

# CASE STUDY : NOZZLES



## Introduction

Scottish Water were experiencing “extremely violent” backwash cycles at one of their plants. This was leading to issues such as excessive **media loss** through the transfer of substrate out of the bed, and into the wash water recovery tank. This process was having a **devastating impact** on pumping systems.



## Solution

Rather than incurring significant environmental, monetary, and time costs by conducting a traditional refurbishment, Scottish Water came to Panton McLeod for an **innovative solution**. The company devised a method to inject PM77 at the correct level whilst keeping the media **in situ**. This was achieved by utilising lances and filling the plenum to the desired level in order to provide a foundation for the PM77 layer to sit upon. After the successful removal of biofouling, backwash cycles were returned to a steady state; resolving the issue of excessive media loss.

## Investigation

The team discovered that the nozzles in their filter bed were **choked up** by biofouling. They needed to remove this film but did not want to incur the **costs** and **inconvenience** of having to move all their media to do so. It also transpired that their supplier no longer manufactured the desired parts, so they would have to be custom made.



## Challenges

“Everything from volumes to dilution rates to contact time, waste management and scaffolding set up had to be **precise, effective and efficient** to ensure the team were **successful**. If it didn’t meet this criteria the team would rethink and come up with another solution.”

*Quotes taken from Iain Ross, Capital Liaison Engineer*

## BENEFITS DELIVERED



RESTORED FITTINGS

**-94%**

REDUCTION IN MEDIA LOSS



UNIFORM BACKWASH CYCLES