveries (including transit losses) of stored water made available for the replacement of Injurious Stream Depletions shall be determined by the Division Engineer pursuant to this ARP and associated decrees.

5. If the limit is reached for any particular forbearance agreement, then the Subdistrict will need to begin replacement of Injurious Stream Depletions to that particular ditch or canal. All Subdistrict depletion payments will be considered in the limits that involve the same forbearance agreements with other Subdistrict.

6. The Division Engineer shall determine on an ongoing basis whether he can administer the operations under each forbearance agreement. If the Division Engineer cannot, then that operation shall cease. General Forbearance Protocols for the Rio Grande River System for 2020 were prepared by the Division Engineer. A copy of the protocols is included with this letter.

7. The Subdistrict shall provide daily replacement water accounting (including, but not limited to diversions, depletions, replacement sources, and river calls) on a monthly basis. The accounting must be emailed to the Division Engineer (Craig.Cotten@state.co.us), the Water Commissioner (sam.riggenbach@state.co.us), and the Subdistrict Coordinator (deborah.sarason@state.co.us), within 10 days after the end of the month for which the accounting applies. Accounting and reporting procedures are subject to approval and modification by the Division Engineer.

8. The Subdistrict must adhere to the terms and conditions of the SWSP(s) incorporated as part of the ARP. The use and inclusion of any new replacement water within the ARP is subject to SWSP approval or approved by the Water Division No. 3 Water Court for a change of water right. Prior to the use of any new replacement water, the State Engineer will evaluate for use as an amendment under this ARP.

9. All deliveries of replacement water shall be measured in a manner acceptable to the Division Engineer. The Subdistrict shall install and maintain measuring devices as required by the Division Engineer for operation of this approved ARP.

10. The Subdistrict must submit an Annual Review of its ARP pursuant to Rule 12.

11. The Subdistrict must replace or remedy all Injurious Stream Depletions caused by non-augmented pumping associated with Subdistrict ARP Wells.

12. The Subdistrict must comply with the Rules, the Subdistrict PWM, and this ARP.

Approval of this ARP does not authorize any change, increase, or expanded use of any water right or permit. Any change, increase, or expansion of a water right or permit will need to comply with existing decrees and or permits, the Confined Aquifer New Use Rules, the Measurement Rules, the Rio Grande Basin Groundwater Use Rules, and may require approval of the Water Court.

The approval of this ARP is made with the understanding that if the ARP proves insufficient to remedy Injurious Stream Depletions, the State Engineer has the authority to invoke the retained jurisdiction of the Division No. 3 Water Court.

I want to thank you for your cooperation and compliance with this approved ARP and for your continued cooperation and compliance in the future. 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

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

Exhibits:

A: General Forbearance Protocols for the San Luis Valley River Systems for 2020
B: Table 2.6

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

Exhibit A

Updated 4/30/2020

General Forbearance Protocols

For San Luis Valley River Systems

Subdistricts No. 1 (RA No 1), No. 2 (Rio Grande Alluvium) and No. 3 (Conejos) will begin to replace depletions to their affected streams on May 1st, the beginning of the 2020 ARP year. Along with these replacement of stream depletions, the State and Division Engineer may allow the owners of the calling ditch to 'forbear', or choose to not take the water that otherwise would have been allocated to that ditch in exchange for receiving payment in some other form. This forbearance is authorized under Colorado Revised Statute 37-92-501 (4)(b)(1)(B) which states that the State Engineer shall "Recognize contractual arrangements among water users, water user associations, water conservancy districts, ground water management subdistricts, and the Rio Grande water conservation district, pursuant to which... injury to senior surface water rights resulting from the use of underground water is remedied by means other than providing water to replace stream depletions."

In order to assist the Subdistrict, water users, and Water Commissioners in determining whether a forbearance contract will be allowed, the following are general guidelines regarding those forbearance contracts for the 2020 ARP year:

- A water right must be the calling water right in order to forbear. In other words, the ditch must be legally and physically entitled and able to receive and divert the replacement water that would have been placed into the river or stream reach if that ditch owner would have decided to take the water available instead of forbearing.

- The owner of a ditch that cannot physically divert all of the water under its priorities due to an inadequate ditch size or other physical restrictions cannot forbear for the amount that the ditch in not able to divert. However, this ditch may be able to forbear in the amount that it is physically and legally able to divert.

- The owner of a ditch that physically is not able to divert the replacement water entitled to it at certain times of the year (for instance during low flow periods), due to an inadequate diversion dam or headgate, or other reasons, cannot forbear during that time of year unless and until the ditch or associated structures are repaired and physically able to take water.

- If it is certain that the owner(s) of a ditch would have declined to take water in their ditch on a given day that they were in the priority to take water, for instance if that owner cannot take their full priority due to a break in the ditch bank, or if the owner has not called for that water right in the ditch, etc., the ditch owner cannot forbear for that water right on that day.

- Forbearance will be allowed on water rights that are not large enough to cover the entire daily replacement amount. A ditch may be forbearing only a portion of the total daily replacement amount due to the size of the water right. In such cases there may be several water rights in

various ditches that are forbearing at the same time in order to meet the entire replacement obligation of the Subdistrict.

- A ditch may operate under a partial forbearance contract with the understanding that the ditch company, subdistrict or other appropriate party will manage the partial flow and partial forbearance at the heading and down ditch to the satisfaction of all water rights owner in that ditch that are in priority on that day. The manager of the ditch with partial forbearance must inform the water commissioner, prior to any operations, the manner and the capability in order to be in compliance, otherwise a water delivery will be required.

- Ditch with a forbearance contract must have accurate, reliable and operational measurement devices on the ditch.

- On a day when water could be placed into the river system for replacement of injurious depletions, and a section(s) of the stream is dry such that this replacement water would not have made it to the calling priority ditch, forbearance by that ditch(es) will not be allowed. During times of dry stretch(es) on the river system, each live stretch will be treated as its own calling system. Only the stretch(es) that includes an RGDSS modelled stream reach will have the ditch(es) eligible for forbearance. If water delivery could not make it physically to any structure in a particular RGDSS reach, then no forbearance is allowed and a water delivery will be required

- A forbearance that results in a section of the river drying up, cannot be used to create a futile call. The river must be administered to replicate what conditions would have taken place had a continuous deliverance of water taken place.

Exhibit B

Table 2.6

Rio Grande Alluvium Response Area & Upper Rio Grande Response Area
Combined Monthly Stream Depletions for Plan Year

(units of ac-ft)

	Rio Grande Alluvium Response Area Total												
	2020								2021				
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)
Rio Grande Del Norte-Excelsior	106	99	101	103	102	116	126	138	139	126	125	117	1,399
Rio Grande Excelsior-Chicago	42	35	32	21	23	30	37	44	45	43	49	42	443
Rio Grande Chicago-State Line	6	-2	-6	-17	-11	-8	-5	-2	-5	-4	0	-4	-57
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	154	132	127	107	114	138	158	180	179	165	174	155	**1,785**

Notes for columns:

(1) Stream reach

(2)-(13) Monthly Stream Depletions in acre-feet

(14) Total Plan Year Stream Depletions in acre-feet