

Incident Assessment

Lomond Hills WTW Coagulation Failure 2 August 2011

DWQR Inspector:
William Byers

Summary of Incident

A loss of control over the coagulation process occurred on 25 July 2012 due to the failure of the acid dosing system. Sulphuric acid is dosed to ensure the optimum pH is obtained for efficient coagulation to take place and the breakdown caused failures of the aluminium, manganese and turbidity parameters in samples of the final water produced at the works.

The sulphuric acid tank is located within a bund to contain any spillages and offer health and safety and environmental protection in the event of tank rupture. The contents of the tank however had reached a low level and the bund had become filled with rainwater. This caused the tank to float which disrupted the ability to dose. To compensate for the lost pH correction, the coagulant dose was gradually increased to regain control over process in the course of the following days.

A series of further aluminium and manganese failures occurred in the final water samples towards the end of August, which are attributed to a disturbance of fine deposits in the sample line. Results of the sampling were in conflict with on-line monitors and other sampling and following a period where extended flushing of the sample line was carried out, subsequent samples were shown to be clear.

DWQR Assessment of Cause of Incident

DWQR declared this an incident due to a failure to demonstrate water quality had returned to compliance within two months. It is however noted from regulation sampling routinely carried out on the works that there had been no further failures against water quality standards after 1 September 2011.

DWQR Assessment of Actions Taken by Scottish Water

Whilst Scottish Water carried out the necessary investigation of the issue and restored water quality within a reasonable timescale, it did not provide adequate reporting information in accordance with requirements and DWQR considers this unacceptable. In addition, DWQR considers it important that where acid tanks are not securely restrained against flotation, maintenance tasks to empty and dispose of bund fluids are regularly carried out.

Scottish Water is carrying out a project to replace the acid plant and this is scheduled for completion in October 2012.

Scottish Water has identified one action from this incident. DWQR accepts that this is appropriate and will be monitoring to ensure it is completed prior to signing off the incident. Additionally, DWQR made one recommendation following the incident