

EVALUATION OF THE EFFICIENCY OF A STORM-OVERFLOW TANK IN "SAMA DE LANGREO"

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OBJECTIVES

- The purpose of this study was to evaluate the efficiency of a storm-overflow tank situated in Sama de Langreo (Asturias-North of Spain).
- Constituents loads discharged to the receiving waters through combined sewer overflows during storm weather were determined to perform this evaluation and were compared with the one would have been discharged if this infrastructure had not existed.

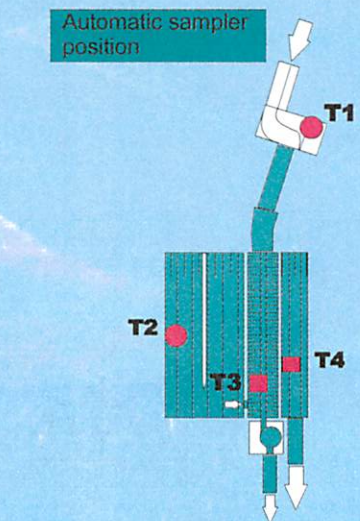
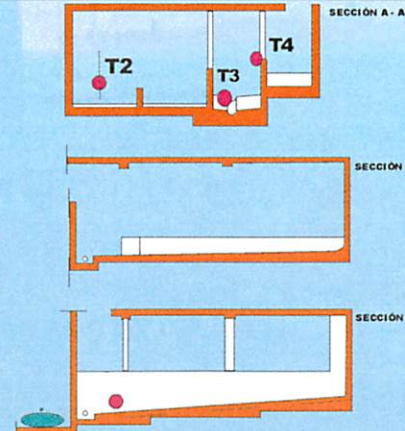
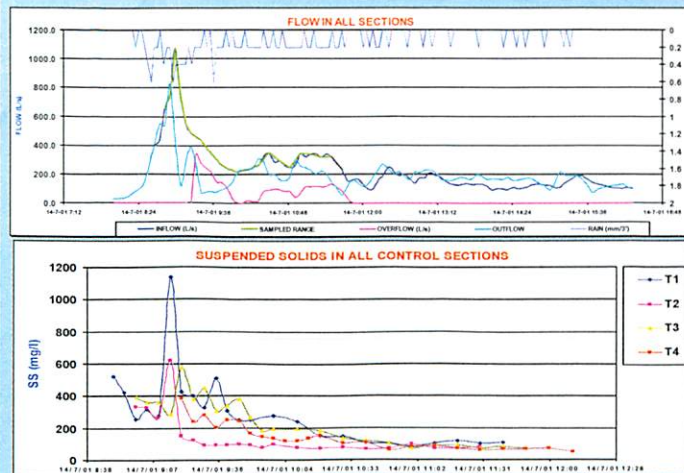


HYDRAULIC CONTROL

- With the purpose of measure the regime of rain during the studied period a pluviometer was installed in the area.
- Three flowmeter were installed to measure the hidraulic regime placed one in the inflow and two in the corresponded outflows. We also used three level indicating transmitter that measured the level in the central camara and in the first flush tank.

FIELD STUDIES

- The study was carry out during 7 month, during this time the campaigns of dry weather and wet weather were performed.
- A total of 5 events with combined sewer overflow and 24 events with partial filling of the basin but without overflow to the receiving waters were produced.
- Out of all five events were sample: two with overflow and three with partial filling. In the next table the event mean concentration, calculated as media of the events studied, in the inflow (EMCT1) and in the overflow to the receiving waters (EMCT4)



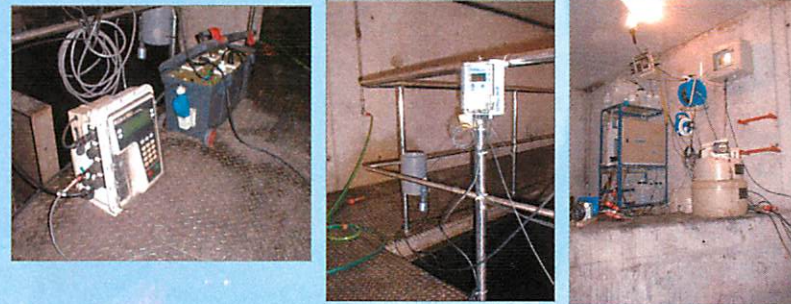
TANK CHARACTERISTICS

The storm-overflow tank in Sama de Langreo has a total capacity of 450 m³, 130 m³ in a central camara (in line storage) and 320 m³ in a first flush tank (off line storage). The inflow pipe gives an additional volume of 10 m³ so the effective volume of the tank is 460 m³. The basin has a net surface of 38 Ha (70.2 Ha brute) therefore the tank has a capacity of 12 m³/Ha.



POLLUTION CONTROL

- To evaluate the efficiencies of constituents load in the storm-overflow tank four automatic sampler were installed: one in the inflow, other in the first flush tank and two in the central camara; one with the intake near the outflow and the other with the intake in the spillway.
- The measure uninterrupted of some constituents was also performed with the help of probes that were placed in the inflow. Concretely two probes were located: a organic matter probe and a multiparameter probe that measured temperature, pH and



	EMCT1	EMCT4	MCDW
NH ⁴⁺ (mg/L)	4.3	4.2	11.2
COD (mg/L)	612.9	370.0	285.8
SS (mg/L)	276.0	172.1	51.8

RESULTS

- The mass flow curve and the polluted mass proceeding from runoff were analyzed.
- The analisis of results allows conclude that the efficiency of the storm-overflow tank in Sama de Langreo is about 96% of improvement in relation with a simple traditional overflow that discharges from 2.5 times the dry weather flow.

