Scope of Work and Fee Estimate

To:	Stephanie Bertoux, San Antonio Basin Groundwater Sustainability Agency
From:	Michael McAlpin & Dave O'Rourke, GSI Water Solutions, Inc.
Date:	August 5, 2024
RE:	San Antonio Creek Valley Groundwater Basin Transducer Purchase and Installation

GSI Water Solutions, Inc. (GSI), is pleased to present this scope of work and budget for the purchase and installation of 5 continuous water level data logging devices called pressure transducers (transducers) for the San Antonio Basin Groundwater Sustainability Agency's (SABGSA) consideration. Transducer installation is proposed for 5 of the 10 Representative Monitoring Site (RMS) wells that are currently not instrumented with transducers in the San Antonio Creek Valley Groundwater Basin's (Basin) Groundwater Level Monitoring Network (Monitoring Network). RMS wells that are not currently instrumented with transducers are considered priority wells for this scope of work, however, a list of viable backup wells is included in this proposal. GSI has developed this proposal based on the SABGSA's Fiscal Year 2024-2025 Budget Priorities and at the request of the SABGSA Executive Director.

Currently, groundwater level measurements are collected manually on a quarterly basis in the 39 accessible wells included in the Monitoring Network. There are pressure transducers installed in 14 of the 39 wells. GSI downloads water level data from the transducers and calibrates the transducers with manual depth to water readings on a quarterly basis.

Transducers can collect data points at a predetermined frequency. The increased frequency in data points allows for identification of pump cycles if installed in a water supply well. This enables a more accurate identification of static water levels and aquifer properties. Similarly, transducer data can enable identification of potential impacts, if any, from nearby groundwater pumping and can be leveraged to optimize pumping schedules.

The SABGSA is required to report at least one groundwater level measurement for each well in the Basin Monitoring Network to the California Department of Water Resources (DWR) every 6 months, representing a spring water level measurement and a fall water level measurement. DWR has recently encouraged collection of monthly groundwater level measurements. Although monthly groundwater level measurements are not required per SGMA regulations, transducers would enable measurement of groundwater levels at this increased frequency without increasing the frequency of the Basin's current quarterly monitoring. GSI would still collect manual depth to groundwater measurements quarterly to ensure the transducers do not require recalibration.

The installation of additional transducers is consistent with the Basin's Tier I Management Actions described in the Basin Groundwater Sustainability Plan. Specifically, expanding the monitoring well network to increase spatial coverage and well density by increasing the frequency of groundwater level measurement collection. A key aspect of Tier 1 management actions is addressing data gaps that are necessary to reduce uncertainty and improve understanding of basin conditions so that better information is available to the SABGSA for managing the Basin and considering the efficacy of the initial SMCs that have been selected. The Sustainably Groundwater

Management Act regulations require sufficient spatial coverage and density of monitoring wells to characterize the groundwater table or potentiometric surface for each principal aquifer.

Scope of Work

The proposed scope of work includes the purchase and installation of 5 transducers in select Basin Monitoring Network wells during the fourth quarter of 2024 (4Q2024) monitoring event. The Basin RMS wells are the priority to be outfitted with a transducer. Table 1 presents the Basin RMS wells currently without a transducer.

Table 1 - RMS Wells with Priority for Transducer and DXT-Cable Installation

Well Name	Access Agreement (Y/N)
13C1	Y
22K3	Y
SACR 3	Y
16G3	Y
2M1	Y
30D1	N
20Q2	N
24E1	N
25D1	N

Notes

RMS = Representative Monitoring Well

Y/N = Yes/No

Task 1 – Well Prioritization, Equipment Purchase, and Field Planning

The scope of work for this task includes a review phase, consisting of the selection of wells to be instrumented with transducers (see Table 1), purchase of the transducer equipment, and field planning. Well depths, depths to water, and historical variations in depth to water will be analyzed in order to determine appropriate lengths of DXT cables (GSI proposes to purchase and install DXT cables to be connected to each of the transducers in order to enable download of data without raising the transducer, resulting in a quicker workflow in the field and a minimized risk of entanglement with potential downhole equipment) and appropriate transducer specifications in order to capture seasonal and yearly fluctuations in groundwater levels.

The four RMS wells with secured access agreements (except 2M1, see further explanation below) will be outfitted with transducers and DXT cables. Pending a change in status of the access agreements for the remaining RMS wells, the remaining (1) transducer will be installed in a non-RMS well. 14L1 is the proposed non-RMS well to be outfitted with a transducer and DXT cable. 14L1 is located near the southern extent of Harris Canyon. Historical water levels and water level trends in 14L1 are consistent with those observed in RMS well 2M1 (located near the northern extent of Harris Canyon). Although 2M1 is an RMS well with a secured well access agreement, historically there have been issues with the sounder becoming stuck in the well during monitoring. Groundwater level monitoring at well 2M1 has been halted pending the installation of a sounding tube. Installation of a sounding tube at 2M1 has been evaluated, however installation costs indicate the project may not be feasible from a cost-benefit perspective. Therefore, 14L1 is suspected to be an appropriate replacement RMS well for 2M1.

Task 2 – Transducer Installation

The scope of work for this task includes installation and calibration of the transducer equipment in the 5 wells, proposed to occur during the fourth quarter of 2024 (4Q2024) Basin groundwater level monitoring event (monitoring event). Each transducer will be programmed to make measurements at a frequency of not more frequent than every 4 hours. DXT cables will be fixed to the well head and transducers will be installed to the cables and set at an appropriate depth. Documentation of the installations will be included in the 4Q2024 Quarterly Monitoring Technical Memoranda and 2024 annual reporting.

Assumptions

- The proposed work is intended to follow standard industry practices and protocols using common technologies.
- Access to the subject properties and coordination with the property owners and/or tenants will be arranged by GSI in conjunction with the 4Q2024 Basin monitoring event scheduling.
- All fieldwork will be conducted during normal business hours.
- GSI will have unimpeded access to the work locations.
- Field activities can be accomplished within 2 days, including completion of the 4Q2024 Basin groundwater monitoring event.
- GSI will attempt to schedule field work to avoid significant weather events when possible. However, weather-related impacts to mobilization efforts or the overall project schedule may result in additional fees. We will keep SABGSA informed if there are unanticipated weather delays.
- All fieldwork can be performed using standard personal protective equipment and procedures.
- Purchased transducer equipment will function as intended.
- The DXT cables can be secured to the well heads with reasonable effort and without major retrofit.

Fee Estimate

Our team's proposed fee to complete the tasks on a time-and-materials basis is $9,957. This fee estimate includes a 10-percent markup on the Van Essen Instruments quote (attached). GSI will perform the work in accordance with GSI's Master Services Agreement with SABGSA dated December 14, 2023. The proposed fee was developed based on GSI's 2024 fee schedule (attached). The rates included in the 2024 fee schedule are valid through the 2024 calendar year and are subject to change thereafter.

Tasks	Labor Hours	Labor Cost	Outside Services	Direct Expenses[1]	Total
Task 1 – Well Prioritization, Equipment Purchase, and Field Planning	16	$3,150	$0	$4,854	$8,004
Task 2 - Transducer Installation	12	$1,953	$0	$0	$1,953
Project Totals	28	$5,103	$0	$4,854	$9,957

Note:

[1] Van Essen Instruments quote attached. The price shown includes purchase of (5) 10-meter TD-Diver Data Loggers, (5) 50-meter DXT-cables, and a 10-percent markup.

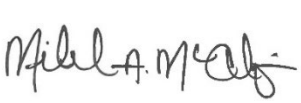
Because the transducer installation is proposed to occur during the 4Q2024 monitoring event, no mobilization costs are included in this fee estimate.

Schedule

The scope of work is proposed to be completed during the 4Q2024 Basin monitoring event.

We thank you for your consideration of this proposal and allowing GSI to continue to serve the interests of the SABGSA. Please contact us if you have any questions.

Sincerely,
GSI Water Solutions, Inc.



Michael McAlpin, PG
Managing Hydrogeologist

Dave O'Rourke, PG, CHG, PE
Principal Hydrogeologist

2024 GSI Fee Schedule

Labor Category	Hourly Rate
Technical Professionals	
Principal	$250 – $360
Supervising	$210 – $310
Managing	$170 – $230
Consulting	$150 – $190
Project	$140 – $170
Staff	$120 – $160
Other Services	
GIS/Graphics/Database	$130 – $185
Editor/Documents	$130 – $155
Administration	$95 – $125

The hourly rate for trial preparation and expert witness testimony is 1.5 times the standard billing rate shown above.

Expenses

- **Mileage:** IRS authorized rate/mile plus 10 percent markup
- **Direct expenses and outside services**: Cost plus 10 percent markup
- **Enterprise GIS:** $100 per month for the duration of use

Van Essen Instruments
Sales-USA@vanessen.com
www.vanessen.com

QUOTE

Sales Representative:	Eric Coulombe	**Quote Number:**	QUO-12148-Y2V2Z6 / 0
	ECoulombe@vanessen.com	**Quote Date:**	7/5/2024
		Effective to:	8/4/2024

Company:	**GSI Water Solutions Inc.**
Contact:	Sydney Robertson
Telephone:	+1 661 345 1988 +1 661 809 1587
Address:	418 Chapala St
	Suite H
	Santa Barbara, California, 93101

Currency: US Dollar

Product	Quantity	Unit Price	Discount	Amount
DI801 TD-Diver Data Logger, 10 meter	5	$674.00	$337.00	$3,033.00
AS346 Diver Smart USB Interface Cable	1	$260.00		$260.00
AS2005 DXT-Cable, 5 meter	1	$176.00		$176.00
AS2015 DXT-Cable, 15 meter	1	$198.00		$198.00
AS2020 DXT-Cable, 20 meter	1	$208.00		$208.00
AS2025 DXT-Cable, 25 meter	1	$220.00		$220.00
AS2040 DXT-Cable, 40 meter	1	$253.00		$253.00
AS2050 DXT-Cable, 50 meter	1	$276.00		$276.00

Sub Total	$4,624.00
Freight Amount *1	
Total	$4,624.00

Shipping terms: EXW – Ex Works ()

Payment Methods

Payable to: Van Essen Instruments

- Check — Mail to: 219 Labrador Drive, Unit 201 Waterloo, Ontario, N2K 4M8, Canada
- Bank Transfer — Bank of America – Account number: 4640580847, ABA: 026009593, Routing number: 011000138
- Reference — Invoice number
- Credit Card — Visa or Mastercard accepted *2

Van Essen Instruments Diver Products include:

- Free technical support via phone, e-mail, MS Teams and Skype
- Free Diver-Office software to program, read and manage all your Divers and Diver data: https://www.vanessen.com/download-diver-office
- Diver product manual: https://www.vanessen.com/product-category/data-loggers/ Search Diver type and download the applicable manual.

*1 If the Freight Amount is blank, shipping charges will be added to your invoice once your order has been shipped.

*2 An International Transaction fee may apply for credit card payments, kindly check with your banking institution