



Alchatek

CASE STUDY
LEAK SEAL

CLEARWELL CHATTANOOGA, TENNESSEE

Water Treatment Plant Losing *Two Million Gallons Per Day Due to Leaks*

LOST TO LEAKS
2 *million gallons per day*

PRODUCT
Spetec GT500

I · THE PROBLEM

CASE STUDY · 01

01 What made this job *difficult.*

CLEARWELL
CHATTANOOGA, TENNESSEE

On top of a hill northeast of Chattanooga, Tennessee sits a clearwell that belongs to Eastside Utilities. Built in the 1940's on a former Army post, this clearwell consists of twin 2-million gallon tanks used for treating surface water to turn it into drinking water. The problem was that less than half of the water coming into the clearwells was making it out the other side. Although this water treatment plant has undergone several upgrades in its 70+ year lifespan, the ground beneath it has been subject to settling and consolidation. The tanks had shifted slightly and in doing so, loosened some of the joints and the water stops contained within. A short drive downhill from the property revealed various gullies and small creeks created by water running down the hillside.

KEY CONDITION

Twin 2-million gallon clearwell tanks had shifted due to settling and consolidation of the ground beneath them, loosening joints and water stops around the perimeter walls and roof support columns.

THE CONSTRAINT

1,700 *gallons per minute*

LEAK RATE MEASURED

well over 2-million gallons per day

02 What was specified, *and how it went in.*

SPETEC GT500

An Alchatek certified installer was called in to utilize Spetec GT500, an NSF / ANSI 61 approved product for contact with drinking water, to seal the leaks. This single component polyurethane resin is designed to penetrate and seal off leaks in cracks, joints, and pipe penetrations. As a hydrophilic polyurethane, it chases down water and gets into the microstructure of the concrete, forming a flexible seal and a tenacious bond with the wet concrete.

THE MATERIAL

Spetec GT500

SPETEC GT500

Single component, hydrophilic polyurethane resin; NSF / ANSI 61 approved for contact with drinking water.

THE METHOD

01
Identify
All of the joints around the perimeter walls were suspect as well as the roof support columns throughout each clearwell that penetrated through the floor.

02
Drill
The contractor drilled holes to intersect the leaking joints around the perimeter of the clearwell and along all interior joints.

03
Install
Injection ports were installed.

04
Inject
Spetec GT500 was pumped into each port to create an injected membrane within the joints and beneath the clearwell.

SAFE FOR DRINKING WATER

Spetec GT500 is NSF / ANSI 61 approved for contact with drinking water.

As a hydrophilic polyurethane, it chases down water and gets into the microstructure of the concrete, forming a flexible seal and a tenacious bond with the wet concrete.

LESS THAN HALF

Less than half of the water coming into the clearwells was making it out the other side.

03 What the result was, *and what confirmed it.*

REMAINING LEAK RATE

After three days of injection the work was done and the site was cleaned up. Monitoring after the Spetec GT500 was installed indicated that the leak had been reduced from 1,700 gallons per minute to 10 gallons per minute. The small number of remaining leaks were attributed to the many vintage valves and fittings that are still present at the plant.

REMAINING LEAK RATE

10 *gallons per minute*

Reduced from 1,700 gallons per minute to 10 gallons per minute after three days of injection.

AT A GLANCE

450 p.s.i.	350 %	Less than 2 %	300 - 330 Centipoise
TENSILE STRENGTH	**TENSILE ELONGATION**	**SHRINKAGE**	**SAME DAY VISCOSITY AT 25° C (77° F)**
ASTM D-3574	ASTM D-3574	ASTM D-1042/D-756	

WHAT REMAINS

The few remaining leaks were attributed to the many vintage valves and fittings still present at the plant.

START THE CONVERSATION

Send us the job.
We will send back an approach.

Send us the soil report or the failure photos and Technical Services will return a written approach within two business days.

TECH SUPPORT

404 · 618 · 0438

WWW.ALCHATEK.COM

Alchatek manufactures polyurethane resins, chemical grouts, and injection equipment for infrastructure repair: leak sealing, soil stabilization, concrete lifting, and seawall repair. Headquarters in Tucker, Georgia, with a bonded warehouse in Reno, Nevada.

Information in this document is believed accurate at the date of publication. Product performance depends on site conditions and application; consult the current Technical Data Sheet, which is the controlling document.