



EXHIBIT A

WORK ORDER NO. 9

CITY OF BAY CITY

Well Siting Study and TWDB Program Project No. 22W09061

This WORK ORDER (“Work Order”) is made by and between the **City of Bay City** (hereinafter referred to as “Owner”) and **Garver, LLC**, (hereinafter referred to as “Garver”) in accordance with the provisions of the MASTER AGREEMENT FOR PROFESSIONAL SERVICES executed on October 27, 2020 (the “Agreement”).

Under this Work Order, the Owner intends to identify an optimal location for a new public supply water well and plant facility to supplement their existing water supply.

Generally, the scope of services includes evaluating areas favorable for construction of a new 2,000 gpm public supply water well and plant facility within Bay City limits. The City plans to decommission the well at the 6th Street & Avenue I WTP. The well siting study shall include an engineering feasibility investigation, performing a hydrogeologic assessment, and hydraulic model simulation of how the new well can be incorporated into the existing distribution system.

Garver will provide professional services as described herein. Terms not defined herein shall have the meaning assigned to them in the Agreement.

1. SCOPE OF SERVICES

- 1.1. Refer to APPENDIX A – SCOPE OF SERVICES.

2. PAYMENT

- 2.1. The lump sum amount to be paid under this Agreement is \$548,686.00 and additional services amount to be authorized by City as requested is \$35,000.00. The total amount under this Agreement is \$583,686.00. For informational purposes, a breakdown of Garver’s estimated costs is included in APPENDIX B – FEE SUMMARY.

3. APPENDICES

- 3.1. The following Appendices are attached to and made a part of this Work Order:
Appendix A – Scope of Services
Appendix B – Fee Summary



This Work Order may be executed in two (2) or more counterparts each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

The effective date of this Work Order shall be the last date written below.

CITY OF BAY CITY

GARVER, LLC

By: _____
Signature

By: D. N. Olson
Signature

Name: _____
Printed Name

Name: Daniel N. Olson, P.E.
Printed Name

Title: _____

Title: Vice President

Date: _____

Date: 03/22/2023

Attest: _____

Attest: Bianna

Appendix A

SCOPE OF SERVICES

CITY OF BAY CITY, TEXAS Well Siting Study & TWDB Program

1. Background

The City of Bay City (“City”) is looking to identify optimal locations for a new public supply water well and plant facility to supplement their existing water supply and has requested Garver (“Consultant”) to conduct a well siting study. The purpose of the well siting study is to evaluate areas favorable for construction of a new 2,000 gpm production well and plant facility within Bay City limit. The City plans to decommission the well at the 6th Street & Avenue I WTP. The well siting study shall include an engineering feasibility investigation, performing a hydrogeologic assessment, and hydraulic model simulation of how the new well can be incorporated into the existing distribution system.

Garver will prepare the deliverables described in each assigned task within the scope of work.

2. Scope of Work

The following scope of work describes the services to be provided.

A. Task I – Funding Support and Coordination

1. Provide program management assistance to the City for execution of the Drinking Water State Revolving Fund (DWSRF) projects.
 - a. Support the City with project scheduling and budget forecasting.
2. Provide Texas Water Development Board (TWDB) funding support assistance to execute the DWSRF project.
 - a. Provide and respond to coordination with TWDB, bond counsel, financial advisor, and the City.
 - b. Assist the City with completion of forms and documentation associated with funding.
 - c. Prepare environmental assessment documentation and coordination with TWDB for approval.

B. Task II – Project Administration

1. Consultant will prepare a Project Management Plan (PMP) and Quality Control/Assurance Plan.
2. Consultant will prepare and review monthly progress reports to support invoices and provide updates for City staff during weekly virtual progress meetings.
3. Schedule and participate in a Kick-Off Meeting with the City to discuss project objectives, team members, document management, stakeholders, and schedule.
4. Schedule and conduct formal progress meetings with the City as tasks dictate. Consultant will review progress at each meeting, review project deliverable status, current schedule, outstanding action items, and project constraints that may impact schedule, budget, or pending decisions. Prepare agenda and meeting materials and facilitate the exchange of ideas and information. Prepare meeting minutes that include action item lists and decision lists within ten business days

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to the City.

5. Prepare and deliver four presentations to City Council for Workshops or regular meetings.

C. Task III – Selection of Well Site(s)

1. Consultant will initially perform site reconnaissance of up to 10 identified properties that are potential well sites.
 - a. Photographs and field notes will be compiled to document the existing infrastructure and environmental conditions at and near the potential well sites.
2. Up to 10 potential well sites will be ranked by hydrogeologic factors and also non-hydrogeologic issues such as proximity to existing infrastructure, surrounding land use, floodplain, property restrictions, regulatory requirements, and potential public concern.
 - a. Consultant will confer on groundwater conditions and well yields with a local groundwater specialist engaged as a Subconsultant.
 - b. Consultant shall conduct a Well Selection Workshop with City to review the initial ten ranked well sites.
3. Consultant will further assess the top 3 ranked well sites based on the scope herein including a cost analysis of selected sites, Hydrogeological Assessment Study, hydraulic simulations, anticipated well yield and water quality, environmental impacts, and the City's location preferences.
 - a. Cost analysis will be performed in accordance with classifications set forth in AACE 17R-97 for a Class 4 cost estimate.
4. Consultant shall prepare a Draft Well Siting Summary Report summarizing task investigative activities with a recommendation for up to three well sites deemed most feasible for construction of a new production well.
5. Consultant will prepare for and facilitate a workshop to review the Draft Well Siting Summary Report with City staff.
6. Consultant will incorporate written comments and Draft Report workshop comments into the Final Well Siting Summary Report.
7. Consultant will conduct quality review of deliverable per PMP.

D. Task IV - Hydrogeological Assessment Study

1. Collect and evaluate pertinent construction, testing, water level records, water quality records and data and geophysical logs for the City's existing public supply wells and public water supply.
 - a. Consultant will utilize a local groundwater specialist engaged as a Subconsultant to complete a desktop Hydrogeologic Study that covers a total of up to three possible new City water well sites identified by the Consultant.
2. The hydrogeological impact assessment will identify the impacts on groundwater quality and quantity from the proposed site activities and quantify them in terms of their scale, magnitude, impact duration, and the probability of the impact occurring.

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3. A hydrogeologic study report will be completed to evaluate and describe the hydrogeologic, aquifer and groundwater conditions and include preliminary water well construction and well pumping equipment parameters and estimates for a new public supply well with a well pump design capacity of 2,000 gallons per minute (gpm). The report will include:
 - a. Assessments regarding the estimated hydrogeologic conditions
 - b. Estimated well site construction area
 - c. Layout and access and adjoining property (properties) for up to three possible new well sites identified by the Consultant
 - d. Relevant Texas Commission on Environmental Quality (TCEQ) and Coastal Plains Groundwater Conservation District rules and requirements for a new public supply well
 - e. The hydrogeological study report shall be signed and sealed by a Professional Geoscientist in Texas.
 - f. Note that an additional water well, groundwater and well pumping evaluation will need to be completed in a separate Hydrogeological Assessment Report that is required by the Coastal Plains Groundwater Conservation District (GCD) for amended operating permits.
4. Consultant will conduct quality review of deliverable per PMP.

E. Task V - Pollution Hazard Study and Report

1. Perform a pollution hazard study for the top 3 ranked water well sites that addresses the Texas Commission on Environmental Quality (TCEQ) rules and regulations for public supply well in TCEQ Chapter 290, Subchapter D, 290.41 (c)(1)(A)(E).
 - a. Work shall include performing a field visit to the planned well site and adjoining areas to observe site infrastructure and conditions and any pollution or environmental site hazard(s) at or in the vicinity of the well site
 - b. Provide a written report for the pollution hazard study that is signed and sealed by a Professional Geoscientist in Texas.
2. Consultant will conduct quality review of deliverable per PMP.

F. Task VI – Model Simulations and Evaluation of Proposed Improvements

1. Consultant will perform hydraulic production and distribution system analysis with the existing 6th Street and Avenue I well out of service for a TCEQ Alternative Capacity Requirement (ACR). The analysis will evaluate ACR criteria using hydraulic system calculations and the hydraulic simulation to demonstrate the request will not compromise the public health or result in a degradation of service or water quality.
2. Consultant will perform a hydraulic simulation under different demand scenarios with the existing 6th Street and Avenue I well out of service to demonstrate requisite need for new a water supply well.
3. Consultant will complete up to two hydraulic simulations for different demand scenarios to assess the proposed water supply improvements for up to three new potential well sites.
4. Demand scenarios will be utilized to identify challenges with system hydraulic capacity and develop recommendations for additional infrastructure upgrades that may be necessary to

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provide the desired level of service. Target instantaneous peak flows from the new supply facilities are assumed to be up to 2,000 gpm under average day conditions and up to 3,000 gpm during maximum day conditions.

- a. Evaluations of maximum day demands will include fire flow evaluations.
 - b. Level of service criteria from the recent system hydraulic evaluations will be applied for this project, unless otherwise directed by the City.
5. Consultant will prepare a Technical Memorandum (TM) in electronic .pdf format summarizing the demand scenarios and results from each model simulation.
 6. Consultant will conduct quality review of deliverable per PMP.
 7. Consultant will prepare for and facilitate a workshop to review the modeling results with the City.

G. Task VII – Dynamic Well Profile

1. Consultant shall coordinate execution of a dynamic well profile for arsenic at the 6th Street and Avenue I well site:
 - a. Two site visits shall be conducted to assess site constraints and perform the dynamic well profile.
 - b. Data will be collected at four different well screened intervals. Up to 12 liters of sampling is anticipated.
 - c. Testing will commence following two days of well pumping (by City). Once confirmed that arsenic concentrations and screened water levels have stabilized, field testing will begin.
 - d. A detailed Dynamic Flow and Mass Balance Report will be prepared that will include analysis, conclusions, and recommendations for well modification.

H. Task VIII - Amendment to the Existing Groundwater Conservation District (GCD) Operating Permit

1. Consultant to assist the City with adding the new water well to the existing GCD Operating Permit.
2. Amendments to increase the City's capacity for groundwater withdrawals are not anticipated as part of this scope of work.

I. Task IX – TWDB Engineering Feasibility Report

1. Consultant shall prepare a Draft TWDB Engineering Feasibility Report (EFR) to address the listed requirements. The report is required as part of the DWSRF program. The following subjects will be covered in the EFR:
 - a. Discussion of New Source
 - b. Site and Surrounding Area
 - c. Treatment Requirements at Facility
 - d. Design Requirements for Normal and Emergency Conditions
 - e. Capacity and Pressure of New Source

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- f. Operations and Maintenance Effects
 - g. Potential Waiver Request
 - h. Alternatives Analysis (Referencing Arsenic Treatment and Well Siting Studies)
 - i. Cost Opinion
 - j. Project Schedule
2. Consultant will prepare for and facilitate a workshop to review the Draft EFR with City staff.
 3. Consultant will incorporate written comments and Draft EFR workshop comments into the Final EFR.
 4. Consultant will submit and address comments from TWDB for completion of EFR.
 5. Consultant will conduct quality review of deliverable per PMP.

J. Additional Services: Task – TCEQ Alternative Capacity Requirement

1. Consultant will compile the hydraulic analysis for prepare request to TCEQ for Alternative Capacity Requirement (ACR). This additional service will include follow-up coordination with TCEQ and addressing comments.

Final Design (NOT USED)

Final Design scope for a new production well to be developed once the well siting study has been completed and final well site approved.

Well Decommissioning Plan (NOT USED)

If the City chooses to decommission a well, a decommissioning plan in accordance with Texas Department of Licensing and Regulation (TDLR) requirements and Texas Commission on Environmental Quality (TCEQ) Regulatory Guidance in accordance with the Texas Groundwater Protection Committee, will be developed separately as part of Final Design.

DELIVERABLES

The following will be submitted to the Owner, or others as indicated, by Engineer:

1. Electronic copy (pdf) of the DRAFT Well Siting Summary Report.
2. Electronic copy (pdf) of the FINAL Well Siting Summary Report.
3. Electronic copy (pdf) of the FINAL Hydrogeologic Assessment Study.
4. Electronic copy (pdf) of the FINAL Pollution Hazard Study.
5. Electronic copy (pdf) of the DRAFT TWDB Engineering Feasibility Report.
6. Electronic copy (pdf) of the FINAL TWDB Engineering Feasibility Report.
7. Electronic files as requested.

EXTRA WORK

The following items are not included under this agreement but will be considered as extra work:

1. Detailed Design or Construction Phase Services.
2. Well Decommissioning Plan.

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3. Traffic Control Plan (TCP).
4. Stormwater Pollution Protection Plan (SWPPP).
5. Construction materials testing.
6. Redesign for the City's convenience or due to changed conditions after previous alternate direction and/or approval.
7. Submittals or deliverables in addition to those listed herein.
8. Design of any utilities relocation beyond those listed herein.
9. Services after construction, such as warranty follow-up, operations support, etc.
10. SCADA design or programming services of any kind.
11. Arc flash or other power system studies.
12. Observation/ Resident Construction Inspection services.

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Schedule

Garver shall begin work under this Agreement within ten (10) days of a Notice to Proceed and shall complete the work in accordance with the schedule below:

Phase Description	Calendar Days
Kickoff Meeting	7 days from Notice to Proceed
Deliver DRAFT Well Siting Report	90 days from receipt of final data from City
DRAFT Report Workshop	14 days after delivery of DRAFT Report
Deliver FINAL Well Siting Report	45 days from Report Workshop and receipt of DRAFT Well Siting Report comments
Deliver FINAL Hydrogeologic Assessment Study	45 days from Report Workshop and receipt of DRAFT Well Siting Report comments
Deliver FINAL Pollution Hazard Study	45 days from Report Workshop and receipt of DRAFT Well Siting Report comments
Deliver DRAFT TWDB Engineering Feasibility Report	90 days from submittal of FINAL Well Siting Report
DRAFT Report Workshop	14 days after delivery of DRAFT Report
Deliver FINAL TWDB Engineering Feasibility Report	45 days from Report Workshop and receipt of DRAFT TWDB Engineering Feasibility Report comments

*Notes:

- For planning purposes, 14 calendar days are assumed for City review from receipt of a DRAFT submittal until comments are expected to be received.
- **This anticipated schedule is based on up to 10 identified well sites.**

Appendix B

City of Bay City, Texas Well Siting Study & TWDB Program

FEE SUMMARY

Basic Services Task	Cost
TASK I - Funding Support and Coordination	\$ 40,776.00
TASK II - Project Administration	\$ 23,046.00
TASK III - Selection of Well Sites	\$ 101,728.00
TASK IV - Hydrogeological Assessment Study	\$ 48,240.00
TASK V - Pollution Hazard Study	\$ 35,580.00
TASK VI - Model Simulations Evaluation of Proposed	\$ 88,056.00
TASK VII - Dynamic Well Profile	\$ 89,814.00
TASK VIII - Amendment to Existing GCD Operating	\$ 7,796.00
TASK IX - TWDB Engineering Feasibility Report	\$ 113,650.00
Total Basic Services Cost	\$ 548,686.00
Additional Services Task	Cost
TASK - TCEQ Alternative Capacity Requirement	\$ 35,000.00
Total Additional Services Cost	\$ 35,000.00
TOTAL COST (Basic and Additional Services)	\$ 583,686.00