

Incident Summary

Bayhead Zone and Clachan SR Ammonium failure 21 November 2017

DWQR Inspector:
Moira Malcolm

Event No. 8965

Event Category: Significant

On Saturday 18th November 2017 the Intelligent Control Centre (ICC) noted a post Chlorine Contact Tank (CCT) monitor alarm for high chlorine from Bayhead Water Treatment Works (WTW). This monitor alarmed throughout the 18th and 19th, but as the other chlorine monitors at the works were reading normally, the alarm was deferred over the weekend and passed to the plant operator on Monday 20th.

The operator found the chlorine monitor to be reading high, calibrated the monitors and took a bench sample of treated water which had an ammonium level of 0.22mg/l. The operator was unaware of the previous alarm deferrals and thought the issue was of short duration.

The following day a routine scheduled sample was taken from Clachan Service Reservoir (SR) which was reported on the 24th to have failed with an ammonium result of 0.57mg/l.

The event was caused by the post CCT chlorine monitor losing calibration. This monitor provides the dosing control signal for ammonium dosing at a ratio of 4.5:1; therefore the high reading from the chlorine monitor caused the overdose of ammonium (from 0.3mg/l to approx. 0.6mg/l).

The incident was caused by the ICC decision to defer the alarm over the weekend. This alarm previously had a 'Do Not Defer' notice attached to it due to its critical nature, however this had been removed when telemetry changes were made one year earlier.

In addition, when the operator attended site he did not take a final water sample, which would have flagged up the level of ammonium entering supply and led to action being taken to minimise the impact on consumers. Because the failing ammonium level in the SR was unknown until the Friday (by which time the non-compliant water had passed through the network), no other samples were taken in distribution to determine the extent of the failure.

The event has been categorised as Significant. Scottish Water has identified nine 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.

