

AGREEMENT  
FOR  
ENGINEERING SERVICES

This AGREEMENT, between the Norman Utilities Authority (OWNER) and PLUMMER ASSOCIATES, INC., (ENGINEER);

WITNESSETH

WHEREAS, OWNER intends to construct and operate chemical disinfection in a centralized location for the ground water supply with a site configuration that accommodates additional future treatment improvements. This PROJECT will be identified as Ground Water Disinfection System and shall be as described in Attachment B.

WHEREAS, OWNER requires survey, design, and engineering services in connection with the PROJECT (the SERVICES); and,

WHEREAS, ENGINEER is prepared to provide said SERVICES; and.

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

**ARTICLE 1 - EFFECTIVE DATE**

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

**ARTICLE 2 - COMPLETION DATE**

ENGINEER 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**

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

**ARTICLE 5 - COMPENSATION**

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

**ARTICLE 6 - OWNER'S RESPONSIBILITIES**

- 6.1. OWNER-Furnished Data: Upon request, OWNER will provide to ENGINEER all data in OWNER's possession relating to ENGINEER's SERVICES on the PROJECT. Such data may include electronic data available from the OWNER's Geographic Information System (GIS), data generated by OWNER's water distribution system model and existing water quality data. ENGINEER 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 ENGINEER. As indicated in the scope of services, ENGINEER will rely on OWNER's testing and analysis of the well water to determine if additional treatment is required for meeting water quality regulations.
- 6.2. Access to Facilities and Property: OWNER will make its facilities accessible to ENGINEER as required for ENGINEER's performance of its SERVICES
- 6.3. Timely Review: OWNER will examine ENGINEER's studies, reports, sketches, drawings, specifications, proposals, and other documents; and transmit OWNER comments or other decisions to ENGINEER in a timely manner.
- 6.4. Meetings: OWNER will participate in monthly progress meetings or other meetings with ENGINEER or contractor(s) defined in 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 ENGINEER's SERVICES or PROJECT construction.
- 6.6. Hazardous Substances: If hazardous substances in any form are encountered or suspected, ENGINEER will stop its own work in the affected portions of the PROJECT to permit testing and evaluation. ENGINEER 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.

#### **ARTICLE 7 - STANDARD OF CARE**

ENGINEER 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. ENGINEER 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, the ENGINEER's fee for the SERVICES and in consideration of the promises contained in this AGREEMENT, OWNER and ENGINEER agree to allocate and limit such liabilities in accordance with this Article.
- 8.2 Indemnification and Liability. The CONSULTANT agrees to defend, indemnify, and hold harmless the OWNER, 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) caused by a negligent act, error, or omission of the CONSULTANT in the performance of services under this Agreement. OWNER agrees to defend, indemnify, and hold harmless the CONSULTANT, 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) 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. The CONSULTANT 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 the CONSULTANT 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. ENGINEER shall indemnify OWNER against legal liability for damages arising out of claims by ENGINEER's employees. OWNER shall indemnify ENGINEER against legal liability for damages arising out of claims by OWNER's employees.
- 8.4 Consequential Damages. To the fullest extent permitted by law, ENGINEER 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 ENGINEER shall maintain the following insurance:



- 9.1 Worker's compensation insurance for ENGINEER'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.

ENGINEER 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 ENGINEER as additional insured on their General Liability Insurance policies.

ENGINEER 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 ENGINEER to the same extent.

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

ENGINEER shall not be responsible for: (1) construction means, methods, techniques, sequences, procedures or safety precautions and programs in connection with the PROJECT; (2) the failure of any contractor, subcontractor, vendor or other PROJECT participant, not under contract to ENGINEER, 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 ENGINEER in Attachment B, Scope of Services.

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

Since ENGINEER 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, ENGINEER's opinion of probable costs and of PROJECT schedules shall be made on the basis of experience and qualifications as a professional engineer. ENGINEER does not guarantee that proposals, bids, or actual PROJECT costs will not vary from ENGINEER's cost estimates.

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

Upon OWNER's request ENGINEER 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 ENGINEER 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 ENGINEER. ENGINEER 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 ENGINEER 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 ENGINEER's compensation.

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

Neither OWNER nor ENGINEER 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 ENGINEER 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:

ENGINEER: Alan Swartz, P.E.  
Plummer Associates, Inc.  
531 Couch Drive, Suite 200  
Oklahoma City, OK 73102  
405-440-2725  
aswartz@plummer.com

OWNER: Rachel Croft  
Norman Utilities Authority  
201-C West Gray  
P.O. Box 370  
Norman OK 73070  
405-217-7778  
rachel.croft@normanok.gov

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

#### **ARTICLE 16 - WAIVER**

A waiver by either OWNER or ENGINEER 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 ENGINEER. 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 ENGINEER 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 ENGINEER have executed this AGREEMENT.

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

**Plummer Associates, Inc. - ENGINEER**

ATTEST

By: Ellen T. McDonald  
 Ellen T. McDonald, PhD, PE  
 Title: Vice President

Alan E. Davis  
 Alan E. Davis, PE, PMP  
 Corporate Secretary

**Norman Utilities Authority- OWNER**

APPROVED as to form and legality this 7 day of October, 2022.

Mr. Boole  
 City Attorney

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

ATTEST

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

\_\_\_\_\_  
 \_\_\_\_\_

## **ATTACHMENT A**

### **SCHEDULE**

The Project shall be completed in accordance with the following schedule.

- Draft Engineering Report shall be delivered to OWNER within 90 calendar days from Notice to Proceed.
- Final Engineering Report shall be delivered to OWNER within 30 calendar days following receipt of OWNER comments.
- Bidding Documents at 65% shall be delivered to OWNER within 90 calendar days following acceptance of the Engineering Report by the OWNER.
- Bidding Documents at 95% shall be delivered to OWNER 45 calendar days following receipt of OWNER comments on 65% Bidding Documents.
- Final Bidding Documents shall be submitted to the OWNER within 45 calendar days following receipt of OWNER comments on 95% Bidding Documents.

**ATTACHMENT B**  
**CITY OF NORMAN**  
**SCOPE OF SERVICES**

**1.0 BACKGROUND**

Norman Utilities Authority (OWNER) provides potable water for the City of Norman (City), Oklahoma from a combination of surface water and groundwater sources. The majority of the City's groundwater wells are located in a wellfields east of the City. Groundwater is currently introduced into the distribution system at locations near each well, creating areas in the distribution system with varying water quality. The NUA has recently installed additional waterlines to collect and deliver the majority of the groundwater to a location where it can be disinfected and consistently introduced into the system. Under this contract, Plummer Associates, Inc. (ENGINEER) will develop an Engineering Report and bidding documents that includes the following:

- Development of the OWNER's design criteria and preferences for the project.
- Review of the existing site evaluation
- Desktop water quality analyses of water stability (corrosion potential) and other specific contaminants.
- Preparation and presentation of a draft and final engineering report discussing evaluation criteria and the recommendation for disinfection.
- Detailed design, bidding documents, at 65%, 95%, and 100% for the construction of the recommended disinfection system with consideration for the full facility build-out.

Plummer Associates, Inc. (ENGINEER) will provide services described above as well as the bidding and construction phase services. These services are further detailed as Basic Services below. Geotechnical analysis, surveying, and utility location will be preliminarily addressed under Items 2.2.8 and 2.2.9 of the Engineering Report and will be finalized during the detailed design phase. Basic services includes the following assumptions:

- A design groundwater flowrate of 16 MGD. This capacity is about 10% higher than the current well capacity provided by the City
- The groundwater disinfection design included in basic services does not include chemical storage and feed equipment for pH adjustment or for meeting water stability requirements and does not include removal of iron, manganese, chromium, arsenic, or disinfection byproducts.
- The design and construction of a system for the addition of fluoride is included in ADDITIONAL SERVICES.

**2.0 BASIC SERVICES**

Basic Services provided by the ENGINEER will generally be covered under four main activities: Project Management and Coordination, Disinfection Engineering Report and Process Design, Detailed Design, and Engineering Allowances. Specific tasks for each activity are identified in the following sections.

**2.1 PROJECT MANAGEMENT AND COORDINATION**

**2.1.1 Project Management**

2.1.1.1 Project management will be provided for the PROJECT and will include developing and implementing a project management plan; tracking and managing internal schedules of work; monitoring and addressing issues related to the scope of work, budget and deliverables; preparing and processing monthly billings; providing labor resources necessary to fulfill scoped work; scheduling and participating in quality control reviews; and providing updates to the OWNER on a regular basis.

2.1.1.2 ENGINEER shall prepare a common monthly invoice for all General Services.

## **2.1.2 Project Coordination**

2.1.2.1 ENGINEER will coordinate design efforts on project tasks identified below.

2.1.2.2 ENGINEER as the prime design consultant will manage sub-consultant's field and design activities and coordinate those efforts with the OWNER.

## **2.2 DISINFECTION ENGINEERING REPORT AND PROCESS DESIGN**

### **2.2.1 Meetings**

2.2.1.1 ENGINEER will prepare for and participate in a Project kick-off meeting. In this meeting, the ENGINEER will review and confirm the scope, schedule, resources, responsibilities, and clarify and define the OWNER's expectations, requirements, and responsibilities for the Project. Meetings will take place at the OWNER's office in Norman and virtually for remote staff. ENGINEER will prepare an agenda for the meetings, moderate the meetings and prepare/distribute meeting notes.

2.2.1.2 Preliminary Design Coordination Meetings - ENGINEER will coordinate, prepare for, and conduct coordination meetings to review progress with the OWNER and the consultants working on the design. Meetings will take place at the OWNER's office in Norman and virtually for remote staff. ENGINEER will prepare an agenda for the meetings, moderate the meetings and prepare/distribute meeting notes. Two (2) coordination meetings will be held; the budgeted meetings are in addition to the kickoff meeting.

### **2.2.2 Process Water Quality and Flow Data Evaluation:**

2.2.2.1 Obtain and review drawings, design reports, geotechnical reports, and master plans for the disinfection and blending of the ground water with the treated surface water. The ENGINEER shall be entitled to rely on the accuracy of the data and information provided by the CITY and the CITY's other consultants and contractors without independent review, evaluation, or verification. The ENGINEER shall not be liable for any claims or injury or loss arising from errors, omissions, or inaccuracies in documents or other information provided by the CITY or the CITY's other consultants and contractors.

2.2.2.2 OWNER to provide project flow rates and water demands (average and peak day) for the planning period. OWNER to provide the capacity of each groundwater well.

2.2.2.3 OWNER to provide 2 years of raw water quality data for the ground water wells and finished water quality data for the both the Water Treatment Plant and water purchased from Oklahoma City in Excel format. The following data is anticipated to be needed for the project:

2.2.2.3.1 OWNER shall provide the Standard Deviation, as well as the average, maximum and minimum values for the following: Groundwater turbidity, calcium, sulfate, total dissolved solids (TDS), chloride, temperature, pH, hardness, ammonia, alkalinity, total organic carbon (TOC), dissolved organic carbon (DOC), chromium, arsenic, iron, manganese, and bromide;

2.2.2.3.2 OWNER shall provide the Standard Deviation, as well as the average, maximum and minimum values for the following: Finished water turbidity, TOC, total trihalomethanes (TTHM's), haloacetic acids (HAA's), pH, alkalinity, and corrosivity data (total dissolved solids, temperature, pH,

alkalinity as calcium carbonate, chloride and sulfate), ODEQ water quality parameters (alkalinity, calcium chloride, conductivity, hardness, iron, manganese, pH, sodium, sulfate, temperature, total dissolved solids, orthophosphate, and silica);

- 2.2.2.4 Provide a sampling plan for the OWNER to collect supplemental water quality data for parameters not available in existing records. The sampling plan shall include recommendations on sampling locations, parameters, test methods, and frequencies. The cost of this sampling and laboratory analysis are not included in Basic Services.
- 2.2.2.5 Perform a statistical analysis of the water quality data to determine the range of values for each parameter. ENGINEER will establish a general range of water quality for the various sources and will not consider well combinations.
- 2.2.2.6 Evaluate iron and manganese concentration values to assess the potential for iron and manganese precipitation following chlorine addition. Recommend next steps if iron and/or manganese precipitation is anticipated to be a concern.
- 2.2.2.7 Evaluate water quality data to assess the potential for TTHM and HAA5 formation. Recommend next steps if TTHM and/or HAA5 formation is anticipated to be a concern.
- 2.2.2.8 Arsenic and chromium are both known to be present in the groundwater supply and are regulated drinking water contaminants. Chlorine addition can change the oxidation state of chromium from chromium-3 to chromium-6, which significantly increases chromium toxicity. The ENGINEER will review arsenic and chromium sampling data from individual groundwater wells and identify potential risks and mitigation strategies for the new groundwater disinfection facility.

### **2.2.3 Chemical Dosing Evaluation**

- 2.2.3.1 The ENGINEER will develop a testing protocol for the OWNER to complete jar testing that the ENGINEER will use to prepare chlorine dose/response curves for the groundwater supply. This shall apply to both sodium hypochlorite and liquid ammonium sulfate (LAS) chemical feeds.

### **2.2.4 Process Sizing and Diagram**

- 2.2.4.1 Develop sizes for the following processes and facilities:
  - 2.2.4.1.1 Sodium hypochlorite chemical storage, containment, pumps, day tank, feed pumps, and other items required for this system
  - 2.2.4.1.2 LAS chemical storage, containment, pumps, day tank, feed pumps, and other items required for this system
  - 2.2.4.1.3 Chemical building with sufficient space for the sodium hypochlorite storage, containment, and feed equipment; LAS storage, containment, and feed equipment; analytical instruments, a work area, restroom, electrical room, and other items necessary for the facility. Chemical storage will be sufficient to store full truck deliveries. Two chemical storage tanks are assumed per chemical.
  - 2.2.4.1.4 Chemical fill station(s)
  - 2.2.4.1.5 Sodium hypochlorite chemical injection system
  - 2.2.4.1.6 Sample and LAS chemical injection system
  - 2.2.4.1.7 Septic system
- 2.2.4.2 Prepare a process diagram for the disinfection system with chemical addition points, sample points, and process instruments.

### **2.2.5 Corrosion Control Assessment**

- 2.2.5.1 Provide a literature review summary of corrosion control considerations for switching from an undisinfected groundwater to a chloraminated groundwater in the distribution system.
- 2.2.5.2 Compare the range of anticipated groundwater quality values with the water quality ranges from the OWNER's two surface water sources. The comparison will include the calculation of LSI, RSI, AI, and DIC values for each water supply using the RTW model. The water quality values used as part of this evaluation will be those established as part of the Process Water Quality and Flow Data Evaluation task.
- 2.2.5.3 Review the EPA Optimal Corrosion Control Treatment (OCCT) document for recommendations regarding corrosion control treatment for this application. Prepare a summary of the corrosion control treatment recommendations and next steps, as applicable. Common corrosion control treatment strategies include pH adjustment and/or phosphate addition. Corrosion control treatment system design is not included in Basic Services.

### **2.2.6 Site Survey and Geotechnical Engineering**

- 2.2.6.1 Perform a site survey to establish contours for use in developing a site layout drawing and as an input to the future design phase.
- 2.2.6.2 Contract with a geotechnical engineering firm to provide one (1) soil boring and one (1) geotechnical engineering report. The soil boring is assumed to be at the proposed location for the chemical feed building. Slab-on-grade construction for the chemical feed building is assumed as the basis for the geotechnical engineering recommendations.

### **2.2.7 Preliminary Site Layout**

- 2.2.7.1 Review the site layout that was proposed in the facility master plan.
- 2.2.7.2 Develop a preliminary site layout drawing showing the proposed chemical feed building, chemical injection and sampling vaults, yard piping, access road, and future improvements. Conceptual sizes will be used for the future improvements, which are assumed to include a ground storage tank, chemical feed building expansion, and high service pump station. The site layout drawing will include the contours developed during the site survey task.
- 2.2.7.3 Develop a 3D rendering of the proposed facility, inclusive of the chemical feed building, chemical injection and sampling vaults, and proposed site design. OWNER will provide aesthetic architectural requirements (as applicable) for use in developing the rendering. The facility master plan is assumed to be used for showing conceptual renderings of the future improvements.

### **2.2.8 Opinion of Probable Construction Cost**

- 2.2.8.1 OWNER will provide data on chemical costs for sodium hypochlorite and liquid ammonium sulfate (LAS).
- 2.2.8.2 Provide a conceptual construction cost comparison between two building construction options (such as prefabricated metal, CMU block, and precast concrete panel) on a \$/square foot basis. OWNER will select the two options for this cost comparison based on feedback from the OWNER's planning department. One option will be selected for use in developing an opinion of probable construction cost (OPCC) for the project.
- 2.2.8.3 Develop an OPCC, operation and maintenance (O&M) cost, and 20-year lifecycle cost for the project.

### **2.2.9 Draft Disinfection Engineering Report**

- 2.2.9.1 Prepare a draft Engineering Report documenting the design and selection criteria used, evaluations, recommendations, and preliminary site layout. Prepare three (3) bound hard copies and one (1) pdf



electronic copy of the draft engineering report and present to the OWNER. Engineering Report shall be formatted and arranged in the standard ODEQ Engineering Report format.

## **2.2.10 Final Engineering Report**

- 2.2.10.1 After receiving input and comments from the OWNER, ENGINEER shall update and finalize the Engineering Report. ENGINEER shall deliver three (3) bound hard copies and one (1) pdf electronic copy of the final technical memorandum to the OWNER. Engineering Report shall be submitted to the ODEQ for review if necessary. Comments from the ODEQ shall be incorporated prior to finalizing the Engineering Report.

## **2.3 DETAILED DESIGN**

### **2.3.1 Meetings**

- 2.3.1.1 The ENGINEER shall conduct one (1) virtual design phase initiation meeting with the CITY. In this meeting, the ENGINEER will review and confirm the scope, schedule, resources, responsibilities. The ENGINEER and the CITY will clarify and define the CITY's expectations; requirements; equipment, valve, and piping preferences; and responsibilities for the Project.
- 2.3.1.2 The ENGINEER will conduct two (2) virtual review workshops with the CITY. The review workshops shall be at the 65% and 95% design milestones. The ENGINEER shall provide the following items no later than seven (7) days prior to each review workshop: agenda, half-size (11"x17") drawings (PDF format), and specifications (PDF format).
- 2.3.1.3 The ENGINEER will conduct two (2) project team coordination meetings.
- 2.3.1.4 The ENGINEER will conduct two (2) internal quality control (QC) meetings.

### **2.3.2 65%, 95% and 100% Design**

- 2.3.2.1 The ENGINEER will prepare, for the approval by the CITY, drawings and specifications setting forth in detail the requirements for the construction of the Project, which shall comply with all applicable laws, statutes, ordinances, codes, and regulations. The standard of care applicable to the ENGINEER's services will be the degree of skill and diligence normally employed by professional engineers or consultants performing the same or similar services at the time of such services are performed. The ENGINEER will re-perform any service not meeting this standard of care without additional compensation.
- 2.3.2.1.1 The 65% design package shall consist of the following items: General drawings, process mechanical drawings, civil drawings consisting of piping and piping connections, process and instrumentation diagrams (P&IDs), electrical one-lines, structural plan drawings and major sections; architectural plan drawings and major sections; heating, ventilation, and air conditioning (HVAC) plan drawings and major sections; civil, mechanical, and structural standard details; technical specifications (except electrical and instrumentation); and an updated OPCC.
- 2.3.2.1.2 The 95% design package shall consist of the following items: Modified 65% package; electrical drawings; instrumentation drawings; electrical and instrumentation technical specifications; construction contract documents (Divisions 00 and 01); and an updated OPCC.
- 2.3.2.2 The ENGINEER will utilize the City of Norman's Standard Specifications and Constuction Drawings (City Specifications) to the maximum extent possible. Additional technical specifications will be prepared as required to supplement the City Specifications.
- 2.3.2.3 The ENGINEER will provide a design for the proposed disinfection facility, inclusive of general, civil, process mechanical, structural, architectural, HVAC, plumbing, electrical, and instrumentation disciplines. The ENGINEER's general services include design of the following items:

- 2.3.2.4.1 Sodium hypochlorite chemical storage, containment, pumps, day tank, feed pumps, and other items required for this system
- 2.3.2.4.2 LAS chemical storage, containment, pumps, day tank, feed pumps, and other items required for this system
- 2.3.2.4.3 Chemical building with sufficient space for the sodium hypochlorite storage, containment, and feed equipment; LAS storage, containment, and feed equipment; analytical instruments, a work area, restroom, and electrical room. Chemical storage will be sufficient to store full truck deliveries. Two chemical storage tanks are assumed per chemical.
- 2.3.2.4.4 Chemical fill station
- 2.3.2.4.5 Connection for future pipe reactor (if not constructed under this project) and ground storage tank
- 2.3.2.4.6 Sodium hypochlorite chemical injection vault (an injection quill is assumed for sodium hypochlorite injection)
- 2.3.2.4.7 Sample and LAS chemical injection vault (an inline diffuser with carrier water is assumed for LAS injection)
- 2.3.2.4.8 Septic system
- 2.3.2.4 The ENGINEER will prepare operation and control descriptions for the following items:
  - 2.3.2.5.1 Sodium hypochlorite chemical feed system
  - 2.3.2.5.2 LAS chemical feed system

### **2.3.3 Opinion of Probable Construction Cost**

- 2.3.3.1 The ENGINEER will submit to the CITY three OPCCs (corresponding to 30% (Submitted with the Engineering Report), 65%, and 95% design milestones) that shall be based on calculated quantities such as areas, volumes, or other unit costs. The OPCCs will be divided into appropriate categories by structure to indicate the cost of each category of work involved in construction of the project. The ENGINEER will obtain quotes from equipment suppliers related to this project and periodically update unit costs based on recent trends and bidding information in this region.
- 2.3.3.2 In providing opinions of costs, financial analysis, economic feasibility projections, and schedules for the project, the ENGINEER has no control over cost or price of labor and materials; unknown conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance by third parties; quality, type, management, or direction of operation personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, the ENGINEER makes no warranty that the CITY's actual project cost, financial aspects, economic feasibility, or schedules will not vary from the ENGINEER's opinions, analyses, projections, or estimates. However, should the actual bids significantly exceed the OPCC for the 100% plans for the Bidding Documents at such a level that a project award is not feasible, the ENGINEER will work with the OWNER to redesign the facility to get the project within budget.

### **2.3.4 ODEQ Design Review**

- 2.3.5.1 After completion of the 95% quality control review meeting and prior to the advertisement for bids, ENGINEER will provide contract documents and prepare an engineering design report and calculations to comply with ODEQ requirements to obtain a Permit to Construct. ENGINEER will electronically submit the plans and specifications to ODEQ for review. If necessary, incorporate modifications requested by permitting entities and obtain all required design approvals and permits. The OWNER will be responsible for fees associated with the permitting process. Submit plans as required to all parties associated with PROJECT including OWNER, ODEQ and private utility companies. ENGINEER will provide a written

response to OWNER comments and will modify documents incorporating required changes. ENGINEER will provide the following sealed construction contract documents to OWNER: two (2) Engineering report copies, two (2) half-size (11"x17") drawing sets; two (2) specification sets; a Final OPCC and PDF files of the aforementioned documents.

## **2.4 BID PHASE SERVICES**

### **2.4.1 Pre-Bid Activities**

- 2.4.1.1 Assist the OWNER in the advertisement of the project for competitive bids.
- 2.4.1.2 Assist the OWNER in securing bids, preparing addenda, issuing notice to bidders and notifying construction news publications. The notice to bidders will be furnished to the OWNER for publication in the local news media. The cost for publications shall be paid by the OWNER. The ENGINEER will distribute bid documents, plans and specifications for the Project to prospective bidders via CivCast.Coordinate and conduct a pre-bid conference for the project for each bid package included in Basic Services.
- 2.4.1.3 In conjunction with the OWNER, ENGINEER will issue addenda in response to questions raised during the bidding process. ENGINEER will transmit addenda to all plan holders.

### **2.4.2 Post-Bid Activities**

- 2.4.2.1 Prepare estimate to be opened at the formal bid opening.
- 2.4.2.2 Assist the OWNER in the opening and tabulation of bids for construction of project and recommend to the OWNER as to the proper action on all proposals received.
  - 2.4.2.2.1 Electronic (PDF OCR) files of the plans and specifications via ftp site or optical disc.
- 2.4.2.3 Assist the OWNER in coordinating the execution of the conformed contract documents.
- 2.4.2.4 Preparation of additional copies of the documents for the OWNER or other parties will be performed by the ENGINEER as an ADDITIONAL SERVICE.

## **2.5 CONSTRUCTION PHASE SERVICES**

### **2.5.1 Pre-Construction Conference and Monthly Progress Meetings**

- 2.5.1.1 Conduct pre-construction conference and, in conjunction with the OWNER, issue clarifications in response to questions raised at the conferences.
- 2.5.1.2 Attend monthly progress meetings as needed at City Offices with the OWNER and the PROJECT contractor. Meet with OWNER staff and/or the City Council for PROJECT discussions, coordination and presentations as required by the OWNER.

### **2.5.2 Field Activities**

- 2.5.2.1 Represent the OWNER in Non-Resident construction administration of the project. In this capacity, the construction administration duties shall not place any responsibility on ENGINEER for the techniques, sequences and methods of construction or the safety precautions incident thereto, and the ENGINEER will not be responsible or liable in any degree for the Contractor's failure to perform the construction work in accordance with the Contract Documents.
- 2.5.2.2 The presence and duties of ENGINEER's personnel at a construction site, whether as onsite representative or otherwise, do not make the ENGINEER or its personnel in any way responsible for those duties that belong to the CITY and/or construction contractors or other entities, and do not relieve the construction contractors or any other entity from their obligations, duties, and responsibilities, including, but not limited to, all construction methods, means, techniques, sequences, and procedures necessary for coordinating and completing all portions of the construction work in accordance with the contract documents and any health and/or safety precautions related to such construction work.

- 2.5.2.3 ENGINEER and its personnel have no authority to exercise any control over any construction contractor or other entity or their employees in connection with their work or any health and/or safety precautions related to such work and have no duty for inspecting, noting, observing, correcting, or reporting on health and/or safety deficiencies of the construction contractors or other persons at the site except ENGINEER's own personnel.
- 2.5.2.4 The presence of the ENGINEER's personnel at a construction site is for the purpose of providing the ENGINEER and the CITY a greater degree of confidence that the completed work will conform generally to the contract documents and that the integrity of the design concept, as reflected in the contract documents, has been implemented and preserved. The ENGINEER neither guarantees the performance of any construction contractor nor assumes responsibility for contractor's failure to perform the work in accordance with the contract documents.
- 2.5.2.5 Make an average of one visit every other month to the site for a 18-month period (9 visits total) beginning with the date of execution of a construction contract by the OWNER to observe the progress and the quality of work and attend a construction progress meeting. The ENGINEER shall become familiar with the progress and quality of the work completed and will determine in general if the work when completed will be in accordance with the contract documents. In addition, on the basis of on-site observations, the ENGINEER shall exercise reasonable care and due diligence in discovering and promptly reporting to the OWNER any defects or deficiencies in the work of CONTRACTOR or any subcontractor. The OWNER's approval, acceptance, use of, or payment for all or any part of the ENGINEER's services hereunder or the PROJECT itself shall in no way alter the ENGINEER's obligations or the OWNER's rights hereunder.
- 2.5.2.6 Meet and review construction progress with OWNER inspectors, or 3rd Party Inspection personnel under contract with the OWNER, during the monthly site visits.
- 2.5.2.7 Exhaustive or continuous on-site inspections by the Engineer to check quality or quantity of the work or material shall be considered an ADDITIONAL SERVICE.
- 2.5.2.8 Conducting, with the OWNER's representative, a final inspection of the PROJECT for conformance with the design concept of the PROJECT and general compliance with the contract documents.

### **2.5.3 Construction Documentation**

- 2.5.3.1 Review samples, catalog data, schedules, shop drawings, laboratory, shop and mill tests of material and equipment and other data which the CONTRACTOR is required to submit for conformance with the design concept of the project and compliance with the information given by the Contract Documents.
- 2.5.3.2 Interpret the intent of the plans and specification for the OWNER and CONTRACTOR, responding to Requests for Information. Investigations, analyses, and studies requested by the Contractor and approved by the OWNER, for substitutions of equipment and/or materials or deviations from the plans and specifications will be considered an Additional Service. NOTE: Such studies conducted by the ENGINEER, if determined to be inadequate, due to incompleteness of ENGINEER prepared plans and specifications will be revised without additional compensation. Any defective designs, plans or specifications furnished by the ENGINEER shall be promptly corrected by the ENGINEER at no cost to the OWNER.
- 2.5.3.3 Review testing laboratories' reports and inspection bureaus required for the testing or inspection of materials, factory testing, etc., for the project. The cost of such laboratory tests or inspection shall be paid by the OWNER. Review daily construction reports and photo for general PROJECT progress.
- 2.5.3.4 Accompany the OWNER in conducting one (1) final completion inspection of the PROJECT for conformance with the design concept of the PROJECT and general compliance with the contract documents, and review and comment on the certificate of completion and the recommendation for final payment to the Contractor. Prepare a list of deficiencies to be corrected by the contractor before final payment is released.
- 2.5.3.5 ENGINEER will review and comment on the certificate of completion and the recommendation for monthly progress payments to the CONTRACTOR. Verification of quantities and completion of work shall be the responsibility of the OWNER. OWNER will provide a copy of the approved pay application to the ENGINEER.

2.5.3.6 Review and comment on the certificate of completion and the recommendation for final payment to the CONTRACTOR following final inspection of the completed Project.

2.5.3.7 Review, evaluate and prepare change orders as required.

#### **2.5.4 As-Built Record Documents**

2.5.4.1 Revise contract drawings with reference to the Contract Document required "red line" notations and the assistance of assigned OWNER or 3rd Party Resident Representative Staff. Revised drawings shall reflect available information as to how the work was constructed. Furnish as-built record documents in PDF, CAD and GIS formats. No hardcopy will be required.

### **ADDITIONAL SERVICES**

Additional Services are those services not included in General Services that may be required for the Project but cannot be defined sufficiently at this time to establish a Scope of Work. ENGINEER will not conduct any ADDITIONAL SERVICES without written authorization from the OWNER. These include, but are not necessarily limited to the following:

- a. Other services not included in Basic or Special Services that are approved by the OWNER.
- b. Design and Construction Administration Services for the addition of Fluoride.
- c. Corrosion control treatment testing and design services.
- d. Resident project representative (RPR) services.
- e. Labor and Analytical costs associated with water quality sampling, not included in Basic or Special Services.
- f. Additional archeological investigations beyond those provided in Basic or Special Services.
- g. GIS processing of geophysical and/or geotechnical data beyond the assumptions provided in Basic or Special Services.
- h. Preparing applications and supporting documents for grants, loans, or planning advances for providing data for detailed applications.
- i. Providing additional copies of reports, plans, specifications, and contract documents beyond those specifically described in Basic and Special Services.
- j. Preparing environmental impact statements, storm water discharge permits, and 404 permit applications, except as specifically included in the Basic Engineering Services.
- k. Appearing before regulatory agencies or courts as an expert witness in any litigation with third parties other than condemnation proceedings arising from the development or construction of the Project, including the preparation of engineering data and reports for assistance to the OWNER.
- l. Payment of fees for permit applications and publication(s) of notices.
- m. Public relation activities and consulting services.

**ATTACHMENT C****COMPENSATION**

The OWNER will compensate ENGINEER on a lump sum basis for the SERVICES rendered. The lump sum fee is broken down below by task as defined in the Scope of Services:

<b>Activity</b>	<b>Task Description</b>	<b>Lump Sum Amount</b>
2.0	Project Management and Coordination	\$28,500
2.1	Disinfection Engineering Report	\$73,600
2.2	Detailed Design Services	\$269,600
2.3	Bid Phase Services	\$14,200
2.4	Construction Phase Services	\$108,000
2.5	As-Built Record Documents	\$10,000
<b>Total</b>		<b>\$503,900</b>

The ENGINEER 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 ENGINEER's interim statements.

<b>Activity</b>	<b>ADDITIONAL SERVICES Task Description</b>	<b>Lump Sum Amount</b>
	Design and Construction of a Fluoride System	\$25,000
<b>Total</b>		<b>\$25,000</b>

Additional services must be authorized by amendment of the agreement.