

Stoer WTW, Lochinver
Benzene Failure
8 September 2014

DWQR Inspector:
Matt Bower

Event No. 6311

Event Category: Significant

Summary of Incident

A regulatory sample from a consumer's tap taken on 8 September 2014 in Stoer Water Supply Zone contained 2.7µg/l of benzene against a regulatory standard of 1µg/l. Subsequent samples also contained low concentrations of benzene. Investigations revealed that over a month ago, in early August, the carbon filter media in one of the three filters at Stoer WTW had been replaced. It was apparent that the media used contains very low concentrations of an organic chemical, which is usually removed by washing prior to use. Following a similar incident in the Scottish Borders involving contaminated media, Scottish Water implemented more rigorous checks on the quality of filtered water following media replacement. It was understood that this procedure was followed at Stoer, however subsequent investigation revealed that confusion over the numbering of the filters had resulted in the wrong filter being sampled as part of the checks and the clear results obtained did not, in fact, relate to the filter with new media. On the basis of these misleading data, permission was granted to put the filter back into service on 2/9/14, six days before the regulatory sample was taken. No consumer contacts were received by Scottish Water in response to the issue – it is unlikely the contamination was noticeable and there were no health implications of consuming water with these concentrations of benzene.

DWQR Assessment of Cause of Incident

The root cause of the incident was the use of contaminated carbon media. This was investigated thoroughly by Scottish Water following a similar case at Tweedsmuir in the Scottish Borders, which also involved filter media contaminated with benzene at very low concentrations. Following a comprehensive review of the supply chain and operational procedures, Scottish Water stated that additional control measures were being considered. This incident, six months later, indicates that these are not completely foolproof. As a consequence, DWQR has felt it necessary to make a further two recommendations to Scottish Water.

This incident at Stoer was also the result of an unfortunate mix-up over the identification of filters – had there been no confusion over the filter numbering, any remaining contamination should have been picked up by the on-site tests and the filter would not have been put back into service. This incident serves to illustrate the importance of ensuring that contractors are clear on work to be undertaken and that clear lines of communication are kept open between contractors and Scottish Water staff.

DWQR Assessment of Actions Taken by Scottish Water

Once the results of the original sample were confirmed, SW acted promptly to remove as much stored water in the system as possible and flush any contaminated water out of the distribution network via hydrants. Clean water was brought in from another supply via tanker. By 11 September all samples were clear of benzene. With the agreement of NHS Highland, it was not thought necessary to place any restrictions on consumption of the supply.

DWQR considers that SW acted promptly on identifying a potential issue and took appropriate action. Scottish Water has identified 5 actions, including the amendment of procedures to prevent confusion over sample points occurring in similar circumstances in the future. DWQR has identified a further two actions to address the issue of contaminated filter media.

The event has been categorised as significant. Scottish Water has identified a number of actions and DWQR accepts that these are appropriate. Additionally, DWQR has made two recommendations and will be monitoring to ensure both these and the actions are completed prior to signing off the incident.

