

**SULTAN CITY COUNCIL  
AGENDA ITEM COVER SHEET**

**DATE:** April 23, 2009

**ITEM:** C - 8

**SUBJECT:** Approval to Advertise for Material Bids to convert the chlorine treatment at the Water Treatment Plant from gaseous to liquid form.

**CONTACT PERSON:** Jon Stack, City Engineer

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**Issue:**

The issue before the Council is to consider advertising the chlorine conversion project for public bid. This project was approved and provided for in the 2009 budget. The preliminary budget is \$40,000 from Water System Improvements Capital Budget.

**Staff Recommendation:**

Request Council authorize advertising to solicit at least three bids from specialty suppliers for necessary materials for the chlorine treatment conversion from gas to liquid. The installation of the new equipment will be completed by City Staff to reduce costs.

**Summary:**

The existing chlorine room at the water treatment plant has adequate space for the installation of a liquid application of chlorine to the treated water prepared for the City residents. This project is needed to increase the safety of City Workers while providing necessary water disinfectant as part of the water treatment required by the State Department of Health.

**Background:**

The existing chlorination system was installed at the construction of the original plant in 1979 with minor equipment repairs and replacements through the last 30 years.

Changes in technology and applications of liquid chlorine have become more of a standard practice and is much safer. Conditions of the existing chlorine facilities are in poor condition and will require an upgrade to change from gaseous to liquid application. Attached is a draft of the request for material bids.

**Fiscal Impact:**

A preliminary estimate for the necessary materials to complete the conversion was made for the 2009 budget of \$40,000.

**Recommended Action:**

Approve the request for authorization to advertise to solicit at least three written bids from specialty suppliers for the chlorine conversion from gas to liquid at the Water Treatment Plant.

Attachment A. Bid Material List

## ATTACHMENT A

### REQUEST FOR MATERIAL BIDS

The City of Sultan is soliciting bids for materials and equipment to convert the existing gas chlorination treatment at the existing water treatment plant to liquid chlorine system (hypochlorite system). Included with the material submittals will be the necessary design drawings showing where all of the necessary materials and equipment will be located.

The City will provide the dimensions of the existing chlorination room at the water treatment plant and will conduct tours or site visits as necessary for potential bidders. Contact Mike Williams, Water System Manager, at 425-508-9120 to schedule an appointment. For technical questions regarding this material request, please contact Jon Stack, P.E., Sultan City Engineer, at 360-793-2262 or Cell Phone 206-930-7332.

It is the intent of the City to install the new treatment system in-house utilizing City Staff. The bidder shall be available to answer questions regarding his submittal that may arise during construction.

#### **Specifically included in the Material Submittal Bid shall the following:**

1) Two 160 gallon tanks, double wall containment, with sidewall interconnect fitting. Provisions for off-gassing the 12.5% hypochlorite from the pump skid Auto Vent valve and pump PRV's with return line shall be provided.

a. Interconnection fitting with isolation valve and piping to manifold the two tanks together. This allows the two tanks to act as a single system for filling and level measurement. Provide valving to isolate either tank in case repairs are needed. This fitting can also be used as a tank drain line. Provide 1" fill line with outside connection through the south wall and connect to each tank, so that filling can be completed from outside the chlorine room. Provide a through-wall fitting with positive connection to the Drum Pump discharge line. Provide a 110 volt connection on the outside wall (south) to plug in the Drum Pump.

b. The pump suction is made up of 2 rigid suction tubes with foot valves mounted on the tank dome. Tank filling is accomplished utilizing a drum pump and connection to fill line.

c. Attach a level sensor to the tank nearest the door, which since the tanks are interconnected will provide a 4-20 mA signal indicating the level in the combined tank system.

d. Equip each tank with a 2" vent which will be manifolded together and extend outside the west side of the building. This vent line shall end with a 90 degree elbow, facing down with a screen to protect against insect intrusion.

e. Equip Tank #2 with a 1/2" pipe for the return line from the pump's PRV and Auto Vent valve.

f. Provide earthquake tie-downs and wall anchor hardware for each tank.

2) Provide a duplex pump system, pre-piped, to provide 15.8 gph @ 145 psi with a duty and a back up pump. Pumps sizing to be shown on the pump skid drawing. Pumps shall have an 800:1 turndown to allow them to handle the max and the minimum expected plant flow rate. The pumps can be operated manually or electrically flow paced to plant flow rate (4-20 mA). As an option the system can be run in compound loop control utilizing the plant flow rate and the Chlorine analyzer measurements.

a. Pumps shall be supplied with Dosing monitors and Auto Vent valves. Gas coming out of solution gets trapped in the pump and prevents the pump from operating correctly. The dosing monitor senses when the pump is gas bound when it is supposed to be pumping liquid. If it does not sense liquid it opens the Auto Vent valve allowing the trapped gas to return to the storage tank. Once liquid is present it closes the valve and allows normal operation.

b. The pumping system shall be provided on a PVC board for wall mounting with SCH 80 PVC pipe, True Union Ball Valves, both pumps, PRV's, Back Pressure Valve, Auto Vent Valve, Dosing Monitor, Calibration Chamber, Wye Strainer and pump Main/Standby switch.

**Tank #1: 160 Gallon Safe tank, HDXLPE material including:**

- 5" threaded lid
- 2" PVC Vent with pp screen
- 2" PVC fitting for Level
- 1" fitting for metering pump tubing
- Seismic Restraints

**Tank #2: 160 Gallon Safe tank, HDXLPE material including:**

- 5" threaded lid
- 2" PVC Vent
- 2" PVC fitting for Pump return
- 1" fitting for metering pump tubing
- Seismic Restraints

**Duplex Metering Pump System for Sodium Hypochlorite**

Duplex Metering Pump System mounted on a PVC board including:

- 2 each pumps with side mount control panel
- Acrylic dosing monitor
- Automatic Vent Valve
- 16 feet control cable with plug
- Ridged Suction Wand and Foot Valve for Tank Discharge
- ½" PVC Main Connection
- Wall brackets for mounting pump Calibration Column
- Back Pressure and Pressure Relief Valves
- Pre-piped Mounting panel for valves and pumps

Drum Pump for transferring sodium hypochlorite from transport to 160 gallon tanks, equipped with 20' of hose and connection to through-wall fitting. All materials are resistant to any kind of corrosion from 12.5% chlorine liquid. Pump Q minimum of 20 gpm at 14' head.

**Materials Bid Proposal**

Lump Sum Bid

1.	Tank # 1, Complete With Piping, Valves, Fittings, Etc.	\$ _____
2.	Tank #2, Complete With Piping, Valves, Fittings, Etc.	\$ _____
3.	Duplex Metering Pump System, Complete and Fully Assembled	\$ _____
4.	Drum Pump, Complete with External Piping and Wall Fitting and Hose	\$ _____
5.	Technical Assistance During Construction	\$ _____
6.	Drafting of Construction Plan and 5 Copies	\$ _____
7.	*Miscellaneous Item Allowance	\$ 2,000.00
	SUBTOTAL	\$ _____
	State Sales Tax, 8.5%	\$ _____
	TOTAL AMOUNT BID	\$ _____

BIDDERS NAME \_\_\_\_\_

BIDDERS ADDRESS \_\_\_\_\_

BIDDERS PHONE \_\_\_\_\_

DATE \_\_\_\_\_

\* Extra items noted as missing during construction and requested by the City.