



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

**RE: 2021 ANNUAL REPLACEMENT PLAN APPROVAL: SPECIAL
IMPROVEMENT SUBDISTRICT NO. 1 OF THE RIO GRANDE
WATER CONSERVATION DISTRICT**

Dear Mr. Simpson:

Thank you for your April 15, 2021 submission of the Special Improvement District No. 1'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. A copy of this approval will be available next week on the DWR website at:

<https://dwr.colorado.gov/division-offices/division-3-office>

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

Enclosed, please find my approval of the 2021 ARP.

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

cc: Division 3



Subdistrict No. 1 ARP Approval: Plan Year 2021

Review, Findings, and Approval of Subdistrict No. 1's 2021 Annual Replacement Plan

Background

Special Improvement District No. 1 (“Subdistrict”), a political subdistrict of the Rio Grande Water Conservation District (“RGWCD”), timely submitted its proposed Annual Replacement Plan (“ARP”) pursuant to its Second Amended Plan as amended on June 6, 2017 and approved by the State Engineer on October 16, 2017 (“Second Amended PWM”), which revised the Amended Plan of Water Management (“Amended PWM”) decreed by the Division No. 3 Water Court in Case Nos. 2006CV64 and 2007CW52¹ (“May 2010 Decree”) and upheld by the Colorado Supreme Court in Case No. 10SA224.²

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 to the State and Division Engineers on April 15, 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. In the past I have considered all letters, comments, and other objections submitted regarding the adequacy of the ARP. 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 May 2010 Decree and contained in Appendix 5 of the Second Amended PWM.

DWR Review

As set forth in the May 2010 Decree, I must determine whether the ARP presents “sufficient evidence and engineering analysis to predict where and when Injurious Stream Depletions will occur and how the Subdistrict will replace those Injurious Stream Depletions to avoid injury to senior surface water rights” (May 27, 2010 Decree, Term and Condition #2). Also, “[t]he Annual Replacement Plan ...shall identify the sources, availability and amounts of replacement water the Subdistrict will use to remedy Injurious Stream Depletions during the coming year and shall demonstrate the sufficiency of such water to remedy such Injurious Stream Depletions” (May 2010 Decree, Term and Condition 6). Finally, I must review the ARP pursuant to the statutory mandates, constitutional requirements, Rules and Regulations³

¹ *In the matter of the Rio Grande Water Conservation District*, Findings of Fact, Conclusions of Law, Judgment and Decree, Case Nos. 06CV64 and 07CW52, District Court, Water Division No. 3, Colorado (May 27, 2010).

² *San Antonio, Los Pinos and Conejos River Acequia Preservation Ass'n v. Special Improvement Dist. No. 1 of Rio Grande Water Conservation Dist.*, 270 P.3d 927 (Colo. 2011).

³ *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*, Case 2015CW3024, (“Rules”) were approved as promulgated in the March 15, 2019 ruling of the Division No. 3 Water Court.

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adopted in Division No. 3, and any letters, comments, or other objections submitted by water users regarding the adequacy of the ARP. As noted above no letters, comments, or other objections to the 2021 ARP were received.

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 on as a supplement to the 2021 ARP. Appendix A lists 3,524 wells. One well was removed from the 2020 list because it was a duplicate WDID for another well.

The Subdistrict accepted contracts from 64 wells in 2021, as shown in Appendix P. Thirteen of these wells already existed on previous ARP well lists and two wells did not have WDIDs at the time the ARP was submitted.

The contract wells accepted by the Subdistrict in 2021 are listed in Appendix B. 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 will be notified by separate correspondence. DWR finds that the uses of several of the contract wells cannot be covered by the 2021 ARP. The WDIDs of these wells are 2014319 (permit for domestic and lawn), 2014575 (permit for domestic and stock use), 2012935 (decree for stock use).

The following WDIDs cannot be covered for the contracted uses, but are acceptable for the petitioned use of irrigation, 2706179, 2014530, 2014533.

WDID 2013377 was listed as a contract well, but the WDID is incorrect. The correct WDID is 2013877 based on ownership and past records. WDID 2706340 was listed as a contract well, but appears to be the same structure as WDID 2706141 which is already petitioned into the Subdistrict.

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 can be conditionally accepted. Should the SWSP be denied during the ARP Year, the well can no longer be covered by the ARP and the owners will be notified. See attached contract well review table.

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Should any wells accepted as contract wells for this ARP approval 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 will be notified of this conditional acceptance by separate correspondence. The Subdistrict will be copied on all separate correspondence sent for these purposes.

Great Sand Dunes National Park Service Contract

The Subdistrict continued a contract made in 2020 with the Great Sand Dunes National Park Service (NPS) (see Appendix O). The NPS wells (WDIDs 3505620, 3505052, 3505053) lie outside the Subdistrict No. 1 Response Area, but inside the RGDSS Model Domain in an area for which no RGDSS Response Function was developed. Therefore, under Rule 7.5, the NPS provided a Glover analysis as an alternative to determine stream depletions due to NPS groundwater use.

The analysis was determined to be an acceptable and reliable method of estimating stream depletions caused by NPS wells for purposes of the Subdistrict ARP. The Subdistrict also supplied a letter dated January 14, 2021 describing DWR's acceptance of a defined sustainability metric for NPS as required by DWR's Rules and Regulations³. Tables showing historical pumping and estimated Net Groundwater Consumptive Use and monthly net stream depletion for the NPS wells are included as an Exhibit with this letter.

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

The database of wells the Subdistrict 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 Database of Subdistrict Wells includes some wells that are part of an augmentation plan. The augmentation plans vary in their conditions, but generally they coordinate surface rights and other wells in administration of their respective augmentation plan. They are included in the list for fee determination. If any portion of their pumping is not covered by their individual augmentation plans, it is subject to the Subdistrict fees and the Subdistrict will replace Injurious Stream Depletions due to that pumping as part of this ARP. Some wells in this list had independent water rights prior to becoming involved in an augmentation plan. The Second Amended PWM does not allow expansion of "any existing beneficial use or allow a water right to be used for a beneficial use not contained in a valid Decree or Permit." (Second Amended PWM at 2.5.1)

Paragraphs 7 and 8 on page 43 of the April 10, 2013 Decree⁴ clarified that the Subdistrict is required to include a list of Augmentation Plan Wells including both those wells that are listed as Subdistrict Wells but that have augmentation plans associated with them as well as

⁴ *Concerning the Office of the State Engineer's Approval of the Plan of Water Management for Special Improvement District No.1 of the Rio Grande Water Conservation District, Findings of Fact, Conclusions of Law, Judgment and Decree, Case Nos. 06CV64 and 07CW52, District Court, Water Division No. 3, Colorado (April 10, 2013).*

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those wells located within the Subdistrict Territory that have augmentation plans and that will operate independently of the Subdistrict. This list of Augmentation Plan Wells must include the well WDID number, the structure name, the owner's name, the augmentation plan decree case number, an explanation of the augmentation plan and an explanation of the way the Subdistrict treated the Augmentation Plan Wells. The Subdistrict must also include a map with the locations of both types of Augmentation Plan Wells indicated on the map and hyperlinks to the court decrees for each court-decreed augmentation plan.

The Plan of Augmentation decreed in 82CW0017 known as the SRS Augmentation Plan will not be in operation for 2021. All wells associated with the decree will operate as Subdistrict No. 1 wells as part of the 2021 ARP.

Appendix B of the ARP contains the list of augmentation wells, a map of the fields associated with those augmentation plans, as well as a description of the details regarding each augmentation well.

82CW0017 SRS Augmentation Plan

The Subdistrict submitted an addendum to the 2020 ARP 4/27/2020 stating:

- 1) The Plan of Augmentation decreed in 82CW0017 known as the SRS Augmentation Plan will not be in operation during 2021. The wells associated with the Plan of Augmentation are 2008188, 2008189, 2008190, 2008191 and 2008192.
- 2) All the wells associated with the 82CW0017 decree will operate as Subdistrict No. 1 Wells as part of the 2021 ARP. Subdistrict No. 1 will remedy injurious stream depletions caused by all the groundwater withdrawals from these wells and meet requirements for aquifer sustainability in compliance with the rules and regulations for Water Division No. 3 promulgated by the Colorado State Engineer and the Plan Of Water Management.

I have reviewed Appendix A and Appendix B of the ARP and consulted with staff and, after adjusting the list for wells whose contracts were denied, find it to be an accurate inventory of Subdistrict Wells and augmented wells that meets the requirements of the May 2010 and April 2013 Decrees.

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, 2021, for the 2020 Water Administration Year were 246,309 acre-feet. The Subdistrict bases their projections on sprinkler groundwater withdrawals because only a small percentage is applied through flood irrigation and "Other" wells.

Subdistrict Well Metered Sprinkler Pumping (acre-feet)
Entered in Table 2.1 of the ARP

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
326,237	260,952	230,448	238,399	206,700	237,035	237,048	262,768	213,504	246,309

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Based on projected Subdistrict operations, weather predictions and antecedent conditions, the ARP anticipates that 2021 well pumping by sprinkler will be 240,000 acre-feet.

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)

Each irrigation season, the RGWCD conducts a field survey of the irrigated acreage on the Valley floor within the RGWCD boundaries to record crop types grown by field. Table 3.1 is the summary of “irrigated acres, cropping patterns and irrigation methods” on parcels that are part of this ARP’s Subdistrict Farm Units. The data was derived from the irrigated agriculture field survey by spatially “capturing” any fields that lie within any of the landowner parcels that are part of the Farm Units.

Table 3.1 of the ARP shows that the Subdistrict categorized ±170,562 acres in 2020. Of this total, ±153,030 acres were irrigated and ±17,532 acres were fallowed or in CREP programs. It is noted that “Potatoes”, “Grain”, and “Alfalfa” are the highest acreage categories, followed by “Cover Crop” with ±22,525 acres.

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

Spreadsheets provided by the Subdistrict describe the Consumptive Use percentage for each of the contract wells in the list in Appendix P of the ARP. The historical pumping for the wells that are not irrigation wells is included in Table 2.4 as “Other Pumping”. The Response Function spreadsheet provided with the ARP indicates the weighted average Consumptive Use percentage of the “Other” wells is 51%. The projected pumping for 2021 is 4,100 acre-feet.

Great Sand Dunes National Park Service Contract

The historical pumping for the NPS wells from 2011 through 2020 is shown in the table below.

NPS Well Metered Pumping (acre-feet)									
2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
9.95	10.48	9.74	10.5	10.79	16.36	7.28	5.60	12.94	11.62

The estimated the projected pumping for 2021 is 10.01 acre-feet. The Consumptive Use percentage is 10%

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

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Necessary to Evaluate the Proposed ARP (Section 8 of 11.1.1 of the ARP)

Farm Unit Data (Sub-Section a)

Information collected for the Subdistrict Farm Units included identification of the wells and surface rights allocated to the irrigated fields on the lands comprising each Farm Unit. A summary of the ditches and pro rata shares of surface water allocated to fields in this ARP's Farm Units is included in Appendix E. This represents the "surface water source" for Subdistrict No. 1. The groundwater source is represented by the database of Subdistrict Wells described in Section 11.1.1, above, and found in Appendix A.

Total Diversion by Ditch (Sub-Section b)

In accordance with Paragraph 2.D of Appendix 1 of the Second Amended PWM, Table 3.2 of the ARP shows diversions to the ditch service areas in the Subdistrict. The diversions shown are from DWR's 2020 diversion records and represent the total irrigation water for the ditches for the 2020 irrigation season, but only a portion of the water for some ditches is delivered within the Subdistrict.

Ditches and Pro Rata Shares (Sub-Section c)

The pro rata surface water allocated to the Subdistrict Farm Units is shown in Appendix E of the ARP.

Surface Water Credit (Sub-Section d)

The amount of Surface Water Credit exchanged between farm units for the 2020 fees was 28,532 acre-feet. The ARP notes that the surface water exchanged for 2021 is not available until May and therefore was not included in the ARP.

Hydraulic Divide Study (Sub-Section e)

The Second Amended PWM clarifies that the Subdistrict will continue its efforts to restore and maintain the historical Hydraulic Divide, in order to reduce stream depletions to the river from well pumping within the Subdistrict. The Hydraulic Divide is a shallow groundwater divide that separates the Closed Basin in the San Luis Valley from the remainder of the Rio Grande Basin. The Hydraulic Divide is found to the north of the Rio Grande in the area generally from Del Norte to Alamosa. Recent water level measurements in wells along the north side of the Rio Grande indicate that the Hydraulic Divide has retreated south to the Rio Grande or very near the river.

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Davis Engineering Service, Inc. prepared a report entitled “Engineering Report on San Luis Valley Groundwater Level Study” from data initially collected in the spring of 2007 which described both the historical evidence of the Hydraulic Divide and the current location and condition of the divide. The study wells have continued to be measured annually to add to the study. Maps displaying the interpreted groundwater contours and location of the Hydraulic Divide prepared from the 2020 groundwater measurements are included in Appendix K of the ARP.

Other (Sub-Section f)

The following supplemental information needed to evaluate the 2021 ARP was provided as a supplement to the ARP:

1. Resolution from RGWCD approving the Subdistrict 2021 ARP.
2. Response Function spreadsheet supporting the calculations submitted in the ARP.
3. The list of Subdistrict Wells included in the 2021 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 2021 ARP.
5. Copies of the new CREP contracts made since the 2020 ARP.
6. Updated Pumping and Depletion tables for GSDNP wells.

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

For the purpose of this ARP, the RGDSS Groundwater Model (version 6P98) has been the basis for the Response Functions used in calculating the stream depletions caused by the Subdistrict Wells’ groundwater withdrawals. The Response Function spreadsheet contains outputs of total depletions for the Plan Year and a breakdown of monthly depletions for three reaches of the Rio Grande.

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”) (Appendix C of the ARP). The annual streamflow forecasts included in the ARP for the Rio Grande and Conejos River basins are those included in the April 8, 2021 Division Engineer’s Rio Grande Compact Ten Day Report (Appendix C of the ARP).

2021 Stream Flow Forecast - Rio Grande (Section 1 of 11.1.2 of the ARP)

There was no difference between the NRCS and the Division Engineer’s forecasts as shown in the following table. The April - September flow for the Rio Grande is 365,000 acre-feet for use in the Response Functions for 2021.

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Rio Grande Stream Flow Forecast

Rio Grande Stream Flow Analysis	Apr-Sep Forecast (acre-feet)	% of avg	Estimated Additional (acre-feet)	Jan - Dec Forecast (acre-feet)
	(1)	(2)	(3)	
NRCS, 4/1/2021	365,000	71%		
Division Engineer, Ten Day, 4/8/2021	365,000	71%	70,000	435,000

- (1) projected 50% 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

2021 Stream Flow Forecast - Conejos River (Section 2 of 11.1.2 of the ARP)

The Subdistrict reviewed the NRCS forecast (projected 50% exceedance streamflow at the Conejos River near Mogote, Los Pinos River near Ortiz, and San Antonio River at Ortiz gaging stations for the period April-September) and data collected from the Division Engineer's Rio Grande Compact Ten Day Report. There was no difference between the NRCS and the Division Engineer's forecasts as shown in the following table. The April - September flow for the Conejos is 207,500 acre-feet for use in the Response Functions for 2021.

Conejos Stream Flow Forecast

Conejos Stream Flow Analysis	Apr-Sep Forecast (acre-feet)	% of avg	Estimated Additional (acre-feet)	Jan - Dec Forecast (acre-feet)
	(1)	(2)	(3)	
NRCS, 4/1/2021				
Conejos River near Mogote	153,000	79%		
Los Pinos River near Ortiz	48,000	66%		
San Antonio River at Ortiz	6,500	42%		
TOTAL	207,500			
Division Engineer, Ten Day, 4/8/2021				
Conejos River near Mogote	153,000	79%		
Los Pinos River near Ortiz	48,000	66%		
San Antonio River at Ortiz	6,500	42%		
TOTAL	207,500		22,500	230,000

- (1) projected 50% exceedance streamflow at the gaging station
- (2) NRCS 30-yr Average Flow: Conejos-194,000, Los Pinos-73,000, San Antonio-15,600, Rio Grande-515,000, Alamosa-68,000
- (3) January through March and October through December

Projected Annual Recharge Credit (Section 3 of 11.1.2 of the ARP)

The ARP next indicates projected recharge credit as an offset to projected pumping. Major ditches that bring surface water into the Subdistrict have recharge decrees, as detailed in the ARP.

Paragraph 3.C of Appendix 1 of the Second Amended PWM requires that recharge credit be based upon anticipated hydrologic conditions for the 2021 ARP Plan Year using historical

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diversion records and the terms of the recharge decrees. The ARP developed trend lines for each canal/ditch by plotting historical annual river flows and corresponding recharge credits, in order to provide a reasonable method for predicting probable recharge credit quantities for 2021. The mathematical process used to develop the trend lines developed for each of the four canals/ditches and resulting equations describing the trend lines are included in Appendix D.

The projected recharge credits were reduced based on the pro-rata shares per 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%), which is also outlined in Table 2.2 of the ARP.

Table 2.2
Calculated Projected Recharge Decree Credits for Subdistrict No. 1
During Current Irrigation Year
 (Units in acre-feet)

	Rio Grande Canal	San Luis Valley I.D.	Prairie Ditch	SLV Canal	Totals
Total Consumable	80,658	8,930	6,780	9,881	106,249
% Within Subdistrict No. 1	93.05%	100%	99.20%	78.82%	
Total Consumable Within Subdistrict No. 1	75,053	8,930	6,725	7,788	98,496
Surface Water Through Sprinklers @83%	-3,073	0	-152	-68	-3,293
Surface Water Used for Flood @60%	-111	0	0	0	-111
Totals	71,869	8,930	6,573	7,720	95,092

Projected recharge decree credits for the Subdistrict for 2021 are calculated as 95,092 acre-feet.

Projected Plan Year Stream Depletions (Section 4 of 11.1.2 of the ARP)

Subdistrict staff used the Response Functions developed under RGDSS Groundwater Model Phase 6P98 for predicting injurious depletions to the Rio Grande during the 2021 Plan Year. A copy of the Response Function spreadsheet was provided to DWR as a supplement to the 2021 ARP. The tables in the spreadsheet have been updated to include the Subdistrict's historical operations and estimated 2021 values.

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.

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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 of the ARP.

Historical ARP Well groundwater withdrawal values were entered in Table 2.1 for years 2011 through 2020. Projected ARP Well groundwater withdrawal values were used for 2021. The projected Net Groundwater Consumptive Use for the Plan Year is 106,203 acre-feet.

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

The Response Functions calculated 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. The total depletions are 709 acre-feet, which includes negative depletions of 123 acre-feet in Stream Reach 3. The locations of the stream depletions and monthly quantities are also tabulated in Table 2.5.

Post-Plan Stream Depletions are estimated to accrue to impacted streams for approximately 19 years. Based on predictions from the Response Functions, Table 2.4 of the ARP shows there would be a total of 1,440 acre-feet of Post-Plan Stream Depletions.

Great Sand Dunes National Park Service Contract

The Net Groundwater Consumptive Use is 1.16 acre-feet for the NPS wells. This represents 100% of the depletions from the current year projected pumping and is considered to be a conservative representation.

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 2021 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 4.1 of the ARP.

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, less any water used at the end of the 2020 Plan Year not reflected in these totals.

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Subdistrict No. 1 Replacement Water Reservoir Storage Sources (acre-feet)

	Water Right Name	Submitted in ARP	Approved in SWSP's ²	Remaining 4/30/2021 & Approved for 2021 ARP ³
SWSP	In Storage			
5346	Williams Creek Squaw Pass (Navajo Devel.) ¹	122.7	2,584.8	117.5
5346,5506	Williams Creek Squaw Pass (Farmers Union) ¹	56.49	56.49	
5346,5506	Tabor Ditch No. 2 & Enlargement (SLVID) ¹	5.2	105.3	
5346,5506	Tabor Ditch No. 2 & Enlargement (CPW) ¹	0	272.5	
5346,5506	Pine River Weminuche Pass (SLVWCD)	1,000.0	500+500	1000.0
5346,5506	Treasure Pass TM Diversion (Underwood/Cook)	730.76	432.3+ 298.5	730.7
5346,5506	Treasure Pass TM Diversion (Klecker Ranch)	100.0	100	100
5346,5506	Piedra River, TM, Piedra Water Rights (CPW)	500.0	500	500.0
	Total Transbasin	2,515		2,448
13CW3002	Santa Maria Reservoir Co Leases			
5491	2011 - 1950 shares @ 0.9233 af/share	1,252.11	1,800	
5491	2012 - 3270.8 shares @ 0.9443 af/share	1,252.11	3,089	
5491	2013 - 3235.8 shares @ 0.72 af/share	2,328.8	2,329	
5491	2014 - 3320.8 shares @ 1.288 af/share	4,278.2	4,278	
5491	2015 - 3095.8 shares @ 1.86 af/share	5,758.2	5,758.2	
5491	2016 - 1645.0 shares @ 0.968 af/share	1,792.36	1,592.36	
5491	2017 - 835.0 shares @ 1.084 af/share		905.14	
5491	2018 - 210.0 shares @ 0.618 af/share		129.78	
5491	2019 - 180.0 shares @ 2.638 af/share	474.84	474.84	
	Total SMRC	15,885		15,120
	In Storage - Total Water Available	18,400		17,568

¹ Several Transbasin replacement supplies included in previous ARPs were completely consumed during the 2018 Plan Year. They are listed in the above table for tracking purposes.

² Amounts shown are full amounts that were approved in SWSPs.

³ Current Water Commissioners Reservoir records

Subdistrict No. 1 Replacement Water Forbearance & Closed Basin Project Agreements (acre-feet)

WDID	On Call	Limit	Expected Yield	Approved for 2021 ARP
	Forbearance			
	Rio Grande Canal	2,000		
	San Luis Valley Canal	400		
	Commonwealth	No limit		
	Centennial Ditch	No limit		
	Excelsior Ditch	1,000		
	RG Lariat Ditch	500		
	Total On Call- Forbearance	3,800	200 to 800	Up to 3,800

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	CBP Allocation (as of April 2021)	3,800	462	462
	Total On Call- Non-Irrigation Season		462	Up to 462

Great Sand Dunes National Park Service Contract

NPS has acquired forbearance agreements with The Nature Conservancy, Great Sand Dunes National Park, Colorado Division of Parks & Wildlife (San Luis Lakes), and Rio Grande Water Conservation District for the 2021 ARP Year. The agreements represent all affected water rights holders on Medano Creek. It is expected all depletions to Medano Creek during the 2021 ARP Year will be remedied through these forbearance agreements.

Operation of the 2021 Annual Replacement Plan (Section 2 of 11.1.3 of the ARP)

Subdistrict water that is currently in storage will be released from Continental or other Reservoirs in the upper Rio Grande at the direction of the Division No. 3 Division Engineer, in time and amounts required to offset Injurious Stream Depletions as shown in Table 2.6 of the ARP. All 2021 Plan Year Injurious Stream Depletions will be replaced or remedied in the time, location and amount that they occur, beginning May 1, 2021. These releases of water will be performed under the provisions of section 37-87-103, C.R.S. In addition, the ARP states that since the most current RGDSS Groundwater Model (6P98) does not predict depletions by Subdistrict Wells to streams other than the Rio Grande, the Subdistrict will not make replacements to any stream other than the Rio Grande.

The ARP mentions the Subdistrict may make a request to the Division Engineer to release replacement sources currently held in reservoirs to the unconfined aquifer for temporary storage. The Subdistrict may submit an application for an SWSP describing details and justification of how the Subdistrict anticipates this type of operation. The SWSP would then be reviewed for potential approval and implementation.

The ARP notes that sections 37-80-120, 37-83-104, and 37-83-106, C.R.S. allow for exchanges to occur between reservoirs without a decreed exchange right, if recognized by the Division Engineer. The ARP states that appropriate accounting between the Division Engineer's Office and the Subdistrict will occur on a regular and routine basis as these exchanges occur and that they will be documented and reported in the 2021 Annual Report. The Division Engineer's Office will be notified in advance of these exchanges.

The ARP provides documentation that the Subdistrict has renewed forbearance agreements for the 2021 Plan Year with six canals located on the main stem of the Rio Grande with whom they had agreements during previous Plan Years. The Subdistrict describes a yield of 200 to 800 acre-feet of yield from forbearance in the Operations section of the ARP. This is a much more realistic figure than what is listed in the table of replacement sources.

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

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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).

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 2021. The ARP also mentions the Subdistrict may request to aggregate depletions with other Subdistricts during the 2021 ARP year.

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 ARP notes that the Subdistrict has acquired multiple years' worth of depletion replacement water that is currently in storage and available for release. That volume exceeds the amount needed to cover the current and total calculated post-plan stream depletions to the Rio Grande. If Subdistrict No. 1 were to fail, the individual well owners of the former Subdistrict No. 1 would have to obtain plans for augmentation or take other

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measures to comply with present or future rules and regulations governing groundwater withdrawals. Presumably, those plans would be required to replace these post-plan depletions into the future. In the interim, Subdistrict No. 1 would provide water to remedy injurious post-plan depletions.

Therefore, the Subdistrict does not believe that a financial guarantee agreement provided by the Rio Grande Water Conservation District is necessary to assure that all post-plan depletions will be remedied if Subdistrict No. 1 were to fail or otherwise be unable to replace injurious post-plan depletions. DWR understands that if the Subdistrict otherwise ceases operations, the water in storage will remain under control of the Subdistrict and/or the RGWCD and will be available to remedy the post-plan injurious depletions under the direction of the Division Engineer.

Anticipated Funding for the Plan Year (Section 3 of 11.1.3 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

Forbearance Agreements (Section 1 of 11.1.4 of the ARP)

In accordance with section 37-92-501 (4) (b) (I) (B) C.R.S., the Subdistrict has reached forbearance agreements with six entities (Appendix H of the ARP), for a total of up to 3,900 acre-feet. A summary of the amounts contracted and the expected yield are found in the table of replacement sources above.

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. The Subdistrict indicates they expect to yield up to 800 acre-feet from these agreements during the 2021 irrigation season. However, the portfolio of water as determined in the 2021 Plan Year ARP indicates sufficient firm water to cover Injurious Stream Depletions in the event that no forbearance is available.

Closed Basin Project Production of Calendar Year 2021 (Section 2 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

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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. 462 acre-feet of water is available to Subdistrict No. 1 under this ARP. The resolution from RGWCD allowing the Subdistrict to use Closed Basin Project water in the 2021 ARP was provided as supplemental information. Closed Basin Project water was approved as a replacement source by the Division No. 3 Water Court in the April 2013 Decree (Page 41, Paragraphs 5 - 6).

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 of the ARP)

Unconfined Aquifer Change in Storage Volumes (Sub-Section a)

Appendix J of the ARP shows a tabulation of groundwater levels measured in unconfined and confined wells both within the boundaries of Subdistrict No.1 and the study area for the Change in Unconfined Aquifer Storage - West Central San Luis Valley for the study period, as required by the Second Amended PWM. A tabulation of measured values obtained during the previous 12 months is also included.

The Second Amended PWM includes a required objective of recovering groundwater levels to the extent necessary to achieve unconfined aquifer storage levels between 200,000 and 400,000 acre-feet below the storage level that existed on January 1, 1976. This is measured by a monthly study titled "Study of the Change in Unconfined Aquifer Storage" and utilizes measured groundwater levels from RGWCD monitoring wells located throughout the study area which is approximately the same area included within the Subdistrict.

The calculated monthly change in unconfined aquifer storage volumes has been provided as Figures 6.1, 6.2 and 6.3 of the ARP. Based on measurements through April 12, 2021, the ARP indicates that the change in Unconfined Aquifer storage was -1,187,697 acre-feet on an accumulated month basis. As described in the ARP, the 5-year running average of the accumulated change in storage through December 1, 2020 was -1,073,752 acre-feet. The December 1, 2020 5-year running average of the accumulated change in storage value was 673,752 acre-feet below the lowest goal level.

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The Second Amended PWM states that “[a]ll measurements used to gauge success in reaching Unconfined Aquifer Storage goals will be based on a five-year running average of annual storage levels derived from the average of monthly levels” (Second Amended PWM at 3.4.7). In 2020, the aquifer lost ±115,379 acre-feet. The Subdistrict attributed this to the lack of snowpack and missing monsoons. The highest enrollment in all Subdistrict following programs occurred last year, helping to reduce the drawdown on the aquifer. Subdistrict members are seeking to enroll in following programs again this year, anticipating only an average water supply prediction.

Projections of Unconfined Aquifer Change in Storage Volumes (Sub-Section b)

As part of the ARP, it was recommended the Subdistrict include a plan to achieve and maintain a sustainable aquifer that looks out for a period of at least 5 years and projects where the aquifer will be from those efforts. Figure 6.1 is a graph showing the amount of recovery needed to reach the Subdistrict’s target for compliance with the sustainability metric by 2030. The recovery amount needed to reach the lower target level of -400,000 acre-ft is estimated to be 92,968 acre-ft each year. A line has been added to the graph that shows the required projected recovery to meet the lower target if the Subdistrict has an average water year beginning in February 2020.

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

Fallowing irrigated land is one way to attain the storage goals discussed above. The Second Amended PWM (paragraph 3.4.4) states that “up to 20,000 acres of land previously irrigated in 2000 must be withdrawn from irrigation by December 31, 2016 or a reduction in annual consumptive use of groundwater withdrawals in the amount of 40,000 acre-feet per year. In a similar manner, if the goals in Section 3.4.3.3. above are not achieved, up to 30,000 acres in total must be designated for reduction by December 31, 2018 or a reduction in annual consumptive use of groundwater withdrawals in the amount of 60,000 acre-feet per year. If the goals in Section 3.4.3.3. above are not achieved, up to 40,000 acres in total must be designated for reduction by December 31, 2021 or a reduction in annual consumptive use of groundwater withdrawals in the amount of 80,000 acre-feet per year” in order to progress toward the Unconfined Aquifer storage goal.

RGWCD Staff have been compiling irrigated acreage coverage for the calendar year 2000 by digitizing past RGWCD irrigated cropland census maps for the area within the Subdistrict’s boundary. This information will serve as a basis to determine the previously irrigated lands in the calendar year 2000 that have been fallowed as a part to the Second Amended PWM through the Conservation Reserve Enhancement Program (“CREP”), other conservation programs or the Subdistrict conservation programs.

To date, 29,343 acres have been fallowed for the 2021 ARP. Further DWR understands that the Subdistrict has amended its assessments to generate funds for further incentives for

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reductions in consumption to meet the long-term sustainability goals of the Subdistrict. Based on these comparisons and actions, it appears that the December 31, 2018 guidelines of up to 30,000 acres or 60,000 acre-feet per year of consumptive use of groundwater withdrawals has been substantially achieved. However, it is recognized that acreage is fallowed for many different reasons in any given year and this general observation may not represent acreage taken out of production permanently.

While Subdistrict efforts have achieved a significant reduction in pumping, the reduction in pumping has not yet resulted in sustained increases in aquifer levels due to high volumes of groundwater pumping in extraordinarily dry years.

2021 Contracted Conservation Reserve Enhancement Program Lands (Sub-Section a)

Local USDA FSA field offices located in Alamosa, Rio Grande, and Saguache Counties and the Subdistrict staff implemented the Rio Grande CREP signup process beginning in May 2013 per the 2008 Farm Bill. As of April 1, 2020, the Subdistrict has finalized FSA CRP-1 Contracts for 4,331 acres in Permanent Water Retirement and 5,799 acres in 15 Year Water Retirement terms for a total of 10,129 acres reducing water consumption by approximately 20,000 acre-feet per year. (Totals have been corrected in the table below.)

A map and legal descriptions for the existing CREP parcels are included in Appendix L along with the wells and surface rights associated with the parcels. A summary of the acreage under CREP contracts is shown below. The new CREP contracts were provided in a supplement to the 2021 ARP.

2021 Subdistrict No. 1 CREP Enrollment			
Rio Grande River CREP Enrollment	Permanent	Temporary	Total
Year			
2014	918.6	1,049.9	1,968.5
2015	680.4	1,290.8	1,971.2
2016	1,164.0	751.2	1,915.2
2017	0	479.7	479.7
2018	241.0	1,509.98	1,750.98
2019	0	597.02	597.02
2020	604.6	120	724.6
2021	722.2		722.2
TOTAL	4,331	5,799	10,129

Temporary Land Retirement - Fallow (Sub-Section b)

The Subdistrict has reached an agreement with 11 producers to fallow approximately 4,316 acres into the temporary fallow program. There are three different increments a field can enroll in: 1 field for 4 years, 4 fields for 1 year

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or 2 fields for 2 years. This program is not part of the CREP contracts. The Subdistrict agreed to compensate producers, in return for no groundwater or surface water irrigation use on a parcel of irrigated land for each year the contract is in effect. A table listing the legal descriptions for these temporary fallow parcels is included in Appendix L along with the wells associated with the parcels. A summary of acres enrolled in the program is shown below.

2021 Subdistrict No.1 Fallow Enrollment

2018	2019	2020	2021
Acres: 1,189.98	Acres: 1,813.2	Acres: 3,250	Acres: 4,316

The Subdistrict offered a new conservation program for 2020. The program requires a producer to reduce groundwater withdrawals for a well by half of its historical five-year average.

Approximately 15,000 acres of lands within the Subdistrict took advantage of Preventive Planting Insurance programs during 2020. This program may not be available at the same level for 2021.

The Subdistrict offered a new Well Purchase Program for 2021. Under the program, wells are purchased by the Subdistrict, taking them out of production. Eleven wells serving 11 quarters have been identified for this program, but the program is pending budget litigation.

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

Based on total head-gate diversions the Subdistrict diverted approximately 977.12 acre-feet towards recharge to the unconfined aquifer on the White, McConnell, Lacy and West Medano Ranch properties during the irrigation season. The Subdistrict did not use the wells located on these parcels for any purpose in 2021.

A map of the locations of the lands purchased by the RGWCD is included in Appendix M.

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

The Board of Managers of the Subdistrict and the Subdistrict members remain keenly aware of the PWM deadlines to achieve and maintain sustainability of the unconfined aquifer and have increased assessments to generate funds to further long-term conservation.

With an average water supply predicted for 2021, the Subdistrict is seeing a steady increase in enrollment with the conservation programs offered and hopes to see participation grow. The Subdistrict continues doing everything within its limited authority to complete its charge under the PWM.

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Examples of new conservation measures are: purchasing wells, informing constituents of aquifer level through a monthly email publication; public forums to provide education on sustainability, aquifer conditions and programs offered through the Subdistrict; online surveys to solicit input on conservation ideas; expanded options on fallow programs to increase enrollment; and, mailing out end of year water report by farm to raise water use awareness, with customized calculation on what a 10% cut back would look like on a field by field basis.

Great Sand Dunes National Park Service Contract

NPS obtained approval of the State Engineer per a letter dated January 14, 2021 (Appendix O) that describes a Sustainability Metric that is acceptable for a five year period extending from October 1, 2020 through September 30, 2025. The proposed metric is to limit total pumping from the NPS wells to 54.02 acre-feet, averaging 10.80 acre-feet/year. NPS is in the process of obtaining a decreed Plan for Augmentation and this metric will be reevaluated at the end of the period for incorporation into the Plan. 2021 will be the first year of the period.

Findings

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

1. The Plan of Augmentation decreed in 82CW0017 known as the SRS Augmentation Plan will not be in operation during 2021. All the wells associated with the 82CW0017 decree will operate as Subdistrict No. 1 Wells as part of the 2021 ARP.
2. The Subdistrict accepted a contract from the NPS for wells that lie outside of the Subdistrict No. 1 Response Area, but within the Model Domain. Tables showing historical pumping and estimated Net Groundwater Consumptive Use and monthly net stream depletion for the NPS wells were provided by the Subdistrict as well as a proposed Sustainability Metric accepted for the NPS wells by DWR.
3. The projected pumping is based upon the inventoried Subdistrict Wells, their historical pumping, and CREP fallowing. The inventory of wells, after adjustment as described above, 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 pumping for the Wells for 2021 is consistent with historical pumping information and streamflow forecast and includes lands fallowed under CREP within the Subdistrict for 2021.
4. The Second Amended PWM requires an estimation of projected recharge using historical information. Projected annual recharge credits are based on historical recharge records and the relationship between historical streamflows and recorded historical recharge volumes. The historical recharge credit is based on diversion records on file with the DWR and is calculated pursuant to methods approved by the Water Court.

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5. Overall, the Subdistrict inputs to the Response Functions produced a calculation of depletions that DWR considers conservative such that the depletions are covered and no injury will occur.
6. Projected stream depletions are calculated based on Response Functions generated from RGDSS Groundwater Model 6P98 runs. The Response Functions are based on the RGDSS Model version 6P98, which was approved by the PRT. The Subdistrict used the 6P98 Response Functions in determining stream depletions for the Subdistrict. The ARP Year depletion schedule is included as an Exhibit to this letter.
7. It is noted that Subdistrict No. 1 has delivered sufficient replacements to streams to remedy injurious depletions for most of the past ARP Years and remedied any underestimation discovered in the Annual Report prior to the start of the next ARP Year. The Subdistrict remains in compliance with Rules 3.7, 4.13, 4.26, 5.13, 11.3, 12.1, 12.4.3; the Second Amended PWM, Appendix 1, Section 11.A; the May 2010 Decree, Sections I.A.¶18, II.A.¶36, II.C.¶74.
8. 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:
 - a. Transbasin water up to 2,448 acre-feet is available for release under this ARP through SWSPs approved in prior years.
 - b. Santa Maria Reservoir water up to 15,120 acre-feet is available for this ARP under the agreements with the Santa Maria Reservoir Company and the decree of Case No. 2013CW3002.
 - c. The use of up to 3,800 acre-feet is available for forbearance by contract.
 - d. The use of up to 462 acre-feet of Closed Basin Project water as a replacement water supply is adequate and suitable as a source of replacement water to prevent injury to senior surface water rights per the April 2013 Decree.
 - e. 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.
9. The past financial guarantor agreement provided by the RGWCD is not necessary if the Subdistrict were to fail or otherwise be unable to replace Injurious Stream Depletions caused by Subdistrict Wells. Water supplies noted in Table 4.1 of the 2021 ARP will be used to offset continuing Injurious Stream Depletions from this ARP should the Subdistrict fail. DWR understands that if the Subdistrict otherwise ceases operations, the water in storage will remain under control of the Subdistrict and/or the RGWCD and will be available to remedy the post-plan injurious depletions under the direction of the Division Engineer.

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

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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, 2021 through April 30, 2022**, 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. This approval covers the contract wells as indicated in tables as Exhibit to this letter.
3. The Subdistrict has accepted a contract with NPS wells outside of Response Area #1 and whose impacts are determined pursuant to Rule 7.5 by using an approved alternate method of calculating injurious stream depletions. This action is approved for this ARP year.
4. The Subdistrict must replace or remedy the Injurious Stream Depletions resulting from Subdistrict Well pumping, regardless of the state of the Hydraulic Divide.
5. 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.
6. 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. General Forbearance Protocols for the Rio Grande River System for 2021 were prepared by the Division Engineer. A copy of the protocols is included with this letter.
7. 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.
8. 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.
9. 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.

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10. 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.
11. The Subdistrict must submit an Annual Review pursuant to Term and Condition #17 of the May 2010 Decree. **The Annual Review will include information pertinent to the operation of the ARP in regard to the NPS contract wells.**
12. The Subdistrict must replace or remedy all Injurious Stream Depletions caused by non-augmented pumping associated with Subdistrict Wells.
13. The Subdistrict must comply with the May 2010 Decree approving its Amended PWM, the April 2013 Decree, the Second Amended PWM, the approval conditions of the Second Amended 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, P.E.
State Engineer
Director of the Division of Water Resources

Exhibits:

- A: NPS Tables of Historical Pumping and Depletions**
- B: Subdistrict No. 1 2021 ARP Response Function Table 2.6**
- C: Subdistrict No. 1 Contract Well List - Notes regarding Coverage under the Subdistrict No. 1 2021 ARP**
- D: General Forbearance Protocols for the San Luis Valley River Systems for 2021**

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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

ADDENDUM

This information was compiled on April 12, 2021 to assist with the compilation of the Annual Replacement Plan for Subdistrict No. 1. Estimated stream depletions (acre-feet) assume that all groundwater withdrawn by the Park's wells comes from reduced discharge to Medano Creek (i.e., change in aquifer storage = 0). Groundwater use and stream depletions for 2021 are average-based estimates.

Table 1
National Park Service Estimated Net Groundwater Consumptive Use
 (Units in acre-feet)

Year	National Park Service Total					Recharge that Offsets Groundwater					Net Groundwater Consumptive Use
	Irrigation Pumping to Center Pivots	Irrigation Pumping to Flood Irrigation	Other Pumping	Other Consumptive Use Ratio	Groundwater Consumption	Recharge Source 1	Recharge Source 2	Recharge Source 3	Recharge Source 4	Total	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2011			9.95	10%	0.995					0	0.99
2012			10.48	10%	1.048					0	1.05
2013			9.74	10%	0.974					0	0.97
2014			10.50	10%	1.050					0	1.05
2015			10.79	10%	1.079					0	1.08
2016			16.36	10%	1.636					0	1.64
2017			7.28	10%	0.728					0	0.73
2018			5.60	10%	0.560					0	0.56
2019			7.75	10%	0.775					0	0.78
2020			11.62	10%	1.162					0	1.16
2021			10.01	10%	1.001					0	1.00
Avg			10.01		1.00					0	1.00

Table 2
National Park Service Monthly Net Stream Depletions for Plan Year
 (Units in acre-feet)

Stream Reach	Response Area No.1 Total													
	2020									2021				Total
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
Medano Creek	0.099	0.096	0.099	0.099	0.096	0.099	0.096	0.099	0.099	0.089	0.099	0.096	1.16	
Total	0.099	0.096	0.099	0.099	0.096	0.099	0.096	0.099	0.099	0.089	0.099	0.096	1.16	

ADDENDUM

This information was compiled on April 12, 2021 to assist with the compilation of the Annual Replacement Plan for Subdistrict No. 1. Estimated stream depletions (acre-feet) assume that all groundwater withdrawn by the Park's wells comes from reduced discharge to Medano Creek (i.e., change in aquifer storage = 0). Groundwater use and stream depletions for 2021 are average-based estimates.

Exhibit B

Table 2.6
Response Area No.1 Monthly Net Stream Depletions for Plan Year
(units of ac-ft)

Stream Reach	Response Area No.1 Response Area Total												Total
	2021						2022						
	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Rio Grande Del Norte-Excelsior	-43.4	-35.0	-16.8	-5.9	-5.2	-8.7	-11.7	-11.4	-23.9	-22.6	-31.6	-28.5	-246
Rio Grande Excelsior-Chicago	100.0	81.4	58.7	58.1	57.1	70.3	102.2	110.1	112.3	106.9	121.4	100.8	1,078
Rio Grande Chicago-State Line	0.8	-11.4	-24.9	-15.0	-5.1	-17.1	-1.4	3.0	-4.8	-11.0	-14.6	-22.2	-123
	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	58	35	17	37	47	44	89	102	83	73	74	50	709

Notes for columns:

- (1) Stream reach
- (2)-(13) Monthly Net Stream Depletions in acre-feet
- (14) Total Plan Year Net Stream Depletions in acre-feet

Exhibit C

2021 Subdistrict No. 1 ARP

Contract Well Review Exhibit

WDID	STRUCTURE NAME	APPROVED FOR ARP COVERAGE	DWR COMMENT
2005138	W0343 WELL NO 04	Y	
2005427	W2551 WELL NO IRR 05	Y	
2005914	86CW018 WELL NO 03A	Y	
2005947	86CW020 WELL NO 03AA	Y	
2008137	81CW009 WELL NO 10	Y	
2008582	PERMIT 39684-F	Y	
2009221	W0515 WELL NO 01	Y	
2009457	W0667 WELL NO 02	Y, C	SEE WDID 2014564 - PENDING RESULTS OF SWSP APPROVAL
2009999	W0997 WELL NO 01	Y	
2010190	W1103 WELL NO 03	Y	
2010510	W1319 WELL NO 02	Y, C	PENDING RESULTS OF SWSP APPROVAL
2010513	W1319 WELL NO 05	Y, C	PENDING RESULTS OF SWSP APPROVAL
2010705	W1420 WELL NO 01	Y	
2010776	W1457 WELL NO 02	Y, C	PENDING RESULTS OF SWSP APPROVAL
2010970	W1575 WELL NO 05	Y	
2010971	W1575 WELL NO 06	Y	
2011005	W1595 WELL NO 01	Y, C	PENDING RESULTS OF SWSP APPROVAL
2011592	W1903 WELL NO 09	Y, C	PENDING RESULTS OF SWSP APPROVAL
2011926	W2093 WELL NO 04	Y, C	PENDING RESULTS OF SWSP APPROVAL
2011928	W2095 Well No 01	Y	
2012935	W2784 WELL NO 01	N	NO COMMERCIAL USE - DECREED EXEMPT DOMESTIC
2012945	W2794 WELL NO 03	Y, C	PENDING RESULTS OF SWSP APPROVAL
2013377	W3446 WELL NO 02R	N	WDID CORRECTED TO 2013837
2013815	99CW020 WELL NO 1RRA	Y	
2013832	01CW009 WELL NO 1A	Y	
2013837	00CW015 WELL NO 7S	Y, C	WDID CORRECTED FROM 2013337
2013878	02CW0056 WELL NO PUMP 03	Y	
2014012	2004CW034 WELL 3AA	Y	
2014319	PERMIT 19986-F	N	NO COMMERCIAL USE FOR WAREHOUSE
2014320	2004CW034 WELL 3A	Y	
2014387	2007CW32 WELL NO WAREHOUSE 1	Y	
2014459	07CW19 WELL NO 1	Y	
2014530	16CW0011 WELL NO 1-SR	N	CONTRACT DENIAL - PETITIONED FOR IRRIGATION USE
2014533	16CW0011 WELL NO 1-R	N	CONTRACT DENIAL - PETITIONED FOR IRRIGATION USE
2014537	PERMIT 42591-FR	Y	
2014548	16CW0011 WELL NO 1-SS	Y	
2014549	16CW0012 WELL NO 2-RS	Y	
2014550	2018CW10 WELL NO. 1-RS	Y	
2014551	18CW10 WELL NO. 1-S	Y	

2014564	20CW0007 WELL NO. 2R	Y, C	PENDING RESULTS OF SWSP APPROVAL
2014565	PERMIT 83058-F	Y	
2014575	20CW0006 WELL NO 1-R-WEST	N	NO COMMERCIAL USE - PERMITTED EXEMPT DOMESTIC & STOCK
2014577	PERMIT 42264-F	Y	
2014578	PERMIT 42265-F	Y	
2014579	PERMIT 61648-F	Y	
2014593	PERMIT NO. 39103-F-R	Y	
2014596	PERMIT 42590-F	Y	
2014597	PERMIT 22904-R-F	Y, C	PENDING RESULTS OF SWSP APPROVAL
2700693	PERMIT 244356	Y, C	PENDING RESULTS OF SWSP APPROVAL
2705029	W1493 WELL NO 01	Y, C	PENDING RESULTS OF SWSP APPROVAL
2705165	W1494 WELL NO 01	Y	
2705175	PERMIT 48608-F	Y	
2705286	W1843 WELL NO HQTRS 14	Y	
2705298	W0903 WELL NO HDQTRS 07	Y, C	PENDING RESULTS OF SWSP APPROVAL
2705305	W0903 WELL NO HDQTRS 12	Y	
2705314	W0742 WELL NO 02	Y	
2705428	W1843 WELL NO SKY VLY 07	Y	
2705494	W1505 WELL NO 04	Y	
2705742	W0903 WELL NO HDQTRS 05	Y	
2706174	99CW050 WELL NO 3A	Y	
2706183	2000CW023 WELL NO LOIS-A	Y	
2706254	PERMIT 43745-F	Y	
2706340	17CW3020 WELL NO 7A-R	N	DUPLICATE WIDID NEEDS TO BE REMOVED FROM LIST
2706345	21CW0001 NO 2A-R	Y, C	PENDING SUPPLEMENTAL COURT CASE
PENDING	WORLEY - EAST BOYCE	Y, C	PENDING RESULTS OF SWSP APPROVAL
	* Y - APPROVED FOR ARP		
	** Y, C - APPROVED WITH CONDITIONS		
	*** N - NOT APPROVED FOR ARP		

Exhibit D

General Forbearance Protocols For San Luis Valley River Systems

Subdistricts No. 1, No. 2 (Rio Grande Alluvium), No. 3 (Conejos), No. 4 (San Luis Creek), No. 6 (Alamosa La Jara) and Trinchera Subdistrict will be operating under ARPs and will replace depletions to their affected streams on May 1st, the beginning of the 2021 ARP year. Subdistrict No. 5 (Saguache) will also be subject to these protocols when an ARP is approved. Along with the 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 Subdistricts, 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 2021 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 is 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 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 forbearance will not be allowed.
- Ditches 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. The determination of the physical properties controlling these situations shall be at the sole discretion of the Water Commissioner and/or Division Engineer.
- 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 occurred.