



Drinking Water Quality Regulator
for Scotland

Incident Summary

Rosebery WTW and zone Taste and odour complaints Summer 2018

DWQR Inspector:
Moira Malcolm

Event No. 9504

Event Category: Significant

Scottish Water began to receive complaints for an earthy/musty taste and smell from consumers in the Rosebery WSZ at the end of May 2018 which continued until September. A total of 106 consumer contacts for earthy/musty taste or smell were recorded over this period.

Weekly raw water monitoring is undertaken from Gladhouse reservoir for 2-Methylisoborneol (MIB). This compound is released by algae naturally present in the reservoir which although not a health issue does produce an earthy/musty taste and smell at low concentrations. MIB showed elevated levels on 7 June, and an increase in consumer complaints was recorded from 28 June. These results lead process science staff to investigate changing the blend of water serving Rosebery WTW from 45% Megget, 55% Gladhouse; to 55% Megget, 45% Gladhouse which was undertaken on 2 July.

The blend was further changed on 23 July to 60% Megget, 40% Gladhouse following a rise of MIB in both the raw and final water and a further increase in consumer contacts. This coincided with a reduction in MIB levels and algal counts in the raw water (as the peak of the warmest water had passed).

Monitoring for MIB in the raw and final water, and in distribution continued throughout the summer. Elevated MIB levels and algal growth were exhibited in the raw water, but these were removed by the treatment process for the majority of the summer. MIB in concentrations detectable by the average person ($>10\text{ng/l}$) were only found in the final water



for one week at the end of July, although levels >5ng/l (detectable by sensitive palates) was found from May – August.

A site meeting was called on 6 August to discuss the options available for the WTW, given that a similar event occurred at Carron Valley in 2017. The option used at Carron Valley, namely temporary powdered activated carbon (PAC) dosing on the RGFs, was not considered appropriate due to the scheduled filter upgrade at Rosebery using Filtralite media. Several long-term mitigation measures were investigated. Further actions were agreed to relieve pressure on the WTW: changes in the network were made to reduce the output of Rosebery to 2MLD; a raw water feed of 2.5MLD from Megget reservoir was opened to assist with the aeration and dilution of Gladhouse Reservoir; and a temporary overland run to waste was installed to prevent recycling of the supernatant to the head of the works.

A further blend change to 70% Megget, 30% Gladhouse was made on 13 August. This was the maximum blend available as Megget also supplies other WTWs and Marchbank WTW was experiencing low pressure. MIB concentrations in distribution fell below 5ng/l by the end of August and consumer contacts also tailed off at this time.

The incident was caused by MIB released by algae in the raw water at Gladhouse reservoir. This was exacerbated by the structural condition of the reservoir which meant it was kept at a level of 1 meter below the spill level. The combination of the shallow reservoir and the hot weather experienced in summer 2018 gave optimal conditions for algal growth.

There are no specific treatment options at Rosebery to remove MIB and Scottish Water took practical steps by changing the raw water blend, removing the supernatant return and rezoning the network to mitigate the impact of the taste and odour on consumers.

The event has been categorised as Significant. Scottish Water has identified seven actions which DWQR accepts are appropriate and will monitor to ensure they are completed prior to signing off the incident. DWQR made no additional recommendations.