



COLORADO

**Colorado Water
Conservation Board**

Department of Natural Resources

1313 Sherman Street, Room 718
Denver, CO 80203

**Rio Grande – Conejos Groundwater Monitoring & Analysis
CTGG1 2017-1063/CMS#125971**

January 25, 2019

Conejos River System Water Users Association
Attn: Brock Canty, Chairman
405 Main Street
Manassa, CO 81141

Dear Grantee:

We are pleased to inform you that the Colorado Department of Natural Resources, Colorado Water Conservation Board (CWCB) has approved your request for extension pursuant to the WSRF Grant Program (“Program”) for contract CTGG1 2017-1063. This letter authorizes you to proceed with the Conejos Groundwater Monitoring & Analysis Project (“Project”) in accordance with the terms of this Grant Award Letter.

Attached to this letter are the terms and conditions of your Grant. Please review these terms and conditions, as they are requirements of this Grant to which you, Conejos River System Water Users Association, agree by accepting the Grant Funds.

The WSRF Criteria & Guidelines can be located on our website for additional information. If you have any questions or concerns regarding the project, please contact Craig Godbout, Project Manager at 303-866-3441 or at Craig.Godbout@state.co.us. Please send the 6-month progress reports and invoices directly to the Project Manager and cc me at Dori.vigil@state.co.us.

Thank you.

Sincerely,

//s//

Doriann Vigil
Program Assistant II
O 303-866-3441 ext. 3250
1313 Sherman Street, Rm. 719, Denver, CO 80203
Dori.vigil@state.co.us / cwcb.state.co.com



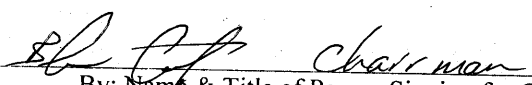
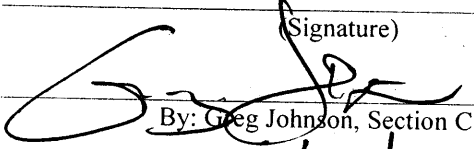
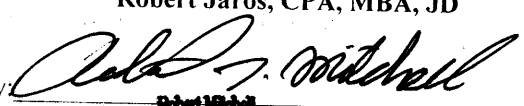
GRANT AGREEMENT AMENDMENT #1

SIGNATURE AND COVER PAGE

State Agency Department of Natural Resources Colorado Water Conservation Board 1313 Sherman Street, Denver Co 80203	Original Grant Agreement Number CMS# 95252 CTGG1 2017-1063
Grantee and Address Conejos River System Water Users Association 405 Main Street Manassa, CO 81141	Amendment Grant Agreement Number CMS#125971 CTGG1 2017-1063
Current Grant Agreement Maximum Amount (after amendment approved) Entire Grant Agreement term for all applicable fiscal years: \$219,000.00	Grant Agreement Performance Beginning Date December 20, 2016
Reason for Modification Extension of Time	Current (after amendment approved) Grant Agreement Expiration Date December 31, 2020

THE PARTIES HERETO HAVE EXECUTED THIS AMENDMENT

Each person signing this Amendment represents and warrants that he or she is duly authorized to execute this Amendment and to bind the Party authorizing his or her signature.

GRANTEE  By: Name & Title of Person Signing for Grantee Date: <u>Dec 19, 2018</u>	STATE OF COLORADO John W. Hickenlooper, Governor Colorado Department of Natural Resources Robert D. Randall, Executive Director  (Signature) By: <u>Greg Johnson, Section Chief</u> Date: <u>1/12/19</u>
In accordance with §24-30-202 C.R.S., this Amendment is not valid until signed and dated below by the State Controller or an authorized delegate. STATE CONTROLLER Robert Jaros, CPA, MBA, JD  By: <u>Maggie V. Mitchell</u> Maggie V. Mitchell, NR Purchasing Director Colorado Department of Natural Resources Amendment Effective Date: <u>1-17-2019</u>	

1. **PARTIES**

This Amendment (the “Amendment”) to the Original Grant Agreement shown on the Signature and Cover Page for this Amendment (the “Grant Agreement”) is entered into by and between the Grantee, and the State.

2. **TERMINOLOGY**

Except as specifically modified by this Amendment, all terms used in this Amendment that are defined in the Grant Agreement shall be construed and interpreted in accordance with the Grant Agreement.

3. **AMENDMENT EFFECTIVE DATE AND TERM**

A. Amendment Effective Date

This Amendment shall not be valid or enforceable until the Amendment Effective Date shown on the Signature and Cover Page for this Amendment. The State shall not be bound by any provision of this Amendment before that Amendment Effective Date, and shall have no obligation to pay Grantee for any Work performed or expense incurred under this Amendment either before or after of the Amendment term shown in **§3.B** of this Amendment.

B. Amendment Term

The Parties’ respective performances under this Amendment and the changes to the Grant Agreement contained herein shall commence on the Amendment Effective Date shown on the Signature and Cover Page for this Amendment, and shall terminate on the termination of the Grant Agreement or **December 31, 2020**, whichever is earlier.

4. **PURPOSE**

The Water Supply Reserve Account provides money for grants and loans to complete water activities, which are broadly defined and include water supply and environmental projects and/or studies. This Grant project is for the Conejos Groundwater Monitoring and Analysis in the Rio Grande River Basin.

5. **MODIFICATIONS**

The Grant Agreement and all prior amendments thereto, if any, are modified as follows:

A. All references to Exhibit A is being replaced by Exhibit A-1.

B. Section 7.A. Payments to Grantee

The State shall, in accordance with the provisions of this **§7**, pay Grantee in the following amounts and using the methods set forth below:

i) Maximum Amount

The maximum amount payable under this Grant to Grantee by the State is **\$219,000** as determined by the State from available funds. Grantee agrees to provide any additional funds required for the successful completion of the Work. Payments to Grantee are limited to the unpaid obligated balance of the Grant as set forth in **Exhibit A-1**. The maximum amount payable by the State to Grantee during each State fiscal year of this Grant shall be:

\$219,000 in FY2017
\$219,000 in FY2018, minus any funds expended in FY2017
\$219,000 in FY2019, minus any funds expended in FY2017 and FY2018
\$219,000 in FY2020, minus any funds expended in FY2017 FY2018 and FY2019
\$219,000 in FY2021, minus any funds expended in FY2017 FY2018, FY2019 and FY20

6. LIMITS OF EFFECT AND ORDER OF PRECEDENCE

This Amendment is incorporated by reference into the Grant Agreement, and the Grant Agreement and all prior amendments or other modifications to the Grant Agreement, if any, remain in full force and effect except as specifically modified in this Amendment. Except for the Special Provisions contained in the Grant Agreement, in the event of any conflict, inconsistency, variance, or contradiction between the provisions of this Amendment and any of the provisions of the Grant Agreement or any prior modification to the Grant Agreement, the provisions of this Amendment shall in all respects supersede, govern, and control. The provisions of this Amendment shall only supersede, govern, and control over the Special Provisions contained in the Grant Agreement to the extent that this Amendment specifically modifies those Special Provisions.

Water Supply Reserve Account

REVISED 10/19/16 (Amendment #1 Revision 12/18/18)

Exhibit A-1 **Statement of Work**

WATER ACTIVITY NAME – Conejos Groundwater Monitoring and Analysis

GRANT RECIPIENT – Conejos River System Water Users Association (CRSWUA)

FUNDING SOURCE – WSRA Basin Account \$19,000; Statewide Account \$200,000

INTRODUCTION AND BACKGROUND

Wells in the Rio Grande Basin will be shut down unless (1) injurious stream depletions are replaced or remedied, and (2) a plan for sustainability of the unconfined aquifer and the confined aquifer is addressed and maintained. In the over-appropriated Rio Grande Basin, there is not sufficient water available for all well owners to meet the augmentation requirements of the new Rules and Regulations. CRSWUA is concerned about relying upon the State's model for groundwater administration because the model is regional rather than specific to conditions in the Conejos watershed. CRSWUA will place water level transducers in local confined aquifer irrigation wells to record and monitor real-time water level data over a sustained length of time, establishing a scientific basis for evaluating the relationships/interconnectivity between different pumping wells in the area in and around Subdistricts #3 and #4 and providing a better understanding of the lateral transmissivity of the confined aquifer, the degree of connection to the overlying unconfined aquifer, and the potential connection to surface water bodies. By gathering groundwater data from a larger and more relevant sample, CRSWUA will provide to Colorado a scientific assessment to fine tune the model for more accurately administering the Rio Grande Compact and groundwater usage in the Rio Grande Basin.

OBJECTIVES

- Develop ground water data to address "Rules Governing Withdrawal of Ground Water in Water Division No. 3"
- Support optimum use of water, consistent with preservation of the priority system of water rights
- Provide scientific data to the RG Basin and DWR to create a plan for groundwater sustainability
- Develop historical analysis and real time data to identify and address injurious stream depletions
- Help identify injurious depletions on the San Antonio, Conejos, La Jara, Alamosa and Rio Grande
- Improve Colorado's ability to more accurately meet its Rio Grande Compact obligations
- Support agriculture by helping to regulate and balance the use of limited surface and groundwater resources
- Help maintain a sustainable water supply in the Confined and Unconfined Aquifer

TASKS – (following page)

TASK 1 – Identify Qualifying Wells

Description of Task – Assess each of the 12 existing wells identified by DWR’s Kelley Thompson (CDWR Modeling/DSS) as potentially to be included in this study, based on locations and criteria established in his memorandum of August 11, 2014 (attached). In 2015, additional wells will be identified and added to the Project, subject to approval by DWR, for a total of 16 wells, all meeting the same criteria. 8 wells will be done with matching funds, while the additional wells will be done after the NTP from CWCBC.

Method/Procedure – Based on available information from DWR on perforated well intervals, CRSWUA will examine each well to identify and confirm that each meets the following criteria:

- A. Well Location - Achieve a regular spacing across representative aquifer conditions given the Thiessen polygon method that is used to spatially weight wells within the network.
- B. Well Depth – Completed into Layer #3 as defined by RGDSS, between 210 and 349 feet
- C. Obtain Permission – Well owner understands expectations, requirements, is willing to provide access, has signed waiver of liability, and has provided written consent.
- D. Well Structure – There is no cascading – no water moving between layers. This will be determined initially, and only in a preliminary way, by listening for the sound of any cascading within the well. A more accurate determination will follow in Task 2.
- E. Establish schedule/timing for pulling the pump, conducting the camera survey, installing the transducer, replacing the pump, installing telemetry, and verifying this schedule with the well owner.

Deliverable - All existing wells identified as potentially meeting criteria. Determination will be made as to the requirement for additional or alternate existing wells.

TASK 2 – Verify Wells & Schedule the Project with all Parties

Description of Task – Schedule pulling the pumps, camera-ing and E-logging the wells, replacing the pumps, installing the telemetry and placing the transducers.

Method/Procedure -Central Pump Company, of Center, Colorado, an established well driller and pump contractor, will be scheduled to pull the pumps, camera the wells, and replace the pumps in a specified and coordinated manner, in each case allowing time for the water to clear after pulling the pump before photographing the well.

With E-logging technology, while the pumps are out of the wells, CRSWUA will collect flow rates and directions, stratigraphic verification, well casing integrity, and temperature/conductivity data in all wells where such work is possible.

Establish that each identified well for which the well owner has granted permission in fact meets all required criteria to be included in the study. Schedule and prioritize each phase of Project and verify that each well is a high capacity functioning well and meets the criteria of depth and no cascading.

Deliverable – Contracting, scheduling, and priorities in place; well owners and all contractors and stakeholders are prepared to proceed with project.

TASK 3 – Implementation

Description of Task – For each of the potential wells, pull the pump, camera and E-log the well, place transducer in the well, install telemetry, and reinstall the pump. The first 8 wells will be done with the matching funds provided by RGWCD, CWCD, and Alamosa/La Jara CD. The additional wells, probably in the Alamosa/LaJara Conservancy District, will be done in 2015.

Method/Procedure – Well drilling contractor, Central Pump Company, of Center, Colorado, shall pull the pumps and reinstall them in accordance with specifications of the Colorado Board of Examiners of Water Well Construction and Pump Installation Contractors.

After the water has cleared, camera contractor, also Central Pump Company, shall provide a down-hole view and a detailed 360° continuous scan of sidewalls. The view shall allow an operator to examine wall, casings, infiltration, screen, gravel pack, encrustations, deterioration, perforation blockage or other physical damage.

With E-logging technology, while the pumps are out of the wells, CRSWUA will collect flow rates and directions, stratigraphic verification, well casing integrity, and temperature/conductivity data in all wells where such work is possible.

Dynotek shall install a telemetry system for the network of wells in order to link each well into the system of nodes in the SCADA system currently serving the Conejos Water Conservancy District. Their method will be the same as was used for all others installed by them for the District.

Dynotek shall place transducers in each well in accordance with accepted practices.

Deliverable – Groundwater monitoring system installed. Ready to begin collecting & analyzing data.

TASK 4 – Post-Installation Assessment, Engineering, Analysis, & Administration

Description of Task – Begin collecting and analyzing data. Troubleshoot and establish proper function of all operational aspects of the installed systems; facilitate engineering, monitoring, and data-gathering studies; conduct analyses; track and administer progress of post-installation studies.

Method/Procedure – Identified team of collaborators and stakeholders (potentially including but not limited to Kelly Thompson, Eric Harmon, Allen Davey, Craig Cotten, Steve Vandiver, and Nathan

Coombs) will verify that installed systems meet expectations and satisfy criteria and establish that data gathered is compatible in content and format with requirements of the RGDSS model and the District's SCADA system.

CRSWUA has determined that the existing team of collaborators and stakeholders is capable of accomplishing many tasks which might otherwise require employing a major engineering consulting firm. Since their availability and involvement cannot be anticipated with certainty, however, and in the interest of deploying and conducting this project in a timely manner, CRSWUA has selected MWH Americas Inc. (MWH) to provide technical support for this groundwater monitoring and analysis project.

Some, but not all, of the procedures, described in the proposed scope of work submitted by MWH (see attached proposal) may be required from that contractor. The Budget to this request for funding therefore anticipates a balance between the anticipated matching and in-kind participation of identified stakeholders and the professional services of MWH. The procedures in the MWH Scope of Work include the following:

- Project Management
- Data Review and Analysis
- Monitoring Network Design
- Monitoring Performance Check
- Data Management and Analysis
 - Database Design
 - Data Mining and Aquifer System Analysis
- Aquifer Testing with Controlled Pumping
- Summarize CRSWUA area water balance
- Groundwater Model Improvement Report
- Other Reporting

CRSWUA does not yet have any paid staff. Therefore, local administration will be provided by The Conejos Water Conservancy District. Administration will include: tracking progress made on each of the above Tasks; archiving reports and documents as they are developed during the course of this study; documenting changing circumstances or conditions on each of the 16 wells involved in this Project; tracking costs, processing invoices, and submitting quarterly and final reports to CWCB as described below.

Deliverable – The study will be completed successfully, producing a quality project in a timely manner and achieving significant savings by using locally and regionally available expertise whenever possible. CRSWUA will successfully provide the administrative oversight required for a project of this size.

REPORTING AND FINAL DELIVERABLE

Reporting: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the statement of work including a description of any major issues that have occurred and any corrective action taken to address these issues.



Last Update: January 9, 2018

Budget and Schedule

Budget and Schedule: This Statement of Work shall be accompanied by a combined [Budget and Schedule](#) that reflects the Tasks identified in the Statement of Work.

Reporting Requirements

Progress Reports: The grantee shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status of the tasks identified in the statement of work, including a description of any major issues that have occurred and any corrective action taken to address these issues. The CWCB may withhold reimbursement until satisfactory progress reports have been submitted.

Final Report: At completion of the project, the grantee shall provide the CWCB a Final Report on the grantee's letterhead that:

- Summarizes the project and how the project was completed.
- Describes any obstacles encountered, and how these obstacles were overcome.
- Confirms that all matching commitments have been fulfilled.
- Includes photographs, summaries of meetings and engineering reports/designs.

Payments

Payment will be made based on actual expenditures, must include invoices for all work completed and must be on grantee's letterhead. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire Project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions.

The CWCB will pay the last 10% of the entire water activity budget when the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the water activity and purchase order or contract will be closed without any further payment. Any entity that fails to complete a satisfactory Final Report and submit to CWCB within 90 days of the expiration of a purchase order or contract may be denied consideration for future funding of any type from CWCB.

Performance Requirements

Performance measures for this contract shall include the following:

(a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget. Per Grant Guidelines, the CWCB will pay out the last 10% of the budget when the final deliverable is completed to the satisfaction of CWCB staff. Once the final deliverable has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

(b) Accountability: Per the Grant Guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per the Grant Guidelines, Progress Reports must be submitted at least once every 6 months. A Final Report must be submitted and approved before final project payment.

(c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each Progress Report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary.

(d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the Grant Agreement.

BUDGET

Provide a detailed budget by task including number of hours and rates for labor and unit costs for other direct costs (i.e. mileage, \$/unit of material for construction, etc.). A detailed and perfectly balanced budget that shows all costs is required for the State's contracting and purchase order processes. Sample budget tables are provided below. Please note that these budget tables are examples and will need to be adapted to fit each individual application. Tasks should correspond to the tasks described above.

BUDGET

TASK		DWR In-Kind	CRSWUA In-Kind	Ala/ La Jara	CWCD	RGWCD	WSRA	TOTAL
1	Identify wells	\$ 23,500.00						\$ 23,500.00
2	Verify wells and scheduling		\$ 2,000.00					\$ 2,000.00
2a	well owners permission		\$ 2,000.00					\$ 2,000.00
3	Implementation			\$ 5,000.00				\$ 5,000.00
3a	Pull 8 (matching) \$ 1,000.00 X8				\$ 5,000.00	\$ 3,000.00		\$ 8,000.00
3b	Camera and e-log 8 (matching) \$ 600.00 X8					\$ 4,800.00		\$ 4,800.00
3c	reinstall 8 (matching) \$ 1,000.00 X8					\$ 8,000.00		\$ 8,000.00
3d	telemetry 8 (matching) \$ 3,600.00 X8					\$ 28,800.00		\$ 28,800.00
3e	transducers 8 (matching) \$ 2,300.00 X8					\$ 18,400.00		\$ 18,400.00
3f	Repeat 3a-3e with 8 wells WSRA					\$ 12,000.00	\$ 56,000.00	\$ 68,000.00
4	POST INSTALLATION							
4a	assessment						\$ 25,000.00	\$ 25,000.00
4b	engineering						\$ 50,000.00	\$ 50,000.00
4c	analysis						\$ 69,000.00	\$ 69,000.00
4d	administration				\$ 5,000.00		\$ 19,000.00	\$ 24,000.00
TOTAL		\$ 23,500.00	\$ 4,000.00	\$ 5,000.00	\$ 10,000.00	\$ 75,000.00	\$ 219,000.00	\$ 336,500.00



405 Main Street, Manassa CO 81141

Reference: **Contract # CTGG1 2017-1063**
 Conejos River System Water Users Association (CRSWUA)
 Conejos Groundwater Monitoring and Analysis

Amended Extended Schedule

(Exact start/end dates for each well vary, but all occur within the following dates)

TASK for ALL WELLS	START DATE	FINISH DATE
3a Pull	12-16-2016	12-31-2020
3b Camera, e-logging	1-9-2017	12-31-2020
3c Re-Install	1-9-2017	12-31-2020
3d Telemetry	1-9-2017	12-31-2020
3e Transducers	1-9-2017	12-31-2020
4a RTI engineering, assessment & analysis	1-18-2018	12-31-2020
4b RTI engineering, assessment & analysis	1-18-2018	12-31-2020
4c RTI engineering, assessment & analysis	1-18-2018	12-31-2020
4d Administration & Reporting	1-9-2017	12-31-2020