

Chew Valley Flood Forum - Response to queries 2 23/10/13.

We have set out our response to your e-mail enquiry dated 22/10/13 in blue text directly below each question you have raised in italic scrip

If my calculations using your data are broadly right, I believe the following statements are correct. Or have I miscalculated/misunderstood something?

- 1) If the Lake is 75% or more full in September/October the likelihood is that it will overflow in Winter/Spring*

In some wet years this can be the case. However, if we discharged water to maintain a partially full reservoir, there is no certainty that the reservoir will re-fill later in the year. This is an important consideration for us because we can not predict whether future months will be dry or wet.

- 2) Over the last 24 years the Lake has not been less than 50% full in the summer.*

That is true because we operate the reservoir to ensure water is not taken too early in the year.

- 3) Setting aside the extraordinarily dry winter of 1990, when the Lake seems to have dropped to about 10% full in December, the Lake has not been less than 30% full in any month. It is generally at its lowest in Autumn/early Winter and very seldom drops below 50% full.*

My understanding of the data indicates Chew has been drawn down to about 50% of theoretical volume for about half of the years since 1990 (10 out of 22 years).

- 4) Taking the extreme case, and again setting aside 1990, if the current "emergency" drain down capability had been continuously in use, the Lake would not have run out of water at any time from 1991 onwards.*

We take some care and effort in planning the operational use of our use of resources to avoid 'running out' of water at any reservoir. This includes ensuring stored water at Chew is not overused to a position where failure becomes a possibility. Chew is a critical part of our overall resources management plan. The size of Chew makes it the 'storage of last resort'. When all other reservoirs approach minimum operating capacity Chew is still required to have sufficient storage to maintain supply during long dry periods extending beyond a single year (because we must consider the probability of 2 and 3 year droughts).

Unfortunately, we are not able to dismiss the impacts of 1991/92, or the likelihood that similar dry years occur every 10 years on average over our period of record. Years such as 1991 are by no means the worst dry years. We are required to plan to provide a secure water supply for severe droughts such of the type experienced in 75/76, 63/64, 43/44, 33/34 and 21/22.

Following on from what you said on the 8th of October, could you please confirm:

- a) *that water can be imported/pumped into Chew Valley Lake from other reservoirs i.e. the Blagdon and Chew Magna reservoirs. How frequently has this been done and what triggers the import?*

We would only transfer water from Chew Magna when Chew is not overflowing. This transfer is a relatively small volume and is normally only available for short periods in winter and only then if there sufficient water inflow into Chew Magna reservoir.

If the trigger is the Lake water level, what is the level? How much water (cu m) can be imported from Blagdon per hour/day? Can you provide data on the imports since 1990?

No water can be imported to Chew from Blagdon.

- b) *no water can be discharged/exported from the Lake other than via the "emergency" drain down and river compensation flow outlet(s) (are these two separate outlets or just one?) and of course the overflow spillway. Are there any plans to add the facility to pump water from the Lake to other reservoirs in the future?*

There is a single low level draw off from the reservoir that has a single emergency draindown valve, transfer pump suctions and compensation valve are also linked to this pipe. We could either pump the water away if there is somewhere to put it, or open this emergency valve to send it down the river, but not both together.

There is also a high level emergency draw off valve (previously referred to as having 80,000m³d capacity). All water discharges ultimately to the river Chew and contributes to flows downstream. The only transfer of water to reservoirs we make from Chew are to the Barrow Tanks on the A38. When these reservoirs are full, transfer has to stop or be reduced. We have no plans to change our current mode of operation at this time.

- c) *whether there is any legal requirement to keep the Lake water above a certain specific level?*

There are no legal obligations to maintain Chew reservoir at any particular level (although there are environmental issues associated with very low reservoir levels). We do have a statutory duty to maintain a secure supply in drought years to all customers. DEFRA have approved our overall planning approach to provide this security. A key requirement of the plan is that total storage of all our reservoirs, including Chew, should be at 100% capacity at the start of the hydrological year (March). If that assumption is changed, we may not be able provide the current level of supply security agreed with DEFRA.

I should be grateful for your comments and answers to the above questions. We are trying to understand how the Lake operates to avoid making ill-informed assumptions and wasting people's time by barking up the wrong trees.