Improving filter performance with PM cleaning

Using our proprietary PM77 cleaning system, we successfully removed inorganic build-up from the underdrain of a secondary manganese filter at a water treatment site in Scotland.

Panton McLeod
A Stonbury company

In **summary**

→ Inorganic fouling was causing high differential pressure in the filter underdrain

→ To avoid a costly and disruptive filter change, we delivered a specialist filter clean

→ Our work restored the optimal flow rate and functional performance of the filter

The **need**

Our client requested our services to clean a secondary manganese filter after noticing that inorganic fouling – mainly iron and manganese build up – was causing high differential pressure in the filter underdrain, prompting the high-pressure alarm to activate.

The **solution**

Our team used the proprietary PM 77 Cleaning System to target the inorganic fouling and improve the performance of the filter, restoring the correct pressure to the system.

After safely preparing the site for the three-day project, we prepared the PM 77 solution to the dilution and dosage tailored to the project needs. We then pumped the solution through specially configured hosing into the beds. After an agreed three hours contact time, we removed the solution and applied a neutraliser solution to the bed to increase the pH back to a neutral level (between 6.5 and 9).

Once the asset was empty, the pipework was reinstated by our client, who then undertook backwashing samples to test the efficacy of the works. The results of these tests showed a significant reduction in filter headloss value, from 0.12 bar prior to cleaning, to 0.07 bar after the clean. Prior to the clean, the backwash flow rate did not exceed 145 m3/hr.

After the cleaning, this was successfully increased to 210 m3/hr. The asset was returned to service immediately following collection of the results.

The **benefits**

- The proprietary PM 77 Cleaning System restored the backwash efficiency and overall performance of the filter bed, without the need to remove or replace the filter media.
- The in-situ cleaning avoided expensive and disruptive media replacement and refurbishment.
- Cleaning with this system can significantly extend the filter life.
- The works have restored hydraulic performance by removing inorganic compounds including iron and manganese from the filter media, underdrains and filter floors.
- Delivered within just three days, the clean avoided disruptive asset downtime.
- The clean has helped prevent related infrastructure failures.
- Statistics following the clean:

0.5
The filter headloss value reduction, measured in bars

65
The backwash flow rate improvement, in m3/hour







