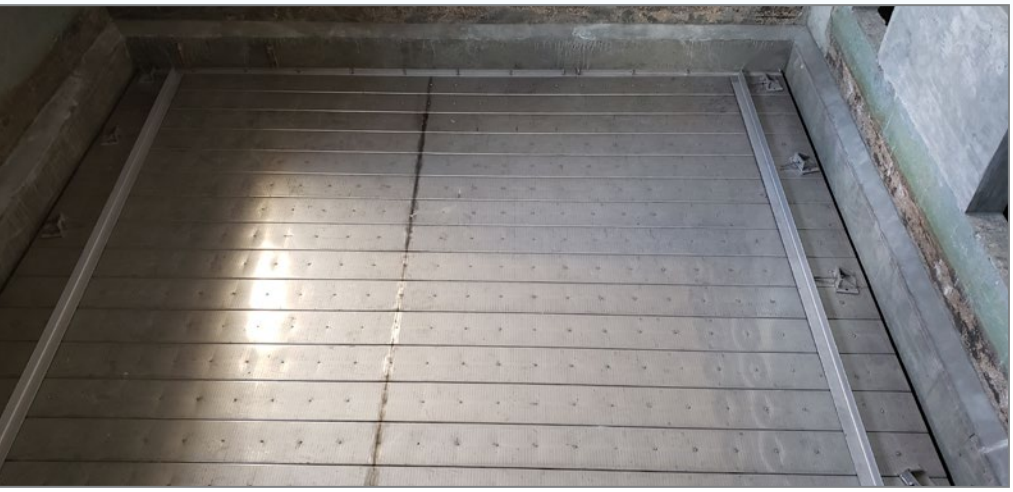
LAZERFLO® REPLACES FAILING BLOCK UNDERDRAINS

RECOVERED FILTERING AREA FOR THE CITY OF DURANT



Overview

The City of Durant, Oklahoma, produces an average 3.8 million gallons per day (MGD) – or 14,385 cubic meters per day (m^3/d) – of potable water for over 15,000 citizens and tourists. After its concrete gravity filter underdrain failed multiple times, the City opted to replace its block underdrain system rather than continue to rehabilitate it. While analyzing the plant's alternatives, WesTech engineers found that a previous crew had filled the last foot of the filter cell with grout because a shortened flume could not provide lateral air and water feeds there. The engineers also learned that the plant had recently installed a stainless-steel air header, which it wished to continue using.

Based on these and other considerations, the engineers recommended LAZERFLO® low-profile underdrain as the best replacement option. The LAZERFLO underdrain is constructed of interlocking stainless-steel strips with laser-cut slots that retain fine media without the need for gravel support. It stands a mere 6 inches (15 centimeters) high and anchors directly to the concrete floor upon which it rests, providing true strength to the installation. In addition, with the LAZERFLO underdrain's open-plenum design, the shortened flume is not an issue, allowing for an increased filter area. ■

RESULTS

6%
Reclaimed Filter Area

2 Person
Installation Crew

> 0.25 Millimeter
Fine Media Retention Without Support Gravel

Project Summary

City of Durant, Oklahoma Water Treatment Plant

Location:
Durant, Oklahoma, USA

Application:
Municipal Water

Process:
Gravity Filtration With Concrete Basin

Size:
17.83 feet x 13.83 feet (5.43 meters x 4.96 meters)

Peak Capacity:
7.5 MGD (28,391 m^3/d)

Highlights

- Filter's design hydraulic loading rate is 1-6 gallons per minute (gpm) per square foot (or 2.4-14.4 meters per hour).
- Underdrain easily accommodates the plant's 42 inches (1.1 meter) of mixed media bed without supporting gravel.
- Backwash method for cleaning the media bed is air scour using the plant's existing stainless-steel air header followed by a water backwash.
- Open-plenum design eliminates the need for lateral air and water feeds at each underdrain strip, enabling the plant to recover lost filtering area.

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