

Welcome to the Global Water Technology Center Tarragona



Overview

Facility inaugurated in **June 2011**

Real Industrial Scale assets processing **10,000** m³/day

Access to **3** different water sources

40 testing units

150 separation component test positions

To support **7** Market Segments



Oil & Gas



Industrial Water & Desalination



Residential & Commercial



Nutrition & Dairy



Municipal



Bioprocessing & Healthcare



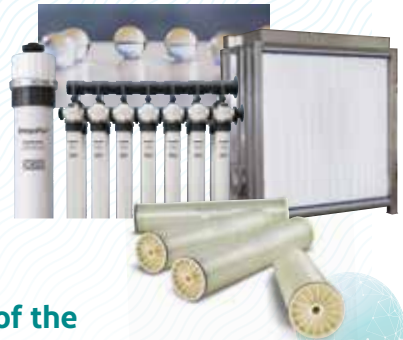
Wastewater/Industrial Wastewater

Technologies incorporated

- Ultrafiltration (UF)
- Nanofiltration (NF)
- Reverse Osmosis (RO)
- Ion Exchange (IX)
- Biodigestion (MBR/MABR)

In addition

- Element Evaluation Laboratory
- Best in class Analytical Laboratory (> 50 techniques)



DuPont Water Solutions taking part of the Sustainability Development Goals (SDG)



SUSTAINABLE DEVELOPMENT GOALS

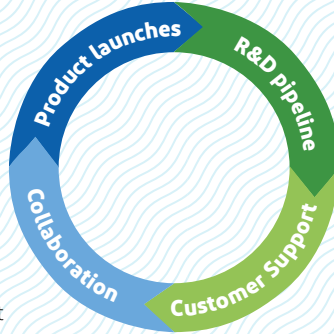
Milestones & Key Achievements

Accelerate product launches

- More than 16 new products since 2011
- Cost of water reduced by 15–25% in RO
- 25% less energy required in UF

Enhance R&D pipeline

- Innovative solutions for existing and new applications
- More than 30 external cooperations
- More than 8 MM USD in public funding



Manufacturing collaboration

- Time to launch a product 10 times faster

Customer Support

- 150 customer projects per year
- Improve customer process
- More than 3,000 visits

Unique research center with global customer collaboration to validate solutions and technologies to address global water challenges

Knowledge



Development



Local Expertise/
Global Markets



Relationships

Capabilities

Large Ultrafiltration Unit (UF)



Large Reverse Osmosis Unit (NF/RO)



Large Industrial Asset (UF + NF/RO + IX)



Single elements testing pilot plants (NF/RO)



Flat sheet pilot plants (RO + IX)



Cross Flow (RO)



Residential Unit (NF/RO)



Containerized pilot plant for Oilfield application (UF + NF/RO)



Containerized pilot plant for waste water application (UF + RO)



Containerized pilot plant for Membrane Bioreactor Applications (MBR)



Membrane Aerated Biofilm Reactor unit (MABR)



Containerized pilot plant for Ion exchange applications (IX)



Containerized pilot plant for brackish water applications (UF + NF/RO)



Mobile De-oiling unit (IX)



Containerized pilot plant for brackish water applications (UF)



Containerized Multitech Research Unit (UF + RO + IX)



Available sources of feed water

Brackish water

100 m³/h supply
Ebro river with treatment



Seawater

80 m³/h supply
intake close to end
of a river and harbor



Municipal & Industrial Wastewater

50 m³/h supply
Camp de Tarragona WWTP primary and
secondary conventional treatment
Industrial water from petrochemical industries



Element Evaluation Laboratory

- State-of-the art service offering with global coverage
- Global alignment between Water Solutions Testing facilities
- Expert analysis, testing and servicing of liquid separations technologies. Support to treatment installations in order to keep the plant operating at peak performance.
- Problems solving by performing root-cause investigation



Analytical Laboratory



Liquid samples analysis

- Determination of ionic content
 - necessary for design simulations and selection of best technology
 - support to root cause investigation of failures
 - evaluation of specific ion rejection
 - prediction of scaling
- Determination of organics and micropollutants for water reuse applications
- Determination of physical parameters (suspended solids, turbidity, SDI, TTF...)
- Determination of microbiological indicators
- Determination of oil and grease



Solid samples analysis

- Evaluation of chemical composition of materials
- Identification of potential chemical degradation and halogenation
- Microscopic exploration
- Fundamental characterization of resins



Foulant & Scaling analysis

- Surface analysis for different types of fouling (biological, organic and scaling)
- Sample extraction to perform quantitative analysis (metals, organics, etc.) Fundamental on identifying optimal maintenance cleaning recipe
- Supports optimum pretreatment selection in order to improve whole treatment process efficiency



Working TOGETHER for a clean-water future

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Water Solutions
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