

## **Tywi liming progress report, July - September 2010**

### **1. Summary**

This report summarises the work undertaken and the progress made on the Tywi liming project in the period from July to September 2010. Approximately 104 tonnes of lime was dosed in this period. The rainfall adjusted target for the period was 182 tonnes.

The water quality remains on target to achieve the objectives for Good Ecological Status in the Afon Tywi, as required by the Water Framework Directive.

The Tywi doser has been operational for most of the quarter, with some downtime attributed to a technical fault with the computer controls in late September which has since been rectified.

The battery bank at the Camddwr doser has been replaced and the doser has discharged approximately 19 Tonnes. However, low voltage issues have persisted as the planned installation of the hydro generator had to be postponed because of high flows.

The priorities for the next quarter will be establishing and utilising the telemetry information system, installing the Camddwr hydro-generator and progressing the procurement of a new lime delivery system at the Camddwr doser.

### **2. Lime doser operation, maintenance & safety**

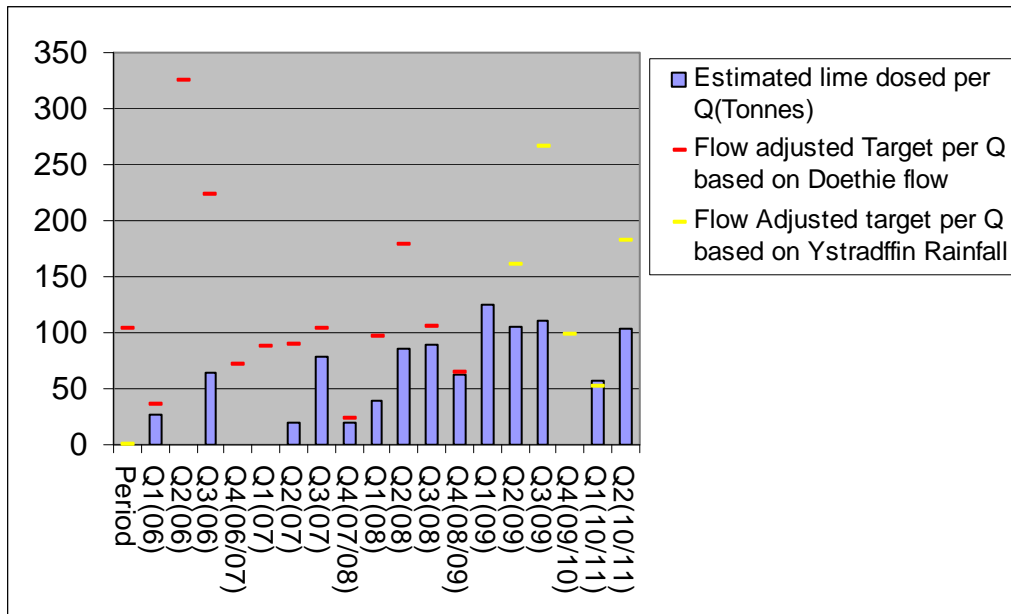
The Tywi doser has been operational for the majority of the quarter. There was some downtime due to a technical fault with the doser control unit, which has now been rectified. Approximately 85 Tonnes has been delivered and dosed from the Tywi doser during the period.

The Camddwr low voltage problems have persisted this quarter and are likely to continue until the hydro-generator can be installed. The doser was operational for a period following the installation of a new battery bank, and during this period 19 Tonnes was discharged to the Camddwr.

The rainfall-adjusted liming target for this quarter was 182 tonnes. The July – September 2010 (Q2) total rainfall at Ystradffin was 121% of the quarterly total rainfall average (January 06 – June 10). The rainfall adjusted target is calculated as 121% of the nominal quarterly target of 150 tonnes (*Fig. 1*).

The Health and Safety Manager from the haulier contractor (Graham Claire, Turners) and a representative from Francis Flower attended a delivery at the Tywi doser in August to finalise and agree the Safe System of Work to enable hauliers to make unaccompanied deliveries to the doser. A subsequent delivery in September was made without EAW staff present. For the first delivery made by each driver, Graham Claire is going to accompany the delivery to confirm the training competency of the driver (at least 3 drivers will be trained).

We are in discussion with the Procurement team and possible contractors with a view to re-engineering the delivery system at the Camddwr doser to enable larger lorries and lone working deliveries at this site.

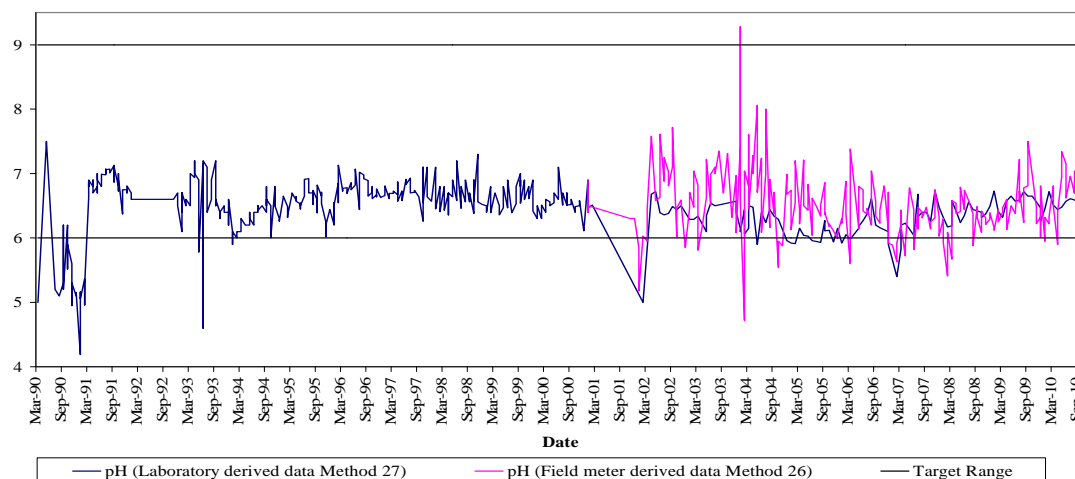


**Fig. 1: Lime dosed per Quarter 2006 – September 2010.**

### 3. Water quality

pH values recorded in the Tywi at Ystradffin, 1.5 km downstream of Llyn Brienne Reservoir, ranged from 6.53 to 6.61 for laboratory-derived data and from 6.66 to 7.04 for field meter data during this quarter (Table 1 and Fig.2). The values remain within the target range to achieve the objectives for Good Ecological Status in the Afon Tywi, as required by the Water Framework Directive.

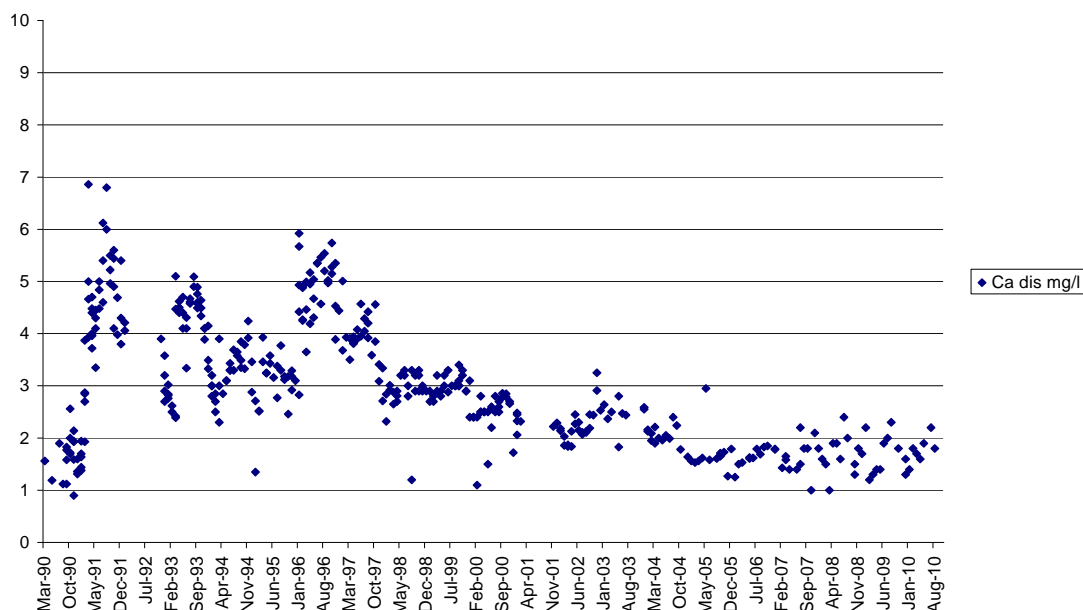
**Fig. 2: pH of the Afon Tywi at Ystradffin, 1.5km downstream of Llyn Brienne Reservoir from March 1990 to September 2010.**



**Table 1. pH and dissolved Ca in the Afon Tywi at Ystradffin, 1.5km downstream of Llyn Brienne Reservoir for April-September 2010.**

Period	Date	Lab pH	Field pH	Diss. Ca (mg/l)
Apr-Jun 2010	27/04/10	6.44	5.9	1.6
	30/04/10		6.41	
	26/05/10		6.95	
	27/05/10	6.48	7.34	1.9
	24/06/10	6.57	7.15	
	30/06/10		6.62	
Jul-Sep 2010	22/07/10	6.61	6.96	2.2
	02/08/10	6.59		1.8
	03/08/10		6.69	
	25/08/10		7.04	
	21/09/10	6.55	6.88	
	22/09/10		6.74	
	30/09/10	6.53	6.66	

Fig.3 shows the overall decline in calcium concentrations since 1996. However, concentrations appear to have levelled off in the period since 2006.



**Fig. 3: Dissolved calcium in the Afon Tywi at Ystradffin, 1.5km downstream of Llyn Brianne Reservoir from March 1990 to September 2010.**

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