

# Texas Water Development Board - Drinking Water State Revolving Fund - Water Treatment Plant Improvements - 200,000 Gallon Clearwell & Filter Backwash Improvements, City of Emory, TX Project ID: 62527



The 200,000 gallon clearwell is a welded tank with a self supported style roof. The tank is installed with valves that allow the new clearwell to be isolated for service, or to be used while the older clearwell is taken out of service. The piping and valves also allow both clearwells to be used in series or parallel. The 200,000 gallon tank is also directly attached to the filter backwash system for cleaning the filter cells when required. The new clearwell foundation is a ring style foundation that required an over excavation of the subgrade and installation of select fill material to help reduce settlement of the structures foundation.

Another major component of the project was to design a filter piping gallery that would allow the city to easily access and maintain the existing filter backwash piping that was installed below ground when originally constructed. With the filter piping gallery designed, Hayter Engineering designed a new filter-to-waste line and filter backwash line. All new butterfly valves were installed with pneumatic actuation that was connected to a central control panel installed on top of the personnel walk way at the top of the filter wall.

The project also included the backwash pump building, which contains the backwash pumps, piping, and air compressor for the pneumatic valve actuation. The backwash pumps are sized to properly expand the media to allow the filter media to be cleaned without disturbing the filtering quality of the media. With the design of the backwash pump building, the existing subgrade was over excavated 6' and backfilled with select material to reduce potential settlement of the structures foundation.

Along with the installation of the filter piping gallery, the installation of the new 200,000 gallon clearwell and the backwash pump building, there were multiple control valves and piping that were installed to convey, isolate, and better use the water treatment plants upgrades and overall capacity.

## CLIENT

City of Emory

## CONTACTS

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## CONSTRUCTION COST/COMPLETION

Clearwell: \$393,500.00

Completed 2014

Filter Backwash: \$1,271,442.00

Completed 2015

## SERVICES PROVIDED:

Financial Application

Preliminary Engineering Report

Cost Estimates

Design Plans & Specifications

Design Surveys

Boundary-Property Surveys

Geotechnical Engineering

Construction Bid & Award

Construction Review

O & M Manual

Materials Testing

Warranty Review