

Incident Summary

South Moorhouse WTW Coagulation Failure January 2017

DWQR Inspector:
Colette Robertson-Kellie

Event No. 8267

Event Category: Significant

A chlorine gas leak alarm shut down the treatment works on the 25th January 2017, and the ICC passed the alarm to the standby operator, who attended the site. The works had shut down because of the gas leak alarm, and the operator was unable to find a reason for the gas alarm. The Operator restarted the works and monitored it for an hour before leaving. The ICC called him 8 minutes later to advise that the filtered aluminium alarm had been triggered; the ICC monitored the situation, advised the Operator that aluminium levels were rising, and so the Operator returned to the works. There was no obvious reason for the high aluminium levels, so the Operator shut the works down. He then observed that the alum dosing pumps were continuing to operate despite the shutdown, and that one of the two raw water sources was still supplying raw water to the works. This was as a result of the raw water inlet valve having been left on manual instead of automatic following a fault the previous month. Once this had been fixed, treated water aluminium levels improved to acceptable levels, and the works was restarted. Investigations after the incident found that there was a fault with the alum dosing pump, which resulted in the pump not responding to the reduction in the raw water flow, and so a higher volume of aluminium sulphate was dosed to the reduced flow of raw water than was needed. When the works was started up, this high aluminium content 'slug' of water passed through the works, leading to high aluminium levels.

Monitoring of water quality was good during this incident, both at the treatment works and in the distribution system. Aluminium levels at the treatment works exceeded 200µg/l for over eight hours, but sampling from consumers' properties did not detect any failures of the PCV.

The incident was caused by Scottish Water's failure to return the raw water inlet valve to automatic following maintenance work the previous month, which prevented full shutdown of the works, and failure of the alum dosing pump to dose in a flow proportional manner.

The event has been categorised as Significant. Scottish Water has identified seven actions which DWQR accepts are appropriate and will monitor to ensure they are completed prior to signing off the incident. DWQR made one additional recommendation.

