



Case Study

WTP #6

Waste Water Treatment
Plant Upgrade



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1-800-400-4683

P/N 21553768

Highlights:

- Chart's liquid oxygen (LOX) technology replaces the customer's previous equipment
- The efficiency, reliability and ease of use of the Chart system allowed the operator to reconsider using a different primary system, and instead utilize Chart's system as primary

Location: San Francisco, CA

Scope of Project:

- Custom design, engineering and manufacturing of the storage and vaporization system
- Provide the control system narrative for the full design and implementation process
- Commissioning and training



Application:

The third largest municipal utility in California provides reliable water services to more than 2.6 million residents and industrial customers. The facility treats 60 million gallons of water per day (MGD) and uses oxygen injection in the process. The upgrade required ensuring reliability of the sewer system, operational improvements and seismic retrofits.

Project Background:

As part of San Francisco's 20-year Sewer System Improvement Program, their largest wastewater treatment facility needed to be modernized. The current VPSA system needed a high volume LOX system as backup. The public water utility was putting in plant upgrades which required the LOX system to operate in standby mode and be available to produce the same volume of quality biosolids and odor treatment as the primary system, while minimizing the neighborhood impacts.

System Configuration:

A total of 60,000 gallons of LOX storage on site consists of 4 x 15,000 vertical bulk storage tanks, a remote fill stand, four ambient vaporizers with automatic switching manifold, vacuum jacketed piping (LOX fill and LOX supply lines), a PLC control panel, and a flow meter manifold. The system operates at 45 psi storage pressure and 3 psi send out pressure with the capability of a maximum of 70,000 SCFH 24hr duty cycle.

Significant Accomplishments:

Chart's complete full-scope engineered system approach met public funding requirements for being 100% manufactured in the United States.

Chart's design has reduced future servicing and maintenance costs built-in. For example, vacuum jacketed pipe minimizes the external piping joints and extends lifecycle.

