AGENDA

Each item on the agenda, no matter how described, shall be deemed to include any appropriate motion, whether to adopt minute motion, resolution, payment of any bill, approval of any matter or action, or any other action. Items listed as "For information: or "For discussion" may also be the subject of an "action" taken by the Board or a Committee at the same meeting.

1. DETERMINATION OF A QUORUM

2. PUBLIC COMMENT

3. LEGISLATIVE REPORT
   Staff Recommendation: For Discussion and possible action

4. AMENDMENT NO. 1 WITH COLORADO SCHOOL OF MINES FOR SOIL AQUIFER TREATMENT RESEARCH PROJECT
   Staff Recommendation: The External Affairs Committee recommend Board of Directors authorize Amendment #1 with Colorado School of Mines for a no cost time extension through September 30, 2018.

5. NO COST TIME EXTENSION WITH SCHLUMBERGER FOR BOREHOLE GEOPHYSICAL LOGGING
   Staff Recommendation: The External Affairs Committee recommend the Board of Directors enter into Amendment #1 with Schlumberger for a no cost time extension for borehole geophysical logging through June 30, 2019.

6. DEPARTMENT REPORT
   Staff Recommendation: The External Affairs Committee receive and file the report.

7. DIRECTORS REPORTS, INQUIRIES AND FOLLOW-UP OF DIRECTIONS TO STAFF

8. ADJOURNMENT

Agenda posted by BRANDON MIMS, on 06/08/2018. In compliance with ADA requirements, this document can be made available in alternative formats upon request.
In compliance with the Americans with Disabilities Act (ADA), if special assistance is needed to participate in the meeting, please contact Deputy Secretary at (562) 921-5521 for assistance to enable the District to make reasonable accommodations.

All public records relating to an agenda item on this agenda are available for public inspection at the time the record is distributed to all, or a majority of all, members of the Board. Such records shall be available at the District office located at 4040 Paramount Boulevard, Lakewood, California 90712.

Agendas and minutes are available at the District’s website, www.wrd.org.

EXHAUSTION OF ADMINISTRATIVE REMEDIES – If you challenge a District action in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Deputy Secretary at, or prior to, the public hearing. Any written correspondence delivered to the District office before the District’s final action on a matter will become a part of the administrative record.
MEMORANDUM
ITEM NO. 3

DATE: JUNE 11, 2018
TO: EXTERNAL AFFAIRS COMMITTEE
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: LEGISLATIVE REPORT

SUMMARY

2018 State Legislative Calendar
JUNE
June 1 - Last day for each house to pass bills introduced in that house.
June 4 - Committee meetings may resume.
June 15 - Budget Bill must be passed by midnight.
June 28 - Last day for a legislative measure to qualify for the Nov. 6 General Election ballot.
June 29 - Last day for policy committees to hear and report fiscal bills to fiscal committees

JULY
July 4 – Independence Day
July 6 – Last day for policy committees to meet and report bills. Summer Recess begins on adjournment provided Budget Bill has passed.

AUGUST
Aug. 6 - Legislature reconvenes from summer recess.
Aug. 17 - Last day for fiscal committees to meet and report bills.
Aug. 20-31 - Floor session only. No committee may meet for any purpose except rules committee, bills referred pursuant to assembly rule and conference committees.
Aug. 24 - Last day to amend on floor.
Aug. 31 - Last day for each house to pass bills. Final recess begins on adjournment.
FISCAL IMPACT

None

STAFF RECOMMENDATION

For Discussion and possible action
MEMORANDUM

ITEM NO. 4

DATE: JUNE 11, 2018

TO: GROUNDWATER QUALITY (GWQ) COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: AMENDMENT NO. 1 WITH COLORADO SCHOOL OF MINES FOR SOIL AQUIFER TREATMENT RESEARCH PROJECT

SUMMARY

On July 20, 2017, the Board of Directors authorized entering into a contract with the Colorado School of Mines for a research project related to the Groundwater Reliability Improvement Project (GRIP – now known as the Albert Robles Center for Water Recycling and Environmental Learning, or ARC). The research project is a follow-up to the Colorado School of Mines 2010 study and is called “Sequel to Performance Assessment of Surface Spreading Operations Receiving Different Blends of Tertiary/Fully Advanced Treated Recycled Water”.

The current work involves testing various blends of tertiary treated recycled water with advanced treated recycled water such as will be produced by ARC to evaluate optimum blend ratios and any potential impacts on the effectiveness of Soil Aquifer Treatment at the Montebello Forebay Spreading Grounds once ARC is online.

The research project was anticipated to be completed within 6 months. But due to delays with getting source water for the project from the Leo J. Vander Lans Advanced Water Treatment Facility, which was offline for the last half of 2017 and early 2018, and the need for Colorado School of Mines research staff to perform time consuming, out-of-scope work during this outage to maintain soil column readiness and perform additional sampling and monitoring, there is a need for a budget increase and time extension to complete the project.

FISCAL IMPACT

No Impact
STAFF RECOMMENDATION

The External Affairs Committee recommend the Board of Directors authorize Amendment #1 with Colorado School of Mines for a no cost time extension through September 30, 2018.
AMENDMENT NO. 1 TO CONTRACT NO. 948
AGREEMENT FOR PROFESSIONAL SERVICES
BETWEEN
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
AND
COLORADO SCHOOL OF MINES

This Amendment No. 1 to Contract No. 948 ("Amendment No. 1"), is made and entered into this ____ day of June, 2018 ("Effective Date"), by and between the Water Replenishment District of Southern California (hereinafter “District”), and The Board of Trustees of the Colorado School of Mines, for and on behalf of the Colorado School of Mines, (hereinafter “Mines”). The District and Consultant are collectively referred to herein as the “Parties”.

I. RECITALS

A. WHEREAS, On July 20, 2017, a certain agreement, hereinafter referred to as Contract No. 948 ("Agreement"), was executed between the District and Consultant for the Groundwater Reliability Improvement Project (GRIP), now known as the Albert Robles Center for Water Recycling and Environmental Learning, research project known as the “Sequel to Performance Assessment of Surface Spreading Operations Receiving Different Blends of Tertiary/Fully Advanced Treated Recycled Water”; and

B. WHEREAS, the District and Consultant now desire to enter into Amendment No.1 in order to increase the budgetary amount and extend the term of the Agreement, as set forth below, due to project schedule delays.

II. AMENDMENT

NOW, THEREFORE, in consideration of the mutual covenants, promises and agreements set forth, it is agreed the Agreement, a copy of which is attached hereto as Exhibit “A”, and incorporated herein by reference, shall remain in full force and effect except as otherwise hereinafter provided.

1. Term of the Agreement: The term of the Agreement shall be extended to September 30, 2018 (the “Expiration Date”).

2. Fee: The existing budgetary amount shall be increased by an amount not to exceed Twenty Thousand Dollars ($20,000.00).

3. Remaining Portion of the Agreement: Except as otherwise expressly set forth in this Amendment No.1, all other provision of the Agreement shall remain in full force and effect between the Parties.
IN WITNESS WHEREOF, the parties have caused this Amendment No. 1 to be executed as of the Effective Date.

THE BOARD OF TRUSTEES OF THE COLORADO SCHOOL OF MINES, FOR AND ON BEHALF OF THE COLORADO SCHOOL OF MINES, ("MINES")

Signature

Print Name

Title

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

Signature  Signature
John D.S. Allen  Willard H. Murray, Jr.
Print Name  Print Name
President, Board of Directors  Secretary, Board of Directors
Title  Title

Approved As To Form
LEAL, TREJO APC

Attorneys for the Water Replenishment District of Southern California
EXHIBIT “A”
This Technical Services Agreement (the “Agreement”) is made and entered into this 20th day of July, 2017, by and between the Water Replenishment District of Southern California (“District”) and The Board of Trustees of the Colorado School of Mines, for and on behalf of the Colorado School of Mines, (“Mines”) (collectively the “Parties” or individually as “Party”) for the furnishing of certain technical services upon the following terms and conditions.

1. **Scope of Services.** Mines shall perform the scope of services described in Exhibit A hereto (“Services”). Tasks other than those specifically described in Exhibit A shall not be performed without a prior written amendment to this Agreement.

   1.1 **Standard of Care.** In performing the scope of services under this Agreement, Mines shall exercise the standard of care and expertise it would use for the performance of such services for itself.

2. **Term.** The term of this Agreement shall commence on **July 20, 2017** and shall end on **June 30, 2018** (the “Expiration Date”). At least sixty (60) days prior to the Expiration Date, District staff shall evaluate the quality of the Services that have been provided by the Mines, the cost of such Services relative to the benefits, and the need for any continuation of the services. The results of such evaluation shall be provided to the appropriate District Committee, which committee shall provide a report to the District’s Board of Directors (“Board”). If the Board determines that there is a demonstrated need for the continuation of such Services, the Board may renew the Agreement on terms and conditions that do not provide for a significantly longer term, increased scope of services or increased fee schedule than is provided for in Paragraphs 1 or this Paragraph 2. If the Board desires to modify the Agreement to provide for such a significantly longer term, increased scope of services or increased fee schedule, the District shall comply with the provisions of its then current Administrative Code concerning the solicitation and approval of proposals for technical services.

2.1 **Termination by District**

   2.1.1 **Termination for Convenience.** The District may terminate this Agreement for its convenience at any time upon five (5) days written notice to Mines. Mines’ compensation in the event of such a termination shall be exclusively limited to payment for all authorized services performed and for all
authorized expenses incurred up to the effective date of such termination. Mines understands and agrees that it shall not be entitled to any additional compensation or reimbursement whatsoever in the event of such termination.

2.1.2 Mines’ Obligations Upon Termination. Following any termination of this Agreement by the District or Mines, Mines shall promptly return all District property, and shall likewise provide to District all finished and unfinished data, studies, maps, reports, and other deliverables and work-product prepared by Mines pursuant to this Agreement.

3. Mines’ Compensation. District will compensate Mines for services performed and for expenses incurred pursuant to this Agreement as follows:

3.1 Fee. Mines shall be paid in accordance with the fees and Mines Rate Schedule attached to this Agreement as referenced in Exhibit A which may not be changed except with District’s written approval.

3.2 Reimbursable Expenses. Mines shall be reimbursed for only pre-approved expenses, subject to the provisions of this Agreement. Mines shall obtain the District’s prior written approval before incurring an expense not specifically provided for under this Agreement.

3.2.1 Third Party Expenses. Unless specifically provided in Exhibit A, and subject to the provisions of Paragraph 3.2, the District shall not reimburse Mines for any costs charged to Mines by third parties unless said costs are preapproved. In the event such costs are approved, such reimbursement shall be at cost without any markup by Mines.

3.3 Invoices. Invoicing will occur as described in Exhibit A.

4. Mines’ Obligation to Provide Notice of Changes. Mines shall provide written notice to the District no later than twenty (20) days after the occurrence of any event (including any direction by the District) which Mines believes requires a change in its compensation or the time for performance of its obligations under this Agreement. Said notice shall describe the event and the basis for any change in compensation or time for performance requested by Mines. The Parties shall thereafter meet and confer to determine whether such a change is appropriate. However, no such change to this Agreement may be made except by written amendment to this Agreement executed by the Parties.

5. Ownership and Use of Documents. All documents, reports, surveys, renderings, photographs, data and other materials furnished by the District to Mines shall remain the exclusive property of the District and shall not be distributed or provided to third parties without the express written authorization of the District. All deliverables furnished by Mines to the District under this Agreement shall be the exclusive property of the District.
and shall not be distributed or provided to third parties without the express written
authorization of the District.

6. **Publication of Project Information.** Mines shall notify and obtain written approval from
the District before presenting verbal or written information to outside individuals or entities
about the services or project for which Mines was retained.

7. **Patents and Copyrights.** Mines shall assume all costs arising from the use of patented or
copyrighted materials, including but not limited to, equipment, devices, processes, and
software programs used or incorporated in the work performed under this Agreement.
Mines shall be responsible for its acts and the acts of its employees regarding the use of
any patented or copyrighted materials.

8. **Mines’ Status.** Mines is an independent contractor and neither Mines nor any employee of
Mines is or will be treated as an employee of the District under this Agreement. District
controls the result to be accomplished under this Agreement, but not the means by which
Mines achieves such results.

8.1 Payments made to Mines pursuant to this Agreement shall be the sole and complete
compensation to which Mines is entitled. Mines is solely responsible for any taxes
levied by local, state or federal authorities on such sums. Mines will be responsible
for properly withholding from its employees.

8.2 District will not make any contribution to any retirement plan or Social Security
on behalf of Mines or any of Mines’ employees. Mines will be responsible for
properly contributing to any applicable retirement plan on behalf of its employees.

8.3 District will not make any payments to Mines, or Mines’ employees, which rely
upon employee status, including, but not limited to, FLSA and other overtime and
minimum wage requirements, prevailing wage laws, worker’s compensation
benefits, FMLA, CFRA, Paid Leave, and unemployment benefits. Mines will be
responsible for properly making such payments or otherwise providing the benefits
of such laws to its employees.

8.4 Mines shall comply with the Political Reform Act of 1974, as amended including,
but not limited to, disclosure of all conflicts of interest and other financial
disclosure requirements required thereunder.

9. **Instructions to Mines.** In the performance of the services set forth in this Agreement, Mines
shall report to and receive instructions from the following person on behalf of the District:
**Ted Johnson.**

10. **Subconsultant Services.** Mines will not use subconsultants for any work under this
Agreement.
11. **Compliance With Laws and Regulations; Licensing.** Mines shall perform its services under this Agreement in compliance with all applicable provisions of Federal, State and local laws, statutes, codes, rules, regulations, and ordinances (“Applicable Laws”). By entering into this Agreement, Mines represents and warrants that it possesses and will keep current all license and registrations required by Applicable Laws to enter into this Agreement and to perform the scope of services hereunder.

12. **Insurance.** Mines, at its sole cost and expense, shall obtain, keep in force, and maintain the following policies of insurance at all times while this Agreement is in effect. Nothing in this statement shall be construed as enlarging the responsibility or liability of Mines beyond that permitted by the laws of the State of Colorado including, but not limited to, the Colorado Governmental Immunity Act, C.R.S. §24-10-101, *et seq.*, as amended.

12.1 **Required Policies.**

12.1.1 **Commercial General Liability Insurance** (contractual, products, and completed operations coverages included) with a combined single limit of no less than $1,000,000 per occurrence and $2,000,000 aggregate.

12.1.2 **Business or Comprehensive Automobile Liability Insurance** for owned, scheduled, non-owned, or hired automobiles, with a combined single limit of no less than $1,000,000 per accident.

12.1.4 **Employment Practices Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.5 **Workers’ Compensation Insurance** as required by Colorado law

12.1.6 **Evidence of Insurance** – Prior to execution of the agreement, Mines shall supply to District a certificate of insurance signed by the insurer’s representative evidencing the coverage required by this agreement.

13. **Conflict of Interest.** No official of the District who is authorized in such capacity and on behalf of the District to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving this Agreement, or any contract or subcontract relating to work to be performed pursuant to this Agreement, shall become directly or indirectly personally interested in this Agreement or in any part thereof. Mines shall not accept employment or contract during the term of this Agreement with any firm or individual for the provision of services if such employment or contract would conflict directly with the Services provided to the District under this Agreement.

14. **No Expert Witness.** Mines, at no time during or after this Agreement, shall be called to act as an expert witness for the purposes of testifying on the items included in the Scope of Work or related to this Agreement.
15. **No Warranty.** Mines shall perform all work in accordance with industry standards, but Mines provides no warranty for the services or deliverables provided under this Agreement.

16. **Open Records.** Mines is a Colorado state public institution and therefore is obligated to the Colorado Open Records Act (CORA). The Parties are aware that this Agreement and any pricing are not confidential. Any other item marked as confidential will be treated as such and the District will be notified if any request for its disclosure is made, allowing District to defend such disclosure. The District is responsible for marking the confidential items it provides to Mines as confidential and Mines is responsible for marking the deliverables to the District as confidential.

17. **Equal Opportunity.** During the performance of this Agreement, Mines shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, marital status or national origin.

18. **Successors and Assigns.** This Agreement shall inure to the benefit of, and be binding upon, the District, Mines, and their respective successors and assigns provided, however, that no assignment of the duties or benefits under this Agreement shall be made without the written consent of Mines and the District.

19. **Choice of Law and Venue.** The Parties shall remain silent as to choice of law and venue.

20. **Notices.** All notices provided by this agreement shall be in writing and shall be sent by first-class mail and facsimile transmission as follows:

   If to the District:
   
   Water Replenishment District of Southern California  
   4040 Paramount Blvd.  
   Lakewood, CA 90712  
   Phone: (562) 921-5521  
   Fax: (562) 921-6101

   If to Mines:
   
   Natalie Vega  
   Colorado School of Mines  
   Guggenheim Bldg., Rm 125  
   1500 Illinois Street  
   Golden, CO 80401-1887  
   Phone: 303-273-3268  
   Email: nmartine@mines.edu  
   Fax: 303-273-3971
21. **Amendments.** This Agreement may be modified only by a writing signed by the Parties hereto.

22. **Integration; Construction.** This Agreement (inclusive of exhibits incorporated herein by this reference) sets forth the final, complete and exclusive expression of the Parties’ agreement with respect to the subject matter hereof, and supersedes any and all other agreements, representations, and promises, whether made orally or in writing. Notwithstanding anything in Exhibit A to the contrary (or any invoice or other unilateral terms or conditions provided by Mines), in the event of any conflict or inconsistency between this Agreement and Exhibit A (or any invoice or other unilateral terms or conditions provided by Mines), this Agreement shall control. The Parties represent and warrant that they are not entering into this Agreement based upon any representation or understanding that is not expressly set forth in this Agreement. This Agreement shall be construed as the product of a joint effort between the Parties and shall not be construed against either Party as its drafter.

23. **Effective Date.** This Agreement is effective as of the date first set forth above.

24. **Authority.** Each person signing this Agreement represents that he or she has the authority to do so on behalf of the Party for whom he or she is signing.
IN WITNESS WHEREOF, the Parties have caused this AGREEMENT to be executed the day and year first above written.

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

Signature

Robert Katherman
Print Name
President, Board of Directors
Title

Signature

Sergio Calderon
Print Name
Secretary, Board of Directors
Title

THE BOARD OF TRUSTEES OF THE COLORADO SCHOOL OF MINES, FOR AND ON BEHALF OF THE COLORADO SCHOOL OF MINES, ("MINES")

Signature

Print Name
Title

Approved As To Form
LEAL, TREJO LLP

Attorneys for the Water Replenishment District of Southern California
IN WITNESS WHEREOF, the Parties have caused this AGREEMENT to be executed the day and year first above written.

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

______________________________  ______________________________
Signature                      Signature
Robert Katherman               Sergio Calderon
Print Name                     Print Name
President, Board of Directors  Secretary, Board of Directors
Title                          Title

THE BOARD OF TRUSTEES OF THE COLORADO SCHOOL OF MINES, FOR AND ON BEHALF OF THE COLORADO SCHOOL OF MINES, ("MINES")

______________________________
Signature
Kirstin Volpi
Print Name
Executive Vice President and COO, CFO
Title

Approved As To Form
LEAL, TREJO LLP

Attorneys for the Water Replenishment District of Southern California
EXHIBIT A
SCOPE OF WORK AND FEES/RATE SCHEDULE
Water Replenishment District of Southern California

Ted Johnson
Water Replenishment District of Southern California
4040 Paramount Boulevard
Lakewood, CA 90712

Proposal

Sequel to performance assessment of surface spreading operations receiving different blends of tertiary/fully advanced treated recycled water

Submitted by

Tzahi Y. Cath, Ph.D., Professor and Director
Julia Regnery, Ph.D., Affiliate Faculty
Advanced Water Technology Center (AQWATEC)
Colorado School of Mines (CSM)
Civil & Environmental Engineering Department
Golden, CO 80401-1887
Phone 303-273-3402
Fax 303-273-3413
E-mail: tcath@mines.edu

August 22, 2017
Sequel to performance assessment of surface spreading operations receiving different blend ratios of tertiary/fully advanced treated recycled water

Tzahi Cath and Julia Regnery, Colorado School of Mines, Golden, CO

INTRODUCTION

Surface spreading operations utilizing recycled water in California are currently limited to the total volume of recycled water that can be recharged at a given site. California’s Division of Drinking Water (DDW), formerly the Department of Public Health (CDPH), has established regulations in which total organic carbon (TOC) has been selected as a measure of system performance (CDPH 2014). In addition, water quality standards were specified that have to be met prior to recharge (CDPH 2014). The 2014 California State Water Resources Control Board – DDW regulations for groundwater replenishment with recycled water differ depending on application type (i.e., surface spreading or direct injection) and whether or not full advanced treatment prior to infiltration is performed. These requirements also include removal of regulated and unregulated organic contaminants as well as surrogate parameters such as TOC to assure proper treatment performance (State Water Board Resolution, 2013). For surface spreading operations, the regulations consider that the TOC concentration in the recycled water (at the point of compliance or at the local groundwater table) should not exceed 0.5 mg/L divided by the approved recycled water contribution (RWC). For a RWC of 35 percent, for example, this approach limits the TOC concentration in the recycled water to 1.4 mg/L. For natural treatment processes such as soil-aquifer treatment (SAT) this represents a very low limit and a tertiary effluent quality might not be sufficient to either meet this TOC concentration or operate at a RWC beyond 35%. For recharge operations that are interested in further increasing their RWC, blending the tertiary water with fully advanced treated (FAT) water such as ultra filtration (UF), reverse osmosis (RO), ultraviolet light and advanced oxidation (UVAOP) might be desired. FAT water can achieve TOC concentrations of less than 0.5 mg/L using a secondary or tertiary treated effluent as feed water. Thus, blending tertiary effluent with FAT permeate either prior to spreading or in the aquifer can be a viable strategy to increase the allowable RWC set forward by the DDW.

This proposed study is a follow-up on previous soil column experiments at Colorado School of Mines (CSM) testing different tertiary/FAT water blends during simulated SAT operation (Drewes et al., 2010). The study is designed to further explore the effects of different blend ratios and timing of tertiary treated and FAT water on the quality of the underlying groundwater through controlled laboratory-scale experiments utilizing the same soil column systems. This study will also characterize changes in the attenuation of organic matter during spreading operation by applying different blend ratios of tertiary and FAT effluents and examine the performance of SAT regarding the removal of TOC, nitrogen species, and indicator trace organic compounds. In addition, this study will closely monitor potential leaching of organic and inorganic constituents from the soil when increasing FAT permeate contribution.
Analytical Procedures

This study will employ a tiered approach using surrogate parameters and trace organic chemical indicator compounds (Drewes et al. 2008, 2011) to monitor the change of water quality during surface spreading operations.

Tier 1 parameters comprise measurements of physicochemical properties and include temperature, pH, dissolved oxygen, alkalinity, and conductivity. The pH will be determined using a Beckman 260 portable pH meter with combination of a gel-filled electrode (Beckman, Fullerton, CA) (Standard Method 4500-H+). Conductivity and temperature will be determined using an YSI model 85 multi-meter (YSI Incorporated, Yellow Springs, OH) (Standard Method 2510). Total alkalinity will be measured using the Hach Alkalinity Kit (Hach, Loveland, CO).

Tier 2 parameters consist of bulk parameters including total organic carbon (TOC), dissolved organic carbon (DOC), UV absorbance at 254 nm, nitrate, nitrite, ammonia, phosphate, and cations/metals. Analyses will be carried out according to Standard Methods (APHA, 2012). UV absorbance will be analyzed using a Beckman UV/VIS spectrophotometer with a 1-cm quartz cell (Standard Method 5910 B). TOC and DOC will be quantified using a Sievers 5310 TOC analyzer with autosampler (Ionics Instruments, Boulder, CO) according to Standard Method 5310 B. The ratio between UVA and TOC will be used to calculate the Specific UV Absorbance (SUVA). Nitrate and phosphate will be analyzed using a Dionex ion chromatograph following Standard Method 4110. Ammonia is measured according to the Hach Nessler Method 8038 adapted from Standard Methods 4500-NH3 B and C. Inorganic cations will be determined by using a Perkin-Elmer Elan 6100 inductively coupled plasma mass spectrometry system (Standard Method 3125 B). This method includes Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Se, Si, Sn, Sr, Ti, U, V, and Zn.

Tier 3 efforts are directed to monitor the attenuation of proposed indicator trace organic chemicals (i.e., atenolol, gemfibrozil, iopromide) as well as potential formation of disinfection by-products (i.e., N-nitrosodimethylamine (NDMA)) during subsurface passage as a function of blending ratio. Monitoring for these compounds will allow assessing performance of SAT under a predefined set of conditions (i.e., retention time, predominant redox conditions, source water quality). Trace organic compounds will be quantified at CSM by liquid chromatography – tandem mass spectrometry and gas chromatography – tandem mass spectrometry using well established methods (e.g., Teerlink et al., 2012).

Tier 4 parameters including 3D-fluorescence excitation emission matrix and size exclusion chromatography coupled with organic carbon detection aim at further characterizing organic carbon present in the recharged water blend as well as the soil organic matter that potentially leaches from the soil as a function of blending ratio. 3D-fluorescence spectroscopy is carried out on a Horiba Jobin Yvon AquaLog spectrofluorometer (Edison, NJ) using a 1 cm quartz fluorospectrometer cell. Separation of organic matter into (A) biopolymers, comprising polysaccharides, proteins and colloids, (B) humic substances, (C) building blocks (hydrolysates of humics), (D) low molecular weight humics and acids, and (E) low molecular weight neutrals (such as alcohols, aldehydes, ketones and amino acids) and their quantification is based on size-exclusion chromatography (SEC) followed by multi-detection of organic carbon, UV-absorbance at 254 nm, and organic bound nitrogen (Huber et al. 2011).
OBJECTIVES

This study will evaluate the quality of recharged groundwater during SAT operations receiving a blend of tertiary treated effluent and FAT permeate. Furthermore, the study will assess if short durational changes in the blend will impact the quality of recovered water after 30 days of subsurface travel. Anticipated low to no flows of tertiary treated effluents at night will be simulated in daily cycles by increasing FAT contribution to 100% for several hours. The objectives of the study are to:

1. Determine the efficiency of SAT regarding the removal of TOC, DOC, nitrate, and trace organic indicator chemicals under controlled laboratory conditions while receiving different blends of tertiary treated and FAT effluents, both longer term (continuous feed) and short-term (6-hours and 12-hours, respectively) blend switches.

2. Assess the affect of different recycled water blends (tertiary vs. FAT treated) on dissolution of soil organic matter and inorganic constituents during spreading operations.

3. Provide an opinion about a spreading operation procedure using a blend of tertiary and FAT treated recycled water that results in maximum SAT performance and minimal dissolution of organic and inorganic constituents.

TECHNICAL APPROACH

In order to determine the performance changes of SAT operation receiving different blends of tertiary treated effluent and FAT permeate, controlled laboratory-scale studies will be conducted at CSM using FAT water (i.e., MF/RO/UVAOP) and tertiary treated effluent provided by WRD.

Task 1: Assessing SAT performance using different blends of tertiary treated effluent and FAT permeate and monitoring of leaching potential

Changes of bulk organic carbon and trace organic compounds present in recycled water during SAT will be investigated under controlled conditions using existing laboratory-scale soil column systems at CSM. The soil column system (C1 system) consists of four 1-m acrylic glass columns (inner diameter 14 cm), respectively, which can be operated in series. The C2 system consists of a single 1.2 m soil column. While C2 soil column is operated under unsaturated and predominantly oxic redox conditions representing the infiltration zone of SAT systems, C1 soil columns are operated under saturated, anoxic flow conditions, representative of the subsurface conditions of the San Gabriel Spreading Grounds. The hydraulic travel time in the C1 soil column system consisting of four 1-m columns is approximately 6 days per 1-m column simulating a total of 25 days of subsurface treatment. Travel time in the C2 system was determined to be approximately 7 days. Travel times were previously determined through breakthrough tests using conservative tracers (Rauch 2005). Coupling of both systems will achieve a total travel time of approximately 32 days. The systems have previously received secondary/tertiary treated effluent as well as surface water as feed water for approximately 15 years, is therefore well acclimated, and simulates field attenuation processes of spreading operations very closely. The soil used in the column system represents aquifer material of the South Platte River alluvial in Colorado, which are both low in soil organic carbon content (less than 0.1%). The soil in this system provides a surface for microorganisms to attach to. The important element of SAT is the thriving biologically active community in these soil columns that is common to all SAT projects and representative of full-scale operations.
The column systems C1 and C2 will be coupled in line and will be used to study the effects of different blending ratios and blending timing on SAT performance. The coupled soil column system will be recharged with tertiary treated effluent provided by WRD for six weeks during the first experiment to create conditions that are similar to recharge conditions at the San Gabriel Spreading Grounds. After baseline hydrochemical conditions are established, the soil column system will be continuously fed with a blend of 15% tertiary / 85% FAT for 6 weeks. During the third experiment, the coupled C1-C2 system will be fed with a blend of tertiary and FAT water in the following daily (24 hour) cycle during experiment 2: 18 hours at 25% tertiary / 75% FAT followed by 6 hours at 0% tertiary / 100% FAT. This will simulate anticipated low to no flows of tertiary treated effluent at the full-scale spreading basin during nighttime hours. This cycle will be operated for the first 3 weeks of the 6 week experiment; then on day 22, and for just one day, 12 hours at 25% tertiary / 75% FAT will be followed by 12 hours at 0% tertiary / 100% FAT to simulate a longer outage of tertiary treated effluent. The next day (i.e., day 23) will resume to the daily schedule of 18 hours at 25% tertiary / 75% FAT followed by 6 hours at 0% tertiary / 100% FAT for the remaining 3 weeks of operation.

Aqueous samples for water quality analysis will be collected from the feed, after the single C2 column (~7 days travel time of predominantly oxic redox conditions), the first column of the C1 system (~6 days of suboxic to anoxic redox conditions) and the fourth C1 column (total of ~32 days travel time representing a sequence of oxic/suboxic/anoxic redox conditions). For all experiments tertiary treated effluent and FAT water will be used that is provided by WRD.

Samples from these locations will be analyzed for analytes of interest, which are classified as Tier 1 (temperature, pH, DO, electrical conductivity, alkalinity), Tier 2 (TOC, DOC, UV absorbance, nitrate, nitrite, phosphate, cations), Tier 3 (trace organic indicator compounds including NDMA), and Tier 4 (3D-fluorescence, SEC-DOC). In addition, two electrical conductivity and nitrate probes will be installed at the inflow and outflow of the soil column system to continuously monitor both surrogate parameters throughout experiments. Three experiments will use different blends and timing of tertiary treated effluent and FAT water as summarized in Table 1. Anticipated sampling frequencies are also stated in Table 1.

Table 1. Blending ratios, sampling locations and frequencies during Task 1

<table>
<thead>
<tr>
<th>Experiment</th>
<th>Feed Water Blend (tertiary vs. FAT)</th>
<th>Sampling Location C2-C1 System</th>
<th>Parameter</th>
<th>Frequency</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Week 1-6</td>
<td>100:0%</td>
<td>Influent, effluent</td>
<td>Tier 1 &amp; 2 Tier 3 &amp; 4</td>
<td>Weekly Thrice*</td>
<td></td>
</tr>
<tr>
<td>(2) Week 1-6</td>
<td>15:85%</td>
<td>Influent, 1.2-m, 2.2-m, effluent</td>
<td>Tier 1 &amp; 2 Tier 3 &amp; 4</td>
<td>Weekly Thrice*</td>
<td></td>
</tr>
<tr>
<td>(3) Week 1-3</td>
<td>Daily cycle of 25:75% (18 hours) followed by 0:100% (6 hours)</td>
<td>Influent, 1.2-m, 2.2-m, effluent</td>
<td>Tier 1 &amp; 2 Tier 3 &amp; 4</td>
<td>Weekly Thrice* Sampling frequency will be adjusted as necessary if leaching is observed.</td>
<td></td>
</tr>
<tr>
<td>Day 22</td>
<td>Disturbance of 0:100% (12 hours), then back to the previous daily cycle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 3-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Sampling on three consecutive days during the sixth week of experiment.
**Task 2: Observations of SAT operation using blends of tertiary and fully advanced treated effluents**

Based upon the findings of this study, opinions will be provided regarding the scenarios and potential water quality impacts for various blends and timing of tertiary treated effluent and FAT permeate for surface spreading operations at the San Gabriel Spreading Grounds. The goals here are to minimize organic carbon leaching and formation of disinfection by-products (i.e., NDMA) and maintain performance of SAT under various blending conditions while also achieving nitrogen removal and attenuation of trace organic chemicals that might still be present in FAT water. The impact of a short duration 100% FAT recharge will be included. Mines provides no warranty for the services or opinions provided.

**PROPOSED BUDGET AND RATES**

This study is designed for six months. The proposed budget of this study is summarized in Tables 2 and 3.

**Table 2. Proposed costs for water quality assessment**

<table>
<thead>
<tr>
<th>Water Source/Sampling Location</th>
<th>Target Analytes</th>
<th>Unit cost</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil-column study w/ different tertiary and fully advanced treated effluents blends; three different conditions</td>
<td>Tier 1 (x60)</td>
<td>$22</td>
<td>$1,320</td>
</tr>
<tr>
<td></td>
<td>Tier 2 (x60)</td>
<td>$90</td>
<td>$5,400</td>
</tr>
<tr>
<td></td>
<td>Tier 3 (x30)</td>
<td>$750</td>
<td>$22,500</td>
</tr>
<tr>
<td></td>
<td>Tier 4 (x30)</td>
<td>$350</td>
<td>$10,500</td>
</tr>
</tbody>
</table>

**Total Cost Supplies**

Overhead (8.5%) $39,720 $3,376

**Table 3. Proposed costs for personnel involved study**

<table>
<thead>
<tr>
<th>Task</th>
<th>Time</th>
<th>Unit cost</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kate Spangler: Analytical support for bulk parameter and trace organic chemical analysis</td>
<td>120 hours</td>
<td>$50/hr</td>
<td>$6,000</td>
</tr>
<tr>
<td>Graduate student: Column testing and trace organic chemical analysis</td>
<td>300 hours</td>
<td>$20/hr</td>
<td>$6,000</td>
</tr>
<tr>
<td>Dr. Regnery: Assessment of historical data, coordination and supervision of laboratory-scale efforts, analytical support for trace organic chemical analysis</td>
<td>150 hours</td>
<td>$90/hr</td>
<td>$13,500</td>
</tr>
<tr>
<td>Dr. Cath: Preparation of final report</td>
<td>10 hours</td>
<td>$250/hr</td>
<td>$2,500</td>
</tr>
</tbody>
</table>

**Total Cost Personnel** $28,000 $2,380

The total costs for this study are estimated to be **$73,476** including costs for sampling, supplies, water analysis, personnel, and administrative fees (8.5% or $5,756). It is expected that WRD will cover shipping costs of tertiary treated and FAT effluent samples to CSM. The
Colorado School of Mines is tax exempt. The first invoice in the amount of $30,000 will be submitted with the acceptance of the scope of work document. The second invoice in the amount of $20,000 will be submitted 3 months after initiation of the study. The final invoice in the amount of $23,476 will be submitted along with the final results.

REFERENCES


MEMORANDUM
ITEM NO. 5

DATE: JUNE 11, 2018

TO: GROUNDWATER QUALITY (GWQ) COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: NO COST TIME EXTENSION WITH SCHLUMBERGER FOR BOREHOLE GEOPHYSICAL LOGGING

SUMMARY

On May 25, 2017, the Board of Directors authorized entering into a contract with Schlumberger Technology Corporation to provide borehole geophysical logging services during the drilling and construction of two new groundwater monitoring wells, known as LA#5 and LA#6. The term of the contract expires June 30, 2018. Well LA#5 was successfully completed in September 2017.

For well LA#6 there have been delays in finding an acceptable location due to the highly urbanized area near downtown Los Angeles. A location has finally been preliminarily determined, pending approval through the City’s extensive permitting process. Therefore, a no-cost time extension is needed to the Schlumberger contract to cover the work when it occurs.

FISCAL IMPACT

No Impact

STAFF RECOMMENDATION

The External Affairs Committee recommend the Board of Directors enter into Amendment #1 with Schlumberger for a no cost time extension for borehole geophysical logging through June 30, 2019.
AMENDMENT NO. 1 TO CONTRACT NO. 937
AGREEMENT FOR PROFESSIONAL SERVICES
BETWEEN
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
AND
SCHLUMBERGER TECHNOLOGY CORPORATION

This Amendment No.1 to Contract No. 937 (“Amendment No. 1”), is made and entered into this ____ day of June, 2018 (“Effective Date”), by and between the Water Replenishment District of Southern California (hereinafter “District”), and Schlumberger Technology Corporation, (hereinafter “Consultant”). The District and Consultant are collectively referred to herein as the “Parties”.

I. RECITALS

A. WHEREAS, On July 20, 2017, a certain agreement, hereinafter referred to as Contract No. 937 (“Agreement”), was executed between the District and Consultant for borehole logging, data processing, and reporting; and

B. WHEREAS, the District and Consultant now desire to enter into Amendment No. 1 in order to extend the term of the Agreement, as set forth below, due to delays in finding an acceptable location for the construction of one of the two groundwater monitoring wells.

II. AMENDMENT

NOW, THEREFORE, in consideration of the mutual covenants, promises and agreements set forth, it is agreed the Agreement, a copy of which is attached hereto as Exhibit “A”, and incorporated herein by reference, shall remain in full force and effect except as otherwise hereinafter provided.

1. Term of the Agreement: The term of the Agreement shall be extended to June 30, 2019 (the “Expiration Date”).

2. Remaining Portion of the Agreement: Except as otherwise expressly set forth in this Amendment No.1, all other provision of the Agreement shall remain in full force and effect between the Parties.
IN WITNESS WHEREOF, the parties have caused this Amendment No. 1 to be executed as of the Effective Date.

SCHLUMBERGER TECHNOLOGY CORPORATION, ("CONSULTANT")

__________________________
Signature

__________________________
Print Name

__________________________
Title

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

__________________________
Signature
John D.S. Allen

__________________________
Print Name
President, Board of Directors

__________________________
Signature
Willard H. Murray, Jr.

__________________________
Print Name
Secretary, Board of Directors

Approved As To Form
LEAL, TREJO APC

Attorneys for the Water Replenishment District of Southern California
EXHIBIT “A”
PROFESSIONAL SERVICES AGREEMENT
SCHLUMBERGER TECHNOLOGY CORPORATION

This Professional Services Agreement (the “Agreement”) is made and entered into this 20th day of July, 2017 by and between the Water Replenishment District of Southern California (“District”) and Schlumberger Technology Corporation, (“Consultant”) (collectively the “Parties” or individually as “Party”) for the furnishing of certain professional services upon the following terms and conditions.

1. Scope of Services. Consultant shall perform the scope of services described in Exhibit A hereto (“Services”). Tasks other than those specifically described in Exhibit A shall not be performed without a prior written amendment to this Agreement.

1.1 Standard of Care. In performing the scope of services under this Agreement, Consultant shall exercise the standard of care and expertise prevailing in California for the performance of such services.

2. Term. The term of this Agreement shall commence on July 20, 2017 and shall end on July 20, 2018 (the “Expiration Date”). At least sixty (60) days prior to the Expiration Date, District staff shall evaluate the quality of the Services that have been provided by the Consultant, the cost of such Services relative to the benefits, and the need for any continuation of the services. The results of such evaluation shall be provided to the appropriate District Committee, which committee shall provide a report to the District’s Board of Directors (“Board”). If the Board determines that there is a demonstrated need for the continuation of such Services, the Board may renew the Agreement on terms and conditions that do not provide for a significantly longer term, increased scope of services or increased fee schedule than is provided for in Paragraphs 1 or this Paragraph 2. If the Board desires to modify the Agreement to provide for such a significantly longer term, increased scope of services or increased fee schedule, the District shall comply with the provisions of its then current Administrative Code concerning the solicitation and approval of proposals for professional services.

2.1 Termination by District

2.1.1 Termination for Convenience. The District may terminate this Agreement for its convenience at any time upon five (5) days written notice to Consultant. Consultant’s compensation in the event of such a termination
shall be exclusively limited to payment for all authorized services performed and for all authorized expenses incurred up to the effective date of such termination. Consultant understands and agrees that it shall not be entitled to any additional compensation or reimbursement whatsoever in the event of such termination.

2.1.2 Consultant’s Obligations Upon Termination. Following any termination of this Agreement by the District or Consultant, the Consultant shall promptly return all District property, and shall likewise provide to District all finished and unfinished data, studies, maps, reports, and other deliverables and work-product prepared by Consultant pursuant to this Agreement.

3. Consultant’s Compensation. District will compensate Consultant for services performed and for expenses incurred pursuant to this Agreement as follows:

3.1 Fee. Consultant shall be paid in accordance with the fees and Consultant Rate Schedule attached to this Agreement as Exhibit B which may not be changed except with District’s written approval.

3.2 Reimbursable Expenses. Consultant shall be reimbursed for only pre-approved expenses, subject to the provisions of this Agreement. Consultant shall obtain the District’s prior written approval before incurring an expense not specifically provided for under this Agreement.

3.2.1 Third Party Expenses. Unless specifically provided in Exhibit B, and subject to the provisions of Paragraph 3.2, the District shall not reimburse Consultant for any costs charged to Consultant by third parties unless said costs are preapproved. In the event such costs are approved, such reimbursement shall be at cost without any markup by Consultant.

3.3 Invoices. Consultant shall submit monthly invoices to District for services performed and expenses incurred during the preceding month. District shall process Consultant’s invoice upon receipt and issue any undisputed payment in a timely manner. Consultant’s invoices shall separately identify all personnel for whose services payment is sought, the services performed, and all expenses for which reimbursement is requested. As a condition precedent to payment, District may require Consultant to furnish supporting information and documentation for all charges for which payment is sought. District shall have the right to withhold from payments to Consultant reasonably disputed amounts including, without limitation, amounts for services not performed in accordance with this Agreement and costs, expenses or damages incurred by District as a result of Consultant’s breach of this Agreement or Consultant’s negligence.

4. Consultant’s Obligation to Provide Notice of Changes. Consultant shall provide written notice to the District no later than twenty (20) days after the occurrence of any event
(including any direction by the District) which Consultant believes requires a change in its compensation or the time for performance of its obligations under this Agreement. Said notice shall describe the event and the basis for any change in compensation or time for performance requested by Consultant. The Parties shall thereafter meet and confer to determine whether such a change is appropriate. However, no such change to this Agreement may be made except by written amendment to this Agreement executed by the Parties. Consultant's failure to provide the notice required under this Paragraph shall constitute a waiver of its right to seek a change in its compensation or the time for performance of its obligations under this Agreement.

5. **Ownership and Use of Documents.** All proprietary information developed by Consultant in connection with, or resulting from, this Agreement, including but not limited to inventions, discoveries, improvements, copyrights, patents, maps, reports, textual material or software programs, shall be the sole and exclusive property of the District. Consultant agrees that the compensation to be paid pursuant to this Agreement includes adequate and sufficient compensation for any proprietary information developed in connection with or resulting from this Agreement. Consultant further understands and agrees that full disclosure of all proprietary information developed in connection with, or resulting from, this Agreement shall be made to the District, and that Consultant shall do all things necessary and proper to perfect and maintain District’s ownership of such proprietary information. All documents, reports, surveys, renderings, photographs, data and other materials furnished by the District to Consultant shall remain the exclusive property of the District and shall not be distributed or provided to third parties without the express written authorization of the District.

6. **Publication of Project Information.** Consultant shall notify and obtain written approval from the District before presenting verbal or written information to outside individuals or entities about the services or project for which Consultant was retained.

7. **Patents and Copyrights.** The Consultant shall assume all costs arising from the use of patented or copyrighted materials, including but not limited to, equipment, devices, processes, and software programs used or incorporated in the work performed under this Agreement. Consultant shall defend, indemnify hold the District, its officers, directors, agents, employees, representatives and assigns harmless from and against any and all claims, demands, suits at law, and actions of every nature for or on account of the use of any patented or copyrighted materials.

8. **Consultant’s Status.** Consultant is an independent contractor and neither Consultant nor any employee of Consultant is or will be treated as an employee of the District under this Agreement. District controls the result to be accomplished under this Agreement, but not the means by which Consultant achieves such results.

8.1 Payments made to Consultant pursuant to this Agreement shall be the sole and complete compensation to which Consultant is entitled. Consultant is solely responsible for any taxes levied by local, state or federal authorities on such sums.
Consultant shall defend and indemnify the District for any taxes, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to properly withhold taxes as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.2 District will not make any contribution to any retirement plan or Social Security on behalf of Consultant or any of Consultant’s employees. Consultant shall defend and indemnify the District for any contribution, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to contribute to any retirement plan or Social Security as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.3 District will not make any payments to Consultant, or Consultant’s employees, which rely upon employee status, including, but not limited to, FLSA and other overtime and minimum wage requirements, prevailing wage laws, worker’s compensation benefits, FMLA, CFRA, Paid Leave, and unemployment benefits. Consultant shall defend and indemnify the District for any payment, fines, penalties and attorneys’ fees assessed or threatened to be assessed against District for failure to make any such payment or otherwise provide the benefits of such laws as a result of any determination that Consultant, or any of Consultant’s employees, is an employee rather than an independent contractor of District.

8.4 Consultant shall comply with the Political Reform Act of 1974, as amended including, but not limited to, disclosure of all conflicts of interest and other financial disclosure requirements required thereunder.

9. **Instructions to Consultant.** In the performance of the services set forth in this Agreement, Consultant shall report to and receive instructions from the following person on behalf of the District: Ted Johnson, Ken Ortega, or Robb Whittaker.

10. **Subconsultant Services.** Any subconsultants to be used by Consultant in the performance of the scope of services shall be identified in Exhibit A hereto. Consultant shall obtain the District’s prior written approval before retaining a subconsultant to perform any portion of the scope of services of this Agreement. Notwithstanding Consultant’s use of any subconsultants, Consultant shall be responsible to the District for the performance of its subconsultants as it would be if Consultant had performed those services itself. Nothing in this Agreement shall be deemed or construed to create a contractual relationship between the District and any subconsultant employed by Consultant. Consultant shall be solely responsible for payments to any subconsultants. Consultant shall defend and indemnify the District for any payment, fines or penalties assessed or threatened to be assessed against District as a result of any claim brought by any subconsultant of Consultant for any matter arising from, or related to, the services performed by subconsultant under this Agreement.
11. **Compliance With Laws and Regulations; Licensing.** Consultant shall perform its services under this Agreement in compliance with all applicable provisions of Federal, State and local laws, statutes, codes, rules, regulations, ordinances and professional standards ("Applicable Laws"). By entering into this Agreement, Consultant represents and warrants that it possesses and will keep current all license and registrations required by Applicable Laws to enter into this Agreement and to perform the scope of services hereunder.

12. **Insurance.** Consultant, at its sole cost and expense, shall obtain, keep in force, and maintain the following policies of insurance at all times while this Agreement is in effect, and shall not commence any work under this Agreement until proof of such insurance has been provided to the District. The coverages provided by such insurance shall not be construed as limitations of liability.

12.1 **Required Policies.**

12.1.1 **Commercial General Liability Insurance** (contractual, products, and completed operations coverages included) with a combined single limit of no less than $2,000,000 per occurrence or the full per occurrence limits of the policies available, whichever is greater for bodily injury, personal injury and property damage.

12.1.2 **Business or Comprehensive Automobile Liability Insurance** for owned, scheduled, non-owned, or hired automobiles, with a combined single limit of no less than $1,000,000 per accident.

12.1.3 **Professional Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.4 **Employers’ Liability Insurance** with limits of $1,000,000 per claim and $1,000,000 in the aggregate.

12.1.5 **Workers’ Compensation Insurance** as required under the Workers’ Compensation Insurance and Safety Act of the State of California.

12.2 **Required Terms.**

12.2.1 All policies except workers’ compensation and professional liability, shall name as additional insureds the Water Replenishment District of Southern California, its directors, officers, employees, agents authorized volunteers and representatives. The coverage shall contain no special limitations on the scope of protection afforded the District, its directors, officers, employees, or authorized volunteers.

12.2.2 All policies (with the exception of Professional Liability) shall be written on an occurrence basis. If a policy may only be obtained on a claims made basis, the policy shall be maintained continuously for a period of no less
than three (3) years after the date of final completion of the scope of services under this Agreement.

12.2.3 All policies shall provide that coverage cannot be cancelled without thirty (30) days prior written notice to the District.

12.2.4 All insurance required under this Agreement shall be considered primary to any insurance maintained by the District. All policies except Professional Liability shall include waivers of subrogation in favor of the District and its insurers.

12.2.5 Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to District, its directors, officers, employees, or authorized volunteers.

12.2.6 The Consultant’s insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer’s liability.

12.2.7 Liability insurance shall indemnify the Consultant and his/her sub-contractors against loss from liability imposed by law upon, or assumed under contract by, the Consultant his/her sub-contractors for damages on account of such bodily injury (including death), property damage, personal injury, completed operations, and products liability.

12.2.8 Deductibles and Self-Insured Retentions – Any deductible or self-insured retention must be declared to and approved by District. At the option of District, the insurer shall either reduce or eliminate such deductibles or self-insured retentions. Policies containing any self-insured retention (SIR) provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named or additional insureds, co-insurers, and/or insureds other than the first named insured.

12.2.9 Evidence of Insurance – Prior to execution of the agreement, the Consultant shall file with District a certificate of insurance signed by the insurer’s representative evidencing the coverage required by this agreement. Such evidence shall include an additional insured endorsement signed by the insurer’s representative. Such evidence shall also comply with the Evidence and Required Forms of Insurance attached hereto as Exhibit “C”. In the event that the Consultant employs other contractors (sub-contractors) as part of the work covered by this agreement, it shall be the Consultant’s responsibility to require and confirm that each sub-contractor meets the minimum insurance requirements specified above. Failure to continually satisfy the Insurance requirements is a material breach of contract.
12.2.10 All polices required under this Agreement shall be issued by companies authorized to transact insurance business in the State of California acceptable to the District and having a Best rating of A- or equivalent or as otherwise approved by District.

13. **Indemnification.** Consultant shall indemnify, defend and hold harmless the District and its directors, officers, employees, agents and representatives (collectively “District”), from and against any and all claims, liabilities, costs, damages, suits, proceedings, injuries (including injuries to real and personal property, and injuries to persons, including death) incurred by District (“Losses”), as a result of Consultant’s breach of any provision of this Agreement, Consultant’s failure to comply with applicable laws, Consultant’s negligent acts or omissions, or Consultant’s willful misconduct. However, Consultant’s obligation to defend shall arise regardless of any claim or assertion that the District caused or contributed to the Losses. Nothing in this paragraph shall constitute a waiver or limitation of any legal rights which the District may have including, without limitation, the right to implied indemnity.

14. **Arbitration and Attorneys’ Fees.** Any dispute arising from or relating to this Agreement shall be submitted to final and binding arbitration before an arbitrator who is a member of the National Academy of Arbitrators. The parties will obtain a list of five names of potential arbitrators from the National Academy of Arbitrators, or the American Arbitration Association, and will take turns striking the names of arbitrators until one arbitrator remains, who shall preside over the arbitration. The arbitrator will have no power to rewrite any of the terms of this Agreement. The parties shall split the cost of the arbitrator’s fee and any court reporter required by the arbitrator or if both parties agree to having the proceedings taken down by a court reporter. The prevailing Party in any action arising from or relating to this Agreement shall be entitled to recover its reasonable attorneys’ fees, expert witness fees and arbitration fees and costs in addition to any other relief and recovery ordered by the arbitrator or other tribunal hearing any matter related to this Agreement.

15. **Conflict of Interest.** No official of the District who is authorized in such capacity and on behalf of the District to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving this Agreement, or any contract or subcontract relating to work to be performed pursuant to this Agreement, shall become directly or indirectly personally interested in this Agreement or in any part thereof. Consultant shall not accept employment or contract during the term of this Agreement with any firm or individual for the provision of services if such employment or contract would conflict directly with the Services provided to the District under this Agreement.

16. **Equal Opportunity.** During the performance of this Agreement, Consultant shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, marital status or national origin.
17. **Successors and Assigns.** This Agreement shall inure to the benefit of, and be binding upon, the District, Consultant, and their respective successors and assigns provided, however, that no assignment of the duties or benefits under this Agreement shall be made without the written consent of the Consultant and the District.

18. **Choice of Law and Venue.** This Agreement shall be governed by and interpreted in accordance with the laws of the State of California. The Parties agree that the exclusive venue for any action or proceeding arising from or relating to this Agreement shall be in the County of Los Angeles, State of California.

19. **Notices.** All notices provided by this agreement shall be in writing and shall be sent by first-class mail and facsimile transmission as follows:

If to the District:

Water Replenishment District of Southern California  
Attn: Ted Johnson  
4040 Paramount Blvd.  
Lakewood, CA 90712  
Phone: (562) 921-5521  
Fax: (562) 921-6101

If to Consultant:

Masood Khan  
Wireline Account Manager  
5080 California Ave, Suite #400  
Bakersfield, CA 93309  
Phone: 661-864-4735  
Email: mkhan@slb.com

20. **Amendments.** This Agreement may be modified only by a writing signed by the Parties hereto.

21. **Integration; Construction.** This Agreement (inclusive of exhibits incorporated herein by this reference) sets forth the final, complete and exclusive expression of the Parties’ agreement with respect to the subject matter hereof, and supersedes any and all other agreements, representations, and promises, whether made orally or in writing. Notwithstanding anything in Exhibit A to the contrary (or any invoice or other unilateral terms or conditions provided by Consultant), in the event of any conflict or inconsistency between this Agreement and Exhibit A (or any invoice or other unilateral terms or conditions provided by Consultant), this Agreement shall control. The Parties represent and warrant that they are not entering into this Agreement based upon any representation or understanding that is not expressly set forth in this Agreement. This Agreement shall
be construed as the product of a joint effort between the Parties and shall not be construed against either Party as its drafter.

22. **Effective Date.** This Agreement is effective as of the date first set forth above.

23. **Authority.** Each person signing this Agreement represents that he or she has the authority to do so on behalf of the Party for whom he or she is signing.

IN WITNESS WHEREOF, the Parties have caused this AGREEMENT to be executed the day and year first above written.

**WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA**

[Signature]

Robb Whitaker  
*Print Name*  
General Manager  
*Title*

**SCHLUMBERGER TECHNOLOGY CORPORATION, ("CONSULTANT")**

[Signature]

[Print Name]

*Title*

Approved As To Form  
LEAL, TREJO LLP

[Signature]

Attorneys for the Water Replenishment  
District of Southern California
be construed as the product of a joint effort between the Parties and shall not be construed against either Party as its drafter.

22. **Effective Date.** This Agreement is effective as of the date first set forth above.

23. **Authority.** Each person signing this Agreement represents that he or she has the authority to do so on behalf of the Party for whom he or she is signing.

IN WITNESS WHEREOF, the Parties have caused this AGREEMENT to be executed the day and year first above written.

WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA

---

**Signature**

Robb Whitaker

**Print Name**

General Manager

**Title**

---

SCHLUMBERGER TECHNOLOGY CORPORATION, ("CONSULTANT")

---

**Signature**

Masood M. Khan

**Print Name**

Account Manager

**Title**

---

Approved As To Form

LEAL, TREJO LLP

---

Attorneys for the Water Replenishment District of Southern California

---

Water Replenishment District of Southern California 9 Professional Services Contract Schlumberger Technology Corporation
EXHIBIT A
SCOPE OF WORK

Water Replenishment District of Southern California

Exhibit A
Scope of Work

Professional Services Contract
Schlumberger Technology Corporation
May 10, 2017

Attn: Ted Johnson

Chief Hydrogeologist  
Water Replenishment District of Southern California  
4040 Paramount Blvd Lakewood, CA 90712

RE: Request for Proposal – Geophysical Well Logging

Dear Mr. Johnson,

Thank you very much for the opportunity for allowing us to submit pricing for 2017 Geophysical Well Logging program. We at Schlumberger understand you have a choice when selecting service companies and appreciate the fact that you have continued to allow us to provide Wireline Logging Services.

Schlumberger’s field engineers and operations management team continue to improve our great record of safety and service delivery. We are proud that 2016 has been a good year in terms of safety and service quality and, going forward, we will continue to strive to improve on that record.

As per your instructions we have engaged WSP Parsons Brinckerhoff for project management and integrated log processing and interpretation as subcontractors.

Please note all services are provided under our General Terms & Conditions as attached herewith.

For 2017 Well logging we are pleased to offer the following pricing:

**Primary Services**

<table>
<thead>
<tr>
<th>Services</th>
<th>Well Depth 2,200ft</th>
<th>Well Depth 1,000ft</th>
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<td>Mileage Charge</td>
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**Optional Services**

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<td>Fullbore Formation Microlmage</td>
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<td>Sonic Scanner, Compressional and Shear</td>
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<td>FMI Image Processing</td>
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<td>Sonic Scanner Processing</td>
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<td>$2,750</td>
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Please see attached quotes for details on pricing.

If you have any further queries regarding this offer, please feel free to contact me at the numbers provided below. Looking forward to have continued great working relations with Water Replenishment District of Southern California during coming years.

Sincerely,

Masood Khan
Wireline Account Manager
Email: mkhan@slb.com
661-864-4735
916-849-5343
### Schlumberger

**Quote Number:** DQTJ-00151  
**Service Date:** 10-May-2017

**Customer:** WATER REPLENISHMENT DISTRICT OF SOU  
**Well Name/#:** WATER REPLENISHMENT DIS  
**Field:**  
**County:**  
**State/Province:**  
**Country:**  
**UWI:**  
**Rig:**  
**Run #:** Pending  
**SLB Loc:** Bakersfield District

**Service Instructions:**  
- Primary Services: Well Depth: 2,200ft  
- Tool Protection  
- 3rd Party (WSP Consulting - Subcontract for PM, integrated log processing and report

### Ln | SPN | Desc | Qty | UOM | Price | Discount | Amount | Opt
--- | --- | --- | --- | --- | --- | --- | --- | ---
10 | SERV | Service Charge - Open Hole | 1 | EA | 2,700.00 | 65.00% | 945.00 |
20 | FLATCHL | Flat Charge - Land | 5000 | FT | 0.70 | 65.00% | 1,225.00 |
30 | SERCHGD | Depth Charge | 6,200.00 | Discount: 4,030.00 | 2,170.00 |
40 | AIT-PEX | Platform Express Array Induction Imager | 2,200 | FT | 1.46 | 55.00% | 1,445.40 |
50 | DEP | Depth Charge | 2,000 | FT | 1.46 | 55.00% | 1,314.00 |
60 | SUR | Survey Charge | 6,132.00 | Discount: 3,372.60 | 2,759.40 |
70 | MCFL-PEX | Platform Express Micro Cylindrical Focused Log | 2,200 | FT | 0.94 | 55.00% | 930.60 |
80 | DEP | Depth Charge | 3,948.00 | Discount: 2,171.40 | 1,776.60 |
90 | SUR | Survey Charge | 4,116.00 | Discount: 2,263.80 | 1,852.20 |
100 | HNGS-C | Xtreme Natural Gamma Ray Spectroscopy (Combo) | 2,578.00 | Discount: 25,460.10 | 31,177.90 |
110 | DEP | Depth Charge | 4,116.00 | Discount: 2,263.80 | 1,852.20 |
120 | SUR | Survey Charge | 4,116.00 | Discount: 2,263.80 | 1,852.20 |
130 | MR-SCAN-T1 | MR Scanner, T1 Logging | 6,578.00 | Discount: 25,460.10 | 31,177.90 |
140 | DEP | Depth Charge | 180 | NTFLATL3-10 | Flat Charge Tier III - Depth to 10K, (and NewTech) OH | 1 | EA | 1,430.00 | 1,430.00 |
150 | SUR | Survey Charge | 180 | NTFLATL3-10 | Flat Charge Tier III - Depth to 10K, (and NewTech) OH | 1 | EA | 1,430.00 | 1,430.00 |
160 | FLAT | Flat Charge | 180 | NTFLATL3-10 | Flat Charge Tier III - Depth to 10K, (and NewTech) OH | 1 | EA | 1,430.00 | 1,430.00 |
190 | FLATL2-10 | Flat Charge Tier II - Depth<10K OH | 470.00 | 1,410.00 |
200 | MEDIA | Media Charges | 2,840.00 | Discount: 0.00 | 2,840.00 |
210 | ALVL2 | Level 2 Services Flat Charge | 2,020.00 | Discount: 1,520.00 | 500.00 |
220 | MILEAGE_WL | Mileage | 840.00 | Discount: 294.00 | 546.00 |
230 | MILEAGE150P | Mileage Charge, above 150 miles | 546.00 |

**Requested Total:** 43,562.10  
**Optional Total:** 43,562.10  
**Quote Total (USD):** 43,562.10
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**Pre-Job Instructions:**
- Primary services - Well Depth: 2,200ft
- AIT, MCFL, HING, MRX
- Tool Protection
- 3rd Party (WSP Consulting - Subcontract for PM, integrated log processing and report

**Estimated Discounted Total (USD):** 43,562.10

*THE ESTIMATED CHARGES SHOWN ABOVE MAY BE EXCLUSIVE OF TAX AND THE FINAL INVOICE WILL INCLUDE ALL APPLICABLE TAXES.*

*THIS QUOTATION IS VALID FOR A PERIOD OF 30 DAYS FROM THE DATE ABOVE, UNLESS OTHERWISE SPECIFIED BY SCHLUMBERGER, AND WILL BE PERFORMED IN ACCORDANCE WITH THE ATTACHED GENERAL TERMS AND CONDITIONS OR THE TERMS OF A MASTER SERVICE AGREEMENT IF ONE IS IN FORCE BETWEEN CUSTOMER AND SCHLUMBERGER. CUSTOMERS WRITTEN ACCEPTANCE OF THE TERMS OF THIS QUOTATION AND, IN THE ABSENCE OF A MASTER SERVICE AGREEMENT, THE ATTACHED GENERAL TERMS AND CONDITIONS SHALL TOGETHER FORM A BINDING CONTRACT BETWEEN THE PARTIES.*
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Requested Total: 35,138.00
Optional Total: 35,138.00
Quote Total (USD): 35,138.00
Customer Name: WATER REPLENISHMENT DISTRICT OF SOU
4040 PARAMOUNT BLVD
LAKEWOOD CA 90712
Customer Rep: Masood Khan
Sales Engineer: Masood Khan

Pre-Job Instructions:
- Primary Services - Well Depth: 1,000ft
  - AIT, MCFL, HNGS, MRX
  - Tool Protection
  - 3rd Party (WSP Consulting - Subcontract for PM, integrated log processing and report

Estimated Discounted Total (USD): **35,138.00**

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<table>
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<th>Ln</th>
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<td>Flat Charge Tier III - Depth to 10K, (and NewTech) OH</td>
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<td>EA</td>
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<td>Flat Charge Tier II - Depth&lt;10K OH</td>
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<td>EA</td>
<td>470.00</td>
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Estimated Discounted Total (USD): 41,853.15

THE ESTIMATED CHARGES SHOWN ABOVE MAY BE EXCLUSIVE OF TAX AND THE FINAL INVOICE WILL INCLUDE ALL APPLICABLE TAXES.

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Pre-Job Instructions:
Optional Services: Well depth 1000ft
- CMR
- FMI
- MSIP P&S,
- Tool Protection

Estimated Discounted Total (USD): **31,306.25**

The estimated charges shown above may be exclusive of tax and the final invoice will include all applicable taxes.

This quotation is valid for a period of 30 days from the date above, unless otherwise specified by Schlumberger, and will be performed in accordance with the attached general terms and conditions or the terms of a master service agreement if one is in force between customer and Schlumberger. Customers written acceptance of the terms of this quotation and, in the absence of a master service agreement, the attached general terms and conditions shall together form a binding contract between the parties.
GENERAL TERMS AND CONDITIONS

THE FOLLOWING GENERAL TERMS AND CONDITIONS OF THIS CONTRACT CONTAIN INDEMNITY AND CHOICE OF LAW PROVISIONS - PLEASE READ CAREFULLY.

1. Acceptance. By requesting Schlumberger’s services, equipment, or products, Customer voluntarily elects to enter into and be bound by these General Terms and Conditions.

2. Definitions.
   a. Schlumberger – Schlumberger Technology Corporation, a Texas corporation.
   b. Customer – the person, firm or other entity to which the equipment and/or services are supplied or provided.
   c. Group – Either Schlumberger or Customer and its respective parents, affiliates, subsidiaries, and each of their respective officers, directors, contractors, subcontractors, consultants, agents, employees and invitees.
   d. Claims – Damage, loss, liability, claims, demands and causes of action of every kind and character (including all costs and expenses thereof and reasonable attorney fees associated therewith).

3. Terms. Cash in advance unless Schlumberger has approved Customer’s credit prior to the sale. Terms of sale for credit-approved accounts are total invoice amount due at Schlumberger’s office. Houston, Texas on or before the 30th day from the date of invoice. Customer shall pay interest on past due balances at the lesser of 1.5% per month or the maximum allowed by applicable state or federal law. If Customer’s account becomes delinquent, Schlumberger shall have the right to revoke any and all previously applied discounts. Upon such revocation, the full invoice price without discount will become immediately due and owing and subject to collection. Customer hereby agrees to pay all fees directly or indirectly incurred in the collection of past due or delinquent accounts, including agency and attorney’s fees.

4. Taxes. Customer shall pay all appraisals or sales levees (other than income taxes) imposed by any government, governmental unit or similar authority with respect to the charges made or payments received in connection with Schlumberger’s services, equipment or products.

5. Independent Contractor. Schlumberger is and shall be an independent contractor with respect to the performance of the services set forth in this Contract, and neither Schlumberger nor anyone employed by Schlumberger shall be the agent, representative, employee or servant of Customer in the performance of such services or any part hereof. When Schlumberger’s employees (defined to include Schlumberger’s direct, indirect, special, or statutory employees) are covered by the Louisiana Workers’ Compensation Act, La R.S. 23:1021 et seq., Customer and Schlumberger agree that all work and operations performed by Schlumberger and its employees pursuant to this Contract are an integral part of and are essential to the ability of Customer to generate Customer’s goods, products and services for purposes of La R.S. 23:1081(A). Furthermore, Customer and Schlumberger agree that Customer is the statutory employer of Schlumberger’s employees for purposes of La R.S. 23:1081(A). Irrespective of Customer’s status as the statutory employer or special employer (as defined in La R.S. 23:1081C) of Schlumberger’s employees, Schlumberger shall remain primarily responsible for the payment of Louisiana workers’ compensation benefits to its employees, and shall not be entitled to seek contribution for any such payments from Customer.

6. Obligations of Customer.
   a. Well and Well Site Conditions: Notification of Hazardous Conditions. Customer, having custody and control of the well and superior knowledge of the conditions in and surrounding it, shall provide Schlumberger with all necessary information to enable Schlumberger to perform its services safely and efficiently. Schlumberger’s equipment is designed to operate under conditions normally encountered in and around the work site, however, if hazardous or unusual conditions exist, Customer shall notify Schlumberger in advance and make special arrangements for servicing such wells.
   b. Samples. The handling and disposal of any material taken from below the rotary table (“Samples”) by Schlumberger and analyzed or stored by it in the performance of the services, or Samples for analyses received from a third party on Customer’s behalf, are the sole responsibility of Customer, who is the owner and generator of the Sample. If Samples are stored at Schlumberger’s facilities, monthly charges will apply in accordance with the applicable Cost Proposal. Unless otherwise provided by written agreement of the parties, Customer agrees that it will transport and dispose of any such Samples in accordance with all applicable federal, state and local laws and regulations. Customer hereby waives, releases and agrees not to assert any claim or bring any action recovery action against Schlumberger in connection with the use, generation, storage, transportation or disposal of Samples under any common law theories or federal, state or local environmental laws or regulations, now existing or hereafter enacted, without regard to the cause or causes thereof or the negligence of any party and Customer will release, indemnify, protect, defend and hold Schlumberger harmless from and against any and all claims made against it in connection with such Samples.
   c. Samples Storage. Any Samples stored at a Schlumberger facility on behalf of Customer will accrue daily or monthly storage charges to be billed at mutually agreed-upon time intervals in accordance with the terms of a separate agreement for the storage of Samples.

7. Warranty for Products and Services.
   a. Schlumberger represents and warrants that all services provided hereunder shall be performed in a good and workmanlike manner in accordance with good oilfield practices and that it shall exercise diligence to insure the correctness and safety transport of all Samples, log, test and other data. Schlumberger will give Customer the benefit of its best judgment based on its experience, interpreting information and making written or oral recommendations concerning Samples, logs or tests or other data, type or amount of material or service required, manner of performance or predicting results. Nevertheless, all such recommendations or predictions are opinions only and in view of the impreciseness of obtaining first-hand knowledge of the many variable conditions, the reliance on inferential measurements and assumptions which are not infallible, and/or the necessity of relying on facts and supporting services furnished by others. NO WARRANTY IS GIVEN CONCERNING THE ACCURACY OR COMPLETENESS OF SAMPLE ANALYSES, LOG, TEST OR OTHER DATA, THE EFFECTIVENESS OF MATERIAL USED, RECOMMENDATIONS GIVEN, OR RESULTS OF THE SERVICES RENDERED. SCHLUMBERGER WILL NOT BE RESPONSIBLE FOR ACCIDENTAL OR INTENTIONAL INTERCEPTION OF OR TAMPERING WITH DATA BY OTHERS, NOR DOES SCHLUMBERGER GUARANTEE THE SAFE STORAGE OR THE LENGTH OF TIME OF STORAGE OR AGAINST LOSS OF ANY SAMPLES, DIGITAL TAPES, OPTICAL LOGS OR PRINTS, OR OTHER SIMILAR PRODUCTS OR MATERIALS.
   b. Schlumberger warrants that products (including but not limited to tools, supplies and materials) furnished hereunder shall conform to the quality and specifications represented. Schlumberger reserves the right, at its sole discretion, to use new, used or refurbished parts in the assembly of its products. Schlumberger warrants all its products to be free of defects in material and workmanship for a period of twelve (12) months from the date of shipment. The above warranty does not apply to products that have been modified by anyone at Customer’s request, supplied by Customer or purchased by Schlumberger at Customer’s request, and/or that have been subjected to improper handling, storage, application, installation, operation or maintenance by anyone other than Schlumberger, and including but not limited to damage caused by aggressive fluids, lightening or improper voltage supply.
   c. Schlumberger’s sole liability and Customer’s exclusive remedy under the foregoing warranties are expressly limited to the repair, replacement or the refund of an equitable portion of the purchase price, at Schlumberger’s sole option, of products or services which prove to be defective within the warranty period. A Customer claim pursuant to this warranty shall be made immediately upon discovery and confirmed in writing within thirty (30) days after discovery of the defect. Defective items must be held for inspection or returned to the original Schlumberger delivery point upon request. Schlumberger shall have the right to inspect the products claimed to be defective and shall have the right to determine the cause of such defect. Returned products shall become the property of Schlumberger.
GENERAL TERMS AND CONDITIONS

THE FOREGOING WARRANTIES FOR SERVICES AND PRODUCTS ARE IN LIEU OF ALL OTHER WARRANTIES, WHETHER ORAL, WRITTEN, EXPRESS, IMPLIED OR STATUTORY. IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY SHALL NOT APPLY. SCHLUMBERGER’S WARRANTY OBLIGATIONS AND CUSTOMER’S REMEDIES THEREUNDER (EXCEPT AS TO TITLE) ARE SOLELY AND EXCLUSIVELY AS STATED HEREIN.

8. Title and Risk of Loss
(a) Unless otherwise agreed between the parties, title to and risk of loss for products sold will pass to Customer upon delivery to Customer’s carrier at Schlumberger’s manufacturing facility. Customer will pay or reimburse Schlumberger for all freight, preparation, and in-transit insurance costs from the time of delivery. Customer agrees that title to and risk of loss for products will pass to and remain with Customer, even if Schlumberger agrees to store the products at a Schlumberger location until Customer requests delivery.

(b) The method, place or medium of payment will not in any way limit Schlumberger’s rights in and to the products until payment has been received in full. On all orders Schlumberger shall retain a security interest in the products to the extent of any unpaid balance of the purchase price therefor, and Schlumberger may use all reasonable efforts to retain and/or obtain possession of such products until such unpaid balance has been received and accepted by Schlumberger.

9. INDEMNITIES.
(a) Personnel and Property
1. SCHLUMBERGER SHALL BE RESPONSIBLE FOR AND HEREBY AGREES TO RELEASE, PROTECT, DEFEND, INDEMNIFY AND HOLD HARMLESS CUSTOMER GROUP AND ITS INSURERS FROM AND AGAINST ALL CLAIMS ARISING OUT OF OR IN CONNECTION WITH DAMAGE TO OR LOSS OR DESTRUCTION OF PROPERTY OR OF THE PERSONAL INJURY, ILLNESS OR DEATH OF ANY MEMBER OF CUSTOMER GROUP OR ITS CONTRACTORS (OTHER THAN SCHLUMBERGER) AND SUBCONTRACTORS, AGENTS, REPRESENTATIVES OR INVITEES ARISING OUT OF OR IN CONNECTION WITH THIS CONTRACT OR THE SERVICES PROVIDED HEREUNDER.

2. CUSTOMER SHALL BE RESPONSIBLE FOR AND HEREBY AGREES TO RELEASE, PROTECT, DEFEND, INDEMNIFY AND HOLD HARMLESS SCHLUMBERGER GROUP AND ITS INSURERS FROM AND AGAINST ALL CLAIMS ARISING OUT OF OR IN CONNECTION WITH DAMAGE TO OR LOSS OR DESTRUCTION OF PROPERTY OR OF THE PERSONAL INJURY, ILLNESS OR DEATH OF ANY MEMBER OF CUSTOMER GROUP OR ITS CONTRACTORS (OTHER THAN SCHLUMBERGER) AND SUBCONTRACTORS, AGENTS, REPRESENTATIVES OR INVITEES ARISING OUT OF OR IN CONNECTION WITH THIS CONTRACT OR THE SERVICES PROVIDED HEREUNDER.

(b) Special Indemnity. NOTWITHSTANDING ANYTHING TO THE CONTRARY HEREOF, CUSTOMER ASSUMES ALL LIABILITY FOR AND AGREES TO RELEASE, PROTECT, DEFEND, INDEMNIFY AND HOLD SCHLUMBERGER GROUP AND ITS INSURERS HARMLESS FROM AND AGAINST ALL CLAIMS ARISING OUT OF OR IN CONNECTION HEREWITH FOR: (i) PROPERTY DAMAGE, PERSONAL INJURY OR DEATH OR LOSS THAT RESULTS FROM FIRE, EXPLOSION, BLOW-OUT, CRAWLING, WILD WELL OR WORK PERFORMED TO CONTROL A WILD WELL; (ii) PROPERTY DAMAGE OR LOSS THAT RESULTS FROM POLLUTION, CONTAMINATION, OR RADIATION DAMAGE, INCLUDING ENVIRONMENTAL POLLUTION OR CONTAMINATION, WHETHER CAUSED BY CUSTOMER’S FAILURE TO PROPERLY HANDLE, TRANSPORT OR DISPOSE OF ANY SAMPLES, INCLUDING CONTAINMENT, CLEAN-UP AND REMEDIATION OF THE POLLUTANT AND CONTAMINATION, WHETHER OR NOT CAUSED BY AN APPLICABLE FEDERAL, STATE OR LOCAL LAW OR REGULATION; (iii) PROPERTY DAMAGE OR LOSS THAT RESULTS FROM RESERVOIR OR UNDERGROUND DAMAGE, INCLUDING LOSS OF OIL, GAS, OTHER MINERAL SUBSTANCES, OR WATER OR THE WELL BORE ITSELF, AND SURFACE DAMAGE ARISING FROM SUBSURFACE OR SUBSEA DAMAGE; (iv) COST TO CONTROL A WILD WELL, UNDERGROUND OR ABOVE THE SURFACE, INCLUDING ANY REDRILLING OR REWORKING AND RELATED CLEAN UP COSTS; (v) DAMAGE TO PROPERTY OWNED BY, IN THE POSSESSION OF, OR LEASED BY CUSTOMER, AND/OR WELL OWNER, IF DIFFERENT FROM CUSTOMER (THE TERM “WELL OWNER” SHALL INCLUDE WORKING AND ROYALTY INTEREST OWNERS OR THE OWNER OF ANY OIL/GAS PRODUCTION FACILITIES OR PIPELINES, DRILLING RIG/VESSLE, PLATFORM OR OTHER STRUCTURE AT THE WELL SITE) OR (vi) LOSS OF OR DAMAGE TO SCHLUMBERGER PROPERTY, EQUIPMENT, MATERIALS OR PRODUCTS, INCLUDING BUT NOT LIMITED TO, RECOVERY, REPAIR AND REPLACEMENT EXPENSES, WHEN SUCH LOSS OR DAMAGE OCCURS; (a) WHILE IN TRANSIT OR BEING MOVED ON ANY FORM OF TRANSPORTATION OWNED OR FURNISHED BY CUSTOMER, (b) WHILE LOCATED AT THE WELL SITE WHEN SCHLUMBERGER PERSONNEL ARE NOT PRESENT, (c) AS A RESULT OF IMPROPERLY MAINTAINED PRIVATE ACCESS ROADS TO THE WELL SITE OR AS A RESULT OF THE INFERIOR CONDITION OF LEASE ROADS OR THE SITE, OR (d) WHILE BEING USED BY OR WHILE UNDER THE CUSTODY OR CONTROL OF ANY PERSON OTHER THAN A SCHLUMBERGER EMPLOYEE, WHETHER IN AN EMERGENCY OR OTHERWISE.

(c) APPLICATION OF INDEMNITIES. THE ASSUMPTION OF LIABILITY AND INDEMNITIES IN PARAGRAPHS (a) and (b) ABOVE SHALL APPLY TO ANY LOSS, DAMAGE, EXPENSE, INJURY, ILLNESS, DEATH OR CLAIM ARISING OUT OF OR IN CONNECTION WITH THIS CONTRACT OR THE SERVICES PROVIDED HEREUNDER, WITHOUT REGARD TO THE CAUSE(S) THEREOF INCLUDING, WITHOUT LIMITATION, UNSEAWORTHINESS, STRICT LIABILITY, ULTRAHAZARDOUS ACTIVITY, BREACH OF EXPRESS OR IMPLIED WARRANTY, IMPERFECTION OF MATERIAL, DEFECT OR FAILURE OF EQUIPMENT, DEFECT OR “RUIN” OR OTHER CONDITION OF PREMISES, INCLUDING ANY CONDITIONS THAT PRE-EXIST THE EXECUTION OF THIS CONTRACT, OR THE SOLE, JOINT, CONCURRENT OR GROSS, ACTIVE OR PASSIVE, NEGLIGENCE OR OTHER FAULT OF THE INDEMNIFIER OR ITS CONTRACTORS OR SUBCONTRACTORS OR THEIR EMPLOYEES, AGENTS, REPRESENTATIVES OR INVITEES.

(d) Anti-Indemnity and Insurance Savings Clause. If any defense, indemnity or insurance provision contained in this Contract conflicts with, is prohibited by or violates public policy under any federal, state or other law determined to be applicable to a particular situation arising from or involving any services, equipment and/or products hereunder, it is understood and agreed that the conflicting, prohibited, or violating provision shall be deemed automatically amended in that situation to the extent, but only to the extent, necessary to conform with, but not be prohibited by and avoid violating public policy under such applicable laws.

10. Incidental or Consequential Damages. IT IS EXPRESSLY AGREED THAT SCHLUMBERGER GROUP SHALL NOT BE LIABLE TO THE CUSTOMER GROUP FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT OR SPECIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, ANY LOSS OF PROFITS OR BUSINESS INTERRUPTION OR LOSS OF USE, LOSS OF DATA, LOSS OF ASSETS INCLUDING SAMPLES, LOSS OF PRODUCTION OR LOSS OF RIG TIME, REGARDLESS OF THE SOLE, JOINT, CONCURRENT OR GROSS, ACTIVE OR PASSIVE, NEGLIGENCE OR OTHER FAULT OF SCHLUMBERGER.

11. Insurance. Each party, as indemnifier, agrees to support the indemnity obligations it assumes under Paragraph 9, by obtaining at its own cost, adequate insurance for the benefit of the other party as indemnified, with contractual indemnity endorsements. To the extent each party assumes liability hereunder, such insurance shall waive subrogation against the indemnified Group and its insurers and name the indemnified Group as additional insureds and loss payees, and to the same extent such coverage shall be primary to that carried by the indemnified Group. Customer shall not self-insure without the written consent of Schlumberger.

12. Ownership of Intellectual Property
Schlumberger owns all rights to the proprietary intellectual property embodied in its services and products or which are created in the course of providing such services or products to Customer. Schlumberger does not transfer any ownership rights in such intellectual property to Customer. Schlumberger will be liable for intellectual property infringement claims arising out of Customer’s normal use of Schlumberger’s products and services but will not be liable for infringement that arises: (i) out of Customer’s use of Schlumberger’s products or services in combination with products or services not provided by Schlumberger; (ii) where Schlumberger products or services have been specially modified, designed and/or manufactured to meet Customer’s specifications; (iii) out of unauthorized additions or modifications to Schlumberger products or services; or (iv) where Customer’s use of Schlumberger products or services do not correspond to Schlumberger published standards or specifications.
13. **Limitation of Liability.** Notwithstanding anything to the contrary herein, except as provided under Paragraph 9. (a) 1., Schlumberger's liability arising from or in connection with this Contract (whether for indemnity, breach of contract, negligence, misrepresentation, or otherwise) shall not in any circumstances exceed the full value of the consideration owed to Schlumberger under this Contract.

14. **Employee Solicitation.** Except with the prior written consent of Schlumberger, Customer shall not directly, indirectly or through third parties solicit, recruit or induce any Schlumberger employee, consultant or representative to leave, terminate or otherwise end his/her association with Schlumberger in order to become an employee, consultant or representative of Customer until at least one (1) year has elapsed from Customer's receipt of the final invoice for the services.

15. **Miscellaneous.** Schlumberger shall not be liable for any delay or non-performance due to governmental regulation, labor disputes, hostile action, weather, fire, acts of God or any other causes beyond the reasonable control of Schlumberger. If services are performed or equipment or products furnished offshore or on navigable water, Federal Maritime laws shall govern this Contract; if performed or furnished in Texas, Louisiana, New Mexico or Wyoming, the laws of Texas shall apply, otherwise the laws of the state where the services are performed or equipment or products are furnished shall apply. Should any clause, sentence, or part of these General Terms and Conditions be held invalid, such holding shall not invalidate the remainder, and the Terms and Conditions shall be interpreted as if the invalid clause, sentence, or part has been modified or omitted, if necessary, as required to conform to the jurisdiction purporting to limit such provision.
EXHIBIT B
CONSULTANT RATE SCHEDULE

1.0 Consultant shall be compensated for actual services performed in accordance with this Agreement

Primary Services:

<table>
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<tr>
<th>Services</th>
<th>Well Depth 2,200 ft</th>
<th>Well Depth 1,000 ft</th>
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<tr>
<td>Service Charge</td>
<td>$2,170</td>
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<tr>
<td>AIT-MCFL-HNGS-MR Scanner T1</td>
<td>$37,506</td>
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<td>Tool Protection</td>
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<td>Media Delivery</td>
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<tr>
<td>Mileage Charge</td>
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<td>$546</td>
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<tr>
<td>Project Management and Interpretation</td>
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<td><strong>Total</strong></td>
<td><strong>$58,562</strong></td>
<td><strong>$50,138</strong></td>
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Optional Services

<table>
<thead>
<tr>
<th>Services</th>
<th>Well Depth 2,200 ft</th>
<th>Well Depth 1,000 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fullbore Formation Micolmager</td>
<td>$13,860</td>
<td>-</td>
</tr>
<tr>
<td>Sonic Scanner, Compressional and Shear</td>
<td>$13,115</td>
<td>$9,365</td>
</tr>
<tr>
<td>Tool Protection</td>
<td>$2,840</td>
<td>$2,840</td>
</tr>
<tr>
<td>FMI Image Processing</td>
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<td>-</td>
</tr>
<tr>
<td>Sonic Scanner Processing</td>
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<td>$2,750</td>
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<td><strong>Total</strong></td>
<td><strong>$40,965</strong></td>
<td><strong>$14,955</strong></td>
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2.0 A not to exceed budgetary amount of $181,500.00 ($165,000 plus contingencies, not to exceed $181,500; which amount applies to Consultant’s fee and reimbursable expenses) is established for this Agreement. Notwithstanding any other provision of this Agreement, the District shall not be obligated to pay Consultant any amount in excess of said budgetary amount absent prior written approval from the District. Likewise, Consultant shall not be obligated to perform services or incur expenses in excess of the budgetary amount absent prior written approval from the District.
EXHIBIT C
EVIDENCE AND REQUIRED FORMS OF INSURANCE

Checklist for Additional Insured Endorsement

Contractor Name: ________________________________

Project Name: __________________________________

Refer to the Additional Insured Endorsements forms E1-E8 following:

Endorsement(s)

☐ Additional Insured (AI) Status – GENERAL LIABILITY - Member Water District, its directors, officers, employees, or authorized volunteers are named as additional insureds - as broad as following forms:

  o Form CG 20 10 11 85 (E1) or

  o BOTH CG 20 10 (E2) and CG 20 37 (E3) if forms with later edition dates provided (usually 10 01 or 07 04 editions). Also acceptable CG 20 10 04 13 (or older editions E2) specifically naming the District parties or using language that states "as required by contract"

  o "Blanket" Endorsement - (no specific policy number) (E4) covering one or more of the above endorsements required with words "as required by written contract/agreement".

  o If large number of Subcontractors - Additional Insured endorsement CG 20 38 04 13 recommended (E5)

  o Policy numbers - matches policy number shown on Certificate of Insurance. (see Optional Dec. Page/Endorsement pages below)

  o Primary Coverage – The primary/non-contributory language is included. “The insurance provided by this policy shall be primary as respects any claims related to the ______ Project. Any insurance, self-insurance, or other coverage maintained by the district, its directors, officers, employees, or volunteers shall not contribute to it.” e.g. Form CG 20 01 (E6)

☐ Auto liability (Optional (E7)) Al - most standard forms have automatic Al but some carriers provide endorsement

☐ Waiver of Subrogation (Workers Compensation and Property (Course of Construction, if required in contract) (E8)

☐ Optional - For extra confidence in verifying coverage require Declaration Page and Endorsement Schedule pages - compare the endorsement numbers. Look out for Amendment of contractual liability and or prior works exclusions - refer to Legal Counsel.
MEMORANDUM
ITEM NO. 6

DATE: JUNE 11, 2018

TO: EXTERNAL AFFAIRS COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: DEPARTMENT REPORT

SUMMARY

Staff will report any significant department activities that are not agendized and require no action on the part of the Committee.

FISCAL IMPACT

None

STAFF RECOMMENDATION

The External Affairs Committee receive and file the report.