Drinking Water Quality Regulator for Scotland

Incident Assessment

Suainaval (Uig) Zone Coliform Failures September 2015

DWQR Inspector:
Moira Malcolm

Event No. 7198

Event Category: Significant

Summary of Incident

On Thursday 24th September 2015 Scottish Water's public health team (PHT) received notification that routine scheduled samples taken on 23rd September from three service reservoirs (SRs) (Miavaig, Valtos and Islivig) downstream of Suainaval (Uig) WTW on the Isle of Lewis had detected coliforms. Following discussion with health professionals a 'boil water' notice was placed on the areas served by the SRs. The clear water tank (CWT) at the treatment works and the SRs were shock dosed with chlorine, the chlorine set point at the works was increased and bottled water was delivered to vulnerable consumers.

Specialist contractors were called out to evaluate the condition of the CWT, balancing tank and SRs. The SRs were found to be in good condition however the balancing tank was found to have leaking wall head joints which could have allowed rainwater ingress and other potential contamination, and the CWT had a failed scour valve, contained grass deposits (most likely blown through the overflow scour pipe) plus potential points for ingress on the top and sides of the tank.

Resamples were taken on 24th September both at the SRs and at properties supplied by these reservoirs which all passed, and when these results were confirmed the boil water notice restriction was lifted on 26th September.

Leading up to the event, the WTW had been running with a very low chlorine contact time, meaning that disinfection may have been compromised.

5 customer contacts regarding water quality were received during the period of the boil water notice restriction.

DWQR Assessment of Cause of Incident

The most likely cause for the bacteriological failures was the integrity issues with both the CWT and balancing tank at Suainaval (Uig). The low chlorine contact time may have contributed to the failures by not allowing sufficient disinfection of the treated water at the WTW, however this low contact time has been operational at the treatment works for some time with no previous failures.

The coliforms isolated from all the failing samples – plus failing samples taken on the same day by the same sampler from North Lochs WTW and Achmore SR – all conformed to the same morphology and were from the same *Klebsiella spp.* group of bacteria. While these bacteria are environmentally ubiquitous, the uniformity of all of the samples may indicate that a sampling or laboratory error may have occurred. This is supported by the travel times from the CWT to the SRs: it takes 1 day for water to reach Miavaig SR, 3 days to reach Valtos SR and 4 days to reach Islivig SR. If the contamination event originated from the CWT it would not be

expected that the failures would occur on the same day at each of the SRs, but staggered relating to when the water was received.

DWQR Assessment of Actions Taken by Scottish Water

Scottish Water took appropriate action to address and resolve the situation.
Several issues are highlighted and are pertinent:

1. The low chlorine contact time at the WTW is concerning. DWQR has asked Scottish Water to provide disinfection strategies for all of their WTW to ensure that deficiencies are addressed using a risk assessed basis.
2. Suitable and sufficient sampling and investigation was taken during and after the event.
3. Storage tank cleaning and maintenance has been carried out when required, rather than as part of a routine scheduled maintenance plan.

The event has been categorised as Significant. Scottish Water has identified a number of actions and DWQR accepts that these are appropriate. DWQR undertook an on-site investigation following the incident, and as a result of this investigation has made several recommendations. DWQR will be monitoring to ensure both these and actions are completed prior to signing off the incident.