

April 19, 2024

Jeff Jiang, P.E.

CITY OF HOLLYWOOD

Department of Public Utilities

Engineering and Construction Services Division

Post Office Box 229045

Hollywood, Florida 33022

City of Hollywood SRWWTP
Temporary Hypochlorite System

Dear Mr. Jiang:

As requested, Hazen and Sawyer, D.P.C. (Hazen) is pleased to offer engineering services for the design of a fast-track temporary hypochlorite system for the Southern Regional Wastewater Treatment Plant (SRWWTP).

BACKGROUND

As part of the SRWWTP operating permits from the Florida Department of Environmental Protection (FDEP) and Broward County Resilient Environmental Department (BCRED), disinfection is required for surface water discharge and for the production of public access reuse water. Chlorine is a strong oxidizing agent that destroys waterborne disease-causing organisms. The SRWWTP currently uses gaseous chlorine to disinfect the treated effluent prior to ultimate disposal. Based upon the risks associated with the toxic nature of chlorine gas and the condition of the SRWWTP's existing chlorine gas system, the City has decided to replace the chlorine gas system with a hypochlorite system within the existing Chlorine Building. A temporary hypochlorite system is therefore needed in the interim to facilitate demolition of the existing system and construction of the new system. This scope of services provides for the design and procurement of a temporary system.

SCOPE OF SERVICES

Task 1 – Basis of Design Report

Hazen shall provide the City with an initial data request consisting of a minimum of three years of chlorine usage and effluent flow data. Hazen shall also collect and compile existing drawings, related to the current gaseous chlorination system. Upon receipt of data requested, Hazen shall arrange for and attend one kickoff meeting with City via Microsoft Teams to outline the detailed requirements for the design. Based on the data provided, Hazen will develop a Technical Memorandum summarizing the basis of design for a temporary hypochlorite system to replace current gaseous chlorine usage to facilitate the ultimate conversion of the gaseous system located in the existing Chlorine Building. The Technical Memorandum will be drafted for the purposes of permitting submitted to the City for review and comment. Two calendar days for City review are assumed in Hazen's time of performance. After review, Hazen will finalize the memorandum for use in pursuing regulatory acceptance and develop an opinion of probable construction cost

(OPCC). The OPCC shall be classified as an order of magnitude estimate as defined by the Association for Advancement of Cost Engineering (AACE) International.

Task 2 – Detailed Design

Hazen shall prepare contract documents (plans and specifications) for permitting, bidding, and construction of the temporary hypochlorite system as outlined in the Technical Memorandum developed under Task 1. The system is anticipated to replace the current maximum day gaseous chlorine use on a temporary basis while the design and construction of a permanent hypochlorite system to be located within the existing Chlorine Building takes place. The design will be limited to a temporary hypochlorite system consisting of dual containment HDPE storage tanks for 12.5% sodium hypochlorite and a packaged chemical metering system located outside in the vicinity of the existing Chlorine Building to facilitate connection to the existing chlorine solution distribution pipelines. For this temporary facility, no day tank, transfer pump or building design is included. Hazen shall provide City with electronic PDF copies of the plans and specifications. Hazen shall meet with City staff to receive and discuss City's review comments at the 100% design stage. The 100% design milestone submittal shall consist of draft final plans and specifications. Seven calendar days for City review are assumed in Hazen's time of performance. Upon review and comment by City staff of the 100% plans and specifications, the entire contract document set including the City's front end documents, technical specifications and construction drawings incorporating the comments for all work proposed will be submitted. No additional design modifications are anticipated.

It is anticipated that permits will be required for this project from Broward County Resilient Environmental Department (BCRED), Florida Department of Environmental Protection (FDEP) and the City of Hollywood Building Department. Hazen shall provide signed and sealed contract documents for permitting. It is also anticipated that a minor modification to the operating permit will be needed. Hazen will provide permitting services for FDEP and BCRED and assist the City with pre-permitting activities with the City of Hollywood Building Department. The City will pay all permit fees. An allowance for professional land surveying services proximate to the proposed hypochlorite facility is included and to be used at the City's discretion, if needed, as these services may already be procured under other on-going work at the SRWWTP.

Task 3 – Bidding Services

Hazen shall assist the City during the bidding phase for the project. Activities to be performed are as follows: attend a pre-bid conference, reply to bidders' technical questions, draft up to two addenda to the technical specifications and drawings for City distribution, review the Bid Proposal form, prepare a Bid Tabulation, check contractor references of the lowest responsive bidder, and issue a recommendation of award. Contract document packages will be produced, sold and/or distributed by the City.

KEY ASSUMPTIONS

Key assumptions concerning this scope are:

- Design of the disconnection and/or demolition of the existing gaseous chlorination system is not included.
- Existing electrical conduit, electrical feeds, instrumentation conduit are adequate for the envisioned project and will not require expansion or replacement.

- Due to all work taking place on the SRWWTP site, a boundary survey is not included. If needed, it will be procured under a separate work order.
- Miscellaneous underground utility locates and geotechnical investigations are not included. If needed, these items will be procured under a separate work order.
- City will provide access to all data and facilities necessary for execution of the work.
- No owner-furnished / pre-purchasing of equipment is anticipated.
- No soil contamination exists in the project area.
- The design approach will address minimal downtime of the existing operating facilities.
- Since the proposed impervious area is relatively small compared to the SRWWTP overall area, it is assumed that a modification to the existing ERP is not required.
- Value engineering and other outside reviews (other than City staff review) are not anticipated.
- No local minority business enterprise or local small business enterprise participation is envisioned.
- The City will competitively bid the project and enter into an agreement with an outside Contractor to complete the work. No prequalification of Contractors will be performed.
- The City will provide front end documents applicable to the project.
- The development of conformed contract documents will be performed by others.
- Services during construction, if needed, will be included under a separate work order.

COMPENSATION

Due to the fast-track nature of the project, engineering services will be performed for a lump sum fee of \$334,918. A not-to-exceed land surveying allowance of \$10,000 has been added for use at the City's discretion for a total possible fee of \$344,918. A preliminary drawing list is attached.

SCHEDULE

Engineering services will be completed within 120 working days from Project Kickoff in accordance with the attached fast-track schedule which assumes project kickoff beginning June 2024. This schedule includes 60 days for permitting through BCRED, FDEP and City of Hollywood Building Department review.

Engineering services for the project will be performed as part of the Professional Services Agreement for General Engineering Hazen Services (Agreement) dated October 2023. Services provided by Hazen and Sawyer, D.P.C. shall be limited to those services specifically identified in this work order.

We look forward to your reply. In the meantime, should you have any questions, please contact us.



Very truly yours,

Hazen AND SAWYER, P.C.

A handwritten signature in blue ink, appearing to read "J. Philip Cooke", written over a faint, larger blue ink signature.

J. Philip Cooke, P.E.
Vice President

c: File No. 4321-016/1.0

Attachments

**CITY OF HOLLYWOOD
SOUTHERN REGIONAL WASTEWATER TREATMENT PLANT
TEMPORARY HYPOCHLORITE SYSTEM
Fee Breakdown**

<u>Tasks</u>	Labor Hours										<u>Subtotal</u>	<u>Fee</u>
	<u>Senior Officer</u>	<u>Senior Associate</u>	<u>Associate</u>	<u>Senior Principal Engineer</u>	<u>Principal Engineer</u>	<u>Engineer</u>	<u>Senior Principal Designer</u>	<u>Senior Designer</u>	<u>Senior Drafter</u>	<u>Admin Assistant</u>		
LABOR												
Task 1 - Basis of Design Report	2	8	16	32	48	0	0	24	24	10	164	\$ 31,272
Task 2 - Detailed Design	24	64	80	128	468	560	40	92	144	48	1648	\$ 285,148
Task 3 - Bidding Services	2	8	0	48	0	0	0	8	16	24	106	\$ 18,398
Subtotal	28	80	96	208	516	560	40	124	184	82	1,918	\$ 334,818
DIRECT EXPENSES												
Survey Allowance												\$ 10,000
Out-of-pocket												\$ 100
Subtotal												\$ 10,100
Total												\$ 344,918
Maximum Hourly Labor Rate	335.27	332.07	293.76	207.55	194.77	130.91	179.13	159.65	105.37	89.40		

CITY OF HOLLYWOOD
SOUTHERN REGIONAL WASTEWATER TREATMENT PLANT
TEMPORARY HYPOCHLORITE SYSTEM
Preliminary Drawing List

SHEET COUNT	DWG No.	TITLE
GENERAL		
1	G-1	TITLE SHEET, LOCATION MAP AND LOCATION MAP
2	G-2	LIST OF DRAWINGS, SECTIONS AND DETAILS IDENTIFICATION
3	G-3	ABBREVIATIONS AND SYMBOLS
4	G-4	EXISTING SITE & STAGING PLAN
CIVIL		
5	C-1	PROPOSED SITE PLAN
6	C-2	SODIUM HYPOCHLORITE YARD PIPING
7	C-3	PAVING, GRADING, AND DRAINAGE PLAN
8	C-4	MISCELLANEOUS CIVIL DETAILS
MECHANICAL		
9	M-1	CHLORINE FACILITY - PROPOSED PLAN
10	M-2	SODIUM HYPOCHLORITE - PROCESS FLOW DIAGRAM - SHEET 1
11	M-3	SODIUM HYPOCHLORITE - PROCESS FLOW DIAGRAM - SHEET 2
12	M-4	SODIUM HYPOCHLORITE SYSTEM - PLAN
13	M-5	SODIUM HYPOCHLORITE SYSTEM - SECTIONS
14	M-6	SODIUM HYPOCHLORITE SYSTEM - TANK NOZZLE LAYOUT
15	M-7	MECHANICAL DETAILS - SHEET 1
16	M-8	MECHANICAL DETAILS - SHEET 2
STRUCTURAL		
17	S-1	STRUCTURAL GENERAL NOTES
18	S-2	SODIUM HYPOCHLORITE SYSTEM - PLAN
19	S-2	SODIUM HYPOCHLORITE SYSTEM - SECTIONS
20	S-3	STRUCTURAL DETAILS - SHEET 1
21	S-4	STRUCTURAL DETAILS - SHEET 2
INSTRUMENTATION		
22	I-1	INSTRUMENTATION AND CONTROLS SYMBOLS AND LEGEND
23	I-2	CONTROL SYSTEM BLOCK DIAGRAM
24	I-3	SODIUM HYPOCHLORITE SYSTEM P&ID - SHEET 1
25	I-4	SODIUM HYPOCHLORITE SYSTEM P&ID - SHEET 2
26	I-5	SODIUM HYPOCHLORITE SYSTEM FILL & METERING PUMP LCP
27	I-6	INSTRUMENTATION DETAILS SHEET
ELECTRICAL		
28	E-1	ELECTRICAL LEGEND AND SYMBOLS
29	E-2	ELECTRICAL GENERAL NOTES
30	E-3	ELECTRICAL SITE PLAN
31	E-4	SODIUM HYPOCHLORITE SYSTEM LAYOUT
32	E-5	SODIUM HYPOCHLORITE SYSTEM ELECTRICAL PLAN - SHEET 1
33	E-6	SODIUM HYPOCHLORITE SYSTEM ELECTRICAL PLAN - SHEET 2
34	E-7	ELECTRICAL BUILDING LAYOUT
35	E-8	SINGLE LINE DIAGRAM
36	E-9	RISER DIAGRAM - SHEET 1
37	E-10	RISER DIAGRAM - SHEET 2
38	E-11	ELECTRICAL CONDUIT & PANELBOARD SCHEDULES
39	E-12	ELECTRICAL DETAILS SHEET 1

ID	Task Name	Duration	Start	Finish	JuneJulyAugustSeptemberOctoberNovemberDecember											
1	Fast-Track Hypochlorite System	120 days	Mon 6/3/24	Fri 11/15/24												
2	Design	67 days	Mon 6/3/24	Tue 9/3/24												
3	Project Initiation	1 day	Mon 6/3/24	Mon 6/3/24												
4	Kick-off Meeting	1 day	Mon 6/3/24	Mon 6/3/24												
5	Basis of Design Report	30 days	Tue 6/4/24	Mon 7/15/24												
6	Draft BODR	21 days	Tue 6/4/24	Tue 7/2/24												
7	City Review	2 days	Wed 7/3/24	Thu 7/4/24												
8	Final BODR	7 days	Fri 7/5/24	Mon 7/15/24												
9	Detail Design - 100% Design	66 days	Tue 6/4/24	Tue 9/3/24												
10	Develop 100% Design	59 days	Tue 6/4/24	Fri 8/23/24												
11	City Review	7 days	Mon 8/26/24	Tue 9/3/24												
12	Permitting	43 days	Wed 9/4/24	Fri 11/1/24												
13	Submit Permit Applications to FDEP	1 day	Wed 9/4/24	Wed 9/4/24												
14	Submit Pemit Application to CoH Building Dept	1 day	Wed 9/4/24	Wed 9/4/24												
15	Permit Review and Approval FDEP	42 days	Thu 9/5/24	Fri 11/1/24												
16	Permit Review and Comment CoH Building Dept	42 days	Thu 9/5/24	Fri 11/1/24												
17	Bidding	10 days	Mon 11/4/24	Fri 11/15/24												
18	Submit Final Bid Documents	10 days	Mon 11/4/24	Fri 11/15/24												
19																
20																

Project: Bar Screen Bypass Preli
Date: Thu 4/4/24

TaskInactive Task

SplitInactive Milestone

MilestoneInactive Summary

SummaryManual Task

Project SummaryDuration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

External Tasks

External Milestone

Deadline

Critical

Critical Split

Progress

Manual Progress

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