



## CITY OF SUGAR LAND

Engineering Department

**CIP Project Number: WA0605**

**Title: Alternative Disinfection**

**Project Phase: Design**

**% of Phase Completion**



**Cost for this Phase: \$ 185,000**

**Funding Sources: Revenue Bond**

**Project Manager: Tim Jahn**

**Contractor: TBD**

**Consultant: Malcolm Pirnie**

### **Project Description:**

Project was originally intended for conversion of the existing gaseous chlorine system to feed sodium hypochlorite by bulk delivery at the five groundwater treatment. However, based on results of the PER, it appears that this option is cost prohibitive. Therefore, project will include leaving the gaseous chlorine system in place and installing chlorine gas scrubber systems at all five plants in the event of a leak. Upgrades to the chlorinators and injectors will also be included in the project.

**Justification:** Due to our water plants close proximity to residential homes, a chlorine scrubber system will be installed at the five groundwater plants in the event of a chlorine gas leak.

**Updates: December 2008-**Interviews for consulting firms scheduled 12/17/08. Consultant selection expected early January 2009. Scope and fee negotiations expected to begin in January 2009.

**March 2009** –Malcom Pirnie Engineers selected design system once a type of system is agreed to by Utilities/Engineering staff (bulk delivery vs. onsite chlorine generation). Malcom Pirnie will update capital and operating costs to determine best method of delivery.

**April 2009** – Malcom Pirnie updated the 2007 study in letter report dated 4/16/09. Based on this information, Utilities staff is recommending other alternatives to address gas chlorine such as installation of chlorine scrubber system. This is being reviewed by staff and Malcom Pirnie.

**June 2009:** Task 1 engineering contract approved with Malcom Pirnie to evaluate and update the capital and annual O&M costs from the Freese and Nichols, Inc. Feb. 2007 study. Task 1 (FNI Study Review) expected to be completed in mid-March. Utilities and Engineering staff will decide if alternative disinfection is a cost effective option.

**July 2009:** Based on capital and operating costs limitations, conversion from gaseous chlorine to liquid chlorine is no longer considered and project will include installation of chlorine gas scrubber system. This system will provide protection to surrounding residents in the unlikely event of chlorine gas release. An engineering fee, scope, and schedule will be negotiated with Malcom Pirnie for this approach.

**August 2009** – City Council approved engineering contract with Malcom Pirnie for design and bidding phase for installation of chlorine scrubber systems and upgrade to the chlorination feed system at the City's five groundwater plants. Design kickoff meeting is scheduled 8/28/09.

**September 2009** – Field reconnaissance held 9/10/09 to collect data at all five groundwater plants by Malcom Pirnie staff. Design memorandum prepared 9/29/09 and in review by City staff. Next progress meeting scheduled 10/09/09 to discuss findings and recommendation to move forward with final design of chlorine scrubbers and upgrades to chlorination feed systems.

**October 2009** – Progress meeting held 10/09/09 to discuss design basis memorandum and additional data needed to move forward with design. 50% design drawings were submitted October 28 for City staff review. Next steps will include completing the design basis memorandum and scheduling a progress meeting in November.

**November 2009** – Progress meeting held 11/11/09 to discuss design basis memorandum and additional data needed to move forward with design. 50% design drawings comments were provided to Malcom Pirnie. Additional field reconnaissance activities held 11/18/09 to fine tune measurements and confirm each plant layout. Next steps will include completing design to 90% and preparing submittal package for TCEQ approval expected in December.

**December 2009** – Progress meeting held 12/16/09 to discuss 90% design plans. Based on comments from City staff, Malcom Pirnie will revise drawings and submit a 95% completion to include design comments and front end construction documents in January 2010. Malcom Pirnie submitted letter to TCEQ to inform them of proposed changes to the chlorinators and to receive TCEQ approval. Next steps will include completing design to 95% and waiting to hear from TCEQ.

**January 2010** – Malcom Pirnie re-submitted 90% review construction documents 01/22/10. Utilities and Engineering staff reviewing documents and will provide comments at next progress meeting scheduled 02/04/10. Next steps will include completing design to 100% and preparing documents for bidding in February/March 2010 timeframe.

**February 2010** – final design to 100% on hold. City utilities staff requested design fee proposal from Malcom Pirnie to include chlorine scrubber for Riverpark WP (annexed by City December 1, 2009). This item will be included as an add alternate during bid in case funds are available to install this additional scrubber. This will push the bidding phase to April/May 2010 timeframe.

**March 2010** – final design to 100% on hold. Malcom Pirnie considering options of eliminating chlorine booster pumps in design to reduce operational complexity. Further evaluation will be needed to determine best course of action for City. Update proposal expected in late March or early April for consideration of City Council approval in April. Bidding phase of project will occur in the May/June timeframe.

**April 2010** – Malcom Pirnie submitted updated proposal to include design of chlorine scrubber for Riverpark WP and additional electrical work for the other water plant scrubbers and chlorinator upgrades. Agenda item was prepared and discussed with City Manager on April 21. City Manager authorized agenda item for City Council approval on May 4, 2010. Final design expected to be completed in July, with bidding phase to begin in July/August.

**May 2010** – City Council approved contract amendment with Malcom Pirnie on May 4. Final design is underway. Site visits held May 14 to gather additional field information and confirm existing yard piping and location of proposed facilities. 95% plan and specifications submittal expected June 4.

**June 2010** – 95% plans and specifications submitted 06/04/10. City staff reviewing plans and will provide comments at the next progress meeting scheduled July 1 with Malcom Pirnie. Project expected to advertise for bidding in late July or early August.

**July 2010** – final plans and specifications completed. Project expected to advertise August 4 and 11, with bid opening scheduled August 19. Base bid will include chlorine scrubbers only, and alternates will include chlorine injector upgrades.

**August 2010** – six bids received August 19, 2010. Apparent low bidder is R&B Group, Inc. for \$930,200 for base bid and all add alternates. Project budget is about \$1,6 MM so project will move forward with recommendation of award at the September 21, 2010 City Council meeting. Construction phase service contract with Malcom Pirnie will be negotiated to coincide with approval of construction contract. Construction expected to begin in mid-October 2010 with 270 calendar days of construction.

**September 2010** – City Council approved construction contract with R&B Group, Inc. for \$930,200. Notice to Proceed expected in October 2010, with substantial completion expected in June 2011. Construction phase services contract with Malcom Pirnie approved.