

Incident Summary

Glenconvinth WTW Aluminium Failures May 2021

DWQR Inspector:
Moira Malcolm

Event No. 11700 & 11728

Event Category: Significant

Ammonium exceedances were reported from regulatory samples taken at two of Glenconvinth WTWs service reservoirs on 5th May (reported as event 11700). On 19th May onsite operators noted a spike in ammonium on telemetry (lasting approximately 1 hour) following the routine swapping of duty to standby pumps of both ammonium and sodium hypochlorite dosing. A regulatory sample coincided with the elevated level and recorded 0.55mg/l (event 11728). Reactive sampling following both events did not show further failures at the works or in distribution.

Scottish Water's investigation has noted that the root cause of the incident was the ammonium sulphate dosing control system. The investigation into the failures on 5th May show that the ICC (Intelligence Control Centre) called out the standby operator on 3rd May for 'filter out of service' and 'ammonia flow switch low' alarms. Ammonium dosing was reset and the two filters out of service were investigated. During this investigation the ICC noted a high ammonium alarm however did not inform the operator as they assumed the operator had visibility of the alarm on SCADA (they did not) and when the alarm cleared, the ICC assumed that the ammonium issue had been addressed. At the times of the ammonium exceedances the WTW was running at a low flow rate using only 2 filters, Scottish Water's investigation discovered that when the plant falls below a flow rate of 25 l/s the ammonium dosing does not follow at a flow-proportional rate but remains at a fixed minimum dose. Due to the low flow rate through the works, this resulted in the overdosing of ammonium sulphate on both the 3rd and 19th May.

The event has been categorised as significant. Scottish Water has identified ten actions which DWQR accepts are appropriate and will monitor to ensure they are completed prior to signing off the incident. DWQR made two additional recommendations.