

**Texas Water Development Board  
Clean Water State Revolving Fund  
Wastewater Treatment Plant (Sequencing Batch  
Reactor) - City of Reno, Texas  
Project ID: 4012-01**



The City of Reno, Texas Wastewater Treatment Plant was expanded from 0.261 MGD to 0.522 MGD to protect downstream waters and to adequately provide for the wastewater disposal needs of its citizens. This project used an innovative technique known as sequencing batch reactor (SBR) continuous flow technology which has resulted in average discharges significantly below permit limits. TCEQ provided permitting and regulatory oversight for this project.

Particular improvements included (1) use of innovative technology where available and cost-effective; and (2) reuse of as much of the existing facility as possible. The heart of the new facility is a dual train sequencing batch reactor, employing a pre-react basin ahead of the main reactor, to allow continuous inflow to the facility. The SBR process eliminates the need for a clarifier separate from the aeration basin, and much of the typical yard piping, and is considered innovative technology under TCEQ 217 design criteria. Screenings removal is accomplished by employing coarse and fine manual screens in series operation, at significantly less cost than a mechanical screen. Rather than expand sludge bed area, a polymer thickening system was employed to reduce drying time from 1 month to a matter of days. Most major components of the existing plant were re-used, including the master lift station, contact stabilization tank, clarifier, control building, storm water retention basin and sludge beds. The clarifier was reused as a disinfection contact tank, and the contact stabilization tank as aerated sludge holding.

Success of the project is measured in terms of achieving or exceeding the desired pollution reduction, within the budget allocated for the project. The plant is exceeding design effluent quality – removals are approximately 97% for CBOD, and 93% for ammonia-nitrogen. The construction cost of \$1,604,509 was below the \$1,617,000 available for construction.

Service provided by Hayter Engineering are listed at right.

This project was completed in 2000.

**CLIENT**

City of Reno

**CONTACT**

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(former) City of Reno

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**CONSTRUCTION COST**

\$1,604,509

**SERVICES PROVIDED**

Preliminary Engineering Report  
Design

Financial Application Assistance

Bid & Award

Storm Water Pollution Prevention Plan

Handicapped Accessibility Review

Start-Up

Operations & Maintenance  
Manual

Construction Review

Warranty Review

Materials Testing

TPDES Discharge Permit