

Burncrooks WTW

30/08/2018

DWQR Staff Present

Colette Robertson-Kellie, Alison Seton

Scottish Water Staff Present

Drew Lowrie, John Gow, Derek Cooke, John Griffin, Kelly Borthwick, Gillian McAlpine, Christine Peat, Alison Fraser, Jennifer Burrows, Amy Gove.

Summary of Inspection

Overall Summary

At the time of the audit the works was being well operated and managed. There are ongoing issues with high levels of organics in the raw water which appear to be difficult to remove using the existing treatment process and lead to exceedances of the THM standard. The current coagulation chemistry is optimised, with low filtered aluminium levels, and generally filtered water turbidity is low; there is no first flush to waste after backwash, and no slow start, so turbidity peaks are evident in filtered water after backwash. Water quality trends for final water are good and are stable. The SCADA system was effective at showing water quality trends at the works and the Operator was proficient at using the system. Trials were underway to determine whether dosing powdered activated carbon (PAC) will assist in further removal of organics from the supply, and on-line DOC monitors are being used to measure its effectiveness. The trial appears well co-ordinated, managed and supported by Operational and process science staff. Initial data from the site shows that the PAC showed a reduction in organics, but had caused operational issues which were being investigated. Scottish Water commissioned an independent report into the issues with organics in raw water in 2015 and has considered all of the recommendations - there are intentions to further investigate organic fractionation analysis.

Orthophosphoric acid dosing levels for lead control in the network are high, and lead levels at the lead test rig in the network are disappointingly high, which is likely due to the high organics content of the water.

Completion of task scheduling and records for maintenance and calibration of instrumentation are excellent. Servicing of bench instrumentation had been completed the day before the audit; this servicing was a year later than it should have been.

The Operators, process scientists and asset planner appear to work well as a supportive and effective team.

There have been manganese failures at the treatment works and in the networks. There is a Resmix unit that is operational all year round at the reservoir which reportedly does lower manganese levels, but there is no secondary filtration for manganese removal. The final water sample point has clear instructions for Sampling staff to contact Operational staff if the flow from the sample tap is too low - at the time of the audit the sample tap flow was increased, and the water visibly became darker for a few minutes, demonstrating the importance of managing the sample line.

The DWSP needs to be updated to include the presence of the ortho dosing plant, and to reflect that one of the CWT has been taken out of service. The DWSP shall be reviewed separately to this audit.

The site procedure for the response to a turbidity alarm was out of date.

Scottish Water intends to close Burncrooks WTW in 2021.