



## Case Study

# Acciona EDAR San Fernando (Trinidad)



Year construction	2016
N° of units	2
DAF model	FPAC200
Material	AISI304
Pack lamelar	No
Water type	Sewage municipal
Application	Thickening WAS
Unitary flow	30 m <sup>3</sup> /h
TSS in / out	7900 / 100 ppm
Sludge floated DS	2.5 (w/o poly) – 6% (w. poly)

ACCIONA was contracted by the Water and Sewerage Authority (WASA) from Trinidad and Tobago to design-build-operate the new WWTP SAN FERNANDO with a capacity of 45 ML/d (111,600 PE), including primary, secondary and sludge treatment.

SIGMADAF supplied two FPAC200 DAF units to clarify and thicken the excess biological sludge (WAS) from an activate sludge biological treatment. The DAF equipment is specially designed for easy operation and maintenance, with full control-automation system and the SMARTADAF system in the pressurization and aeration, provided with micrometric adjustable BACK-PRESSURE valves to control the depressurization process.

The DAF units were designed to treat up to 31.25 m<sup>3</sup>/h with a DS conc. of 0.6 to 0.8%. The DAF dimensions are L 16,3 x W 4,2 m with a useful surface of 68 m<sup>2</sup> designed to operate at a mass load of 2.7 (2 units w/o polymer) to 7,3 kg DS/m<sup>2</sup>-h (1 units w. poly dose of 3 kg/tn DS).

The DAF tanks were fabricated in steel AISI304 and shipped to the project location properly packaed for sea freight.



## SIGMADAF – FPAC Features

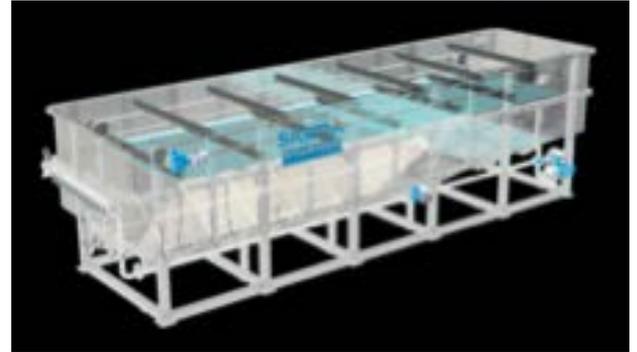
The FPAC system is a large surface DAF unit with cross-flow separation to provide thickening of the excess sludge stream with high solids from the WwTP secondary sedimentation. The system is designed to treat wastewater flows heavily loaded with solids that need sufficient surface area for successful flotation and separation.



The FPAC incorporates an aeration system (pump – saturator – valves) to generate micro-bubbles (30 to 50-micron range) to increase efficiency, as smaller bubbles easily adhere to equal-sized or larger solid particles, enhancing the overall flotation effectiveness of the system.



The FPAC is a high-performance system with a number of distinctive features. It includes a single movement floated sludge separator (skimmer), which rotates against the hydraulic flow of the water, helping to minimise the collection distance of the sludge and eliminating solids carry-over in the clarified water. It produces sludge with a dry solids content 3 to 4 times greater than a conventional system with less polymer consumption. The result of which, is a reduction in the need for further sludge de-watering or drying, resulting in reduced OPEX costs.



Clarified water flows outside through specially designed overflow weirs dimensioned for low velocity and minimum solids wash-out, keeping the TSS content in the outlet water low.



The bottom sludge decanted within the system is collected in the central auger as it thickens and partially de-watered by the extraction shaftless screw unit. This enables the operator to control the thickness of the decanted sludge, eliminates the early-removal of solids and reduces the build-up of sludge in the tank bottom. The residual sludge is then transported to a central discharge point and removed via an automatic pneumatic valve. This discharge cycle is self-cleaning, and any particles adhered to the walls or sides of the system will loosen and follow their initial flow path.



**Sigmadaf Clarifiers, S.L.**  
 Poligon Industrial Pont Xetmar  
 Carrer C, n° 19  
 17844 Cornellà de Terri (Girona)  
 +34 972 223 481  
 info@sigmadafclarifiers.com  
 sigmadafclarifiers.com

Member of:

