



**NOTICE IS HEREBY GIVEN that the
Mound Basin Groundwater Sustainability Agency ("Agency")
Board of Directors ("Directors") will hold a
SPECIAL BOARD MEETING
at 2:00 P.M. on
Thursday, July 18, 2019
at Ventura City Hall, Santa Cruz Conference Room #223
501 Poli Street, Ventura, California 93001**

**MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY
SPECIAL BOARD OF DIRECTORS MEETING AGENDA**

*This is a special meeting of the Board of Directors called in accordance with Government Code 54956.
Other than the listed agenda items, no other business will be considered by the Board of Directors.*

CALL TO ORDER 2:00 p.m.

1. PLEDGE OF ALLEGIANCE

2. PUBLIC COMMENTS ON ITEMS NOT APPEARING ON THE AGENDA

In accordance with Government Code Section 54954.3: every notice for a special meeting shall provide an opportunity for members of the public to directly address the legislative body concerning any item that has been described in the notice for the meeting before or during consideration of that item. Five minute time limit, please.

3. ROLL CALL

4. ISOTOPE STUDY CONTRACTING AUTHORIZATIONS

a. Motion

b. The Board will consider authorizing the Executive Director to execute a master services agreement (MSA) and work order with Blaine Tech Services, subject to negotiation of terms satisfactory to Agency Counsel and Executive Director, and authorize the Executive Director to execute any laboratory service agreements necessary to complete isotope study.

5. ADJOURNMENT

The Board will adjourn to the next **Regular Board Meeting** on Thursday, **August 15, 2019**, or call of the Chair.

Materials, which are non-exempt public records and are provided to the Board of Directors to be used in consideration of the above agenda items, including any documents provided subsequent to the publishing of this agenda, are available for inspection at UWCD's offices at 106 North 8th Street in Santa Paula during normal business hours.

The Americans with Disabilities Act provides that no qualified individual with a disability shall be excluded from participation in, or denied the benefits of, the District's services, programs or activities because of any disability. If you need special assistance to participate in this meeting, or if you require agenda materials in an alternative format, please contact the Mound Basin Clerk of the Board at (805) 525-4431 or the City of Ventura at (805) 654-7800. Notification of at least 48 hours prior to the meeting will enable the Agency to make appropriate arrangements.

Approved: _____

Executive Director Bryan Bondy

Posted: (date) July 17, 2019 (time) 11:05a.m.

(attest) **Kris Sofley**

At: <https://moundbasingsa.org>

Posted: (date) July 17, 2019 (time) 11:10a.m.

(attest) **Kris Sofley**

At: <https://www.facebook.com/moundbasingsa/>

Posted: (date) July 17, 2019 (time) 11:15a.m.

(attest) **Debra Martinez**

At: Ventura City Hall, 501 Poli Street, Ventura, California 93001



Motion Item No. 4

DATE: July 18, 2019
TO: Board of Directors
FROM: Executive Director
SUBJECT: Isotope Study Contracting Authorizations

SUMMARY

The Groundwater Sustainability Plan (GSP) Grant Category B includes completion of an isotope study. As discussed with the Board, United Water Conservation District (UWCD) staff originally agreed to perform the groundwater sampling activities for the study. In mid-June, UWCD staff recommended hiring Blaine Tech Services to perform the sampling, with UWCD oversight. UWCD staff obtained a proposal from Blaine Tech Services and scheduled the sampling work for July 29 – 31. On July 16, UWCD staff informed MBGSA that Blaine Tech Services should be hired directly by MBGSA. In order to avoid rescheduling and further delays, it is recommended that the Board authorize the Executive Director to execute a master services agreement and work order with Blaine Tech Services, subject to negotiation of terms acceptable to Agency Counsel and the Executive Director. The Executive Director provided the Agency's standard master services agreement and a work order to Blaine Tech Services for their comment on July 17 (Attachment A).

The isotope study also requires the services of four different analytical laboratories. It is uncommon to contract with laboratories for one-time services. However, in the event that one or more laboratories require an agreement; it is recommended that the Board authorize the Executive Director to execute any laboratory-provided agreement(s).

RECOMMENDED ACTION

It is recommended that the Board:

1. Authorize the Executive Director to execute a master services agreement and work order with Blaine Tech Services, subject to negotiation of terms satisfactory to Agency Counsel and Executive Director, and
2. Authorize the Executive Director to execute any laboratory service agreements necessary to complete isotope study.

BACKGROUND

Please see summary.

FISCAL SUMMARY

Blaine Tech Services' sampling estimate is \$9,970. Any additional services beyond those estimated by Blaine Tech Services will be billed at the unit rates included in the contract. The Agency's budget addresses the groundwater sampling and laboratory services.

ATTACHMENTS

- A. Draft Master Services Agreement and Work Order

Proposed Action: Authorize the Executive Director to execute a master services agreement and work order with Blaine Tech Services, subject to negotiation of terms satisfactory to Agency Counsel and Executive Director, and Authorize the Executive Director to execute any laboratory service agreements necessary to complete isotope study

Motion: _____ 2nd: _____

J. Chambers___ C. Everts___ M. Mobley___ S. Rungren___ G. Shephard___

Master Services Agreement

This Master Services Agreement (the "MSA") is made and entered into by and between **Mound Basin Groundwater Sustainability Agency ("MBGSA")**, and **Blaine Tech Services ("Service Provider")** (each a "Party" and collectively the "Parties") as of this 18th day of July 2019 (the "Effective Date"). The words "we", "us", and "our" refer to MBGSA, and the words "you" and "your" refer to the Service Provider.

By signing this MSA, the Parties agree as follows:

1. MSA Documents

This MSA sets forth basic terms that will apply to your performance of services during the term of this MSA. Additional and specific terms that will apply to a particular project ("Project") and the performance of particular services will be set forth in one or more statements of work ("SOWs") substantially in the form of Exhibit A. Each SOW will be governed by this MSA. If any term in this MSA conflicts with a term in a SOW, the terms and conditions of this MSA will control, unless the SOW specifies that its terms and conditions will control. Specific terms in a SOW will not affect any other SOW governed by this MSA without explicit agreement of the Parties in writing.

2. Statements of Work / Purchase Orders

You will be responsible for providing all services described in a SOW ("Services"). Each SOW will detail the material terms and conditions applicable to the Services to be provided pursuant to that SOW. A SOW may add additional Services and obligations of the Parties and include additional legal terms and conditions. If either Party requires an assigned purchase order number on invoices, it is understood and agreed that the purchase order document is for internal accounting purposes only and that neither or nor any accompanying form will in any way modify, add to, or delete any of the terms and conditions of this MSA or any SOW.

3. Fees and Payment

Invoicing and payment intervals will be defined in each SOW ("Fee Terms"). Unless the Fee Terms clearly indicate otherwise, we will pay invoices within thirty (30) days of receipt of invoice. All invoices or invoice disputes must be emailed to kriss@unitedwater.org to receive timely payment.

If, for any reason, we dispute the performance of the Services or the applicable Fees, we will (a) promptly pay all undisputed Fees and (b) provide a detailed description of the nonconforming Services or disputed Fees sufficient for the Parties to discuss and make a good faith attempt to resolve the dispute ("Invoice Dispute"). If we do not make payment or issue an Invoice Dispute within 60 days, you may provide us with 10 days' written notice of non-payment, after which, if the failure to pay or issue an Invoice Dispute is not cured, you may suspend performance of all Services until we either (i) make payment or (ii) issue a sufficiently detailed Invoice Dispute.

Unless expressly stated in the SOW, you will bear sole responsibility for all expenses incurred in connection with the performance of Services. If a SOW specifies that we will be reimbursing any of your travel and out-of-pocket expenses ("Expenses"), you agree to comply with each of our travel and reimbursement policies, whether formal or informal. Any policy waivers or exceptions must be confirmed in writing by us before you incur the expense. You also agree to provide us with advance notice and estimated anticipated Expenses and to invoice us at your cost and/or IRS-approved rates where applicable and provide copies of original receipts.

4. Confidentiality

We will direct the Services provided by you and communications with you regarding this matter will be through us. All Services and communications are protected by the attorney-client privilege and attorney work product doctrine. Accordingly, all documents, reports, disclosures, plans, and other information of any nature and description, which MBGSA supplies to you or which you discover or develop in performance of the Services is deemed confidential. You must not disclose any of the same to any third party without our prior written authorization, except to the extent that information is in the public domain, was in your possession prior to disclosure to MBGSA or you are required by law.

5. Term and Termination

The term of this MSA will be perpetual from the Effective Date until terminated by either Party on written notice; provided, however, that no termination will affect obligations incurred under this MSA before termination or which, by their nature, extend beyond the term. Notwithstanding the preceding sentence, this MSA will remain in effect for so long as you are obligated to provide Services under any operative SOW.

6. Work and Labor

You agree to observe all laws, ordinances, rules, and regulations of any government unit or agency affecting items furnished and/or the performance of Services.

7. Standard of Work Performed and Materials Sourced

You warrant that you will perform all Services satisfactorily and in a timely manner in accordance with our agreed-upon SOW, specifications, drawings, samples, and any other description you furnish to us prior to or during the course of your Services. In the absence of exact specifications otherwise in the SOW, we will assume that all materials furnished will be of the highest grade and best quality, and the work will be performed in a professional and first-class manner consistent with the customary care and skill ordinarily exercised by professionals in your industry.

In addition to any other rights or remedies available at law or in equity, you agree to re-execute, at your own cost and expense, any defective or reasonably unsatisfactory work that appears during progress of the Services and will remedy and replace, at your own cost and expense, any defects due to faulty materials or workmanship which appear within a period of one (1) year from the date of acceptance of the completed work by us.

8. No Liens or Encumbrances

You warrant that no liens, encumbrances, security interests, or other third-party claims of any type will attach to real or personal property owned or leased by us as a consequence of your performance of Services hereunder. (For yourself, your successors, and others acting both through or under you.) You also agree, upon request, to furnish to us standard forms of waiver of lien signed by you and all contractors, subcontractors, and materialmen who will furnish labor and materials hereunder.

9. Ownership of Work

Except to the extent that it is expressly limited in any particular SOW, all right, title and interest in the work product of your Services will be and remain our sole property and will constitute a "work-made-for-hire" as such term is understood under U.S. copyright laws. We will have the exclusive right, but not the obligation, to use,

adapt, alter, delete from, add to, or rearrange such work product, or any part thereof, to combine the same with other works, and to patent, register for trademark protection, and/or otherwise exploit any and all of the foregoing in any manner as we may determine in our sole discretion. You agree to execute other instruments, give further assurances, and perform acts which are or may become necessary or appropriate to effectuate and carry out the provisions of this Section 9. To the extent ownership of any work product resulting from your Services for us does not by operation of law vest in us, you hereby assign, sell, transfer, grant, and convey all right, title, and interest in such work product to us. However, during the course of this MSA, you may further develop your knowledge, skills, and experience. Other than as may fall within the "Confidentiality" section of this MSA, nothing in this MSA is intended to limit your use of any knowledge, skills, experience, ideas, concepts, know-how, and techniques developed before or during the course of this MSA, without limitation, in the development, manufacturing, and marketing of your Services.

10. Indemnity

You agree to defend (with counsel acceptable to us), indemnify, and hold us (including our affiliates, member agencies, employees, agents, and representatives) harmless against any and all claims, demands, or other liabilities for suits, injuries, damages, losses, fines, expenses, or costs of any sort, including attorney's fees (collectively, "Claims") to the extent caused by your negligent performance of Services, your intentional misconduct, or your breach of any other obligation under this MSA; except that you need not indemnify with respect to that portion of a Claim resulting from our negligence or intentional misconduct, or to the extent of your reliance on the express written approval, acceptance, or instructions of us with respect to the act or omission giving rise to the Claim. You will, as soon as reasonably possible after receiving notice of a third-party Claim for which indemnity might be sought, notify us in writing, provided that the failure to notify will not relieve you of your obligations.

11. Workers Compensation Insurance

Both Parties will each insure its own employees and agents with a minimum of \$1,000,000 Workers' Compensation Insurance and, regardless of policy limit, will hold each other harmless from any claims by its own employees, contractors, subcontractors, and materialmen who have furnished labor hereunder, or successors for injury, disability, or death arising from any work associated with this MSA. Upon request by either Party, a certificate of workers' compensation insurance will be provided evidencing such coverage.

12. Insurance

During the term of this MSA and for a period of three (3) years thereafter, you agree to keep and maintain, at its sole expense, additional insurance as follows:

- (a) Professional Liability (errors and omissions) Insurance of \$1,000,000 per claim and in the aggregate;
- (b) General Commercial Liability Insurance with combined bodily injury, property damage, product liability, completed operations, and contractual liability coverage in the amount of \$1,000,000 per occurrence and \$2,000,000 in the aggregate, which specifically covers this MSA, and names the other Party, its subsidiaries, and affiliated entities as additional insured Parties;
- (b) Automobile Liability Insurance, including coverage for hired, owned, or non-owned vehicles, in the amount of \$1,000,000 which specifically covers this MSA and names the other Party, its subsidiaries, and affiliated entities as additional insured Parties; and
- (c) You will furnish to us, upon request, an insurance certificate from a carrier with an A.M. Best rating of "A" or better satisfying the above requirements and containing a complete waiver of subrogation. Your insurance coverage may not be terminated or materially changed without thirty 30 days' prior written notice to us.

13. Subcontracting/Assignment

You may not assign or subcontract any portion of your obligation to perform Services, nor may you assign any money due or to become due under this MSA, without our prior written consent. We may not assign this MSA without your written consent, which may not be unreasonably withheld; provided that such consent will not be necessary for the assignment, by operation of law or otherwise, to any of our parents, subsidiaries, affiliates, or any entity that succeeds our business in connection with a merger, reorganization, or sale of all or substantially all of our assets or voting securities. This MSA will be binding upon and inure to the benefit of the Parties and their respective successors and assigns.

14. Independent Contractor/No Third-Party Beneficiaries or Exclusivity by Service Provider

Nothing in this MSA will provide any benefit to any third party; it being the intent of the Parties that this MSA will not be construed as a third-party beneficiary contract. You are acting as our independent contractor and nothing in this MSA will be construed to create or imply a joint venture, partnership, association, or similar obligation between us. As such, any and all sums paid by us to you that are subject to taxing deductions, if any, will be your sole responsibility and you will indemnify and hold us harmless from any and all damages, claims, and expenses, including reasonable attorney's fees, arising out of or resulting from any claims asserted by any taxing authority as a result of or in connection with said payments. Nothing in this MSA will impose any obligation on you to provide exclusive services to us.

15. Conflict of Interest

You represent and warrant to us that to your best knowledge, neither you nor any individual who will be performing Services for us has any other interests or business relationships of any kind which could either conflict with our interests or create the appearance of a conflict. You will immediately and fully apprise us of any potential conflicts that may arise.

16. General Warranties

Each Party represents and warrants that: (i) it is duly organized, validly existing, and in good standing under the laws of the jurisdiction of its formation and is qualified to conduct its business in those jurisdictions necessary to perform this MSA; (ii) the execution and delivery of this MSA are within its powers, have been duly authorized by all necessary action and do not violate any of the terms or conditions in its governing documents or any contract to which it is a Party or any law applicable to it; (iii) this MSA constitutes a legal, valid, and binding obligation of such Party enforceable against it in accordance with its terms (subject to any equitable defenses); (iv) there are no bankruptcy, insolvency, reorganization, receivership, or other similar proceedings pending or being contemplated by it, or to its knowledge threatened against it; and (v) there are no suits, proceedings, judgments, rulings, or orders by or before any court or any governmental authority that could materially adversely affect its ability to perform this MSA.

17. Force Majeure

Force Majeure is the only excuse for non-performance of this MSA by either Party and all other excuses waived. Each Party shall be relieved of its obligation to perform any part of this MSA to the extent its performance is prevented or rendered impracticable by any events or circumstances beyond its reasonable control including, but not limited to, war, fires, floods, acts of God (natural disasters), governmental restrictions, labor lock-outs, civil uprising resulting in damage or destruction of

any facilities. Each Party will promptly notify the other in writing of any inability to perform and the cause thereof, as well as its good faith estimate of the date upon which the event will end and its performance will resume. You agree that in the event of a Force Majeure, your allocation of available resources or supply to us will be based on fair allocation by volume among your customers without regard to price or profitability. If the event is anticipated to extend beyond 60 days, we may, at our option, cancel the SOW and/or this MSA and be relieved from our obligations as of the date of cancellation. Both Parties will make reasonable efforts to avoid the adverse impacts of a Force Majeure and to expeditiously resolve the event or occurrence once in order to resume performance.

18. Events of Default

An "Event of Default" means, with respect to a Party (the "Defaulting Party"): (a) any false or misleading representation or warranty made by a Party or the failure of a representation or warranty made by a Party to remain true during the Term hereof; or (b) a Party: (i) makes an assignment or any general arrangement for the benefit of creditors; (ii) files a petition or otherwise authorizes the commencement of a proceeding under any bankruptcy or similar law for the protection of creditors, or has such petition filed against it and such petition is not withdrawn or dismissed for 20 business days after such filing; (iii) otherwise becomes bankrupt or insolvent; (iv) is unable to pay its debts when due; (v) fails to post, maintain, renew, or increase collateral when and as may be required hereunder during any Term and such failure is not remedied within two (2) business days after written notice thereof is received; (c) the failure of a Party to perform a material obligation under this MSA or SOW when such failure is not excused by Force Majeure; or (d) any other event affecting such Party specified as an Event of Default in this MSA.

In addition to any other remedies available at law or equity, if an Event of Default with respect to a Defaulting Party has occurred and is continuing, the other Party will have the right to (a) provide written notice of (and stating the nature of) such Event of Default to the Defaulting Party; (b) designate a date between 1 and 20 days after such notice is effective on which this MSA will terminate; (c) withhold payments due to the Defaulting Party; and (d) suspend performance.

19. Governing Law

This MSA will be governed by the laws of California, notwithstanding any state's choice of law rules to the contrary.

20. Miscellaneous

All provisions of this MSA which must, in order to give full force and effect to the Parties' rights and obligations, survive the termination or expiration of this MSA, will so survive. Amendments to this MSA are not enforceable unless in writing and executed by both Parties. If any provision in this MSA is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way. No waiver or consent, express or implied, of any default will operate as a waiver or consent of any other default. In entering into this MSA, the Parties represent that they have each had an opportunity to consult with their own attorneys and that all of the Parties have cooperated in the drafting and preparation of this MSA. The language of this MSA may not be construed for or against any Party on the grounds that any specific Party or Parties authored this MSA.

21. Notices and Billings

Notices shall be provided to the addresses below. Notices must be provided by facsimile, electronic email, or hand delivery and will be deemed received on the business day it was transmitted or delivered (unless transmitted or delivered after the close of business in which case it will be deemed received on the next business day), and notice by overnight mail or courier will be deemed received two business days after it was sent:

Either Party may change their address for the purpose of this MSA by giving written notice of such change to the other Party in the manner provided in this paragraph.

MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY	
All Notices:	Billings
Bryan Bondy, Executive Director	Kris Sofley, Clerk of the Board
P.O. Box 3544 Ventura, CA 93006-3544	P.O. Box 3544 Ventura, CA 93006-3544
Phone No.: 805-212-0484	Phone No.: 805-525-4431
Email: bryan@bondygroundwater.com	Email: kriss@unitedwater.org

And

Blaine Tech Services	
All Notices:	Billings
Bart Gebbie, VP Client Services	Alex Stack, Senior Project Manager
20735 Belshaw Ave., Carson, CA 90746	20735 Belshaw Ave., Carson, CA 90746
Phone No.: 310-885-4455	Phone No.: 310-885-4455
Facsimile No.: 310-637-5802	Facsimile No.: 310-637-5802
Email: bgebbie@blainetech.com	Email: alexstack@blainetech.com

THIS MSA, INCLUDING ANY EXHIBITS AND SCHEDULES, CONSTITUTES THE PARTIES' COMPLETE AGREEMENT WITH RESPECT TO THE SUBJECT MATTER HEREOF AND SUPERSEDES ANY PRIOR AGREEMENTS OF ANY TYPE, WHETHER WRITTEN OR ORAL. BY SIGNING BELOW, THE PERSON SIGNING FOR YOU WARRANTS THAT HE OR SHE IS DULY AUTHORIZED TO SIGN ON YOUR BEHALF. IF THIS MSA IS ALTERED IN ANY WAY, IT WILL BE VOID AB INITIO.

IN WITNESS WHEREOF, the Parties, by their respective duly authorized representatives, have executed this MSA effective as of the Effective Date.

Blaine Tech Services	MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY
By: _____	By: _____
Print Name: _____	Print Name: Bryan Bondy
Title: _____	Title: Executive Director
Date: _____	Date: July 18, 2019

Statement of Work – Mound Basin GSA Isotope Sampling

To: Blaine Tech Services
 20735 Belshaw Ave., Carson, CA 90746
Attention: Alex Stack
 alexstack@blainetech.com

From: Mound Basin Groundwater Sustainability Agency
 P.O. Box 3544
 Ventura, CA 93006-3544
 Attention: Bryan Bondy
 Email: bryan@bondygroundwater.com

In accordance with our Master Services Agreement (“**MSA**”) dated July 18, 2019, the following Statement of Work (“**SOW**”) is entered into by Mound Basin Groundwater Sustainability Agency (“**Customer**”) and Blaine Tech Services (“**Provider**”) for a new project and/or services (collectively, “**Services**”):

GENERAL NATURE OF SERVICES: *Groundwater Sampling.*

SCOPE OF SERVICES: Purge and sample eight monitoring wells with a bladder pump in accordance with the sampling procedures set forth in *Recommendations for Groundwater Sampling and Analysis, Mound Basin Groundwater Sustainability Agency Water Quality and Isotope Study*, dated May 10, 2019 (attached to this Statement of Work) or as otherwise directed by United Water Conservation District staff.

TERM: July 18, 2019 until project completion or December 31, 2019, whichever occurs first.

COMPENSATION AND PAYMENT: Time and materials services, not-to-exceed \$9,970, without prior written authorization. Labor rates and other unit rates are pursuant to Blaine Tech Services quote dated May 19, 2019 (attached to this Statement of Work).

PAYMENT TERMS

Payments shall be due:

- upon the completion of the SOW
- as follows: Billing will occur on a monthly basis and shall be based on time and materials. All invoices will be payable on a Net-30 basis. Invoices are due on the 5th business day of each month. Invoices received after the 5th business day of the month are payable on a Net-60 basis. Payment may be delayed up to 30 days beyond these terms in the event of Board of Directors meeting cancellations.

ADDITIONAL TERMS AND CONDITIONS

This SOW will be governed by the terms and conditions of the MSA. In the event of any conflict between the terms set forth in this SOW and the MSA, the MSA shall be deemed to control the relationship between the parties with respect to the SOW.

ACCEPTED AND AGREED:

“PROVIDER” Blaine Tech Services	“CUSTOMER” MOUND BASIN GROUNDWATER SUSTAINABILITY AGENCY
By: _____	By: _____
Print Name: _____	Print Name: Bryan Bondy
Title: _____	Title: Executive Director
Date: _____	Date: July 18, 2019

BLAINE
TECH SERVICES INC.

GROUNDWATER SAMPLING SPECIALISTS
SINCE 1985

May 16, 2019

Kathleen Kuepper
United Water
106 N. 8th Street
Santa Paula, CA 93060

RE: Proposal for Groundwater Services at wells in Ventura, CA

Dear Ms. Kuepper:

Thank you for the opportunity to provide groundwater services at the project site referenced above. The following is a description of the project requirements, as we understand them, and their associated costs.

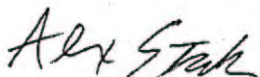
Project Requirements

- BLAINE will provide two Sampling Technicians in two Sampling Vehicles to complete Project.
- Project consists of measuring water levels, purging and sampling 8 wells using a QED Bladder pump. Wells will be sampled through tubing. One screen volume and stabilization will be achieved before sampling will occur.
- All work will be performed at the rates shown below. Hourly rate includes Sampling Technician, Sampling Vehicle, all reusable on-board equipment and pumps and controller boxes.
- All other equipment and materials provided at rates shown.
- All purge and rinsate water will be offloaded to the ground into UNITED WATER provided drums, BLAINE can provide drums for \$65/drum
- Hourly rate will be calculated Portal-to-Portal from our BLAINE Carson office
- BLAINE submission to UNITED WATER will be field data sheets only.

Item	Rate	Quantity (est)	Total
• Technician/Vehicle Hourly Rate	\$105/hr	60hrs.	\$6300
• Provide 3/8" ID PE Tubing	\$0.35/ft	4200ft	\$1470
• Provide 3/8" x 1/4" bonded tubing	\$1.20/ft	1300ft	\$1560
• 0.45 micron field filters	\$20/each	8	\$160
• Per Diem	\$120/night	4	\$480
		Total	\$9970

For clarification of any of these details, please call me at (310) 885-4455 x111.

Sincerely,



Alex Stack
Senior Project Manager

Recommendations for Groundwater Sampling and Analysis, Mound Basin Groundwater Sustainability Agency Water Quality and Isotope Study

Prepared for:

Mound Basin Groundwater Sustainability Agency

Prepared by:



S.S. PAPADOPULOS & ASSOCIATES, INC.
Environmental & Water-Resource Consultants

May 10, 2019

416 NE Dallas Street, Camas, Washington 98607 • (360) 566-7119

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Acronyms and Abbreviations

‰ part-per-thousand or per mil
ft.-bgs feet-below-ground-surface
mg/L milligrams-per-liter
MBGSA Mound Basin Groundwater Sustainability Agency
SGMA Sustainable Groundwater Management Act
SSPA S.S. Papadopulos & Associates, Inc.
TDS Total dissolved solids
UWCD United Water Conservation District

Section 1

Introduction

This document presents recommendations for the sampling and analysis of groundwater from nested monitoring wells located in the Mound Basin in Ventura County, California (Figure 1). This work is being performed as part of the Mound Basin Groundwater Sustainability Agency (MBGSA) water quality and isotope study. The objective is to better understand the groundwater flow system of the basin, which has multiple aquifers. Specific issues being addressed by the study include the sources and mechanisms of groundwater recharge, groundwater age and dynamics, interconnections between aquifers, and interaction between surface water and groundwater, all of which the MBGSA desires to better understand.

In contrast with many alluvial basins subject to SGMA requirements, the Mound Basin is not a simple alluvial fill basin. The basin has a series of three aquifers with varying water quality characteristics, including relatively poor-quality groundwater throughout the Mugu Aquifer Zone and at least one area of highly mineralized “warm” water in the deep aquifer zones. The mineralized water appears to be sourced from older formations underlying the basin and directed upward along an unmapped fault zone. Additionally, groundwater levels in this area have proven difficult to calibrate in UWCD’s groundwater flow model. Investigation of the sources of recharge to the different aquifers could help refine the basin’s hydrogeologic conceptual model and numerical groundwater flow model. Moreover, insights gained will improve the MBGSA’s ability to manage groundwater quality.

Groundwater analysis of ion tracers, stable isotopes, and radioactive isotopes is proposed because evaluation of these constituents has been shown in adjacent basins be useful for identifying sources and mechanisms of groundwater recharge and better understanding interactions between aquifers. For example, the isotopic composition of groundwater (expressed as the relative abundance of oxygen-18 ($\delta^{18}\text{O}$) and deuterium (δD)) was used to distinguish between river leakage, regional recharge, and imported water in the Santa Clara-Calleguas Hydrologic Unit (Izbicki 1997). Also, age dating using radioactive isotopes (tritium and carbon-14) was used to confirmed that shallow aquifers were being recharged by local streams, but that some deeper aquifers were isolated and contained groundwater that was up to 20,000 years old. Finally, in a more-recent study, Izbicki et al. (2005) used a combination of ion tracers and isotopes to demonstrate that high chloride concentrations in some deep groundwater was associated with underlying petroleum deposits.

This document is divided into the following sections:

- Section 2 provides an overview of the monitoring wells and selected analyte suite.
- Section 3 discusses groundwater sampling procedures.
- Section 4 lists proposed analytical methods and reporting limits.
- Section 5 discusses the need for laboratory quality control samples.
- Section 6 summarizes the costs associated with laboratory analysis.

Section 2

Sampling Design

Three nested/cluster groundwater monitoring wells are being recommended for sampling as part of this study. Well locations are shown in Figure 1 and include from west-to-east along the centerline of the basin:

- 02N23W15J01S-03S (Marina Park);
- 02N22W07M01S-03S (Camino Real Park); and,
- 02N22W09L03S-04S (Kimball Park).

The proposed monitoring wells are screened at discrete depth intervals ranging between 170 and 1,280 ft.-bgs (Table 1) (UWCD 2012). The three well clusters shown in Figure 1 represent a total of eight (8) distinct screened groundwater intervals for sampling.

Table 2 reports the analytical parameters proposed for in each groundwater sample. The list includes general geochemical parameters to characterize the composition of groundwater, ionic and isotopic tracers that can be used to understand recharge and aquifer interactions, and groundwater age dating methods.

Section 3

Sampling Procedures

Groundwater sampling for field parameters and inorganics will follow accepted procedures used by the UWCD. Sampling for stable isotopes and groundwater age-dating will be done in accordance with protocols developed by the respective laboratories conducting these analyses. These procedures are described in detail in Appendix A.

3.1 Water Quality Measurements and Sampling

Groundwater samples will be collected using a pneumatic bladder pump and low flow sampling methods. These methods involve placing the water-intake in the middle or slightly above the middle of the screened interval and pumping at a rate (typically <0.5 L/min) that does not result in significant water level drawdown (<0.1 m) (Puls and Barcelona, 1996).

All wells will be purged prior to sampling. The volume purged should at least be equal to the screen interval volume. Water levels will be monitored during purging and recorded on a form like the example provided in Appendix D. Temperature, specific conductance, pH, oxidation-reduction potential (ORP) and dissolved oxygen will also be recorded at intervals during well purging using a metered, closed-atmosphere flow cell. During purging, water from the selected tap will be routed by a clean “Y” fitting directly to the flow cell using a short section of tubing. Wells will be purged until all field parameters have stabilized. Table 3 presents the criteria for purge stabilization.

Once stabilized parameter values have been recorded, water will be re-directed to the second outlet of the “Y” fitting for sample collection. Water samples designated for laboratory analysis will be collected directly into the appropriate containers. Samples requiring filtration will be collected using a clean, dedicated, in-line 0.45-micron capsule filter, attached to the appropriate “Y” outlet using clean tubing and fittings. The first 200 ml of filtrate will be discarded prior to collecting samples. As appropriate, preservatives will be added to the sample bottle immediately after collection, or alternatively, samples will be collected in pre-preserved bottles. The number and types of containers to be filled for each analysis, as well as holding times and any special sample handling or preservation requirements are listed in Table 4.

Clean latex (powder-free) gloves will be worn by sampling personnel during sampling and replaced between wells. Detailed sampling procedures specific for stable isotopes and groundwater age-dating analyses are provided in Appendix A. Upon collection, samples will be labeled and immediately placed on ice in a cooler or otherwise stored as specified in Table 4 until delivery to the laboratory.

3.2 Sample Identification, Labeling and Documentation

Sample identification will be based on standard UWCD practice. For each sampling location/date, the following information will be recorded in a field log:

- Sample number
- Sample location

- Sampling date and time
- Sampler's name
- Well purging information (flow rate, duration, total volume purged)
- Field parameter readings during purging
- Final (stabilized) field parameter readings
- Analytes sampled for and number of bottles collected for each analysis
- QA samples collected
- Any other relevant information (field conditions, details of how sample was collected).

Sample bottles will be labeled using self-adhesive labels, which will be completed in indelible ink and include:

- Sample identification number
- Analysis requested
- Preservatives added
- Sample date and time
- Sampler's name

Field logs recorded by the samplers should be reviewed for completeness, accuracy, and clarity.

3.3 Sample Shipping

A Chain-of-Custody form will be completed by field samplers and included with every shipment of samples to the laboratories. The form will be reviewed by field personnel to check that sample identification numbers exactly match those on the sample bottles and field logs. Following review of the forms, field sampling personnel will ship samples to the appropriate laboratories for analysis, in accordance with the following requirements:

- Sample coolers will be shipped overnight Monday through Thursday. Do not ship on Friday.
- Samples will be shipped within 24 hours from collection.
- If needed, enough blue ice should be added to coolers to ensure samples are maintained at or below 4 degrees centigrade during transport.
- Bubble wrap will be used to package the samples and COCs.
- Coolers will be sealed with tape.

The laboratory shipping addresses for specific analyses are listed in Table 4. Laboratory contacts are listed in Appendix B.

Section 4

Analytical Methods

Field analytical measurements will be made with a multi-parameter probe (YSI 556 MPS or similar) fitted with a flow cell. All field instruments will be calibrated according to manufacturer's specifications. Laboratory analytical methods and reporting limits are summarized in Table 5.

Section 5

Laboratory Quality Control

The standard laboratory quality control procedures established by each laboratory used for this project are adequate to estimate laboratory precision and accuracy. For isotopic analysis, the collection of laboratory quality control samples is not required because the laboratory uses all in-house standards in lab duplicates to ensure accuracy and precision. Standard and duplicate data associated with testing can be provided in a QA/QC report for an additional \$50. For inorganic analytes, laboratory quality control samples potentially include blanks, duplicates, matrix spikes, and check standards¹ (laboratory control samples). ALS Environmental will send requisite containers for QC upon request² and run batch QC for the unit cost of a sample, which is \$298.

A field duplicate sample is also recommended. The inclusion of a field duplicate would increase the cost of sampling and analysis by the unit cost provided in Section 6.

¹ Duplicates, matrix spikes, and matrix spike duplicates are used to estimate overall bias due to the combination of the analytical procedure and matrix interferences. Check standards are used to verify analytical precision and provide an estimate of bias due to calibration. Laboratory method blanks are used to measure the response of the analytical system at a theoretical concentration of zero.

² The volume of water required for QC samples is four times the quantity reported for a single sample in Table 4 for ALS Environmental.

Section 6

Analytical Costs

Proposed parameters, laboratories, and analytical costs are reported in Table 6. The analytical cost per sample is \$1,883. For eight groundwater samples, one field duplicate, and QC reports for both isotopic and inorganic analyses, the total cost is \$17,295. This cost does not include any equipment charges, shipping costs, or applicable taxes. Price quotes for individual labs are included in Appendix C.

Section 7

References

- Izbicki, J.A. 1996, Source, movement, and age of groundwater in a coastal California aquifer. US Geological Survey Fact-Sheet FS-126-96.
- Izbicki, J. A, A.H. Christensen, M.W. Newhouse, and G.R. Aiken. 2005. Inorganic, isotopic, and organic composition of high-chloride water from wells in a coastal southern California aquifer. *Appl Geochem.* 20: 1496–1517.
- Puls, R.W., and M.J. Barcelona. 1996. Low-flow (minimal drawdown) ground-water sampling procedures. U.S. Environmental Protection Agency. EPA/540/S-95/504.
- United Water Conservation District (UWCD). 2012. Hydrogeologic Assessment of the Mound Basin. United Water Conservation District Open-File Report 2012-001. June 11, 2012 update.

FIGURES

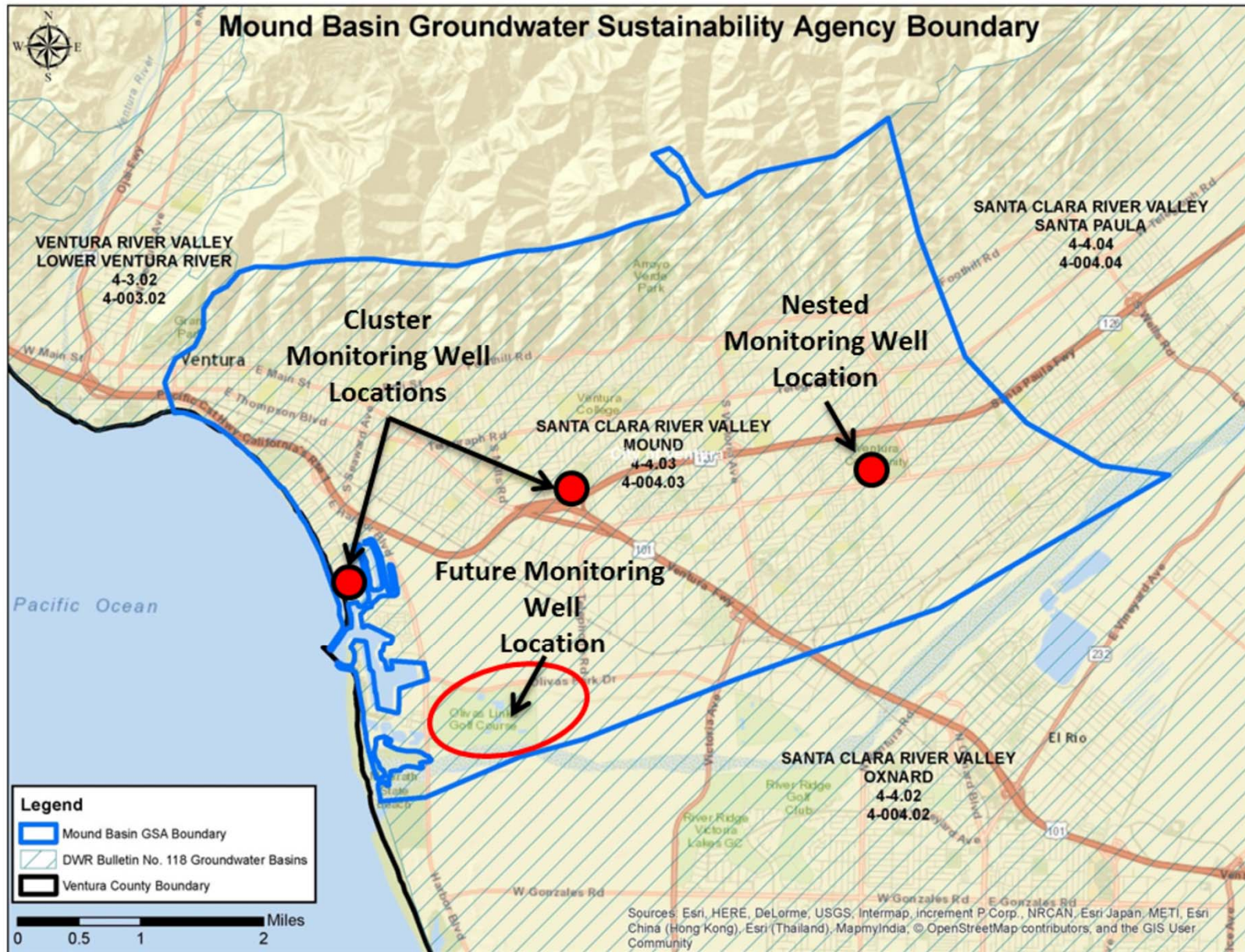


Figure 1. Mound Basin Location Map.

TABLES

Table 1. Proposed Wells for Groundwater Sampling

Location	Configuration	State Well Number	Depth Interval (ft.-bgs)	
			min	max
Marina Park	Cluster	02N23W15J01S	970	1070
		02N23W15J02S	480	660
		02N23W15J03S	170	240
Camino Real Park	Cluster	02N22W07M01S	1200	1280
		02N22W07M02S	710	780
		02N22W07M03S	210	280
Kimball Park	Nested	02N22W09L03S	890	950
		02N22W09L04S	480	510

Table 2. Geochemical and Isotopic Testing Objectives and Parameters

Parameter Type	Parameter Data Objective	Parameter
General Geochemical Parameter	Characterize Groundwater Geochemistry	Conductivity
		Dissolved Oxygen
		ORP
		pH
		Temperature
	Characterize Groundwater Redox	Dissolved Organic Carbon
		Iron
		Manganese
Major Ion Tracer	Evaluate Sources of TDS	Sulfide
		Total Dissolved Solids
		Calcium
		Magnesium
		Potassium
		Sodium
		Alkalinity (TIC) - Total, Bicarbonate, Carbonate
		Sulfate
	Chloride	
	Evaluate Sources of Carbonate	Isotopes of Dissolved Inorganic Carbon (DIC) ($\delta^{13}C$)
	Evaluate Sources of Chloride	Barium
		Boron
		Bromide
		Iodide
Evaluate Sources of Sulfate	Isotopes of Sulfate ($\delta^{34}S-SO_4$ and $\delta^{18}O-SO_4$)	
Evaluate Agricultural Sources	Nitrate-N	
	Nitrite-N	
Groundwater Tracer	Evaluate Recharge Sources	Isotopes of Water ($\delta^{18}O$ and δD)
	Estimate Groundwater/ Recharge Age	Carbon-14
		Tritium

Table 3. Stabilization Criteria for Well Purging

Parameter	Stabilization Criteria*
Temperature	<0.1°C
pH	<0.1
Specific Conductance	<5 %
ORP	<50 mV
Dissolved oxygen	<0.2 mg/L

*Maximum change for 3 successive readings

Table 4. Sample Containers, Preservation and Holding Times

Parameter	Container Requirements	Sample Handling and Preservation	Holding Time	Laboratory
Field Parameters				
Temperature	NA	Use multiparameter meter with flow cell. Purge cell of air bubbles prior to measurement. Daily calibration/verification required.	NA	NA
Conductivity				
Dissolved Oxygen				
pH				
ORP				
Inorganics				
Alkalinity (TIC)- Total, Bicarbonate, Carbonate	250 mL HDPE	Field filter (0.45 micron). No Headspace. Unpreserved. Store at 4° C.	14 days	ALS Environmental 1317 South 13th Avenue Kelso, WA 98626 Tel: (360) 577-7222 www.alsglobal.com
Bromide			28 days	
Chloride			48 hours	
Sulfate				
Nitrate-N				
Nitrite-N			Immediately	
pH			125 mL HDPE	
Barium				
Boron				
Calcium				
Iron				
Magnesium				
Manganese				
Potassium				
Sodium				
Total Dissolved Solids	1-L HDPE	Field filter (0.45 micron). Unpreserved. Store at 4° C.	7 days	
Dissolved Organic Carbon	125 mL HDPE	Field filter (0.45 micron). Acid-preserved. Store at 4° C.	28 days	
Sulfide	125 mL HDPE	Field filter (0.45 micron). Acid-preserved. No Headspace. Store at 4° C.	7 days	
Iodide	250 mL HDPE	Field filter (0.45 micron). Unpreserved. Store at 4° C.	28 days	TestAmerica Pleasanton 1220 Quarry Lane Pleasanton, CA 94566 Tel: (925) 484-1919 www.testamericainc.com

Table 4. Sample Containers, Preservation and Holding Times

Parameter	Container Requirements	Sample Handling and Preservation	Holding Time	Laboratory
Isotopes				
Isotopes of Water ($\delta^{18}O$ and δD)	1-L HDPE	Unfiltered. Unpreserved. Seal with tape. See Appendix A for additional instructions.	NA	Isotech Laboratories, Inc. 1308 Parkland Court, Champaign, IL 61821 Tel: (217) 398-3490 www.isotechlabs.com
Isotopes of Sulfate ($\delta^{34}S-SO_4$ and $\delta^{18}O-SO_4$)	1-L HDPE	Field filter (0.45 micron). Unpreserved.	14 days	
Isotopes of Dissolved Inorganic Carbon (DIC) ($\delta^{13}C$)		Seal with tape. Store at 4° C.	14 days	
Carbon-14		See Appendix A for additional instructions.	NA	
Tritium	1-L HDPE	Unfiltered. Unpreserved. Seal with tape. See Appendix A for additional instructions.	NA	The Tritium Laboratory University of Miami Rosenstiel School of Marine and Atmospheric Science, 4600 Rickenbacker Causeway Miami, FL 33149-1098 Tel: (305) 421-4100 www.tritium.rsmas.miami.edu

Table 5. Laboratory Analytical Methods

Parameter	Analytical Method	Minimum Reporting Limit	Laboratory
Inorganics			
Alkalinity (TIC)- Total, Bicarbonate, Carbonate	SM2320 B	NA	ALS Environmental 1317 South 13th Avenue Kelso, WA 98626 Tel: (360) 577-7222 www.alsglobal.com
Bromide	EPA 300.0	0.1 mg/L	
Chloride		0.1 mg/L	
Sulfate		0.2 mg/L	
Nitrate-N		0.05 mg/L	
Nitrite-N		0.1 mg/L	
pH	SM4500 H+ B	0.1 s.u.	
Barium	EPA 6010C	0.004 mg/L	
Boron		0.02 mg/L	
Calcium		0.02 mg/L	
Iron		0.02 mg/L	
Magnesium		0.005 mg/L	
Manganese		0.001 mg/L	
Potassium		0.2 mg/L	
Sodium		0.2 mg/L	
Total Dissolved Solids	SM2540 C	5 mg/L	
Dissolved Organic Carbon	SM5310 C	0.5 mg/L	
Sulfide	SM4500 S2-D	0.05 mg/L	
Iodide	EPA 300.0 (Low-Level)	0.1 mg/L	TestAmerica Pleasanton 1220 Quarry Lane Pleasanton, CA 94566 Tel: (925) 484-1919 www.testamericainc.com
Isotopes			
Isotopes of Water ($\delta^{18}O$ and δD)	Cavity Ring-Down Spectroscopy (CRDS)	0.01‰	Isotech Laboratories, Inc. 1308 Parkland Court, Champaign, IL 61821 Tel: (217) 398-3490 www.isotechlabs.com
Isotopes of Sulfate ($\delta^{34}S-SO_4$ and $\delta^{18}O-SO_4$)	Isotope Ratio Mass Spectrometry (IRMS)	0.1‰	
Isotopes of Dissolved Inorganic Carbon (DIC) ($\delta^{13}C$)	Isotope Ratio Mass Spectrometry (IRMS)	0.1‰	
Carbon-14	Accelerator Mass Spectrometry (AMS)	NA	
Tritium	Low-Level Gas Proportional Counting with Electrolytic Enrichment	0.1 TU	The Tritium Laboratory University of Miami Rosenstiel School of Marine and Atmospheric Science, 4600 Rickenbacker Causeway Miami, FL 33149-1098 Tel: (305) 421-4100 www.tritium.rsmas.miami.edu

Table 6. Laboratory Analytical Costs

Parameter	Analytical Method	Unit Cost (\$)	Laboratory
Inorganics			
Alkalinity (TIC)- Total, Bicarbonate, Carbonate	SM2320 B	25	ALS Environmental 1317 South 13th Avenue Kelso, WA 98626 Tel: (360) 577-7222 www.alsglobal.com
Bromide	EPA 300.0	20	
Chloride		20	
Sulfate		20	
Nitrate-N		20	
Nitrite-N		20	
pH		SM4500 H+ B	
Barium	EPA 6010C	64	
Boron			
Calcium			
Iron			
Magnesium			
Manganese			
Potassium			
Sodium			
Total Dissolved Solids	SM2540 C	18	
Dissolved Organic Carbon	SM5310 C	44	
Sulfide	SM4500 S2-D	35	
Iodide	EPA 300.0 (Low-Level)	50	TestAmerica Pleasanton 1220 Quarry Lane Pleasanton, CA 94566 Tel: (925) 484-1919 www.testamericainc.com
Isotopes			
Isotopes of Water ($\delta^{18}O$ and δD)	Cavity Ring-Down Spectroscopy (CRDS)	50	Isotech Laboratories, Inc. 1308 Parkland Court, Champaign, IL 61821 Tel: (217) 398-3490 www.isotechlabs.com
Isotopes of Sulfate ($\delta^{34}S-SO_4$ and $\delta^{18}O-SO_4$)	Isotope Ratio Mass Spectrometry (IRMS)	345	
Isotopes of Dissolved Inorganic Carbon (DIC) ($\delta^{13}C$)	Isotope Ratio Mass Spectrometry (IRMS)	65	
Carbon-14	Accelerator Mass Spectrometry (AMS)	750	
Tritium	Low-Level Gas Proportional Counting with Electrolytic Enrichment	325	The Tritium Laboratory University of Miami Rosenstiel School of Marine and Atmospheric Science, 4600 Rickenbacker Causeway Miami, FL 33149-1098 Tel: (305) 421-4100 www.tritium.rsmas.miami.edu
Total Cost Per Sample:		\$1,883	

Appendix A

Detailed Sampling Procedures for Isotopes and Age Tracers

A-1. Collection of Water Samples for Stable Isotope Analysis ($\delta^{18}\text{O}$ and δD)

The water sample is collected into a clean, dry, unpreserved 1-Liter high-density polyethylene (HDPE) bottle, filling it almost to the top, and capping it tightly with a poly-seal cap. A tape seal should also be placed around the cap/bottle joint. The main objective is to protect the sample from evaporation and exchange with atmospheric water vapor. Samples do not need to be filtered unless they contain abundant particulate matter. Samples can be stored at ambient temperature prior to shipping to Isotech Laboratories, Inc. for analysis.

A-2. Sampling of Groundwater for $\delta^{13}\text{C}$, $\delta^{18}\text{O-SO}_4$, $\delta^{34}\text{S-SO}_4$, & ^{14}C Analysis

Samples are collected at the well head through a 0.45-micron filter into a clean, dry, unpreserved 1 liter wide-mouth HDPE bottle. Prior to sample collection, the bottle is thoroughly rinsed with well water. It is recommended that well water flush out the inside of the bottle thoroughly and its contents dumped prior to refilling the bottle. The bottle is filled to the base of the neck. A tape seal is to be placed around the cap/bottle joint to help insure lack of exchange or loss of CO_2 . Samples need to be stored at 4°C or below and shipped overnight on ice to Isotech Laboratories, Inc. for analysis. If the samples are kept refrigerated, the laboratory recommends shipping the samples within two weeks of sampling.

A-3. Sampling of Groundwater for Low-Level Tritium Analysis

The following information is from the University of Miami Tritium Laboratory's website:

<https://tritium.rsmas.miami.edu/analytical-services/advice-on-sampling/tritium/index.html>.

Tritium in environmental samples is determined with a limit of detection of 0.1 tritium units (TU; 1 TU = 0.3 pCi/L). Rain and water vapor of the open air varies from 2 to 30 TU. Indoors, atmospheric humidity may reach 10,000 TU from various luminescent dials. Exposure of the water sample to such air at any temperature can result in erroneous tritium results.

Sampling Procedure:

1. Sample transfer should be done outdoors. If this is not possible, special precautions must be taken as described below.
2. The person performing the sample transfer must not wear a wristwatch, compass or similar article with luminescent dials or so called "beta" lights.
3. The water sample is collected directly into a clean, dry 1 L HDPE bottle, filling it almost to the top, and capping it tightly with a poly-seal cap. Overflow is not desirable. A tape seal is to be placed around the cap/bottle joint to help insure lack of exchange with the atmosphere.
4. Add nothing to the water sample. Do not filter, preserve or chill in any manner. Avoid freezing which may crack the bottle.
5. If sampling must be made indoors, the water must not be exposed to ambient air. Set the uncapped sample bottle upright and fill it with argon gas. Pipe the sample water into the bottom of the argon-filled bottle (below the argon level). When the bottle is almost full, tightly cap it. Exercise care to avoid tilting the open bottle and pouring the argon out.
6. Once capped, hold the filled bottle upside-down and squeeze it hard to check for leakage. If the cap seal is leaky, collect a new sample.
7. Samples should be stored at ambient temperature and shipped to the Tritium Laboratory at the University of Miami for analysis.

Appendix B

Laboratory Contact Information

Table B-1. Laboratory Contact Information

Laboratory	Address	Contact	Phone Number	Email
ALS Environmental	ALS Environmental 1317 South 13th Avenue Kelso, WA 98626	Howard Boorse, Senior Chemist	360-430-7733	Howard.Boorse@alsglobal.com
TestAmerica Pleasanton	TestAmerica Pleasanton 1220 Quarry Lane Pleasanton, CA 94566	Afsaneh Salimpour, Project Manager	925-484-1919	Afsaneh.Salimpour@testamericainc.com
Isotech Laboratories, Inc.	Isotech Laboratories, Inc. 1308 Parkland Court, Champaign, IL 61821	Abby Wright, Project Manager	217-398-3490	abby.wright@isotechlabs.com
The Tritium Laboratory	The Tritium Laboratory University of Miami Rosenstiel School of Marine and Atmospheric Science, 4600 Rickenbacker Causeway Miami, FL 33149-1098	Jim Happell, Project Manager	305-421-4111	jhappell@rsmas.miami.edu

Appendix C

Analytical Laboratory Price Quotations



ALS Environmental
 1317 South 13th Avenue
 Kelso, WA 98626
 Ph. 1-360-577-7222
 Fax 1-360-636-1068

Quote No.: 45933
 Quote Name: Groundwater 2019
 Attention: Brad Bessinger
 Company: S.S. Papadopoulos & Associates, Inc.
 Address: 19215 SE 34th St., Suite 106-370
 Camas, WA 98607
 Ph. 360-566-7119
 Email: bbessinger@sspa.com

Project: Groundwater 2019
 Project Chemist: Kurt Clarkson(Kurt.Clarkson@alsglobal.com)
 Sales Representative: Howard Boorse(Howard.Boorse@alsglobal.com)

Date Revised: 03/01/2019

Expires on: 2/29/20

Project Notes:

Analytical Services

Water

Test Description	QTY	TAT ¹	Unit Price	TAT Surcharge	Adj Unit Price	Extended Price	Test Comments
Bromide Anion by Ion Chromatography - 300.0	8	15 Day-B	20.00	0%	20.00	160.00	
Chloride - 300.0	8	15 Day-B	20.00	0%	20.00	160.00	
Nitrite Anion by Ion Chromatography - 300.0	8	15 Day-B	20.00	0%	20.00	160.00	
Nitrate Anion by Ion Chromatography - 300.0	8	15 Day-B	20.00	0%	20.00	160.00	
Sulfate Anion by Ion Chromatography - 300.0	8	15 Day-B	20.00	0%	20.00	160.00	
Metals by Inductively Coupled Plasma-Atomic Emission Spectrometry - 6010C	8	15 Day-B	64.00	0%	64.00	512.00	Ba,B,Ca,Mg,Mn,K,Na,Fe
Alkalinity Titration - SM 2320 B-1997(2011)	8	15 Day-B	25.00	0%	25.00	200.00	
Total Dissolved Solids Dried at 180 Deg C (TDS) 20th Ed. - SM 2540 C	8	15 Day-B	18.00	0%	18.00	144.00	
pH Value, Electrometric Method 20th Ed. - SM 4500-H+ B	8	15 Day-B	12.00	0%	12.00	96.00	
Sulfide by Methylene Blue Colorimetric 20th Ed. - SM 4500-S2- D	8	15 Day-B	35.00	0%	35.00	280.00	
Dissolved Organic Carbon (DOC), Persulfate-Ultraviolet or Heated-Persulfate Oxidation 20th Ed. - SM 5310 C	8	15 Day-B	44.00	0%	44.00	352.00	

¹ Turn around time: Values ending in '-B' are measured in business days and values ending in '-C' are measured in calendar days.

Deliverables: Tier II
 Quality Assurance Plan: LAB QAP
 Data Qualifiers: Lab Standard
 EDD: No

Subtotals	
Analytical Services:	2,384.00
Other Charges:	0.00
Applicable Tax:	0.00
Total:	2,384.00

LAB will use its best efforts to arrange for the shipment of specially prepared sample bottles, sampling instructions per Client instruction by the readily available, least cost ground shipping method. Costs for expedited delivery to meet Client's need will be at Client's expense.

General

These Terms and Conditions encompass the mutual promises and covenants that shall act as the basis of the agreement ("Agreement") of the parties between ALS Group USA, Corp. dba ALS Environmental (hereinafter referred to as ("LAB") with a corporate business office located at 10450 Stancliff Road, Suite 210, Houston, Texas 77099 and _____, (hereinafter referred to as "Client"). CLIENT and Lab may be referred to in their individual capacity as "Party" or collectively as "Parties." Upon the placement of an order for analysis from the CLIENT, CLIENT represents that its placement of an Order for analysis of Sample(s) constitutes acceptance of the terms and conditions as delineated in this Agreement by the Client provided CLIENT has received a copy of the Terms and Conditions of this Agreement via email, facsimile or other medium of communication.

Provision of Services; LAB will provide the services described in the accompanying tender, quotation, work order, letter, fax or email ("Services").

Where applicable, LAB will use analytical methodologies which are in substantial conformity with certified and/or other recognized applicable methodologies, exercising the same degree of skill, care and diligence that would be exercised by professional service providers in similar circumstances. LAB reserves the right to deviate from these methodologies, if necessary or appropriate, due to the nature or composition of the sample or otherwise, based on the reasonable judgment of LAB. Deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or LAB's standard operating procedures.

The Client acknowledges that it is the Client's sole responsibility to make its own assessment of the suitability for any purpose of the Services, detection limits and confidence intervals inherent in LAB's standard testing methodology, the LAB Report and its contents. It is necessary for LAB to assume that the paperwork submitted with a sample describes the testing protocol desired. Any changes to this protocol must be submitted to LAB in writing. LAB is in no way responsible for analytical method choice unless LAB is informed of all project aspects. If the Client requires the Services to be performed by specific test method, or requires detection limits and/or confidence intervals different to those inherent in LAB's standard testing methodology, then the Client must instruct LAB of such a variation prior to LAB performing the Services.

LAB reserves the right to refuse acceptance of delivery of any sample(s) or to revoke acceptance of delivery of any sample(s) which in the sole judgment of LAB is of unsuitable volume, may pose a risk in handling, transporting or processing for any health, safety, environmental or other reason due to the potential presence of any hazardous substance which may or may not be disclosed to Lab, or has been delivered to LAB more than seventy-two hours after sampling or after half of the recommended holding time for the analysis has lapsed. Prior to LAB's acceptance of any sample or revocation of acceptance, the risk of loss of or damage to such sample remains with the CLIENT. Samples are accepted by LAB when receipt is hereby acknowledged on chain of custody documentation.

LAB may delegate the performance of all or part of the Services to a qualified laboratory within the ALS Group USA umbrella. In the event LAB seeks to assign all or a part of the Services to a third party laboratory unaffiliated with ALS Group USA, LAB will contact CLIENT for prior written approval.

Sample Handling: Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss of or damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation by a LAB employee. In no event will LAB have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from LAB's premises.

LAB will use its best efforts to arrange for the shipment of specially prepared sample bottles, sampling instructions per Client instruction by the readily available, least cost ground shipping method. Any other shipment arrangements or overnight shipping requirements will be at Client's expense. Client is responsible for the cost of shipping samples to the laboratory. Storage time of samples will be subject to requirements under applicable recognized regulations or methods.

When extended or special storage conditions are required, samples are held without analysis, or special disposal procedures are necessary, LAB may add storage and disposal fees to the final invoice. LAB also reserves the right to bill the Client for sample or shipping containers provided but not returned. In addition, CLIENT agrees that any sample delivered will be preceded and/or accompanied by written disclosure of the presence of any hazardous substances known or suspected by CLIENT.

Fees and Payment: Payment terms are 30 days from the date of invoice (**Due Date**). Any variance from the standard payment terms must be stipulated separately in writing.

All prices quoted by LAB are exclusive of sales, use or other taxes, unless stated otherwise.

CLIENT agrees that it shall comply with all payment terms, and seventy-two hours after receipt of posting of payment, CLIENT shall own all information (subject to the provisions contained thereof addressing Confidential Information and Intellectual Property) generated by LAB in the conduct of Services, and have the right to use data without payment of additional compensation to LAB for same, except as herein specifically provided. CLIENT shall not use LAB's name or trademark in any marketing material, reporting materials, press releases or in any other manner whatsoever and shall not attribute to LAB any test result, tolerance or specification derived from LAB's data without prior written consent.

Compensation for Services performed will be based on the current LAB Analytical Fee Schedule, or on quotations agreed to in writing by the parties. Unless specifically indicated on the written confirmation of quotation, analytical turnaround times are not guaranteed. Prorated fees may be charged if project is terminated before completion.

Warranty: LAB MAKES NO WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE SERVICES, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL SUCH WARRANTIES OF ANY KIND ARE HEREBY DISCLAIMED. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THIS AGREEMENT, IN NO EVENT WILL LAB BE LIABLE TO CLIENT FOR ANY LOSS OF PROFITS, LOSS OF USE, BUSINESS INTERRUPTION, COSTS OF COVER OR PUNITIVE, EXEMPLARY, TREBLE, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND IN CONNECTION WITH OR ARISING OUT OF THE PERFORMANCE OF THIS AGREEMENT, WHETHER ALLEGED AS A BREACH OF CONTRACT OR TORTIOUS CONDUCT, INCLUDING BUT NOT LIMITED TO NEGLIGENCE.

Each Party hereby covenants that as a condition precedent to making or bringing any claim, cause of action or demand for any purpose, such Party will provide written notice to the other Party as provided in this Agreement and allow the other Party ten days after receipt of such notice to cure any alleged deficiency.

Mutual Indemnification: The parties hereby release and indemnify and shall continue to release and indemnify the respective entity, its officers, employees and agents from and against all actions, claims (actual or threatened), proceedings or demands (including any costs and expenses in defending or servicing same) which may be brought against it or them, in respect of any loss (including Consequential Loss), death, injury, illness or damage to persons or property, and whether direct or indirect and in respect of any breach of any industrial or intellectual property rights, howsoever arising out of the use of, reliance on, or benefit of, the Services or any Report, except to the extent that the loss, death, injury, illness or damage to persons or property was directly caused by the negligence, willful acts or omissions of LAB, Client or its employees.

The Indemnified Party shall be entitled, at its option, to control the defense of and settlement of any claim on which it is liable or perceived as liable, provided that the Indemnifying Party shall reasonably and in good faith with respect to all matters relating to the settlement or disposition of the Claim as the Claim relates to the Indemnified Party. The Indemnified Parties shall cooperate in the investigation, defense and settlement of any Claim and shall provide prompt written notice to the Indemnifying Party of any such Claim or reasonably expected claim. Prompt notice shall be defined as written notice provided to the other no later than five (5) business days of receipt or knowledge of such Claim. Failure of the Indemnified Party to provide such prompt written notice shall not relieve the Indemnifying Party of its obligations hereunder unless the Indemnifying Party is prejudiced by such delay. An Indemnified Party shall have the right to retain its own separate legal counsel at its own defense.

If the Indemnifying Party fails or wrongly refuses to defend or settle any Claims, then the Indemnified Party will, upon written notice to the Indemnifying Party, have the right to defend

or settle (and control the defense of) such Claims. In such case, the Indemnifying Party shall cooperate, at its own expense, with the Indemnified Party and its counsel in the defense and settlement of such Claims and shall pay, as they become due, all costs, damages and reasonable legal fees incurred.

No settlement or compromise of any Claim subject to the indemnification provisions will be binding on either Party without such Party's written consent, which shall not be reasonably withheld, delayed or conditioned. Neither Party will admit fault on behalf of the other Party without the prior written consent of that Party.

Insurance. Both Parties represent that they maintain, with financially sound and reputable insurers, insurance coverage (including worker's compensation coverage and comprehensive liability coverage with contractual liability) with respect to the conduct of its activities hereunder against loss from such risks in sufficient amounts to support its obligations hereunder. Each Party agrees, upon request of the other Party, to provide the other Party with a Certificate of Insurance evidencing such coverage. Neither party shall cause its insurer to cancel or make a material change in its insurance policy without providing a thirty day written notice to the other Party. Each Party shall maintain Commercial General Liability (both Bodily Injury and Property Damage) Insurance including contractual liability to cover the liabilities assumed in this Contract. The policy territory coverage shall include all areas where Services are performed. Policy limits must not be less than \$2,000,000 combine single limit per occurrence and \$5,000,000 aggregate coverage and Professional liability insurance limits of \$5,000,000.

Termination: Parties may suspend or terminate its obligations under this Agreement if (a) monies payable are outstanding 60 days or more (unless otherwise agreed) after the date of invoice; (b) upon thirty calendar days' written notice if the other Party is in material breach and fails to cure the material breach within such ten day period after receipt of original notice of breach; (c) by giving the Party 60 days written notice of intention to terminate; (iv) immediately, in the event of a filing of a petition in bankruptcy or an assignment for the benefit of creditors, or upon other action taken or suffered, voluntarily or involuntarily, under State or Federal law for the benefit of debtors which is dismissed immediately within thirty days thereafter; or (v) immediately if Party engages in Conduct which is injurious to the other party or acts in gross neglect or gross or willful misconduct that directly relates to the business of the other Party.

In the event of termination, LAB is entitled to be paid for all work performed before the date of termination and for any unavoidable commitments entered into by LAB before the date of termination.

Intellectual Property: Any invention, processes, know-how, secrets, improvements, other intellectual properties and assets, including but not limited to analytical methods, procedures and techniques, procedural manuals, personnel data, financial information, computer technical expertise and software which has been independently developed by LAB independent of this Agreement, and any improvements, modifications, upgrades or other changes thereto are the sole and exclusive property of LAB and Client shall obtain no right, title or interest therein except as expressly provided. LAB at all times retains the right to use any general "know how", techniques, ideas, concepts, algorithms or other knowledge acquired or developed during the performance of this Agreement.

Confidential Information: Neither Party will disclose Confidential Information of the other party to any third party without the prior written consent of the other party, unless required by law.

Confidential Information means all information in relation to a disclosing party, its business, operations, trade secrets (technical or non-technical data) or other information relating to a party that derives economic value from not being generally known or readily accessible, products, processes, customers, suppliers or contractors which is or might reasonably be considered by the disclosing party to be confidential, including all technical data, formulae, specifications, diagrams, plans, drawings, sketches, designs, business plans and reports, business methods and systems, business records, production information, unpublished financial accounts and reports, discount and supply agreements, subcontractor lists, customer lists. Confidential information shall not include information known to the public at time of disclosure; after disclosure becomes part of public domain through no fault of receiving Party; comes from a third party legally entitled to disclose it; independently developed by or on behalf of receiving Party as evidenced in its written records; was in possession of receiving Party at time of disclosure and receiving Party can prove the information was in its possession; or, as required by law, provided that the disclosing Party is given reasonable advance written notice so as to permit a protective order with respect to such information.

Force Majeure Neither Party will be liable or deemed to be in default under this Agreement for any interruption of service, delay, failure of performance to the extent caused by acts of God or other uncontrollable circumstances, including but not limited to: fire; natural disaster; storms; shortages of power; labor strikes; civil disturbances or acts of war (whether declared or undeclared); public health emergency; government orders or regulations that prevent or make performance under this Contract unlawful; or other circumstances which are beyond the reasonable control of the performing Party. In the event any force majeure event delays a Party's performance for more than thirty calendar days following written notice of such, the other Party may terminate this Agreement immediately upon written notice from such Party.

Waiver. Any waiver or delay in enforcing any term or condition hereof must be in writing and signed by both Parties. A waiver of any of the terms and condition of this Agreement will not be construed as a continuing waiver of the same term or condition, or a waiver of any other term or condition thereof.

Savings Clause. Although it is expressly understood and agreed that although Parties consider the provisions contained in this Agreement to be reasonable, if any provision contained in this Agreement is found by any court of competent jurisdiction to be invalid or unreasonable for any reason, then the provisions herein contained shall nevertheless remain effective, but shall be deemed amended as may be considered to be reasonable by such court, and as so amended, shall be enforced. Further, each provision of this Agreement is intended to be severable. If any term or provision is held to be invalid, void or unenforceable by a court of competent jurisdiction for any reason whatsoever, such ruling shall not affect the validity of the remainder of this Agreement.

Governing Law. This Agreement will be construed in accordance with and governed by the laws of the State of Texas, without regard for the provisions thereof regarding choice of laws. All actions and proceedings relating to or arising out of the subject matter hereof will be maintained exclusively in the county or district court located in Harris County, Texas, and each of the Parties hereby irrevocably waives any objection which such Party may now or hereafter have in bringing of any such action or proceeding with respect to this agreement in any jurisdiction set forth above.

Attorneys' Fees and Costs. If any action or proceeding is commenced to enforce or interpret any of the terms or conditions of this Agreement or the performance thereof, including the collection of any payments due hereunder, the prevailing party will be entitled to recover all reasonable attorneys' fees, costs and expenses. If LAB is requested to respond to any mandatory orders for the production of documents or witnesses on CLIENT's behalf regarding work performed by LAB, CLIENT agrees to pay all costs and expenses incurred by LAB not reimbursed by others in responding to such order, including attorney's fees, staff time at current billing rates and reproduction expenses.

Remedies Cumulative. No remedy set forth in this Agreement or otherwise conferred upon or reserved to any party shall be considered exclusive of any other remedy to any party, but shall be distinct, separate and cumulative and may be exercised from time to time as often as occasion may arise or deem expedient.

Authorization; Enforceability. Each of the Parties represents and warrants that the execution and delivery of this agreement has been duly authorized by all necessary corporate actions and no other corporate actions are necessary, and that this Agreement constitutes the valid and binding obligations of such Party, shall be executed by an Officer of the entity with power to bind the Party in this Agreement, and is enforceable in accordance with its terms.

Independent Contractors. In the performance of all obligations hereunder, Parties are independent contractors and the relationship between them will not constitute a partnership, joint venture or agency. Neither Party has any authority to make statements, representations or commitments of any kind on behalf of the other Party, or to take any binding action on behalf of the other Party without the prior written consent of such Party. Neither party will withhold or in any way be responsible for the payment of any federal, state or local income or occupational tax, FICA taxes, unemployment compensation, workers compensation contribution, or any other payments for or on behalf of the other Party or any person on the payroll of such Party.

Assignment. Neither Party may assign, delegate or otherwise transfer its rights, duties, interests or obligations without the prior written consent of the other Party.

Counterparts. This Agreement, and any amendments hereto, may be executed by facsimile/electronic signature and in multiple counterparts, each of which will be deemed an original but all of which together constitute one and the same instrument.

Survival. In addition to any specific survival references in this Agreement, any terms or obligations that may by nature would be expected to survive the termination or expiration of this Agreement shall survive.

Entire Agreement; Amendment. This Agreement, including any and all exhibits, purchase orders and work orders attached hereto, constitutes the entire agreement between the Parties and supersedes all prior discussions, negotiations and agreements, whether oral or written, and none of the Parties will be bound by any conditions, definitions, understanding, warranties or representations other than as expressly stated or referred to herein; provided however, that the existing confidentiality agreement between the Parties shall remain in full force and effect notwithstanding the Parties' execution of this Agreement. The Parties expressly agree that they have not relied on any statement, representation or promise, whether oral or



Terms and Conditions

written, that is not contained in this Agreement. Parties further agree that each has had access to all facts underlying this Agreement and has relied upon its own reasonable judgment in deciding to enter this Agreement. This Agreement may not be supplemented, altered, amended, modified or revoked except by written agreement signed by both Parties.

ALS Group USA, Corp dba ALS Environmental

By: _____
Printed Name: _____
Title: _____
Date: _____

CLIENT: _____
By: _____
Name: _____
Title: _____
Date: _____
Address: _____

ALS Reporting Limits

METHOD	DEFAULT PREP METHOD	ANALYTE	CAS No.	MATRIX	MDLa	MRL	UNITS
6010C	MET-DIG (CLP)	Barium	7440-39-3	Water	0.6	4	µg/L
6010C	MET-DIG (CLP)	Boron	7440-42-8	Water	4	20	µg/L
6010C	MET-DIG (CLP)	Calcium	7440-70-2	Water	0.9	20	µg/L
6010C	MET-DIG (CLP)	Iron	7439-89-6	Water	3	20	µg/L
6010C	MET-DIG (CLP)	Magnesium	7439-95-4	Water	0.3	5	µg/L
6010C	MET-DIG (CLP)	Manganese	7439-96-5	Water	0.3	1	µg/L
6010C	MET-DIG (CLP)	Potassium	7440-09-7	Water	60	200	µg/L
6010C	MET-DIG (CLP)	Sodium	7440-23-5	Water	20	200	µg/L
300.0		Bromide	24959-67-9	Water	0.004	0.1	mg/L
300.0		Chloride	16887-00-6	Water	0.007	0.1	mg/L
300.0		Nitrate as Nitrogen	14797-55-8	Water	0.003	0.05	mg/L
300.0		Nitrite as Nitrogen	14797-65-0	Water	0.007	0.1	mg/L
300.0		Sulfate	14808-79-8	Water	0.004	0.2	mg/L
SM2320 B (manual)		Alkalinity as CaCO ₃	NA	Water	1	2	mg/L
SM2540 C		Solids, Total Dissolved (Filterable)	NA	Water	5	5	mg/L
SM4500 H+ B		pH	12408-02-5	Water	NA	NA	pH units
SM4500 S2-D		Sulfide, Total	18496-25-8	Water	0.02	0.05	mg/L
SM5310 C		Dissolved Organic Carbon	7440-44-0	Water	0.08	0.5	mg/L

March 04, 2019

Brad Bessinger
S S Papadopoulos & Associates, Inc.
416 NE Dallas Street
Suite 201
Camas, WA 98607
bbessinger@sspa.com
Tel: (360) 566-7119

Subject: Analytical Services Proposal - Mound Basin - Ventura GW
TestAmerica Pleasanton Quotation Number 72014164-3

Dear Brad Bessinger,

We appreciate the opportunity to provide your company with a quotation for the Mound Basin - Ventura GW project. We firmly believe that TestAmerica has a unique combination of full service capabilities, technical expertise, local service options, and online resources necessary to ensure successful project outcomes.

At TestAmerica Pleasanton, we believe that quality is the hallmark of our business. To ensure your project's data quality objectives are met; we offer experienced personnel who are trained and committed to completing your analytical project on time, a fully documented QA/QC program, and state-of-the-art laboratory equipment and facilities. In addition to being a full service laboratory, we are part of the nation's largest network. This provides access to an unparalleled spectrum of capabilities and turn around time options, all through a single point of contact.

Total Access is a web portal offering you customizable, real time access to data. With 24 hour access you can perform data trending, compare data to industry or project limits, track CoCs, invoices, reports and much more.

Level IV Deliverables/Customizable EDDs that are high resolution, text searchable reports, available in virtually any format.

Extensive Experience: Project Managers with in-depth knowledge of regulatory protocols and procedures.

Nationwide Logistical Support: bringing you an extensive courier network, service centers and shipping options throughout the U.S. and abroad.

Dioxins/Furans, Air, Radiochemistry, IH and other specialty analyses are offered alongside routine soil and water methods with seamless reports and consolidated EDDs.

The following quotation contains a detailed price breakdown, as well as any notes and clarifications pertaining to your project. We thank you for considering TestAmerica Pleasanton and we hope you will agree that our qualifications, coupled with our competitive pricing, provide the value that your company needs for this project. If you have any questions or need additional information, please contact your Project Manager at 925 484-1919 or afsaneh.salimpour@testamericainc.com.

Chanell Slaughter
Client Relations Manager

cc. Afsaneh Salimpour

TestAmerica Pleasanton
 1220 Quarry Lane
 Pleasanton, CA 94566

Prepared for:

Brad Bessinger
 S S Papadopoulos & Associates, Inc.
 416 NE Dallas Street
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 Camas, WA 98607
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 Date 3/4/2019
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Project: Mound Basin - Ventura GW

Quote Number: 72014164 - 2

Groundwater Samples

TAT: 5_Days (Business Days)

Matrix	Method	Test Description	Quantity	Unit Price	Extended Price
Water	9040B	pH	8	\$ 10.00	\$ 80.00
Water	6010B	B, Ba, Ca, Fe, K, Mg, Mn, Na	8	\$ 65.00	\$ 520.00
Water	SM 2320B	Total, Carbonate alkalinity, Bicarbonate Alkalinity	8	\$ 20.00	\$ 160.00
Water	300.0	Bromide, Chloride, Sulfate	8	\$ 45.00	\$ 360.00
Water	300.0	Nitrate & Nitrite	8	\$ 30.00	\$ 240.00

Groundwater Samples

TAT: 7_Days (Business Days)

(to be analyzed by St. Louis)

Matrix	Method	Test Description	Quantity	Unit Price	Extended Price
Water	300.0	Iodide	8	\$ 50.00	\$ 400.00

Groundwater Samples

TAT: 7_Days (Business Days)

(to be analyzed by Irvine)

Matrix	Method	Test Description	Quantity	Unit Price	Extended Price
Water	SM 5310C	Dissolved Organic Carbon, (DOC)	8	\$ 30.00	\$ 240.00
Water	Filtration	Sample Filtration	8	\$ 10.00	\$ 80.00
Water	9034	Sulfide	8	\$ 18.00	\$ 144.00
Water	SM 2540C	TDS	8	\$ 15.00	\$ 120.00

Total Groundwater Samples

\$ 2,344.00

Quote Other Charges

Description	Quantity	Unit Price	Extended Price
Safe and Environmentally Responsible Waste Management (per sample)	8	\$ 2.50	\$ 20.00
Services - Lab Filtering; If Needed	0	\$ 10.00	\$ 0.00
Total Other Charge			\$20.00

Total Other Charges

\$ 20.00

Total Analysis Charges

\$ 2,344.00

Grand Total for Quote 72014164

\$ 2,364.00

***Quoted charges do not include sales tax. Applicable sales tax will be added to invoices where required by law.*

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PROJECT DETAILS

Advantage

TestAmerica provides a national network of strategically located labs and service centers utilizing an integrated laboratory information management system (LIMS) to deliver seamless reports and EDDs. This unified capability facilitates sharing work between labs, taking advantage of our redundant capacity, to meet your project schedule and data quality objectives.

TotalAccess to Deliverables

TotalAccess allows you to track all aspects of your environmental data program, rapidly - day or night, at work or on the road - through your own familiar web browser. TotalAccess can get your whole environmental data program organized. It's an online resource that will make your job easier, your workflow faster, and your desktop cleaner.

TotalAccess features include:

- Real time access to your sample status and result data in our Laboratory Information Management System (LIMS).
- 24/7 availability to download your Electronic Data Deliverable (EDD) files.
- Convenient organization of all your program information in one place, categorized the way you want it.
- Instant archiving of all documents for secure storage and fast retrieval.
- Dynamic interactive capabilities, enabling you to query and trend data.
- Access to analytical capabilities and methodologies to help you select the best procedures for performing your work.
- Access to lists of Certification programs detailing which TestAmerica laboratories perform work under these programs.
- Online access to your invoices and quotes.
- Ability to compare data results to the regulatory limits.

Details - Receiving Hours

We are open to receive samples:

8 am to 6:30 pm Monday - Friday
Saturday receiving available up until 12pm with prior arrangements made
Closed Sunday

Samples received after 3:00 pm M-F or anytime on Saturday, will be considered as received on the following business day for the purposes of calculating the TAT. The TAT will not commence until all issues regarding sample receipt have been resolved. TestAmerica's acceptance of samples is subject to available capacity and is contingent upon the creation of a mutually acceptable delivery schedule. Please contact your TestAmerica representative prior to sample shipment to schedule analysis. Samples should be shipped to the lab on the day they are collected. TestAmerica reserves the right to subcontract analyses if necessary, with prior approval by the client.

TestAmerica Business Terms & Conditions

Confidentiality -

This quote has been prepared by TestAmerica Laboratories, Inc. ("TestAmerica"), solely for the use of the customer to whom it is addressed in evaluating TestAmerica's qualifications and capabilities in connection with a particular project. The user of this document agrees by its acceptance to return it to TestAmerica upon request and not to reproduce, copy, lend, or

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otherwise disclose its contents, directly or indirectly, and not to use it for any purpose other than that for which it was specifically provided. The user also agrees that where consultants or other outside parties are involved in the evaluation process, access to this document shall not be given to said parties unless those parties also specifically agree to these conditions. In the absence of signed acceptance, submittal of samples will indicate acceptance of this quotation.

Terms and Conditions -

This quotation is based solely upon TestAmerica's standard product (routine QA/QC, detection limits, deliverables and standard turnaround times) and noted exceptions herein. The discounts incorporated into the pricing are based upon the sample quantity, test method, and schedule quoted. Any deviations may impact pricing and/or the acceptance of work. Final acceptance of this work is contingent upon a mutually agreed Sample Delivery Schedule. All sales are subject to TestAmerica's Terms and Conditions **unless alternative terms have been agreed to in writing**. Submittal of samples will indicate acceptance of this quotation.

Quote Expiration -

Pricing listed in the proposal will expire **90 days** from the quote date unless the project is awarded/confirmed within that time period. Unless otherwise set forth in this quotation, TestAmerica reserves the right to re-evaluate pricing for extended length projects on an annual basis.

SERWM -

A fee, notated as Safe and Environmentally Responsible Waste Management (SERWM), will be applied to all invoices for each sample processed by the laboratory.

PROJECT SETUP

Field Sampling Products -

TestAmerica can provide field sampling products upon request and these products are billable to the client at the time of shipment.

Field sampling products may include, but are not limited to:

- VOA sampling devices, preservation kits, ISM supplies, tubing and filters
- Industrial Hygiene media, surface sampling wipes, source sampling traps

The cost of the soil sampling devices is not included in the quoted rates for volatile analysis.

Core Samplers

- 5 gram Core N' One and EnCore samplers are available at \$10 each (three required per sample).
- Disposable Core N' One T-Handles are available at \$15 each.
- TestAmerica does not supply EnCore T-Handles.

Field Preservation

- TerraCore Kits (varied) - quoted based on client required configurations
- Disposable Lock N' Load Handles are available at \$12 each.

If any sampling supplies for soil VOCs are requested, they will be included in the quote under Other Charges.

Coolers and Sampling Supplies -

- Sampling Supplies: TestAmerica will provide sample containers and coolers to support the sampling of water and soil samples. Extra bottles may be provided (up to 10%) in case of breakage. TestAmerica expects that samples and supplies will be returned to the lab,

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including empty coolers and a reasonable percentage of the projected sample load - 70% or higher of the expected/quoted sample number. Coolers not received back by the projected deadline or as agreed with the PM may be charged at \$30 per cooler. Similarly, if the sample containers received as samples are less than 90% of the containers provided, the sample containers not received as samples will be charged at a flat rate of \$1 per container.

- Sample Container Shipping: The containers and preservatives required by the project shall be delivered via ground transportation. A minimum of **5 business days** advance notice is required in order to achieve shipment by ground transportation. Supply shipments requiring priority delivery due to insufficient lead time for ground transportation shall be charged to the client at TestAmerica's cost. Alternatively, TestAmerica can ship the supplies via carrier of choice by the client using the client's shipping account.

TestAmerica does not supply wet ice or blue ice for shipments. If shipping containers are not returned within 60 days, a charge for the containers will be billed at the current market rate. Please contact your PM for the current charges.

Courier Services and Sample Pick-Up -

Courier Services are offered by some TestAmerica facilities. Where offered, the cost of the services will vary based on the distance traveled, the scope of the project being supported, and whether sufficient notice (typically 48 hours) is provided to facilitate efficient scheduling. If no details are described in this quotation and you are interested in learning more about courier options, please contact your Client Relations Manager or Project Manager to inquire about availability and cost.

Minimum Log-In Charges -

TestAmerica's minimum charge is **\$150** for a group of samples received together for analysis. Our minimum invoice value is \$150.

QC Limit Disclaimer -

The laboratory's reporting limits, detection limits, and control limits are subject to change as these values are updated periodically to reflect analytical sensitivity and capability.

Turnaround Time -

- Quoted Turnaround Time - Data will be delivered at the proposed turnaround time in Business Days from Sample Receipt unless otherwise agreed upon. TAT begins the day the laboratory performing analyses receives the samples (day of lab receipt = day zero).

Samples received after 11 AM will be considered received the next business day.

- Expedited Turnaround Time: Expedited turnaround times may be available and must be pre-approved by the laboratory. Expedited turnaround delivery is contingent upon meeting the agreed upon delivery date/time and number of samples. Samples received after 11 AM will be considered received the next business day. Results will be provided via e-mail or TotalAccess by close of business in the lab's time zone unless another time has been agreed to in advance.

Expedited turnaround time surcharges for standard analyses are:

- 5 Business Days TAT = Waived
- 4 Business Days TAT = 25%
- 3 Business Days TAT = 60%

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- 2 Business Days TAT = 75%
- 1 Business Day TAT = 100%

Different surcharges may apply for specialty analyses. These will be provided in your quotation. Weekend TAT can be arranged on a project-specific basis at an additional cost. Please contact your PM to inquire about availability and cost.

PROJECT DELIVERABLES

TestAmerica will provide two analytical report formats, a final report in PDF format and a standard TestAmerica EDD. Both electronic report formats will be delivered via email or web portal. If additional formats or retroactive deliverables are requested, costs of report generation will be billable. Charges will be based on labor and materials cost of report generation and data retrieval. Please contact your PM to inquire about availability and the price of additional deliverables.

- Report Format: Unless a level III or IV deliverable is specifically listed on the pricing page, this quotation includes delivery of a Level I or II report. Level III or IV reports are available at an additional charge.
- Electronic Data Deliverable Format: TestAmerica has many EDD formats available to our clients including the most widely used commercial formats. TestAmerica offers data using a standard EDD. Other EDD formats are available for a minimal cost of \$25 per format (if not included as part of the report options listed in the quotation). The development of EDD formats that are not already available, including modification to existing formats to fit client specific needs, can be provided for a fee starting at \$100. Additional fees will be estimated by the lab and approved by the client. Additional programming fees are billed at \$50/hour.

PROJECT SPECIFICATIONS

Cancellation Fee -

A fee will be charged for cancellation of samples/analyses after a project is received in the laboratory. The fee will be based on the status of analysis at the time of cancellation in accordance with the following categories:

- Received - 35%
- Prepped - 50%
- Analyzed - 95%

Changes in Scope and Work Revisions -

Project requirements must be agreed upon prior to sample receipt. Samples will be logged according to the chain of custody received with the samples. Changes after initiation of the project will be subject to additional charges, including labor time required to reset project, communicate changes to laboratory staff, and rework data. Turnaround time will be reset or rush surcharges will be assessed where applicable. Analyses added with less than 1/2 of the analytical hold time remaining will incur rush turnaround charges. Your project manager will evaluate project specific charges at the time a change order is received.

Held Samples -

- Held samples not analyzed: Samples submitted on hold will be billed at 35% of the analysis fee (minimum \$10/sample). If samples are later analyzed, the handling fee will be waived and only the analysis price will be charged. Samples taken off hold with less than

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1/2 of the analytical hold time remaining may incur rush turnaround charges. Samples will be disposed of 30 days after the report for analyzed samples in the same job is issued, unless alternate archival arrangements are made in advance.

- Extracted/Prepped and Held samples: Samples submitted for prep and hold will be billed at 60% of the analysis fee for each prepped sample (minimum \$30/sample). Samples taken off hold with less than 1/2 of the analytical hold time remaining may incur rush turnaround charges. Samples will be disposed of 30 days after the report for analyzed samples in the same job is issued, unless alternate archival arrangements are made in advance.
- Extended archival of samples: Extended archival of samples (including held samples) may be available for a fee starting at \$2 per container per month (minimum \$10/sample). This fee will be billed in advance on a quarterly basis for every quarter after the standard sample retention time of 30 days after the report is issued. Fees for larger volumes, non-standard matrices or cold storage will be negotiated on a case-by-case basis. Please contact your PM to inquire about availability and pricing for samples that are sent to the lab and archived.

Matrix Spike/Spike Duplication (MS/MSD) Samples -

When MS/MSDs are not specifically requested, TestAmerica will strive to perform the required QC using whatever sample is available but will not report the QC results unless the client requests it. The reporting of client requested MS/MSD results will be charged at applicable unit rates. If MS/MSDs are specifically required or requested, the client must provide additional sample volume.

Multiple Dilutions Analyzed -

TestAmerica strives to analyze samples without dilution or with the minimum dilution required. Samples are diluted to bring the primary analyte within the calibration range of the instrument, to compensate for matrix co-extractives, or to prevent instrument contamination. TestAmerica will report the analytical run containing the highest concentration component/analyte in the sample within the calibrated (quantifiable) range of the method. Analytical screening runs are not reported. If project specific data quality objectives require additional runs, analyses will be billable unless otherwise noted in this quote. Please contact your PM to inquire about the availability of this service for your project.

Sample Disposal -

TestAmerica will dispose of non-hazardous samples, sample extracts and digestates 30 days after the final report is issued. Charges for disposal of non-routine or uniquely hazardous samples will be billed to the client. Alternatively, samples can be returned to the client for disposal. Cost of return shipping will be billable to the client.

Special Sample Handling Fees -

Unit prices assume that samples are a single-phase matrix and that analyses can be performed in accordance with the laboratory's standard analytical procedures. If additional handling is required, additional fees may apply. Examples of special handling include (but are not limited to):

- Matrices requiring additional dilutions or special clean up steps
- Multiphasic samples requiring separate preparations and/or analyses
- Particle size reduction or special sub-sampling procedures
- Extra disposal costs for unique waste streams

Trip Blanks -

TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566

Prepared for:

Brad Bessinger
S S Papadopoulos & Associates, Inc.
416 NE Dallas Street
Suite 201
Camas, WA 98607
bbessinger@sspa.com
Tel: (360) 566-7119

Prepared by Slaughter, Chanell
Date 3/4/2019
Expiration Date 8/27/2019
Est. Start Date

Project: Mound Basin - Ventura GW

Quote Number: 72014164 - 2

TestAmerica typically provides trip blanks with our sample kits containing volatile analysis. When samples are received at the laboratory with trip blanks, the lab will analyze, report and charge the unit rate for the analysis. Please add this sample to your chain of custody. If you do not want the trip blank analyzed, please note this on the COC.

ADDITIONAL BUSINESS TERMS AND CONDITIONS

Environmental Management Fee

If this fee is included in the Other Charges section of the pricing page, a fee equal to the listed percentage of the total invoice amount will be applied to all work done under this quotation. The Fee will appear as a separate line item on each invoice. In the absence of any other firm pricing agreements, your sending work to us under this quotation will signify your acceptance of responsibility for payment of the Fee.

Field Parameters -

pH, Temperature, and Dissolved Oxygen analyses, along with Residual Chlorine screening, are properly performed and treated in the field at the time of sample collection. Laboratory analysis may result in a holding time exceedance qualifier.

Network or Subcontract Labs -

- Networking: TestAmerica reserves the right to perform the services at any laboratory in the TestAmerica network, unless the Client has required a particular location for the work.
- Subcontracting: TestAmerica reserves the right to subcontract services ordered by the Client to another laboratory or laboratories, if, in TestAmerica's sole judgment, it is reasonably necessary, appropriate or advisable to do so. TestAmerica will make every effort to notify the client prior to delivering samples to an out-of-network laboratory. TestAmerica will in no way be liable for any subcontracted services (outside the TestAmerica network) except for work performed at laboratories which have been audited and approved by TestAmerica.

Price Surcharge Due To Sample Volume -

Unless dictated by contract, this quotation is based on the scope of work defined in the quote request. If the volume of samples submitted is less than 70% of the projected volume, a surcharge of 10% of the total project cost may be assessed.

Professional and Administrative Services -

A variety of professional and administrative services are available. Prices for services not specifically detailed in this quotation will be billed in accordance with TestAmerica's Professional Rate Schedule.

Taxes -

Where reports are issued in or delivered to a state which assesses sales tax on TestAmerica's services, applicable sales taxes will be added to the invoice as required by law, unless an appropriate sales tax exemption form is on file with TestAmerica.

Rev: 12/24/2018

TestAmerica Pleasanton
 1220 Quarry Lane
 Pleasanton, CA 94566

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 Date 3/4/2019
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Quote Number: 72014164 - 2

Groundwater Samples

Matrix	Method	Test Description	Analyte	RL	RL	Units
Water	9040B	pH	pH	0.100	0.100	SU
Water	6010B	B, Ba, Ca, Fe, K, Mg, Mn, Na	Barium	0.0100	0.00140	mg/L
			Boron	0.100	0.00100	mg/L
			Calcium	1.00	0.300	mg/L
			Iron	1.00	0.400	mg/L
			Magnesium	1.00	0.0820	mg/L
			Manganese	0.0200	0.00370	mg/L
			Potassium	5.00	0.600	mg/L
			Sodium	1.00	0.300	mg/L
Water	SM 2320B	Total, Carbonate alkalinity, Bicarbonate Alkalinity	Alkalinity	5.00	1.92	mg/L
			Bicarbonate Alkalinity as CaCO3	5.00	1.92	mg/L
			Carbonate Alkalinity as CaCO3	5.00	1.92	mg/L
Water	300.0	Bromide, Chloride, Sulfate	Bromide	1.00	0.392	mg/L
			Chloride	1.00	0.500	mg/L
			Sulfate	1.00	0.400	mg/L
Water	300.0	Nitrate & Nitrite	Nitrate as N	0.226	0.0580	mg/L
			Nitrite as N	0.304	0.100	mg/L
Water	300.0	Iodide	Iodide	0.0500	0.00650	mg/L
Water	SM 5310C	Dissolved Organic Carbon, (DOC)	Dissolved Organic Carbon	0.100	0.0500	mg/L
Water	9034	Sulfide	Sulfide	4.00	2.00	mg/L

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Project: Mound Basin - Ventura GW

Quote Number: 72014164 - 2

Groundwater Samples

Matrix	Method	Test Description	Analyte	RL	MDL	Units
Water	SM 2540C	TDS	Total Dissolved Solids	10.0	5.00	mg/L

Continued

TestAmerica Pleasanton
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Analytical Sample Information

Analysis Method	Matrix	Preservative	Client Sub List Desc Container	Volume Required	Holding Time
Alkalinity 2320B	Water	None	Total, Carbonate alkalinity, Bicarbonate Alkalinity Plastic 250ml - unpreserved	100 mL	14 Days
Anions, Ion Chromatography 300_ORGFM_28D	Water	None	Bromide, Chloride, Sulfate Plastic 250ml - unpreserved	30 mL	28 Days
Anions, Ion Chromatography 300_28D_LL_OF	Water	None	Iodide Plastic 250ml - unpreserved	50 mL	28 Days
Anions, Ion Chromatography 300_ORGFMS	Water	None	Nitrate & Nitrite Plastic 250ml - unpreserved	30 mL	48 Hours
Metals (ICP) 6010B	Water	Nitric Acid	B, Ba, Ca, Fe, K, Mg, Mn, Na Plastic 250ml - with Nitric Acid	50 mL	180 Days
Organic Carbon, Dissolved (DOC) SM5310_DOC_C	Water	None	Dissolved Organic Carbon, (DOC) Amber Glass 250ml - unpreserved	100 mL	28 Days
pH 9040B	Water	None	pH Plastic 250ml - unpreserved	100 mL	IMMEDIATELY
Solids, Total Dissolved (TDS) 2540C_Calcd	Water	None	TDS Plastic 250ml - unpreserved	100 mL	7 Days
Sulfide, Acid soluble and Insoluble (Titrimetric) 9034_Calc	Water	Zinc Acetate and Sodium Hydroxide	Sulfide Plastic 250ml - with Zinc Acetate & NaOH	50 mL	7 Days

Hold Times listed above represent the minimum allotted time between sampling and lab extraction, prep or analysis.

Multiple analyses may be consolidated into fewer containers. Please contact your Project Manager for clarification when requesting sample containers.

Except for some special tests, all samples should be kept cold at 6 degrees C.

TESTAMERICA TERMS AND CONDITIONS OF SALE (Short Form)

When a purchaser (Client) places an order for laboratory, consulting or sampling services from TestAmerica Laboratories, Inc., a Delaware corporation (TestAmerica), TestAmerica shall provide the ordered services pursuant to these Terms and Conditions and the related Quotation or Price Schedule, or as agreed in a negotiated contract. In the absence of a written agreement to the contrary, a client order constitutes an acceptance by the Client of TestAmerica's offer to do business under these Terms and Conditions, and an agreement to be bound by these Terms and Conditions. Receipt of a Client's samples at a TestAmerica laboratory constitutes acceptance of these Terms and Conditions (in the absence of any other negotiated contract). No contrary or additional terms and conditions expressed in a Client's document shall be deemed to become a part of the contract created upon acceptance of these Terms and Conditions, unless accepted by TestAmerica in writing.

1. ORDERS AND RECEIPT OF SAMPLES

1.1 A Client may place an order (i.e., specify a Scope of Work) either by submitting a purchase order to TestAmerica in writing or by telephone subsequently confirmed in writing, or by negotiated contract. Whichever option the Client selects for placing an order, the order shall not be valid unless it contains sufficient specification to enable TestAmerica to carry out the Client's requirements. In particular, samples must be accompanied by: a) adequate instruction on type of analysis requested, and b) complete written disclosure of the known or suspected presence of any hazardous substances, as defined by applicable federal or state law. If a Client fails to provide these required disclosures accompanying the submission of samples, and such failure results in an interruption in the lab's ability to process work due to contamination of instruments or work areas, the Client will be responsible for the costs of clean-up and recovery.

1.2 The Client shall provide one week's advance notice of the sample delivery schedule, or any changes to the schedule, whenever possible. Upon timely delivery of samples, TestAmerica will use its best efforts to meet mutually agreed turnaround times. All turnaround times will be calculated from the point in time when TestAmerica has determined that it can proceed with defined work following receipt, inspection of samples, and resolution of any discrepancies in Chain-of-Custody forms and project guidance regarding work to be done (Sample Delivery Acceptance). Rush turnaround times not requested in advance of the delivery of samples and specifically agreed to by the lab are not guaranteed. If the Client changes the sample delivery schedule prior to Sample Delivery Acceptance, TestAmerica reserves its rights to modify its turnaround time commitment, change the date upon which TestAmerica will accept samples, or refuse Sample Delivery Acceptance for the affected samples.

1.3 TestAmerica reserves the right, exercisable at any time, to refuse or revoke Sample Delivery Acceptance for any sample which in the sole judgment of TestAmerica: a) is of unsuitable volume; b) may pose a risk or become unsuitable for handling, transport, or processing for any health, safety, environmental or other reason, whether or not due to the presence of any hazardous substance in the sample and whether or not such presence has been disclosed to TestAmerica by the Client; or c) holding times cannot be met, due to passage of more than 48 hours from the time of sampling or 1/2 the holding time for the requested test, whichever is less.

1.4 Prior to Sample Delivery Acceptance, the entire risk of loss or damage to samples remains with the Client, except where TestAmerica provides courier services. In no event will TestAmerica have any responsibility or liability for the action or inaction of any carrier shipping or delivering any sample to or from TestAmerica's premises. Client is responsible for assuring that any sample that contains or may contain any hazardous substance to be delivered to TestAmerica's premises is properly packaged, labeled, transported and delivered, all in accordance with applicable laws.

1.5 TestAmerica reserves the right to begin processing samples upon receipt, unless the Client specifically notifies TestAmerica in writing prior to sample receipt that the samples are to be held without preparation or other processing or pending receipt of a purchase order. TestAmerica shall under no circumstances be responsible for missed holding times or turnaround times or for re-sampling costs if samples are released from hold with less than 48 hours or 1/2 the holding time for the requested test remaining, whichever is less.

2. PAYMENT TERMS

2.1 Services performed by TestAmerica will be in accordance with prices quoted and later confirmed in writing or as stated in the Price Schedule. Quoted prices do not include sales tax. Applicable sales tax will be added to invoices where required by law.

2.2 Invoices may be submitted to Client upon completion of any sample delivery group. Billing corrections must be requested within 30 days of invoice date. Payment in advance is required for all clients except those whose credit has been established with TestAmerica. For clients with approved credit, payment terms are net 30 days from the date of invoice by TestAmerica, unless alternative terms have been agreed in a separate written agreement. Payment shall be made without retainage, and shall not be contingent upon the receipt of funds from third parties. All overdue payments are subject to an additional interest and service charge of one and one half percent (1.5%) (or the maximum rate permissible by law, whichever is less) per month or portion thereof from the due date until the date of payment. All fees are charged or billed directly to the Client. The billing of a third party will not be accepted without a statement, signed by the third party, acknowledging and accepting payment responsibility in accordance with these payment terms.

2.3 If Client fails to make timely payment of its invoices, TestAmerica reserves the right to pursue all appropriate remedies, including withdrawing certifications, suspending work and withholding delivery of data under this order without recourse. Client shall be responsible for all reasonable fees, expenses, and costs of collection including but not limited to arbitrator's and attorney's fees. TestAmerica reserves the right to refuse to proceed with work at any time based upon an unfavorable Client credit report.

3. CHANGE ORDERS, TERMINATION

3.1 Changes to the Scope of Work, price, or result delivery date may be initiated by TestAmerica after Sample Delivery Acceptance due to any condition which conflicts with analytical, QA or other protocols warranted in these Terms and Conditions. TestAmerica will not proceed with such changes until an agreement with the Client is reached on the amount of any cost, schedule change or technical change to the Scope of Work, and such agreement is documented in writing.

3.2 Changes to the Scope of Work, including but not limited to increasing or decreasing the work, changing test and analysis specification, or acceleration in the performance of the work may be initiated by the Client after Sample Delivery Acceptance. Such change must be documented in writing and may result in a change in cost and turnaround time commitment. TestAmerica's acceptance of such changes is contingent upon technical feasibility and operational capacity.

3.3 Suspension or termination of all or any part of the work may be initiated by the Client. TestAmerica will be compensated consistent with Section 2 of these Terms and Conditions. TestAmerica will complete all work in progress and be paid in full for all work completed.

4. WARRANTIES AND LIABILITY

4.1 Where applicable, TestAmerica will use appropriate and approved analytical test methods. TestAmerica has referenced these methods in its Laboratory Quality Manuals and has documented them in Standard Operating Procedures. TestAmerica reserves the right based on its reasonable judgment to deviate from these methodologies as necessary or appropriate to the extent required by the nature or composition of the sample, which deviations, if any, will be made on a basis consistent with recognized standards of the industry and/or TestAmerica's Laboratory Quality Manuals. Client may request that TestAmerica perform according to a mutually agreed Quality Assurance Project Plan (QAPP). If samples arrive prior to agreement on a QAPP, TestAmerica will proceed with analyses under its standard Quality Manuals then in effect. TestAmerica will not be responsible for any resampling or other charges if work must be repeated to comply with a subsequently finalized QAPP.

4.2 TestAmerica shall start preparation and/or analysis within holding times provided that Sample Delivery Acceptance occurs within 48 hours of

sampling or 1/2 of the holding time for the test, whichever is less, unless the Client has specifically requested that TestAmerica hold the samples without preparation or other processing or pending receipt of a purchase order. Where resolution of inconsistencies leading to Sample Delivery Acceptance does not occur within this period, TestAmerica will use its best efforts to meet holding times and will proceed with the work provided that, in TestAmerica's judgment, the chain-of-custody or definition of the Scope of Work provide sufficient guidance. Reanalysis of samples to comply with TestAmerica's Quality Manuals will be deemed to have met holding times provided the initial analysis was performed within the applicable holding time. Where reanalysis demonstrates that sample matrix interference is the cause of failure to meet any Quality Manual requirements, the warranty will be deemed to have been met.

4.3 TestAmerica warrants that it possesses and maintains all licenses and certifications that are required to perform services under these Terms and Conditions provided that such requirements are specified in writing to TestAmerica prior to Sample Delivery Acceptance. TestAmerica will notify the Client in writing of any decertification or revocation of any license, or notice of either, that affects work in progress.

4.4 The warranty obligations set forth in Sections 4.1, 4.2 and 4.3 are the sole and exclusive warranties given by TestAmerica in connection with any services performed by TestAmerica or any results generated from such services, and TestAmerica gives and makes NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. No representative of TestAmerica is authorized to give or make any other representation or warranty or modify this warranty in any way.

4.5 Client's sole and exclusive remedy for breach of warranty in connection with any services performed by TestAmerica will be limited to repeating any services performed, contingent on the Client's providing, at the request of TestAmerica and at the Client's expense, additional sample(s) if necessary. Any reanalysis requested by the Client generating results consistent with the original results will be at the Client's expense. If resampling is necessary, TestAmerica's liability for resampling costs will be limited to actual cost or one hundred and fifty dollars (\$150) per sample, whichever is less.

4.6 TestAmerica's liability for any and all causes of action arising hereunder, whether based in contract, tort, warranty, negligence or otherwise, shall be limited to the lesser amount of compensation for the services performed or \$100,000. All claims, including those for negligence, shall be deemed waived unless suit thereon is filed within one year after TestAmerica's completion of the services. Under no circumstances, whether arising in contract, tort (including negligence), or otherwise, shall TestAmerica be responsible for loss of use, loss of profits, or for any special, indirect, incidental or consequential damages occasioned by the services performed or by application or use of the reports prepared.

4.7 In no event shall TestAmerica have any responsibility or liability to the Client for any failure or delay in performance by TestAmerica that results, directly or indirectly, in whole or in part, from any cause or circumstance beyond the reasonable control of TestAmerica. Such causes and circumstances include, but are not limited to, acts of God, acts of Client, acts or orders of any governmental authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, equipment breakdown, matrix interference or unknown highly contaminated samples that impact instrument operation, unavailability of supplies from usual suppliers, difficulties or delays in transportation, mail or delivery services, or any other cause beyond TestAmerica's reasonable control.

5. RESULTS, WORK PRODUCT

5.1 Data or information provided to TestAmerica or generated by services performed under this agreement shall only become the property of the Client upon receipt in full by TestAmerica of payment for the entire order. Ownership of any analytical method, QA/QC protocols, software programs or equipment developed by TestAmerica for performance of work will be retained by TestAmerica. Client shall not disclose such information to any third party without TestAmerica's express prior consent.

5.2 Data and sample materials provided by Client or at Client's request, and the result obtained by TestAmerica shall be held in confidence (unless such information is generally available to the public or is in the public domain or Client has failed to pay TestAmerica for all services rendered or is otherwise in breach of these Terms and Conditions), subject to any disclosure required by law or legal process.

5.3 Should the results delivered by TestAmerica be used by the Client or Client's client, even though subsequently determined not to meet the warranties described in these Terms and Conditions, then the compensation will be adjusted based upon mutual agreement. In no case shall the Client unreasonably withhold TestAmerica's right to independently defend its data.

5.4 TestAmerica reserves the right to perform the services at any laboratory in the TestAmerica network. If a Client has requested a particular location for the work, TestAmerica will inform the Client when operational constraints require the work to be performed at another TestAmerica location. In addition, TestAmerica reserves the right to subcontract services ordered by the Client to another laboratory or laboratories, if, in TestAmerica's sole judgment, it is reasonably necessary, appropriate or advisable to do so. TestAmerica will in no way be liable for any subcontracted services (outside the TestAmerica network) except for work performed at laboratories which have been audited and approved by TestAmerica.

5.5 TestAmerica will dispose of non-hazardous samples, sample extracts and digestates 30 days after the final analytical report is issued, unless instructed to store them for an alternate period of time or to return such samples to the Client, in a manner consistent with U.S. Environmental Protection Agency regulations or other applicable federal, state or local requirements. Charges for disposal will be billed to the client. Alternatively, samples can be returned to the client for disposal. Cost of return shipping will be billable to the client. Air samples in Summa canisters and tedlar bags are used and the containers cleaned immediately after testing, such that those samples are not retained. Longer storage periods may be requested and may be accommodated if space allows, and for an additional charge. Any samples for projects that are canceled or not accepted, or for which return was requested, will be returned to the Client at its own expense. TestAmerica reserves the right to return to the Client any sample or unused portion of a sample that is not within TestAmerica's permitted capability or the capabilities of TestAmerica's designated waste disposal vendor(s). ALL DIOXIN, MIXED WASTE, AND RADIOACTIVE SAMPLES WILL BE RETURNED TO THE CLIENT, unless prior arrangements for disposal are made.

5.6 Unless a different time period is agreed to in an order under these Terms and Conditions, TestAmerica agrees to retain all records for five (5) years.

5.7 If TestAmerica is required to respond to legal process related to services for Client, Client agrees to reimburse TestAmerica for hourly charges for personnel involved in the response and attorney's fees reasonably incurred in obtaining advice concerning the response, preparation to testify, and appearances related to the legal process, travel and all reasonable expenses associated with the litigation. Additional consulting beyond that normally associated with lab reports will be billed at TestAmerica's current published rates.

6. INSURANCE

6.1 During the performance of services under these Terms and Conditions, TestAmerica shall maintain in force Workers' Compensation and Employer's Liability Insurance in accordance with the laws of the states having jurisdiction over TestAmerica's employees who are engaged in the performance of the work. TestAmerica shall also maintain during such period Comprehensive General and Contractual Liability (limit of \$1,000,000 per occurrence/ \$2,000,000 aggregate), Comprehensive Automobile Liability, owned and hired, (\$1,000,000 combined single limit), and Professional/Pollution Liability Insurance (limit of \$1,000,000 per claim/occurrence, \$2,000,000 aggregate).

7. MISCELLANEOUS PROVISIONS

7.1 These Terms and Conditions, together with any additions or revisions which may be agreed to in writing by TestAmerica, embody the whole agreement of the parties and provide the only remedies available. There are no promises, terms, conditions, understandings, obligations or agreements other than those contained herein, and these Terms and Conditions shall supersede all previous communications, representations, or agreements, either verbal or written, between the Client and TestAmerica. These Terms and Conditions, and any transactions or agreements to which they apply, shall be governed both as to interpretation and performance by the laws of the state where TestAmerica's services are performed.

7.2 The invalidity or unenforceability, in whole or in part, of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of these Terms and Conditions, the intent of the parties being that the provisions be severable. The section headings of these Terms and Conditions are intended solely for convenient reference and shall not define, limit or affect in any way these Terms and Conditions or their interpretations. No waiver by either party of any provision, term or condition hereof or of any obligation of the other party hereunder shall constitute a waiver of any subsequent breach or other obligation.

7.3 The obligations, liabilities, and remedies of the parties, as provided herein, are exclusive and in lieu of any others available at law or in equity. Indemnifications, releases from liability and limitations of liability shall apply, notwithstanding the fault, negligence or strict liability of the party to be indemnified, released, or whose liability is limited, except to the extent of sole negligence or willful misconduct.

Price Quote

February 22, 2019

Prepared for:
Brad Bessinger, Ph.D., R.G.
 Vice President, Senior Geochemist
 S.S. Papadopoulos & Associates, Inc.
 416 NE Dallas St., Suite 201
 Camas, WA 98607
 360-566-7119
bbessinger@sspa.com

Prepared by:
 Abby Wright
 Isotech Laboratories, Inc.
 1308 Parkland Court
 Champaign, IL 61821
 Phone: 217-398-3490 Fax: 217-398-3493

Description	Unit	Currency	Unit Cost	Estimated Quantity	Cost
Stable Isotopes of Water (40 - 125 mL of sample required)					
¹³ C/ ¹² C (δ ¹³ C) analysis of DIC in water (<i>Sample should be field filtered, stored cold & shipped on ice</i>)	per sample	USD	\$65.00	8	\$ 520.00
² H/ ¹ H (δD) and ¹⁸ O/ ¹⁶ O (δ ¹⁸ O) analysis of water via CRDS (<i>NOT</i> for produced water, oilfield brines, fracking water, or water containing alcohols)	per sample	USD	\$50.00	8	\$ 400.00
Isotopes of Dissolved Sulfate (1 L of sample required, must be shipped on ice or frozen - no preservative)					
³⁴ S/ ³² S (δ ³⁴ S) and ¹⁸ O/ ¹⁶ O (δ ¹⁸ O) analysis of dissolved sulfate	per sample	USD	\$345.00	8	\$ 2,760.00
Tritium Analysis of Water by beta spectrometry (1 L of sample required - no preservative)					
³ H analysis of water with electrolytic enrichment: detection limit 1 TU	per sample	USD	\$400.00	8	\$ 3,200.00
Radiocarbon Analysis of Water (40 - 125 mL of sample required)					
¹⁴ C analysis of DIC in water by AMS (subcontracted) (<i>Sample should be field filtered, stored cold & shipped on ice</i>)	per sample	USD	\$750.00	8	\$ 6,000.00
Total Estimated Amount					\$ 12,880.00

Notes: 1. Shipping/Customs related charges will be added to the total invoice amount, if such charges are paid by Isotech.
 2. Final invoice will only be for analyses completed.

Prices valid through December 31, 2019.

TERMS AND CONDITIONS:

This quotation is not valid for shipments, sales or re-sales of Weatherford products to or the rendering of services in or otherwise benefiting, directly or indirectly, Cuba, Iran, North Korea, Sudan, or Syria, or any denied or restricted party, or for any prohibited end-use. This quotation is subject to Customer's disclosure of the ultimate end-user(s), end-destination and end-use of the requested products.

The products or services (collectively "Work") specified herein are sold and provided by the applicable Weatherford Laboratories, Inc. affiliate ("Weatherford") subject to and in accordance with the terms and conditions of the most current applicable laboratory services and product sales agreement, master services, supply, or other agreement between Weatherford and Customer ("Master Agreement") covering the Work, if any. If no such agreement exists or applies to the Work (and, for the avoidance of doubt, whether or not a signature is received on the following page), the Work is sold and provided subject to and in accordance with Weatherford's applicable terms and conditions available at <http://www.weatherfordlabs.com/terms-and-conditions> ("Terms and Conditions"). Those Terms and Conditions are incorporated herein by reference for any and all purposes as fully as though set forth verbatim. A paper copy of the Terms and Conditions is available upon request.

CLIENT'S ACCEPTANCE OF PROPOSAL:

To initiate work on this project, please sign and return your acceptance of this proposal via fax or email to:

Project Management
 Isotech Laboratories
 Fax #: (217) 398-3493
projectmanagement@isotechlabs.com

Approved by:

Name: _____ Signature: _____
 Billing Address: _____ P.O. #: _____
 AFE # / Cost Center: _____ Date: _____

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From: Jim Happell <jhappell@miami.edu>
Sent: Monday, February 25, 2019 9:06 PM
To: Brad Bessinger <bbessinger@sspa.com>; Tritium Lab <tritium_o365@miamiedu.onmicrosoft.com>
Subject: Re: Tritium analysis

Brad,

We can do the analysis for you. Cost for 0.1 TU detection is \$325/sample.

--

Jim Happell
University of Miami
Rosenstiel School of Marine and Atmospheric Science
Department of Ocean Science
Director, Tritium Laboratory
4600 Rickenbacker Causeway
Miami, Florida 33149 USA
Phone: 305-421-4111
Fax: 305-421-4112
E-mail: jhappell@miami.edu
Homepage: <https://tritium.rsmas.miami.edu/>

A. Tritium measurement

1. Enrichment and low-level counting of ultra-low activity water sample. Required sample quantity 1000 mL. Normal starting volume is 275 mL. \$325.00

Accuracy and precision will be 0.1 TU (0.3 pCi L⁻¹) or ± 3.5%, whichever is larger. MDA is 0.1 TU (0.3 pCi L⁻¹). Special arrangements will have to be made for undersized or chemically contaminated samples. Advanced notice is required for samples suspected to be above 30 TU (100 pCi L⁻¹).

NOTE: Stated starting volume is needed for obtaining quoted accuracy: a smaller quantity will usually yield less precise results. We will take no more than one third of the furnished amount of water for the first run unless instructed otherwise by submitter.

Appendix D

Example Monitoring Well Sample Collection Form

MONITORING WELL WATER SAMPLE COLLECTION FORM

LOCATION	Project Number:	Location ID:	Date:
	Project Name:		Recorded By:

EQUIPMENT	Water Level:	Sampling Equipment:	Equipment Decon:
	PID:		

WELL INFO:	Casing ID (in)	Water Column (ft):	Ambient PID (ppm):
	Unit Casing Volume (gal/lin ft)	Well Volume (gal):	Well Head PID (ppm):
	Initial Depth to Water (ft):	Screen Interval (ft TOC):	Ground Condition of Well:
	Total Well Depth (ft):	Pump Depth (ft TOC):	Remarks:

CASING INFO	Casing ID (in)	1	1.5	2	3	4	5	6	8	10	12	16
	Unit Casing Volume (gal/lin ft):	0.09	0.09	0.16	0.37	0.65	1.02	1.47	2.6	4.08	5.87	10.44

DATE	Time (24 hr)	Water Level (ft TOC)	Drawdown (ft)	Volume Removed (gal)	Pump Rate (gpm)	pH	Conductivity (mS/cm)	Redox Potential	Turbidity (NTU)	DO (%)	Temp (C)	Salinity	Remarks (odor, clarity, etc)

SAMPLE ID#(s) / Time(s)	Number of Containers/ Volume/ Type	Preserv.	Filter (Y/N)	Pump or Bailer	Parameter(s)