

AGREEMENT  
FOR  
ENGINEERING SERVICES

This AGREEMENT, between the Norman Utilities Authority (OWNER) and Garver, LLC (GARVER);

WITNESSETH

WHEREAS, OWNER intends to design and bid the PROJECT consisting of sludge dewatering treatment processes at the Norman Water Reclamation Facility (WRF)

WHEREAS, GARVER is prepared to provide said SERVICES; and

NOW THEREFORE, in consideration of the promises contained in this AGREEMENT, OWNER and GARVER agree as follows:

**ARTICLE 1 - EFFECTIVE DATE**

The effective date of this AGREEMENT shall be \_\_\_\_\_.

**ARTICLE 2 - COMPLETION DATE**

GARVER shall complete the SERVICES in accordance with Attachment A, Project Schedule.

**ARTICLE 3 - GOVERNING LAW**

The laws of the state of Oklahoma shall govern this AGREEMENT.

**ARTICLE 4 - SERVICES TO BE PERFORMED BY ENGINEER**

GARVER shall perform the SERVICES described in Attachment B, Scope of Services.

**ARTICLE 5 - COMPENSATION**

OWNER shall pay GARVER in accordance with Attachment C, Compensation.

**ARTICLE 6 - OWNER'S RESPONSIBILITIES**

- 6.1. OWNER-Furnished Data: Upon request, OWNER will provide to GARVER all data in OWNER's possession relating to GARVER 's SERVICES on the PROJECT. Such data may include operations reports, record drawings, and equipment manuals for the WRF. GARVER will reasonably rely upon the accuracy, timeliness, and completeness of the information provided by OWNER. OWNER's data is provided for temporary use or copying by GARVER.
- 6.2. Access to Facilities and Property: OWNER will make its facilities accessible to GARVER as required for ENGINEER's performance of its SERVICES
- 6.3. Timely Review: OWNER will examine GARVER's studies, reports, sketches, drawings, specifications, proposals, and other documents; and transmit OWNER comments or other decisions to GARVER in a timely manner.
- 6.4. Meetings and Workshops: OWNER will participate in progress meetings and workshops with GARVER or contractor(s) defined in Attachment B, Scope of Services.
- 6.5. Advertisements, Permits, and Access: Unless otherwise agreed to in the Scope of Services, OWNER will obtain, arrange, and pay for all advertisements for bids; permits and licenses required by local, state, or federal authorities; and land, easements, rights-of-way, and access necessary for GARVER 's SERVICES or PROJECT construction.
- 6.6. Hazardous Substances: If hazardous substances in any form are encountered or suspected, GARVER will stop its own work in the affected portions of the PROJECT to permit testing and evaluation. GARVER will, if

requested by OWNER, conduct tests to determine the extent of the problem and will perform the necessary studies and recommend necessary remedial measures at an additional fee with contract terms to be negotiated. Garver shall not assume any role in the identification, evaluation, treatment, storage, disposal, or transportation of any hazardous substance or waste.

**ARTICLE 7 - STANDARD OF CARE**

GARVER shall exercise the same degree of care skill and diligence in the performance of the SERVICES as is ordinarily possessed and exercised by a professional engineer under similar circumstances. GARVER shall correct the SERVICES that fail to satisfy this standard of care. No warranty, express or implied is included in this AGREEMENT or in any drawing, specifications, report or opinion produced pursuant to this AGREEMENT.

**ARTICLE 8 - LIABILITY AND INDEMNIFICATION**

- 8.1 General. Having considered the potential liabilities that may exist during the performance of the SERVICES, the benefits of the PROJECT, GARVER's fee for the SERVICES and in consideration of the promises contained in this AGREEMENT, OWNER and GARVER agree to allocate and limit such liabilities in accordance with this Article.
- 8.2 Indemnification and Liability. GARVER agrees to indemnify, and hold harmless the OWNER, its officers, servants, and employees, from and against legal liability for all third party tort claims, losses, damage, cost, and expense (including reasonable attorneys' fees and accountants' fees recoverable under applicable law) from bodily injury (including death) or tangible property damage caused by a negligent act, error, or omission of GARVER in the performance of services under this Agreement. OWNER agrees to indemnify, and hold harmless GARVER, its officers, servants, and employees, from and against legal liability for all claims, losses, damage, cost, and expense (including reasonable attorneys' fees and accountants' fees recoverable under applicable law) caused by a negligent act, error, or omission of the OWNER in the performance of services under this Agreement, provided such indemnification shall be applicable only to the extent sovereign immunity has been waived pursuant to Oklahoma law. GARVER and the OWNER each agree to promptly service notice on the other party of any claims arising hereunder, and shall cooperate in the defense of such claims. The acceptance by OWNER or its representatives of any certification of insurance providing for coverage other than as required in this Agreement to be furnished by GARVER shall in no event be deemed a waiver of any of the provisions of this indemnity provision. None of the foregoing provisions shall deprive the OWNER of any action, right, or remedy otherwise available to OWNER at common law.
- 8.3 Employee Claims. GARVER shall indemnify OWNER against legal liability for damages arising out of claims by GARVER's employees. OWNER shall indemnify GARVER against legal liability for damages arising out of claims by OWNER's employees.
- 8.4 Consequential Damages. To the fullest extent permitted by law, GARVER shall not be liable to OWNER for any special, indirect or consequential damages resulting in any way from the performance of the SERVICES.
- 8.5 Survival. Upon completion of all SERVICES obligations and duties provided for in this AGREEMENT or if this AGREEMENT is terminated for any reason the terms and conditions of this Article shall survive.

**ARTICLE 9 - INSURANCE**

During the performance of the SERVICES under this AGREEMENT GARVER shall maintain the following insurance:

- 9.1 Worker's compensation insurance for GARVER's employees as required by Oklahoma Workers Compensation Statutes.
- 9.2 Comprehensive general liability insurance with a minimum of \$125,000 per accident for bodily injury or death and \$25,000 per occurrence for property damage.

9.3 Comprehensive automobile liability insurance with a minimum of \$125,000 per accident for bodily injury or death and \$25,000 for property damage.

9.4 Professional Liability (errors and omissions) insurance with a minimum policy value of \$1,000,000.

GARVER shall furnish OWNER certificates of insurance that shall include a provision that such insurance shall not be canceled without at least thirty days written notice to OWNER. All PROJECT contractors shall be required to include OWNER and GARVER as additional insured on their General Liability Insurance policies.

GARVER and OWNER each shall require its insurance carriers to waive all rights of subrogation against the other and its directors, officers, partners, commissioners, officials, agents and employees for damages covered by property insurance during and after the SERVICES. A similar provision shall be incorporated into all contractual arrangements entered into by OWNER and shall protect OWNER and GARVER to the same extent.

#### **ARTICLE 10 - LIMITATIONS OF RESPONSIBILITY**

GARVER shall not be responsible for: (1) construction means, methods, techniques, sequences, procedures or safety and security precautions and programs in connection with the PROJECT; (2) the failure of any contractor, subcontractor, vendor or other PROJECT participant, not under contract to GARVER, to fulfill contractual responsibilities to the OWNER or to comply with federal, state or local laws, regulations, and codes; or (3) procuring permits, certificates and licenses required for any construction unless such responsibilities are specifically assigned to GARVER in Attachment B, Scope of Services.

#### **ARTICLE 11 - OPINIONS OF COST AND SCHEDULE**

Since GARVER has no control over the cost of labor, materials or equipment furnished by others or over the resources provided by others to meet PROJECT schedules, GARVER's opinion of probable costs and of PROJECT schedules shall be made on the basis of experience and qualifications as a professional engineer. GARVER does not guarantee that proposals, bids, or actual PROJECT costs will not vary from GARVER's cost estimates.

#### **ARTICLE 12 - REUSE OF DOCUMENTS**

Upon OWNER's request GARVER shall furnish OWNER with deliverables and/or other data on electronic media. All documents, including but not limited to, drawings, specifications and computer software prepared by GARVER pursuant to this AGREEMENT are instruments of Service in respect to the PROJECT. Said documents are not intended or represented to be suitable for reuse by OWNER or others on extensions of the PROJECT or on any other PROJECT.

#### **ARTICLE 13 - TERMINATION**

This AGREEMENT may be terminated by either party upon written notice in the event of substantial failure by the other party to perform in accordance with the terms of this AGREEMENT. The non-performing party shall have fifteen (15) calendar days from the date of the termination notice to cure or to submit a plan for cure acceptable to the other party.

OWNER may terminate or suspend performance of this AGREEMENT for OWNER's convenience upon written notice to GARVER. GARVER shall terminate or suspend performance of the SERVICES on a schedule acceptable to OWNER. If termination or suspension is for OWNER's convenience, OWNER shall pay GARVER for all the SERVICES performed to date, amount not to exceed the normal fee amount due for the SERVICES rendered and termination or suspension expenses. Upon restart, an equitable adjustment shall be made to GARVER's compensation.

#### **ARTICLE 14 - DELAY IN PERFORMANCE**

Neither OWNER nor GARVER shall be considered in default of this AGREEMENT for delays in performance caused by circumstances beyond the reasonable control of the non-performing party. For purposes of this AGREEMENT, such circumstances include, but are not limited to abnormal weather conditions; floods; earthquakes; fire; epidemics; war; riot and other civil disturbances; strikes, work slowdowns and other labor disturbances; sabotage; judicial

restraint; and inability to procure permits, licenses, or authorizations from any local, state, or federal agency for any of the supplies, materials, accesses, or SERVICES required to be provided by either OWNER or GARVER under this AGREEMENT.

Should such circumstances occur the non-performing party shall, within a reasonable period after being prevented from performing, give written notice to the other party describing the circumstances preventing continued performance and the efforts being made to resume performance of this AGREEMENT.

**ARTICLE 15 - COMMUNICATIONS**

Any communication required by this AGREEMENT shall be made in writing to the address specified below:

GARVER: Mary Elizabeth Mach, P.E.  
Garver LLC  
1016 24<sup>th</sup> Avenue NW  
Norman, OK 73069  
405-329-2555  
MEMach@GarverUSA.com

OWNER: Ken Giannone, P.E.  
Norman Utilities Authority (NUA)  
201-C West Gray  
P.O. Box 370  
Norman OK 73070  
405-366-5377  
Ken.Giannone@normanok.gov

Nothing contained in this Article shall be construed to restrict the transmission of routine communications between representatives of GARVER and OWNER.

**ARTICLE 16 - WAIVER**

A waiver by either OWNER or GARVER of any breach of this AGREEMENT shall be in writing. Such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

**ARTICLE 17 - SEVERABILITY**

The invalidity, illegality, or unenforceability of any provision of this AGREEMENT or the occurrence of any event rendering any portion or provision of this AGREEMENT void shall in no way affect the validity or enforceability of any other portion or provision of this AGREEMENT. Any void provision shall be deemed severed from this AGREEMENT, and the balance of this AGREEMENT shall be construed and enforced as if this AGREEMENT did not contain the particular portion or provision held to be void. The parties further agree to amend this AGREEMENT to replace any stricken provision with a valid Provision that comes as close as possible to the intent of the stricken provision. The provisions of this Article shall not prevent this entire AGREEMENT from being void should a provision, which is of the essence of this AGREEMENT, be determined void.

**ARTICLE 18 - INTEGRATION**

This AGREEMENT represents the entire and integrated AGREEMENT between OWNER and GARVER. It supersedes all prior and contemporaneous communications, representations, and agreements, whether oral or written, relating to the subject matter of this AGREEMENT. This AGREEMENT, including its attachments and schedules, may only be changed by a written amendment executed by both parties. The following attachments and schedules are hereby made a part of this AGREEMENT:

- Attachment A – Schedule
- Attachment B – Scope of Services
- Attachment C – Compensation

**ARTICLE 19 - SUCCESSORS AND ASSIGNS**

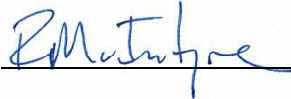
OWNER and GARVER each binds itself and its directors, officers, partners, successors, executors, administrators, assigns, and legal representatives to the other party to this AGREEMENT and to the directors, officers, partners, successors, executors, administrators, assigns, and legal representatives of such other party in respect to all provisions of this AGREEMENT.

IN WITNESS WHEREOF, OWNER and GARVER have executed this AGREEMENT.

DATED this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

**Garver, LLC – GARVER**

ATTEST

By: 

Printed Name: Randy McIntyre

Title: Vice President

\_\_\_\_\_

Cole Niblett

Project Engineer

**Norman Utilities Authority- OWNER**

APPROVED as to form and legality this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
City Attorney

APPROVED by the Trustees of the Norman Utilities Authority this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

ATTEST

By: \_\_\_\_\_

Printed Name: Breea Clark

Title: Chairman

\_\_\_\_\_

Brenda Hall

Secretary

## ATTACHMENT A

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:

<b>Phase Description</b>	<b>Duration (Calendar Days)</b>
Draft ER Submittal	70 days from NTP
Draft ER Workshop	Following Owner review of Draft ER Submittal (approx. 7 days from receipt of report)
Final ER Submittal	7 days from Receipt of Owner comments following Draft ER Workshop
Preliminary Design	90 days from NTP
Final Design	45 days from Owner Approval of Preliminary Design
Bidding	30 days from Owner Advertisement
Anticipated Construction Phase Services	Duration of Construction Contract (Estimated to be 180 days)
Record Drawings and Closeout Documents	30 days from Construction Completion
Application Engineering	Ongoing during Construction

## ATTACHMENT B

**SCOPE OF SERVICES****GENERAL**

Generally, the scope of services includes the alternatives evaluation, design, bidding services, and construction support services for solids dewatering improvements at the Norman Water Reclamation Facility (WRF). Due to the condition of the existing system, improvements will consist primarily of removal and replacement of the existing dewatering centrifuges with a new dewatering system. The scope of services anticipates construction beginning in the spring or summer of 2021. Additional associated improvements and modifications include process piping, chemical piping, drain piping, and electrical. This project will also improve the odor control and ventilation to reduce fugitive emissions from the solids handling facilities from migrating into the administration building.

**1.0 – PRELIMINARY ENGINEERING****1.1 – Engineering Report**

A kickoff meeting will be scheduled and attended by Garver and Owner to initiate the project, introduce key team members, outline any work by others, establish communication protocol, discuss schedule, request initial data, and discuss the project.

Garver will undertake a conceptual alternatives evaluation utilizing the previously established flow projections, design criteria, and mass balance developed during the Phase II Improvements and updated information since its completion. The alternatives evaluation will include an Engineering Report (ER) that will identify footprint, equipment, and general operational requirements to install new dewatering units at the WRF. Garver will evaluate the following four (4) dewatering technologies/alternatives:

- Dewatering Centrifuges
  - Geared Centrifuges
  - Direct-Drive Centrifuges
- Screw Presses
- Rotary Presses

For each alternative outlined in the above list, Garver will prepare general alternative descriptions and conceptual layouts to provide a general idea of equipment layout, sizing criteria, and life-cycle costs. An Opinion of Probably Construction Cost (OPCC) will be provided that includes professional services, contractor overhead and profit, and contingency (30%). The developed costs include material procurement and construction. For the ER, Garver and Owner will consider these as estimates suitable for budget authorization or control. The expected range of accuracy for this type of estimate is -30 to +50% of the actual project estimate. Capital cost evaluations will also consider the following:

- Dewatered sludge conveyance enhancements or configuration modifications.
- Polymer handling and application enhancements.
- Operations accessibility enhancements, such as access platforms and stairs
- Electrical Power and SCADA Enhancements.
- Maintenance accessibility enhancements, such as bridge crane improvements.
- Foul air capture and interconnection with existing foul air transport and other structural improvements to reduce fugitive emissions into the administration building.
- Heating, Ventilation, and Air Conditioning (HVAC) improvements
- Dewatering building entrances, such as roll-up doors and interior doors
- Painting, coating, and grating improvements in dewatering building
- Provisions for temporary dewatering during construction



Life-cycle costs shall include estimated capital costs as well as estimated costs associated with operations and maintenance (O&M) over a 20-year useful life. O&M costs will include, but not be limited to, labor, consumables (chemicals, water, electrical), maintenance and repair parts, and applicable transport and contract costs.

Each alternative will also be evaluated by non-economic criteria developed with input from the Owner. The non-economic criteria are anticipated to be proposed, reviewed, and defined at a workshop with the Owner and will generally include environmental, social, and operational factors.

It is anticipated that any upgrades that increase treatment capacity or change the dewatering technology will require submitting the ER to the Oklahoma Department of Environmental Quality (ODEQ) for official review and approval. Previous information compiled as part of the Phase II Improvements project will be utilized and updated for the ER as appropriate. The ER is anticipated to include the following sections:

- Project Planning and Need
- Existing System Assessment
- Alternatives Evaluation
- Proposed Project and Conceptual Design
- Construction Sequencing
- Project Schedule
- Construction Cost Estimate and Life Cycle Cost Evaluation

#### *1.1.1 – Draft ER Submittal*

The Draft Dewatering Alternatives Evaluation ER will summarize the findings from Task 1.0. The ER will describe each alternative and design criteria, identify the recommended technology, and outline the proposed layout for implementing its process components. The Draft ER will be provided to the Owner for review prior to a Dewatering Alternatives Evaluation Workshop (detailed further below).

#### *1.1.2 – Draft ER Workshop*

Garver will lead and participate in a Dewatering Alternatives Evaluation Workshop with the Owner to review and discuss the findings of the Draft Dewatering Alternatives Evaluation ER. During the workshop, Garver will review the findings of the ER and confirm the recommended alternative. Garver will receive Owner's comments and will incorporate those comments mutually agreed to by OWNER and GARVER into the final ER.

Following approval, Garver will submit two (2) final copies of the ER to ODEQ if necessary. Garver will attend one meeting with ODEQ and Owner to review the report, if required. Detailed design of the selected alternative is anticipated to commence with written approval of the Owner.

### 1.2 – Surveys

Previous design, property, and topographical surveys to be utilized for this project have been completed during the Phase II Improvements or earlier. Garver will utilize previous survey and control points for the project and therefore topographic survey is not included in this scope of work.

#### *1.2.1 – Data Acquisition*

Garver will obtain a high definition color point cloud for all visible surface features within the dewatering room. Robotic Total stations and a Trimble SX10 scanner with camera kit will be used to collect the data. This will be computed into a 3D model of existing structures and equipment.

### 1.3 – Preliminary (30%) Design

Following completion and written Owner Notice to Proceed, Garver will initiate preliminary design of the proposed improvements. The preliminary design phase will include preliminary drawings, and an opinion of probable construction cost (OPCC) with 20% contingency. The preliminary design phase will represent approximately 30% of final construction contract plans. This submittal will not include technical specifications or “front end” contract documents. Garver will not begin final design until the conceptual design is authorized and a Notice to Proceed has been issued by the Owner in writing.

The preliminary drawings will be based upon surveys and will include the following:

- Construction access and staging plan
- Demolition plan
- Process and instrumentation diagrams
- Electrical one-line diagrams (additional drawings as required to be included in Final Design)
- Layouts of the proposed improvements
  - Dewatering equipment, including polymer feed and controls (including any necessary sensors to optimize polymer dose)
  - Sludge piping and conveyance
  - Chemical piping
  - Drain piping
  - Hardware or other improvements required to control fugitive emissions
  - Connection to existing odor control system

Upon Owner review of the preliminary design, Garver will conduct a workshop with the Owner to review and discuss the proposed design.

## **2.0 – FINAL DESIGN**

Upon written Notice to Proceed by the Owner following review of the preliminary design, Garver will conduct final designs to prepare construction plans and specifications, for one construction contract, including final construction details and quantities, special provisions, and OPCC to include contingency. In addition to Garver’s standard drawings and technical specifications, Garver will utilize Owner’s standard “front end” documents and State Revolving Fund or other outside funding agency standard documents (as necessary). Garver will conduct an estimated two design progress meetings with the Owner to review progress, obtain Owner input, and discuss design details.

Upon Owner review of the final design, Garver will conduct a workshop with the Owner to review and discuss, incorporate Owner comments, and prepare the construction documents as required to advertise for bids.

### 2.1 Geotechnical Services

Previous geotechnical investigations to be utilized for this project have been completed during the Phase II Improvements or earlier. Garver does not anticipate the need for additional geotechnical investigation under this scope of work and is therefore not included.

### 2.2 Equipment Procurement (Dewatering Equipment Only):

It is anticipated that the treatment technologies will be proprietary and will need to be procured prior to completion of the Contract Documents. Garver will assist in equipment procurement. Equipment will be bid and a contract will be awarded by the Owner. Notice to Proceed/Procurement will be given during Final Design Phase, and Garver will perform submittal reviews. The contract will later be assigned to the successful Construction Contractor for delivery, installation, start-up, and warranty.

Based on the results of the Preliminary Design findings and recommendations, Garver will develop Equipment Procurement Solicitation Documents, including equipment specifications, terms, and conditions. Garver will provide a Draft Solicitation for review to Owner. Garver will incorporate comments from the Draft Solicitation to prepare a Final Solicitation.

Garver will:

- Assist the Owner in extending invitations to bid equipment and procurement solicitation.
- Receive inquiries from Bidders during the bidding period and respond as required.
- Review bids after receipt by Owner and develop a recommendation for award.
- Assist Owner in interpretation of procurement solicitation and in making contract award.

### **3.0 – BIDDING SERVICES**

During the bidding phase of the project, Garver will:

1. Prepare and submit Advertisement for Bids to Owner for Owner publication in newspapers and/or trade publications. Owner will pay advertising costs outside of this contract.
2. Dispense construction contract documents to prospective bidders using Garver's online plan room.
3. Support the contract documents by preparing addenda as appropriate.
4. Participate in a pre-bid meeting if necessary.
5. Attend the bid opening.
6. Prepare bid tabulation.
7. Evaluate bids and recommend award.

### **4.0 – CONSTRUCTION PHASE SERVICES**

Both Construction Administration and Construction Observation Services are included in this scope of services. The services to be provided during the construction phase of work are summarized in the following sections. The proposed fee for Construction Phase Services is based on the construction contract performance time.

#### **4.1 Construction Administration**

1. Coordinate and lead the preconstruction meeting.
2. Coordinate and lead monthly progress/coordination meetings with the Owner/Contractor.
3. Evaluate, respond, and approve construction material submittals and shop drawings.
4. Review initial schedule and monthly updates to ensure project sequencing is in accordance with the project specifications and timelines are reasonable and, where the schedule does not meet the specifications or appears to be unrealistic, require the contractor to submit a revised schedule.
5. Issue instructions to the Contractor on behalf of the Owner and issue necessary clarifications (respond to RFIs) regarding the construction contract documents.
6. Review the Contractor's progress payment requests based on the actual quantities of contract items completed and accepted, and make a recommendation to the Owner regarding payment. Garver's recommendation for payment shall not be a representation that Garver has made exhaustive or continuous inspections to (1) check the quality or exact quantities of the Work; (2) to review billings from Subcontractors and material suppliers to substantiate the Contractor's right to payment; or (3) to ascertain how the Contractor has used money previously paid to the Contractor.
7. When authorized by the Owner, prepare change orders for changes in the work from that originally provided for in the construction contract documents.
8. Participate in final project inspection, prepare punch list, participate in punch list inspection, review final project closing documents, and make recommendation for payment to the final pay request.
9. Review material testing reports for compliance with project specifications.

### **5.0 – AS-BUILT SERVICES AND O&M MANUAL UPDATE**

Garver will maintain a set of working drawings throughout the project and prepare and furnish record drawings upon completion of construction. Garver will also update the Owner's dewatering chapter of the WRF O&M Manual in the same format as the Phase II O&M Manual to reflect the updated equipment and standard operating procedures.

## **6.0 – CONSTRUCTION OBSERVATION SERVICES**

In addition to services listed in Task 4.0, part-time construction observation is included. Construction observation services will supplement construction administration and provide or accomplish the following:

- Provide part-time construction observation services for the construction contract performance time. The proposed fee is based on a maximum of 400 hours of inspection during the construction contract performance time.
- Consult with and advise the Owner during the construction period.
- Maintain a working knowledge of the construction progress.
- Coordinate potential plan changes to the original construction documents.

In performing construction observation services, Garver will endeavor to protect the Owner against defects and deficiencies in the work of the Contractor(s); but Garver cannot guarantee the performance of the Contractor(s), nor be responsible for the actual supervision of construction operations or for the safety measures that the Contractor(s) takes or should take. However, if at any time during construction Garver observes that the Contractor's work does not comply with the construction contract documents, Garver will notify the Contractor of such non-compliance and instruct him to correct the deficiency and/or stop work, as appropriate for the situation. Garver will also record the observance, the discussion, and the actions taken. If the Contractor continues without satisfactory corrective action, Garver will notify the Owner immediately, so that appropriate action under the Owner's contract with the Contractor can be taken.

## **7.0 – APPLICATION ENGINEERING**

The application engineering services for the WRF will provide coordination of Supervisory Control and Data Acquisition (SCADA) system software upgrades, programming of programmable logic controllers (PLCs), development of human machine interface (HMI) graphics, on-site startup support, and post startup modifications or enhancements for the new dewatering equipment. The engineer will develop new plant PLC programming and SCADA graphic screens as required to implement integration of dewatering process systems at the WRF.

The essential elements used to develop the application engineering services are as follows:

- Owner's existing SCADA software components will be utilized. No additional software installation or server upgrade will be included with this scope of work.
- Owner's existing SCADA server and workstations will be utilized.
- The WRF dewatering improvements construction contract is anticipated to include a package system with self-contained control systems. The specifications for those package systems define various external interface requirements, including a software interface for exchanging data with the plant SCADA system. Under this agreement, the engineer will include support for those data exchanges in the SCADA graphics and plant PLC programming.
- This scope is based upon the following responsibilities of the contractor:
  - PLC hardware, panels, assembly, network, installation, and testing will be provided by the Contractor, as required in the construction contract documents.
  - Variable frequency drive (VFD) and instrumentation calibrations and commissioning will be provided by the Contractor, as required in the construction contract documents.
  - The PLC/Supervisory Communications will be over a fiber/ethernet network installed by

the Contractor as required in the construction contract documents.

- Troubleshooting and correction of wiring errors is the responsibility of the Contractor.
- Configuration of communications between all networked components including PLCs, SCADA servers, network switches, and other devices is the responsibility of the Contractor.

Software programming and configuration of PLCs and SCADA software will initially be performed at Garver's office(s). The monitoring and control features will be developed for the requirements shown in the construction contract documents, more specifically developed to support the PLC I/O lists and control descriptions developed in coordination with the Owner during design.

Garver will provide onsite services for integration, startup, and testing of dewatering control systems in conjunction with the contractor and dewatering system supplier. Services will include:

- Refinement of initial plant PLC programming and HMI development.
- Plant PLC and HMI interface with vendor supplied control systems.
- Startup and functional testing of plant control systems for dewatering process.

Application Engineering effort is based on 160 hours; at 85% spent of the hourly budget Garver will notify Owner if the hours needed to accomplish the work is anticipated to exceed the estimate. At that time, Garver will provide the Owner with an estimate to complete the necessary work.

## **8.0 – PROJECT DELIVERABLES**

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

1. Electronic copies of all documents and deliverables
2. Three (3) copies of the Draft ER
3. Three (3) copies to Owner and two (2) copies to ODEQ of the Final ER
4. Three (3) copies of the Preliminary (30%) Design Deliverable
5. Three (3) copies of the Final Design Deliverable
6. Three (3) copies of the Bidding Documents
7. Three (3) copies of the conformed Contract Documents for contract execution
8. One (1) copy of the Record Drawings and closeout documents
9. Two (2) complete copies of all programming will be provided to the Owner on USB flash drives

## **9.0 – EXTRA WORK**

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

1. Redesign for the Owner's convenience or due to changed conditions after previous alternate direction and/or approval.
2. Submittals or deliverables in addition to those listed herein.
3. Workshops in addition to those listed herein.
4. Preparation of a Storm Water Pollution Prevention Plan (SWPPP).
5. Construction materials testing.
6. Environmental Handling and Documentation, including wetlands identification or mitigation plans or other work related to environmentally or historically (culturally) significant items.
7. Coordination with FEMA and preparation/submittal of a CLOMR and/or LOMR.
8. Improvements outside the dewatering building.
9. Design of new electrical service feed to dewatering building.
10. Site, yard piping, and paving improvements outside of what is required for integrating the new dewatering system.

11. Arc Flash analysis or other power system studies.
12. Generator improvements or fire protection/sprinkler improvements.
13. Large Scale Development and any other Owner applications and fees.
14. ODEQ permitting fees.

Extra Work will be as directed by the Owner in writing for an additional fee as agreed upon by the Owner and Garver.

## ATTACHMENT C

COMPENSATION

The OWNER will compensate GARVER on a lump sum and hourly, not to exceed (NTE) basis for the SERVICES rendered. The lump sum and hourly NTE fee is broken down below by task as defined in the Scope of Services:

<b>Task</b>	<b>Task Description</b>	<b>Total Fee Amount</b>	<b>Fee Type</b>
1.0	Preliminary Engineering	\$99,000	Lump Sum
2.0	Final Design	\$132,000	Lump Sum
3.0	Bidding Services	\$33,000	Lump Sum
4.0	Construction Phase Services	\$49,500	Lump Sum
5.0	As-Built Services and O&M Manual Update	\$16,500	Lump Sum
<b>Lump Sum Subtotal</b>		<b>\$330,000</b>	<b>Lump Sum</b>
6.0	Construction Observation Services	\$60,000	Hourly NTE
7.0	Application Engineering	\$25,000	Hourly NTE
<b>Hourly NTE Subtotal</b>		<b>\$85,000</b>	<b>Hourly NTE</b>
<b>Project Total</b>		<b>\$415,000</b>	<b>Lump Sum / Hourly NTE</b>

GARVER may submit interim statements, not to exceed one per month, for partial payment for SERVICES rendered. The statements to OWNER will be by task for the percentage of work actually completed. The OWNER shall make interim payments within 30 calendar days in response to GARVER's interim statements.