EXHIBIT A

SCOPE OF WORK

NORTH BEACH WATER DISTRICT
SOUTH WELLFIELD TREATMENT IMPROVEMENTS

PROJECT OVERVIEW

One of the sources that the North Beach Water District (District) uses is the South Wellfield. The District drilled three wells in 2013. At that time, the wells showed levels of arsenic above the regulatory maximum contaminant level (MCL) and levels of hydrogen sulfide that would be problematic from a taste and odor standpoint.

The District and Gray & Osborne, Inc., conducted a pilot study to determine the best treatment for the new wells. The pilot study determined that injecting air to increase the dissolved oxygen and filtering the water with a catalytic carbon would remove the hydrogen sulfide. The addition of ferric chloride was included to treat the arsenic.

An existing building at the South Wellfield was modified to serve as a treatment plant. A ferric chloride feed system was installed with a storage tank for the ferric chloride in a separate room. Two carbon filters were installed and filled with a special catalytic carbon. A backwash system was also installed to allow the accumulated iron solids with arsenic to be removed from the filters. The backwash was directed to a pond next to the plant for infiltration. The necessary piping for treatment and operation was installed in the building, including a venturi inductor to inject ambient air for increasing the dissolved oxygen. The facility was constructed in 2016 and placed into service in 2017. The wells and treatment plant operated as designed for several years.

Over time, the water quality in the wells started to change. By 2023, levels of manganese and iron were recorded in the well water that were above their respective MCLs. Arsenic and hydrogen sulfide were still present in similar concentrations as before. The treatment system was not designed to remove these contaminants since they were not problematic at the time that the wells were first equipped. Consequently, the District received complaints about the water quality from the South Wellfield and the District curtailed production.

In 2024, Gray & Osborne and the District started pilot testing treatment solutions that would treat all four water quality issues; arsenic, iron, manganese, and hydrogen sulfide. The intent of the pilot was to determine if a combination of chemical feed and filter media could be found that would allow a minimal amount of modification to the existing treatment plant filter and piping configuration. Several filter media were tried along with varying dosages of chlorine, ferric chloride, and potassium permanganate. The removal of iron and manganese was unsatisfactory and it was determined that the iron precipitation was forming particles that were too small to filter. Additional pilot testing

was performed with ATEC Water Systems, LLC (ATEC), using various polymer additions until a polymer was found that would allow for good removal. The pilot testing verified this result and that the combination of chlorine, ferric chloride, polymer, and Pyrolox® media would provide good removal and a satisfactory filter run time.

The District has decided to perform the upgrades to the treatment system using their own staff in order to expedite the changes. The pilot study showed the hydraulic loading on the new filter media is such that the existing filter vessels can be reused by placing the new media in them. The existing ferric chloride feed system can be reused as is, or can be upgraded by the District at the District's discretion. The only new unit processes are chlorination and polymer addition. There is a potassium permanganate feed system at the existing plant that could possibly be repurposed into one of the new processes. It is expected that the new chemical feed processes can be installed with minimal modification to the existing treatment plant structure.

The District will need the Washington State Department of Health (DOH) approval for the modifications to the treatment plant. This Scope of Work is intended to prepare the Documents that will be reviewed and approved by the DOH for allowing the project to be completed. The DOH will require a Project Report per Washington Administrative Code (WAC) 246-290-110 and Construction Documents per WAC 246-290-120. Since the project will not be publicly bid, the level of detail of the Construction Documents will only need to be sufficient for DOH approval and to assist the District in construction.

ASSUMPTIONS

The following items are assumed for this Scope of Work.

1. The project will be completed using District staff or by specific craftsmen hired directly by the District. Consequently, the Construction Documents suitable for public bidding will not be required.

2. The design treatment process will be chlorine, ferric chloride, and 8187 polymer injection with filtration, using Pyrolox® media.

3. None of the site or building piping will be modified, with the exception of locating any additional chemical injection sites or the modification of the contact tank piping to provide better air removal.

4. Preparation of any Construction Documents will not require any survey.

5. All costs for regulatory review and permitting will be borne by the District.

SCOPE OF WORK

Gray & Osborne has prepared the following Scope of Work Tasks for engineering design and bidding assistance.

Task 1 – Project Management

Provide overall project management and oversight of the project work by the Principal-in-Charge, Project Manager, and senior staff members. Coordinate with project with City staff.

A. Provide overall project management and oversight services, to include:

   1. Procure sufficient staff resources to dedicate to the project.

   2. Prepare and execute Subconsultant Contracts.

   3. Manage and provide monthly progress reports and invoices.

B. Meet with City staff to review project requirements and design process. Three virtual meetings and one onsite meeting are included in this Scope of Work.

C. Schedule and manage quality assurance/quality control reviews of the Design Documents and cost estimates for each milestone deliverable. Assign staff to perform quality assurance/quality control reviews. Maintain documentation of quality assurance/quality control comments and their resolution.

Task 2 – Prepare Project Report

Prepare Project Report per WAC 246-290-110. The Project Report will contain the following sections.

A. Introduction and background including a discussion of water quality changes over time.

B. Pilot study methods and materials.

C. Pilot study results, discussion, conclusions, and recommendations.

D. Design parameters for proposed modifications.

E. Startup procedures and operations and maintenance considerations.

F. Additional materials, such as the ATEC Report, will be included in the Appendix.

Task 3 – Prepare Project Plans and Specifications

Prepare Project Plans and Specifications to aid the District in construction and to allow the project to be reviewed and approved by the DOH. Project Plans will include the following.

A. Building Plan showing the location of new equipment and injection points.

B. Building sections, as necessary, for equipment installation.

C. Electrical Drawings for a new dedicated chemical feed receptacle and possible 4-20 milliampere (mA) signal circuit for flow-pacing of the new chemical feed system.

D. This Task includes one site visit to discuss proposed improvements with District staff.

Task 4 – Washington State Department of Health Submittals

Submit the Project Report and Project Plans to the DOH for review and approval. Address any DOH comments and resubmit.

Task 5 – Complete Quality Assurance/Quality Control Review

Conduct Quality Assurance/Quality Control reviews of the Draft Project Report, Draft Project Plans, and Specifications.

Task 6 – Construction Support and Startup Assistance

Provide construction support as needed, and startup support.

A. Provide up to 8 hours of in-office construction support for District Requests for Information (RFIs) and other questions.

B. Provide two site visits of 2 days each for startup assistance to verify optimal chemical feeds and other operational parameters.

C. Provide an Operations Manual documenting the recommended operation of the new facility based upon the information in the Project Report and the findings observed during startup.

BUDGET

Based on the Scope of Work described, the total estimated cost for engineering services is $42,230 as shown in the attached Exhibit B.

DELIVERABLES

This Scope of Work will provide the following deliverables.

1. Draft Project Report and Draft Plans and Specifications for District review.

2. Final Project Report, Plans, and Specifications.

3. Operations Manual.

4. Electronic files in pdf format will be supplied for each deliverable.

EXHIBIT B

ENGINEERING SERVICES
SCOPE AND ESTIMATED COST

NORTH BEACH WATER DISTRICT - SOUTH WELLFIELD TREATMENT IMPROVEMENTS

Tasks	Principal-In-Charge Hours	Project Manager Hours	Civil Engineer Hours	Electrical Engineer Hours	AutoCAD/ GIS Technician/ Engineer Intern Hours
1 Project Management		4			
2 Prepare Project Report		12	32		
3 Prepare Project Plans and Specifications		16	16	40	40
4 Washington State Department of Health Submittals		4	4		
5 Quality Assurance/Quality Control Review	2	2	2		
6 Construction Support and Startup Assistance		24	48		8
Hour Estimate:	2	62	102	40	48
Fully Burdened Billing Rate Range:*	$170 to $270	$170 to $270	$140 to $190	$120 to $245	$70 to $190
Estimated Fully Burdened Billing Rate:*	$265	$260	$165	$225	$135
Fully Burdened Labor Cost:	$530	$16,120	$16,830	$9,000	$6,480

Total Fully Burdened Labor Cost:	$	48,960
Direct Non-Salary Cost:		
Mileage & Expenses (Mileage @ current IRS rate)	$	600
TOTAL ESTIMATED COST:	**$**	**49,560**

* Actual labor cost will be based on each employee's actual rate. Estimated rates are for determining total estimated cost only. Fully burdened billing rates include direct salary cost, overhead, and profit.