

Comments on Request from Alan Chitty for Information on Charing and Westwell

I refer to the email from A Chitty 18 October 2004 for information on Charing and Westwell sources.

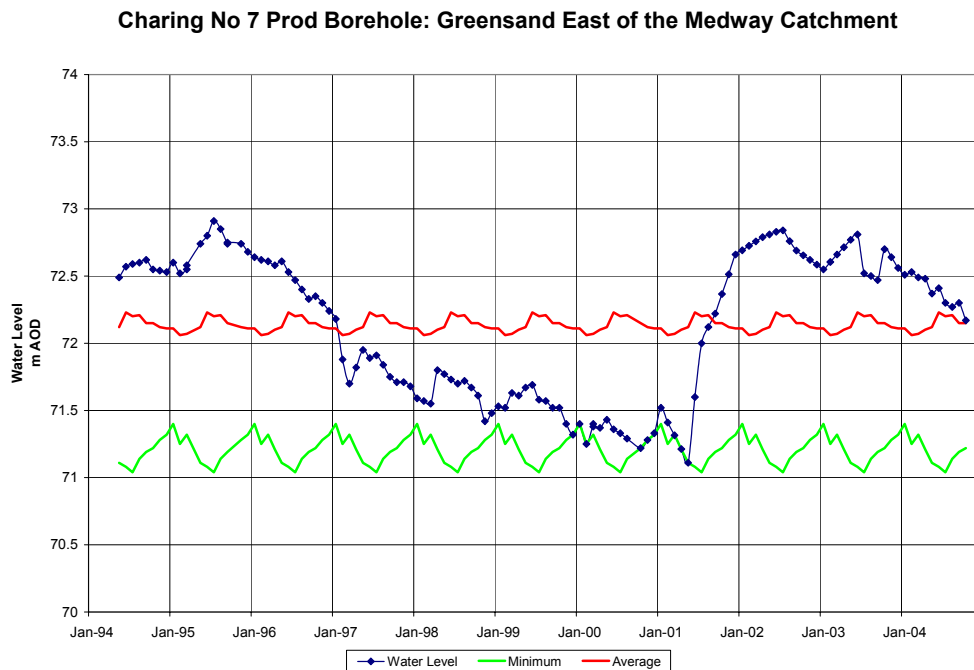
1. GENERAL COMMENT

This catchment was subject to an intensive and expensive investigation, 2 public inquiries and a High Court action between 1995 and 1998, to abstract water from the Charing No 7 borehole. Although the Company failed in the application, a number of important conclusions were reached which are valuable in the wider context. Consequently, there is a vast amount of information in the public domain which is available, and we also have the conclusions of the Inspectors which are relevant to the catchment and sources. I would refer Mr Chitty to the documentation which can be viewed at the EA offices on request.

2. LONG TERM DEROGATION OF THE AQUIFER

The inspector concluded at the 1995 Inquiry that the Charing [and Westwell] boreholes have yielded over 90% of the licence annually (S.250) and that the general Folkestone Beds water table in the vicinity has barely fallen in many years. He states that "Even during [the drought years of 89/90 to 1992/3] it is clear that the aquifer could have sustained normal annual output while remaining above pump levels."

Figure 1: Charing No 7 Water Levels



All the evidence at the Inquiry convincingly demonstrated no long term derogation of the aquifer with water levels sustained even during the drought years. This conclusion continues to be supported by water levels in the Charing No 7 borehole since construction, even during the periods of low recharge in the late 1990's as is evidenced by the attached graph in Figure 1 (note the exaggerated scale of water levels). The graph does show the effects of low recharge but also it demonstrates the rapid recovery of the aquifer to normal recharge again.

3. HYDRAULIC CONTINUITY

The boreholes abstract from the Folkestone Beds, and the Upper Stour runs across the Sandgate Beds, Hythe Beds and Clays, so there is no connection between the two. Over 25 piezometers were drilled across the catchment to prove the clay nature of the Sandgate Beds, and these providing convincing proof of the separation between the two horizons which satisfied the Inspector. At the second Inquiry the matter of continuity between the Folkestone Beds and the Hythe Beds through the clays of the Sandgate Beds was discussed in detail and the Inspector concluded that there was no connection, and therefore there would be no effect on the tributary streams or groundwater levels across or above the Sandgate Beds outcrop.

4. CHEMICAL COMPOSITION

I am uncertain as to the relevance of the question being raised regarding the different chemical composition of the aquifers. Mr Chitty is absolutely correct in identifying the Folkestone nature of the Charing and Westwell waters in comparison with the clear Chalk nature of the Stour. They are entirely different. Simply to cease pumping from the Folkestone Beds will do nothing to maintain the Chalk nature of the Stour.

5. TREATMENT

Water treatment for Chalk sources is generally confined to simple disinfection, with Lower Greensand and Ashdown Beds sources also needing carbon dioxide and often iron and manganese removal. The overall quality of untreated water at Charing has been generally deteriorating over the years and this instigated the requirement for the Charing No 7 borehole. The borehole was further under the outcrop and would have provided improved raw water quality at the plant mitigating the necessity of significant investment in new treatment facilities at Charing Pumping Station.

Note that there was no requirement for additional water, only

- For reduced reliance on older boreholes at the main station
- For increased operational security of supplies
- For potential economies in the provision or deferment of treatment facilities

- to create load spreading of the points of abstraction thus reducing vulnerability to pollution of supplies.

In the event, at the second Inquiry in 1998, the Inspector concluded that there was a very marginal risk to headwaters of the Stour during extreme drought events, and therefore the Company's application failed. The Company has since had to spend £2M on a new treatment works which involves aeration and filtration for iron and manganese to continue to provide safe and reliable supplies to the customer.

Sandy Elsworth
19 October 2004