

The 2007/08 Report Year MLE reconciliation

The MLE carried out for the calculation of the water balance for the base year is set out below.

The MLE adjustment re-assigns any difference there may exist between the water balance determination of total leakage from distribution input (top down), and the estimate of leakage from component analysis of DMA nightlines (bottom up). Where a difference exists it is re-distributed among the components of the water balance based on the confidence intervals associated with each component.

The reconciliation between Net Consumption (including losses) and Distribution Input was only 2.88 MI/d in 2007/08, representing a balancing item of 1% to be re-distributed. Confidence intervals are based around the expected accuracy of each component and reflect the likely error range associated with each component.

Using a 95% Confidence interval method to weight the errors, the reconciliation value has been redistributed according to the following table, where the initial component estimates are on the left and the MLE adjusted components are on the right.

MLE table of adjusted components

Water Balance:Maximum Likelihood Estimate							2007/2008
<small>(Based on NERA/UKWIR report & spreadsheet)</small>							
YEAR :	Estimate	95%Conf.	Confidence	% of	Adjustment		Balanced
	MI/d	Interval	Range MI/d	Total	MI/d		estimate
Meas.non household	64.08	3	3.84	5.90	0.17	Meas.non household	64.251
Meas.household	36.11	3	2.17	3.33	0.10	Meas.household	36.207
Unmeas.household	133.92	10	26.78	41.11	1.19	Unmeas.household	135.101
Unmeas.non household	3.88	30	2.33	3.57	0.10	Unmeas.non household	3.983
Operational use	1.72	10	0.34	0.53	0.02	Operational use	1.735
Legal unbilled	0.83	50	0.83	1.28	0.04	Legal unbilled	0.870
Illegal unbilled	0.28	50	0.28	0.42	0.01	Illegal unbilled	0.288
Distribution Losses	38.96	30	23.38	35.88	1.03	Distribution Losses	39.995
						Total Leakage	52.87
Net Consumption	279.78						
Distribution Input	282.66	0.9	5.20	7.98	0.23		282.43
Reconciliation Item	2.88		65.15	100.00			
Errors in Water Balance						Per Capita unmeas	157.56
% error balance						Per Capita measured	125.43
	-1.02						
Total leakage	52.87						MI/day

The leakage target for Bristol Water for reporting period 2007-08 is 54 MI/d. Following MLE adjustment the level of leakage for the same period is reported as 52.87 MI/d.

The difference seen in the water balance was 2.89 MI/d, which represents -1.02 % error across the balance. This is an improvement in water balance reconciliation item compared with the 2006-07 submission when the error in the water balance was -1.12%

