# This is Xylem

- A leading global water technology provider
- \$7 billion market cap and \$4 billion in revenues
- 12,500 global employees
- 360 global locations
- 155 countries
- Corporate HQ: Rye Brook, NY
- North America HQ: Charlotte, NC

Focused on solving the most important water challenges



### Xylem – Encompassing the Entire Cycle of Water

 $\label{eq:taus} \textit{Transport} \rightarrow \textit{Treat} \rightarrow \textit{Test} \rightarrow \textit{Reuse}: \quad \textit{Enabling \& Optimizing Water Use}$ 



END-USE CONSUMERS

### **Industry-Leading Treatment Brands**









### **Xylem's Approach to Reuse**

### Xylem's process integration expertise

- Evaluate the entire wastewater process
- Integrate best technologies tailored to local use needs and regulations
- Modular design for current requirements and ability to expand to meet future needs

### Achieve lowest possible life-cycle costs

• Energy consumption, consumables, pumping, and residuals

#### **Unmatched process guarantee**

• TotalCare Legendary Customer Service





### **Xylem's Contribution to Reuse Research**

Project	Goal
<b>WRRF 11-01</b> Monitoring for Reliability and Process Control of Potable Reuse Applications	Improve real-time monitoring and control to ensure compliance
WRRF 11-02: Equivalency of Advanced Treatment Trains for Potable Reuse (Ozone, UV, AOP, and BAF pilots)	Evaluate and optimize multiple barrier treatment trains for DPR
WRRF 12-12: Comparison of SAT efficacy for two disinfection alternatives: Chlorine & Ozone	Evaluate two disinfecting process for ability to attenuate organics, CECs, DBPs, Microorganisms
<b>WRRF 13-09:</b> Indirect Potable Reuse Investigation (in-kind contribution of AOP pilot)	Evaluate treatment of groundwater form soil aquifer treatment
<b>City of Hollywood Florida</b> Reuse Study (Ozone and UV AOP Pilot)	Evaluate alternative treatment for Ocean Outfall Discharge Rule
<b>Terminal Island Indirect Potable Reuse</b> AOP Evaluation (AOP Pilot)	Compared multiple AOPs including UV/H2O2 to UV/Chlorine
SCVWD Silicon Valley Purification Center (UV-AOP, Ozone-BAC pilot)	Examine multiple treatment technologies for IPR expansion

# WaterWorld

*Xylem earns 2014 Water Reuse Equipment Manufacturer of the Year for treatment efforts* 



Member of Research Advisory Committee



**NWRI** National Water Research Institute

Corporate sponsor



• Active members, event sponsors

# Xylem's Recent Examples of Full-scale Reuse Project Wins and Installations in US

Project	Technology	Santa Clara Valley Water District
Silicon Valley Advanced Water Purification Center, Santa Clara Valley Water District	10 MGD Title 22 Facility – 12 x LBX closed vessel UV reactors	STATE CONSTRATE
<b>City of San Diego</b> Advanced Water Purification Facility Demonstration Plant (full-scale 1.5 MGD O3-BAF system)	Evaluating O3-BAF as an engineered barrier for advanced treatment train	A Mule Valley · Hesperie .
Apple Valley, Hesperia, Victor Valley Reclamation Plants, Victor Valley Water Reclamation Authority	Open channel and closed vessel UV for three Title 22 facilities	WVWRA
<b>Beneficial Reuse Project,</b> University Area Joint Authority, State College, PA	Ozone pretreatment for Reverse Osmosis to control fouling	UNIVERSITY AREA JOINT AUTHORITY

# **Xylem's Treatability Testing Program**

- Xylem has a fleet of pilot equipment
  - Ozone, UV, and AOP Systems (WEDECO)
  - Filtration Systems (Leopold)
  - Dissolved Air Flotation Systems (Leopold)
  - Biological Systems (Sanitaire)
  - Analytics (YSI and more)
- Xylems has in-house development centers and laboratory-scale testing capabilities
- Xylem's philosophy: to partner closely with our consultants and our customers and work collaboratively to solve water
  - Leverage expertise from past projects
  - Closely assist with developing testing protocol
  - Hands-on support through the duration



Photo Credit: Presentation by Roshanak Aflaki, WEFTEC, 2014

## Importance of Bench- and Pilot-Scale Testing

### **Bench-Scale Testing**

- Quick and inexpensive, great screening and preliminary design tool
- Snapshot-in-time, but useful if water sample is representative of design conditions
- UV Collimated Beam testing
- Ozone demand-decay testing
- Dose-response curves
- AOP testing
- Jar testing

# **Pilot-Scale Testing**

- Optimize process under a range of real-life conditions
- Optimize equipment sizing variables
- Scale-up tool for full-scale design and performance guarantee





# WEDECO MiPRO UV, Ozone, and AOP Pilot System



### **Key Messages From This Presentation**

# What Xylem brings to the table:

- A **partner** from treatability testing to installation and aftermarket.
- Deep application expertise and installed database.
- Simplifying the solution by providing single source support.
- Providing Performance Guarantees and TotalCare Aftermarket Service Support.

*Xylem Offers Sustainable Reuse Solutions, Products, and Services to Help You Meet Your Goals* 

### The End of Our Presentation



**Questions?** 

keel.robinson@xyleminc.com

**Thank You!**