

Invermoriston WTW Contamination Following Filter Refurbishment 23 September 2010

DWQR Inspector:
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Summary of Incident

One of the two granular activated carbon (GAC) filters at Invermoriston was refurbished on 20 August 2010, with new GAC supplied by Chemviron. The filter was flushed for a period of 21 days until 10 September, when permission was given to return the filter to supply based on passing water quality samples taken from the filter. This permission was given on a Water into Supply Certificate, signed by relevant managers for Scottish Water Operations and capital investment staff.

On 23 September 2010, a regulatory sample taken from Invermoriston Water Supply Zone failed with 1193 µg/l Aluminium. This was reported to SW staff on 1 October. Subsequent sampling and analysis confirmed this result, with the cause being identified as the refurbished filter, and the filter was removed from service. No contacts were received by Scottish Water from consumers in connection with this incident.

DWQR Assessment of Cause of Incident

The root cause of this incident was inadequate flushing of the refurbished filter prior to returning it to service, so that substances present in the new GAC leached into supply. Scottish Water has been able to provide evidence that the media used was appropriate and of the correct specification, however it has subsequently identified that the flow rate used to flush the filter was not adequate to remove all contaminants. Although additional flushing prior to the "Water into Supply" sample being taken was sufficient to achieve a passing sample, the filter actually required further flushing and subsequent unfavourable flow conditions following return to service meant that the flows through the filter were low, causing high concentrations of aluminium. These were only discovered via the scheduled regulatory sample.

The treated water pH monitor, that might have alerted staff to the issue sooner, was not operational at the time of the incident but has since been repaired.

DWQR Assessment of Actions Taken by Scottish Water

Once Scottish Water became aware that there was an issue, they acted promptly to remove the refurbished filter from supply. Efforts were made to dilute the water in the clear water tank and to take additional samples. Scottish Water has since reviewed its procedures for commissioning of filters following media replacement. These procedures include specifying the conditions under which new media shall be washed and ensuring that conditions immediately prior to sampling are more typical of normal filter operation. Scottish Water has identified that there are other sites where newly replaced media is due to be commissioned, and has taken steps to ensure the process minimises any risks to water quality.

DWQR has no additional recommendations to make following this incident.