

Muirheads Service Reservoir Chlorine Taste and Odour 13 September 2014

DWQR Inspector:
William Byers

Event No. 6346

Event Category: Major

Summary of Incident

On Saturday morning, 13 September, Scottish Water started to receive calls of taste and odour of chlorine in the water supply in Arbroath. The field staff attending those consumers and investigating the supply in the area found chlorine levels to be of a normal level. Some 24 contacts were received from different areas across the town over the course of the day, with many commenting when visited, that the problem was not as severe as when it first came to their notice the previous night or earlier in the day. Investigations at the local storage tank, Muirheads Service Reservoir, where secondary chlorination is carried out on the supply, found there to be no problems with the chlorine dosing equipment and chlorine levels in the tank itself, were as expected.

Scottish Water had carried out cleaning of one half of the tank on Friday 12 September, the day prior to the taste complaints and it was surmised that the problem may have arisen from the final disinfection of the tank before reintroducing it into supply. Continuing monitoring of chlorine levels whilst visiting consumers and samples taken from addresses in the town showed that at the time of those visits the chlorine levels were normal. A further 25 contacts were received from different addresses across the town on the Sunday and these had tailed off by Wednesday when one contact was recorded. The pattern of the addresses affected indicated a gradual passage of the taste problem through the distribution system. In all, 68 contacts were received from consumers in the area over the 5 day period, with their concerns also being reported in the local media.

DWQR Assessment of Cause of Incident

From the information provided in Scottish Water's investigation, DWQR considers it likely that a combination of the quantity of chlorine applied as a final disinfectant to the tank cleaning and the continuing level of secondary disinfection, led to a plug flow of water containing a higher level of chlorine through the trunk main and distribution system than was normal.

DWQR Assessment of Actions Taken by Scottish Water

Scottish Water took the necessary steps to investigate the cause of the complaints and to reassure consumers of water quality, providing bottled water where necessary until the problem was fully understood. It is noted that in all the chlorine tests carried out in consumers houses and in formal samples, that the levels of free chlorine did not exceed 0.26 mg/l. Chlorine levels measured across the supply area over the course of the year, fall within the range 0.1 to 0.5 mg/l.

Scottish Water operates a formal process for tank cleaning operations and DWQR notes that the authorisations were in place and procedures followed. Appropriate samples were taken from the service reservoir and were shown to be satisfactory, prior to the valve operation to return the cleaned tank into supply. DWQR considers however there to be scope for additional checks to be made between chlorine levels in the continuing supply at service reservoirs and the water contained in tanks to be reintroduced, if these type of complaints are to be avoided.

The event has been categorised as Major. Scottish Water has identified one action and DWQR accepts that this is appropriate. Additionally, DWQR has made one recommendation and will be monitoring to ensure both it and the action are completed prior to signing off the incident.

