



Stuart Ledger
Interim Chief Executive Officer
Affinity Water Ltd
Tamblin Way
Hatfield
Herts
AL10 9EZ

1st March 2022

Dear Mr Ledger

HS2 and Risks to Public Water Supply

The Society has been in correspondence over the past 8 months with the Environment Agency with regard to the impact of tunnelling through the aquifer under the Misbourne Valley. Copies of this correspondence can be accessed at <https://chilternsociety.org.uk/hs2-tunnelling-risks-response-questions-and-concerns/>

As you will see in their last letter, they have us asked us to deal with yourselves with regard to impacts on Public Water Supplies. The area of concern that we have relates to where the tunnels cross under the River Missenden at Little Missenden. Over a period of time a significant amount of ground investigations (GI) has been carried out. This has identified that there are large amounts of water flowing through faulting and joint systems within the aquifer at what appears to be the same depth as where the tunnels will cross the valley (18m below ground level). HS2 have identified a risk that the tunnels may block the fast flowing water within the aquifer which would give rise to either the water diverting away or more probably rising to get over the tunnel (see Para 7.1 of the GW Assessment for Construction Tasks - Tunnel & Cross Passages 1MC05-ALJ-EV-NOT-CS02_CL04-400048_C04). They have also identified that a significant proportion of the water for Amersham PWS comes from the strong water flow in the Misbourne Valley. (See Sections 4 and 7.1 of Chiltern Tunnel Construction Water Environment Assessment 1MC05-ALJ-EV-REP-CS02_CL04-000142)

Our concern is that the tunnels under the River Misbourne cross the northwest-southeast line of the valley at 90°, at a similar depth to the fast-flowing water. This creates a significant obstacle to the water being at a similar depth to the water flow. As HS2 have identified there is a possibility that the water will divert alongside the tunnels and form new pathways through the chalk. This is considered to be a significant risk as the fracturing in the chalk is generally in a northeast to southwest direction. Should this happen there is likely to be a significant reduction in the availability of water to the Amersham PWS.

This could be mitigated by lowering the tunnel by at least 10m as this would allow the fast-flowing water to follow its existing paths. This would also mitigate the risk of substantially reducing the water supply to Amersham PWS.

We look forward to hearing about your assessment of these risks.

Yours faithfully



Simon Kearey

Chairman

cc Tom Beeston

John Gladwin