

MANAGING DISCOLOURED DRINKING WATER

DELIVERING HIGH QUALITY WATER



The
University
Of
Sheffield.

For over 100 years water companies have been providing customers with clean, clear and safe to drink water. Yet, discolouration and other water quality issues can occur due to organic and non-organic material accumulating on pipe walls.

#1 CUSTOMER COMPLAINT FOR WATER QUALITY: DISCOLOURED WATER

Companies often tackle this with expensive, time-consuming and disruptive pipe replacement or invasive cleaning, but this is only a short-term solution as material rapidly re-accumulates.

AN INNOVATIVE APPROACH

The Prediction and management Of Discolouration in Distribution Systems - PODDS

1. FLOW CONDITIONING

PODDS uses hydraulics to safely manage pipe performance.

During conditioning, accumulated discolouration material is removed by mobilising it into the flow at very low, safely managed levels.

ADVANTAGES:

- material is safely removed, conditioning the pipe
- increased resilience to unexpected events or planned network activity
- low cost
- non-invasive, more sustainable than pipe replacement or disruptive cleaning
- optimises total expenditure rather than capital solutions

2. AUTOMATION AND INSTRUMENTATION

Alongside flow conditioning PODDS has encouraged monitoring and instrumentation. Northumbrian Water have automated flow control across their network, managing discolouration without manual intervention or risk.

"Applying PODDS understanding and using flow conditioning helps companies deliver a better service."

Professor Joby Boxall

3. TURBIDITY MONITORING

The understanding behind PODDS comes from measuring turbidity. The latest generation of monitors now enables continuous real time readings to water companies. This allows more proactive management and assessment of the state of their networks at all times.

"Companies don't have to replace pipes - they can manage the risk instead."

Dr Stewart Husband

POSITIVE IMPACT



"Instead of spending 10s of millions replacing or cleaning trunk mains we've applied the PODDS principles to the way we manage our water infrastructure and train staff around this. It's been a game changer for us."

Michael Baker, Tactical Planning Manager, Northumbrian Water

66%

REDUCTION

in discolouration-related customer contacts since applying the PODDS principle.



"The work at Sheffield has helped us understand the different physical, chemical and biological factors that contribute to water discolouration. This allows us to implement our control measures more effectively."

On the subject of water quality discolouration, the work by the Sheffield team is among the best I've seen."

David Main, Technical Team Leader, Scottish Water

Scottish Water have used PODDS understanding to communicate with stakeholders.

LONG TERM VISION TO HELP WATER COMPANIES

1. PODDS is focused on developing decision support tools and models by improving understanding of material accumulation processes. This will **help companies optimise maintenance planning and investment to prevent discolouration.**

2. To achieve this **we need continuous research collaborations with water companies** that support data collection from different networks and water types and develop improved water quality monitoring and data storage/analysis.

GET IN TOUCH TODAY



Arrange a conversation with our team of experts



Collaborate with us on research and development opportunities



Contribute to our data collection efforts

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