

# Exceeding Treatment Standards

## Solids CONTACT CLARIFIER™ and ModTech™

CASE STUDY

**Location:** Tensas, Louisiana  
**Owner:** Tensas Water Distribution  
**Engineer:** Pan American Engineers  
**Contractor:** SanTech

### Treatment Challenge

In 2004, Tensas Water Distribution Association set out to replace their water treatment facility. The existing plant in Tensas, Louisiana, was more than 20 years old. The drive unit on their solids contact clarifier was frequently breaking down, and their gravity filter cells were not meeting performance expectations. When the EPA began enforcement of the stage I disinfectants and disinfection by-products (D/DBP) rule for small surface-water systems in 2004, the water district found compliance with the new MCLS for total trihalomethanes (TTHM) and haloacetic acids (HAA5) to be a difficult challenge. Quarterly running annual average values for HAA5 were as high as 143 µg/L.

### Equipment Selection

To meet the needs for better water treatment, WesTech collaborated with Pan American Engineers to design a new plant at Tensas. Operators at the Tensas facility were looking for a design that was similar to their current equipment from an operational standpoint, but superior in performance. Pan American engaged WesTech to provide all of the process equipment and design support for a high-performing facility. WesTech supplied two 28-foot diameter solids CONTACT CLARIFIERS™

Disinfection Byproducts			
DBP	Allowable MCL	2008 Average	Units
TTHM	80	4	µg/L
HAA5	60	6	µg/L

with a flowrate of 450 gpm each and four ModTech™ self-generating backwash gravity filters designed at 250 gpm each.

The WesTech solids CONTACT CLARIFIER combines mixing, internal solids recirculation, gentle flocculation, and gravity sedimentation in a single unit. The low-shear impeller provides high-volume recirculation and low floc shear, while expending less horsepower. ModTech cluster filters have the advantage of a small footprint and simplified controls and operation, with a self-generating backwash.

In addition to the filters and solids CONTACT CLARIFIERS, WesTech also provided the splitter box, rapid mixers, mix tanks, steel tanks, filter media, underdrain, walkways, piping, and valves. WesTech, with more than 40 years of experience in municipal water treatment, is equipped with the expertise and knowledge to provide a wide array of processes and equipment for an entire facility.

In addition to the superior quality of water, operators are now enjoying equipment that is easier to operate and maintain. The SCADA

system incorporated into the design of the facility eases operator burden, making it easy to monitor the system and make changes to operating parameters. With the old filter cells previously used at Tensas, operators had to manually perform a backwash cycle every day. The self-generating backwash filters perform backwash by gravity whether it be based on run time, head loss, or manually initiated. Fully automated controls isolate the filter to be backwashed, and then reconnected to the backwash weir tank.

Because the hydraulic grade line in the backwash weir tank is higher than the drained tank, gravity forces the drained tank into a backwash cycle and the backwash wastewater is diverted to the reject stream. Operators can easily adjust the rate of backwash by adjusting the height of the backwash weir tank outlet on the easy-to-operate HMI. In normal flow, filtrate from all four tanks flows into the backwash weir tank. With the new WesTech equipment, finished water quality at Tensas has improved, with operators reporting an average turbidity of 0.04 NTU, and a dramatic reduction of DBPs.