

River Test Drought Permit Application

1.3 Exceptional Shortage of Rain case

Addendum 1

25th July 2022

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Table 1: Ranked 8-month cumulative rainfall totals from November 2021 to June 2022.

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1. Further supporting analyses

Since submission of our final River Test Permit application on 19th July, and following discussion with the Environment Agency, we have undertaken some further analyses of rainfall data over the River Test catchment area. These additional analyses further-strengthen our case of exceptional shortage of rain by highlighting additional and worse low rainfall periods within the recent 12 month period.

2. Methodologies

The analyses presented within this addendum follow the ranked cumulative rainfall methodologies outlined within section 6.2 of the previously submitted ESOR case, however they have been adapted to fit to varying time periods of analysis.

We have updated the analyses with focus on an 8-month time period from November to June based upon actual recent observational data. In addition, we have also included a 9-month period from November to July, based on actual recent observational data through to July 25th, combined with average forecast data from 26th-31st July, obtained from Hydromaster, in order to complete the July rainfall total. For the period 26th – 31st July the forecast assumes 6mm of rain, based on the average (50th percentile) rainfall scenario, which we have included in the analysis.

We believe that these additional time periods and the updated data show better the exceptional shortage of rain that has been experienced for the River Test catchment.

3. Results

Table 1 shows that the 8-month cumulative rainfall from November 2021 to June 2022 is ranked 9th out of 131 years of historic records in terms of lowest cumulative rainfall. Total rainfall in the preceding 8 months was 364.2mm which represents 66.4% of long-term average (1961-90) rainfall.

Table 2 shows the 9-month cumulative rainfall from November 2021 to end July 2022, with the July total comprising observed data up to the 25th, and assuming the Hydromaster weather forecast for the period 26th-31st July. This 9-month period is ranked 2nd out of 131 years of historic records in terms of lowest cumulative rainfall. Total rainfall in the preceding 9 months was 372.8mm which represents 62.5% of long-term average (1961-90) rainfall.

Table 1: Ranked 8-month cumulative rainfall totals from November 2021 to June 2022.

8-month cumulative rainfall			
Rank	Year	Rainfall (mm)	Deficit (%)
1	1976	243.9	44.5
2	1944	288.5	52.6
3	1934	303.5	55.3
4	1921	310.9	56.7
5	1938	314.6	57.3
6	1929	318.9	58.1
7	1893	325.6	59.3
8	2005	334.1	60.9
9	2022	364.2	66.4
10	1918	367.6	67.0
9	2022	364.2	66.4

Table 2: Ranked 9-month cumulative rainfall totals from November 2021 to July 2022.

9-month cumulative rainfall			
Rank	Year	Rainfall (mm)	Deficit (%)
1	1976	295.5	49.5
2	2022	372.8	62.5
3	1921	401.6	67.3
4	1934	404.8	67.9
5	1898	454.4	76.1
6	1944	484.2	81.2
7	1938	492.9	82.6
8	1989	494.6	82.9
9	1949	507.4	85.0
10	1929	513.1	86.0
2	2022	372.8	62.5

4. Conclusion

The analyses presented within this addendum show that by incorporating the latest 8-month and 9-month periods of ranked cumulative rainfall data, the exceptional shortage of rain case for the River Test catchment area is strengthened further from that which was presented in the application documents.

As such, we believe these should be taken into consideration alongside the previously submitted ESOR case from 19th July.