



1365 Hamlet Ave Clearwater, FL 33756, (727) 442-7196

**WORK ORDER INITIATION FORM
for the CITY OF CLEARWATER**

Date: April 21, 2017
Project Number: 0992-0235
City Project Number: 17-0008-UT

1. PROJECT TITLE:

RO2 Well Modifications

2. SCOPE OF SERVICES:

The City of Clearwater (City) constructed 11 new brackish groundwater wells that provide feed water to Reverse Osmosis Water Treatment Plant No. 2 (RO2). Since the wells have been in production, the water quality in wells 2-7 (Allen’s Creek East), 2-8 (Allen’s Creek West) and 2-9 (Safety Village) has declined (primarily due to elevated chloride concentrations). This change in water quality has negatively impacted the operations of RO2, resulting in increased RO feedwater pressures and suspended solids, along with higher levels of bromide in the source water supply. SDI Environmental Services, Inc. (SDI) prepared the *Review of RO2 Hydrologic Data (October 20, 2016)* that documented the wells issues and provided recommendations to back plug each of these wells at specific below land surface (BLS) elevations to improve feed water quality.

The City has requested McKim & Creed to provide professional engineering consulting services needed to permit, back plug and test the referenced groundwater wells. The work included with this scope of services includes the following tasks:

TASK 1.0 – Project Management, Administration and Meetings

McKim & Creed will coordinate with our subconsultants, SDI and Applied Engineering to perform project management, administration, meetings and coordination services.

Task 1.1 – General Project Management

McKim & Creed will provide general project management services including: project management plan, progress reports, invoicing, and general coordination.

Task 1.2 –Project Meetings

McKim & Creed will prepare agenda and conduct the following project meetings:

- Kickoff Meeting
- Technical Memorandum No. 1 (Well Back Plugging) Review Meeting

For each meeting, minutes will be prepared and provided to City staff via e-mail (PDF copy).

Task 2.0 – Well Back Plugging

Task 2.1 – Back Plug Wells 2-7, 2-8 and 2-9

McKim & Creed will coordinate with SDI and Applied Drilling to perform the following for each of the three wells:

- Develop plan for discharge of test water
- Back plugging plan review meeting (will cover all three wells)
- Pull existing pump
- Back plug well
- Reinstall pump
- Conduct 1 hour specific capacity test and collect water quality sample from each test
- Acidize well
- Repeat 1 hour specific capacity test and water quality sampling
- Draft Technical memorandum No. 1 (Task 1.2) review meeting with City

Task 2.2 – Well Back Plugging Technical Memorandum

Using the information obtained in previous tasks, a technical memorandum will be developed to summarize the back plugging activities and results. Additionally, the revised wells' specific capacity will be used to evaluate the sizes of the existing pumps and recommendations for new pumps will be provided, if necessary. Five (5) copies of the draft technical memorandum will be submitted to the City along with an electronic (PDF) copy via e-mail. City comments from review meeting (Task 1.2) will be incorporated into the final memorandum and five (5) signed & sealed copies of the memorandum will be provided to the City along with a CD or DVD-ROM to include memorandum and other relevant information.

City comments from review meeting (Task 1.2) will be incorporated into the final memorandum and five (5) signed & sealed copies of the memorandum will be provided to the City along with a CD or DVD-ROM to include memorandum and other relevant information. Any produced plans will be compiled using the City of Clearwater CAD standards, as attached (Attachment A).

TASK 3.0 – PERMITTING SERVICES

McKim & Creed will coordinate with our subconsultants, SDI and Applied Engineering to obtain SWFWMD well modification permit and generic discharge permit. Copies of permits will be provided to the City.

ASSUMPTIONS AND ADDITIONAL INFORMATION:

- Specific capacity testing and well development will be performed with the permanent well pumps in place utilizing existing power, flowmeter and valving.
- If necessary, City may provide alternate pump/motor components to be reset.
- McKim & Creed team will provide and operate a downhole pressure transducer for water level measurement during capacity testing utilizing the existing 2-inch port in the wellhead.
- Pumped water location will be agreed upon with the City and McKim & Creed team.
- McKim & Creed team will supply temporary piping and erosion/turbidity control. If blending of discharge water with hydrant water is necessary, we will provide temporary piping within reasonable limits.
- Cost of potable water, if needed, will be paid by the City.
- Food grade hydrochloric acid (HCL) and corrosion inhibitor will be provided by the McKim & Creed team.

3. PROJECT GOALS:

The main project goals are to improve water quality for wells 2-7, 2-8 and 2-9 and the RO2 wellfield. The project is complete when the Technical Memorandum prepared during Task 2 is accepted by the City.

4. BUDGET:

See Attachment "B".

This price includes all labor and expenses anticipated to be incurred by McKim & Creed, Inc. for the completion of these tasks, in accordance with Professional Services Method "B" – Lump Sum – Percentage of Completion by Task, for a fee of **One Hundred Nineteen Thousand, Four Hundred Forty-Four Dollars (\$119,444.00)**.

Permit application fees will be paid by McKim & Creed.

5. SCHEDULE:

Project schedule will commence upon receipt of written authorization from the City. The total project with construction is to be completed within **130 calendar days** from issuance of notice-to-proceed (NTP). The project shall be phased as follows (relative to NTP):

Kickoff / Back Plugging Plan Review Meeting	14 calendar days
Well Back Plugging	70 calendar days
Final Tech Memo	130 calendar days

6. STAFF ASSIGNMENT (Consultant):

Phil Locke, PE – Project Manager / Lead Engineer
Cathleen Jonas, PG – SDI
Stuart Anderson – Applied Drilling Engineering, Inc.
Nicole Smith, EI – Staff Engineer

7. CORRESPONDENCE/REPORTING PROCEDURES:

Engineer’s project correspondence shall be directed to:
Phil Locke, PE

All City project correspondence shall be directed to:
Jeremy Brown, PE with copies to others as may be appropriate.

8. INVOICING/FUNDING PROCEDURES:

For work performed, invoices shall be submitted monthly to the City of Clearwater, Engineering Department, Attn.: Veronica Josef, Senior Staff Assistant, PO Box 4748, Clearwater, Florida 33758-4748. Contingency services will be billed as incurred only after written authorization provided by the City to proceed with those services.

City Invoicing Code: 0382-96767-561300-533-000-0000

9. INVOICING PROCEDURES

At a minimum, in addition to the invoice amount(s) the following information shall be provided on all invoices submitted on the Work Order:

- A. Purchase Order Number and Contract Amount.
- B. The time period (begin and end date) covered by the invoice.
- C. A short narrative summary of activities completed in the time period
- D. Contract billing method – Lump Sum or Cost Times Multiplier
- E. If Lump Sum, the percent completion, amount due, previous amount earned and total earned to date for all tasks (direct costs, if any, shall be included in lump sum amount).
- F. If Cost Times Multiplier, hours, hourly rates, names of individuals being billed, amount due, previous amount earned, total earned to date for each task and other direct costs (receipts will be required for any single item with a cost of \$50 or greater or cumulative monthly expenses greater than \$100).
- G. If the Work Order is funded by multiple funding codes, an itemization of tasks and invoice amounts by funding code.

10. SPECIAL CONSIDERATIONS:

The consultant named above is required to comply with Section 119.0701, Florida Statutes (2013) where applicable.

PREPARED BY:

**A. Street Lee, PE
Senior Vice President
McKim & Creed, Inc.**

Date

APPROVED BY:

**Michael D. Quillen, PE
City Engineer
City of Clearwater**

Date



CITY OF CLEARWATER ENGINEERING DEPARTMENT

WORK ORDER INITIATION FORM CITY DELIVERABLES

1. **FORMAT**

The design plans shall be compiled utilizing the following methods:

1. City of Clearwater CAD standards.
2. Datum: Horizontal and Vertical datum shall be referenced to North American Vertical Datum of 1988 (vertical) and North American Datum of 1983/90 (horizontal). The unit of measurement shall be the United States Foot. Any deviation from this datum will not be accepted unless reviewed by City of Clearwater Engineering/Geographic Technology Division.

2. **DELIVERABLES**

The design plans shall be produced on bond material, 24" x 36" at a scale of 1" = 20' unless approved otherwise. Upon completion the consultant shall deliver all drawing files in digital format with all project data in Autodesk Civil 3D file format. If not available Land Desktop files are still acceptable, however the City or Clearwater is currently phasing out Land Desktop.

NOTE: If approved deviation from Clearwater CAD standards are used the Consultant shall include all necessary information to aid in manipulating the drawings including either PCP, CTB file or pen schedule for plotting. The drawing file shall include only authorized fonts, shapes, line types or other attributes contained in the standard release of Autodesk, Inc. software. All block references and references contained within the drawing file shall be included. Please address any questions regarding format to Mr. Tom Mahony, at (727) 562 4762 or email address Tom.Mahony@myClearwater.com.

All electronic files (CAD and Specification files) must be delivered upon completion of project or with 100% plan submittal to City of Clearwater.

R02 Well Modifications

McKim & Creed, Inc.

WORK ORDER INITIATION FORM PROJECT BUDGET

Task	Description	Subconsultant Services	Labor	Total
1.0	Project Management, Administration and Meetings			
1.1	General Project Management		\$8,514	\$8,514
1.2	Project Meetings	\$1,300	\$2,181	\$3,481
1.3	Task Allowance (10%)			\$1,200
				\$13,195
2.0	Well Back Plugging			
2.1	Back Plug Wells 2-7, 2-8 and 2-9	\$84,137	\$2,151	\$86,288
2.2	Well Back Plugging Technical Memorandum	\$7,900	\$1,376	\$9,276
2.3	Task Allowance (10%)			\$9,556
				\$105,120
3.0	Permitting			
3.1	Task Allowance (10%)		\$1,026	\$1,026
				\$1,129
Subtotal, Labor and Subcontractors				\$119,444
Grand Total				\$119,444