



# Camp de Tarragona Water Reclamation Plant

Technical Paper  
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Room C  
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Solutions & Technologies





***“Water is too precious  
to be used only once”***

*Antoine Frérot, Chairman and CEO of Veolia Environnement*

*Freshwater is a finite resource. Climate change, population growth or economical developments are pushing the water stress to the limit and raising consciousness about the need to implement plans to preserve our natural resources. Water reclamation has become a reliable solution to protect our reservoirs by increasing its availability and reducing environmental pollutions.*

*“A case story about saving  
natural water resources  
for human consumption  
by reusing reclaimed water  
for industrial applications”*



## **Camp de Tarragona Water Reclamation Plant Project background**

The Spanish province of Tarragona, located on the Mediterranean coast, has dealt with water shortage throughout the years.

To face this problem it is decided the reuse of reclaimed water from two urban wastewater treatment plants (WWTP Tarragona and WWTP Vila Seca -Salou) to supply the Industrial Petrochemical Area of Tarragona. This supply would replace the water from the Ebro River thus releasing this volume for drinking water supply to the population.

The project, which has been partly financed by European Union cohesion funds, has been lead by **Agencia Catalana del Agua (ACA)** in cooperation with **Asociación Empresarial Química de Tarragona (AEQT)** and **Aguas Industriales de Tarragona (AITASA)**. Comprising 3 phases, the plant will grow from 6.8 hm<sup>3</sup>/year to 10.5 hm<sup>3</sup>/year and to a final maximum flow of 20 hm<sup>3</sup>/year.



## Technological challenge and innovation

In order to meet high reclaimed water quality criteria required by the end users, which will be mainly used for cooling towers supply, the process treatment line comprises the following steps:

- >> An enhanced physico-chemical pre-treatment by means of **Actiflo™** (coagulation-flocculation and ballasted settling) followed by **Hydrotech Discfilter** (microscreen filtration) and a **two stage filtration system (gravity and pressure filtration)**. This stage was selected for its efficiency in removing high concentration of total suspended solids of raw water (secondary effluent) thus preventing organic fouling and biofouling in the RO stage.
- >> **Reverse osmosis system** with double pass to ensure compliance with inlet value required for ammonia (0.8 mg/l) by end users from the Industrial Petrochemical Area.
- >> Final **water disinfection** before distribution, according to Spanish RD 1620/2007 for industrial applications (cooling towers).

## Service Capabilities: Operation and maintenance

Veolia Water Solutions & Technologies has also been selected for the **fully operation and maintenance** of the plant for 1+1 year. Our operating experience, supported by 155 years of know-how, combined with our technological expertise form the basis for ongoing improvement and synergies leading to best-in-class service to provide to our customers.

## Demonstration Project

To determine the treatment process line of the water reclamation plant, a 9 months demonstration project was conducted to confirm the efficiency and reliability of the process, in order to meet the water quality required by the petrochemical industries for cooling towers systems supply.





# Camp de Tarragona Water Reclamation Plant

## Data sheet

- » Joint Venture: Emcofa – Socamex
- » Final Client: Agencia Catalana del Agua (Catalan Water Agency)
- » Start up year: 2011
- » Production: 18,911 m<sup>3</sup>/day
- » Raw water: Secondary effluents from WWTP Tarragona and WWTP Vila Seca-Salou
- » Reclaimed water application: Cooling towers supply to Tarragona Industrial Petrochemical Area
- » Treatment process:  
ACTIDisk (Activflo + Discfilter) + double stage filtration + 2 pass RO + UV
- » Contract Nature: Design & Build + (1+1) year operation

	Required value
Intestinal nematode	< 1 egg/10
Escherichia Coli	< 1/100 ml
TSS	5 mg/l
Turbidity	1 NTU
Ammonium	0.8 mg/l
Phosphates	3.0 mg/l
TOC	15 mg/l
Conductivity	2,000 µS/cm

#### OFICINA CENTRAL

Pol. Industrial Santa Ana, C/ El Electrodo, 52  
28522 Rivas Vaciamadrid, MADRID (SPAIN)  
Tel: (+34) 91 660 40 00. Fax: (+34) 91 666 77 16  
[marketing.spain@veoliawater.com](mailto:marketing.spain@veoliawater.com)  
[www.veoliawaterst.es](http://www.veoliawaterst.es)

Edificio Augusta Park - Avd. Via Augusta, 3-11  
08174 Sant Cugat del Vallès BARCELONA (SPAIN)  
Tel: (+34) 93 511 01 00. Fax: (+34) 93 511 01 09

Portuebe nº 23, oficina 1-1  
20018 San Sebastián, GUIPUZCOA (SPAIN)  
Tel: (+34) 943 31 52 25. Fax: (+34) 943 31 16 11

Polígono Industrial El Mayorazgo.  
Edificio Mareste II, C/ 903, nº 24 - Planta Baja  
38108 Santa Cruz Tenerife, TENERIFE (SPAIN)  
Tel: (+34) 922 62 32 02. Fax: (+34) 922 62 35 37