



## Case Study

# Befesa EDAR Reus



Year construction	2008
N° of units	2 X FPAC600-CW
Material	CONCRETE TANK, EQUIPMENT IN AISI316
Pack lamelar	No
Water type	Surface [Lake]
Application	Clarification
Unitary flow	625 m <sup>3</sup> /h
TSS in / out	150 / 10 ppm

ABENGOA was contracted to design-build the expansion and upgrading of the WTP REUS with a capacity of 30 ML/d (250,000 PE). The WTP has two clarification – filtration treatment lines and sludge treatment line. In the upgrading works of new pre-treatment including physico-chemical followed by dissolved air flotation was added to remove suspended solids and eventually algae present in the raw water.

The DAF is built in concrete tanks and SIGMADAF supplied the flotation process equipment such as the skimmer, air saturator and aeration devices, air supply units and the rest of equipment to complete the system.

Prior to the DAF the water is flocculated with the aid of chemicals in coagulation-flocculation tanks with mechanical mixing. A coagulant (alum sulphate) and polyelectrolyte are added to facilitated the formation of flocs with better flotation properties, the retention times in these two tanks are 2 min in coagulation and 20 min in flocculation.

SIGMADAF designed and supplied all the equipment for two (2) units FPAC600 CW working as primary clarifiers at the WTP installed in new concrete tanks, including:



surface chain scrapper, recirculation pumps (2+1S), air compressors (1+1S), air saturators, aeration system with nozzles, sediment sludge purge valves, pneumatic control panel, pipes, valves and accessories, instrumentation, spare parts documentation and manuals.

The DAF unit has dimensions L 10800 x W 7500 x H 4940 mm. with useful surface of 81 m<sup>2</sup>. The recirculation flow was set at 70 m<sup>3</sup>/h per DAF (12%) and the flotation air as 100 l/min at 6 bar pressure.



### SKIMMER

To sweep the floated sludge in the tank surface, a chain type scrapper is provided with dimensions L 10500 x W 7500 mm constructed in AISI316 with drive motor of 1.10 kW. This skimmer sweep the scum towards an extraction pit at the tank outlet.



### AERATION SYSTEM

The aeration system includes a saturation pressure vessel (2 ud) with vol. 2,300 lts (Ø1400 x L 1500 mm) with air pipes (8 ud down) and submersed nozzles for depressurization. Air is supplied by 1 ud piston air compressor of 5,5 kW capacity and 500 lt. air receiver.

### SIGMADAF FPAC-CPL20 FOR WTP SLUDGE THICKENING

SIGMADAF also supplied the flotation units for the thickening of the sludge produced at the WTP as a result of the treatment, 2 units FPAC-CPL20 were supplied with capacity for 10 m<sup>3</sup>/h each constructed in AISI304 and 1 polymer preparation unit PFL10.

