

Incident Summary

Papa Stour WTW Disinfection Failures 9 October 2019

DWQR Inspector:
Bill Byers

Event No. 10621

Event Category: Significant

Following a planned shutdown of the works to permit repair of a leaking pipe below the sodium hypochlorite tank, the hypochlorite tank was refilled and the works restarted. Shortly thereafter a low chlorine alarm was activated prompting a manual shut down of the works. No issues were found with the dosing equipment and the works was restarted. This was repeated several times in the next hour to test gradually changed dosing set points, as no significant improvement was being experienced. With no improvement evident, the hypochlorite tank was drained and refilled with a fresh batch. Disinfection dosing and effectiveness was then quickly shown to be restored. A period of some 2 hours had elapsed since the initial restart following the planned work. Investigation showed that the hypochlorite solution originally used to replenish the tank after the planned work, was under strength. The drums of chemical used were unlabelled and therefore the strength of chemical was unknown. It is suspected this was dilute hypochlorite and it had been further diluted, as per normal procedure, on recharge of the tank. Chlorine levels in the final water leaving the works was only marginally affected by the event and the reactive sampling carried out at the works and at consumer's taps in the following two days showed there to be no breach of microbiological standards.

I am content with Scottish Water's findings that the root cause of this event was the use of over-diluted sodium hypochlorite in the disinfection process.

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