

Stoneybridge WTW Loss of supply 17 September 2020

DWQR Inspector:
Moira Malcolm

Event No. 11224

Event Category: Serious

On 17 September 2020 planned work was undertaken to swab the raw water main from Loch Iarras to Stoneybridge WTW. This was done following approval by North Treatment Control and with both Clear Water Tank (CWT) levels at 100% to ensure continuity of supply during the works shutdown. When the operation was complete the works was restarted, however the inlet flow did not increase as expected, with only 3 litres/second entering the works (the works requires a continuous flow of 8L/s for operation). Work began to remove any airlocks from the raw water main, and the situation was escalated to the Team Manager when CWT levels were at 28% and 54%. Tankering was agreed to supplement supply; Strome and Ludaig TWP's were switched off, and later Howmore boundary valve opened to reduce demand.

By 22:00 there was still no flow to the works as the last 100m of raw water main was fully airlocked. A gravity fed temporary overland pipe was installed but failed, so overpumping from the swabbing tee at the basket strainers to the WTW was trialled – first with a 3" then 4" pump – however this also failed at 02:00 on 18 September. Work commenced to back charge the airlocked main, and some flow began to reach the works but with insufficient flow to restart the works. The decision was then made to reswab the main – first the final section, and when this was unsuccessful at restoring flow, the whole raw water main was reswabbed.

Overnight demand on the network had outstripped supply, despite tankering, with both CWTs running dry at 08:00 and supply was lost to 600 direct fed properties. Bottle water contingencies were put in place and the Public Health Team instigated a sampling programme. By 08:18 the reswabbing operation was complete and was successful at re-establishing a flow to the works, so the works was restarted and run to waste, however at 09:00 an island-wide power cut shut down the works. After routine checks the WTW was finally restarted and returned to supply by 10:30. Forty-four consumer contacts were made to Scottish Water in relation to the incident, and one sample failure (for aluminium, iron, manganese and turbidity) was recorded from Eriskay SR which had run dry during the incident.

The incident was caused by airlocks in the raw water main following a planned swabbing operation, which resulted in inadequate flow of water to the works which was unable to restart until the airlocks were cleared. The swabbing operation was considered a success by Treatment Control, something that I cannot agree with since consumers were left without supply. Scottish Water's investigation implicates a lack of sufficient air valves on the raw water main which resulted in the airlocks.

The lack of air valves was raised as an action following a previous water quality incident regarding the swabbing of the raw water main at Stoneybridge (Event no 6793 in March 2015). I am unaware if new air valves have been fitted to the raw water main since the last incident, as Scottish Water has failed to provide

an answer to this question. According to the Network Valves Sub-Programme Management Approach (SPMA) provided by Scottish Water, the air valves on this raw water main are categorised as low risk for maintenance and inspection purposes with only responsive intervention planned. Since the previous incident in 2015 the raw main has been swabbed on one occasion. No issues were encountered during this operation. However, given that this is the second incident created by airlocking of this main I do not consider the SPMA categorisation of these particular air valves to be suitable.

The event has been categorised as Serious. Scottish Water has identified three 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.

