A dynamic splash of clear blue water against a white background, with droplets and ripples visible. The water is positioned in the upper right and left corners of the slide, framing a central white rectangular area.

WATEREUSE ASSOCIATION  
NORTHERN CALIFORNIA CHAPTER

# FORWARD/REVERSE OSMOSIS -A NEW TECHNOLOGY

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# OUTLINE

Part 1: FO/RO Technology

Part 2: Demonstration Test Results

Part 3: Conclusions & Future Thoughts

# PART 1: FO/RO TECHNOLOGY

# WHAT IS IT?

Dual membrane technology provides for treatment via an osmotic membrane followed by a reverse osmosis membrane system to produce high-quality water.



# WHY TEST THIS TECHNOLOGY?



NASA PROMOTED  
TECHNOLOGY



PROOF OF CONCEPT

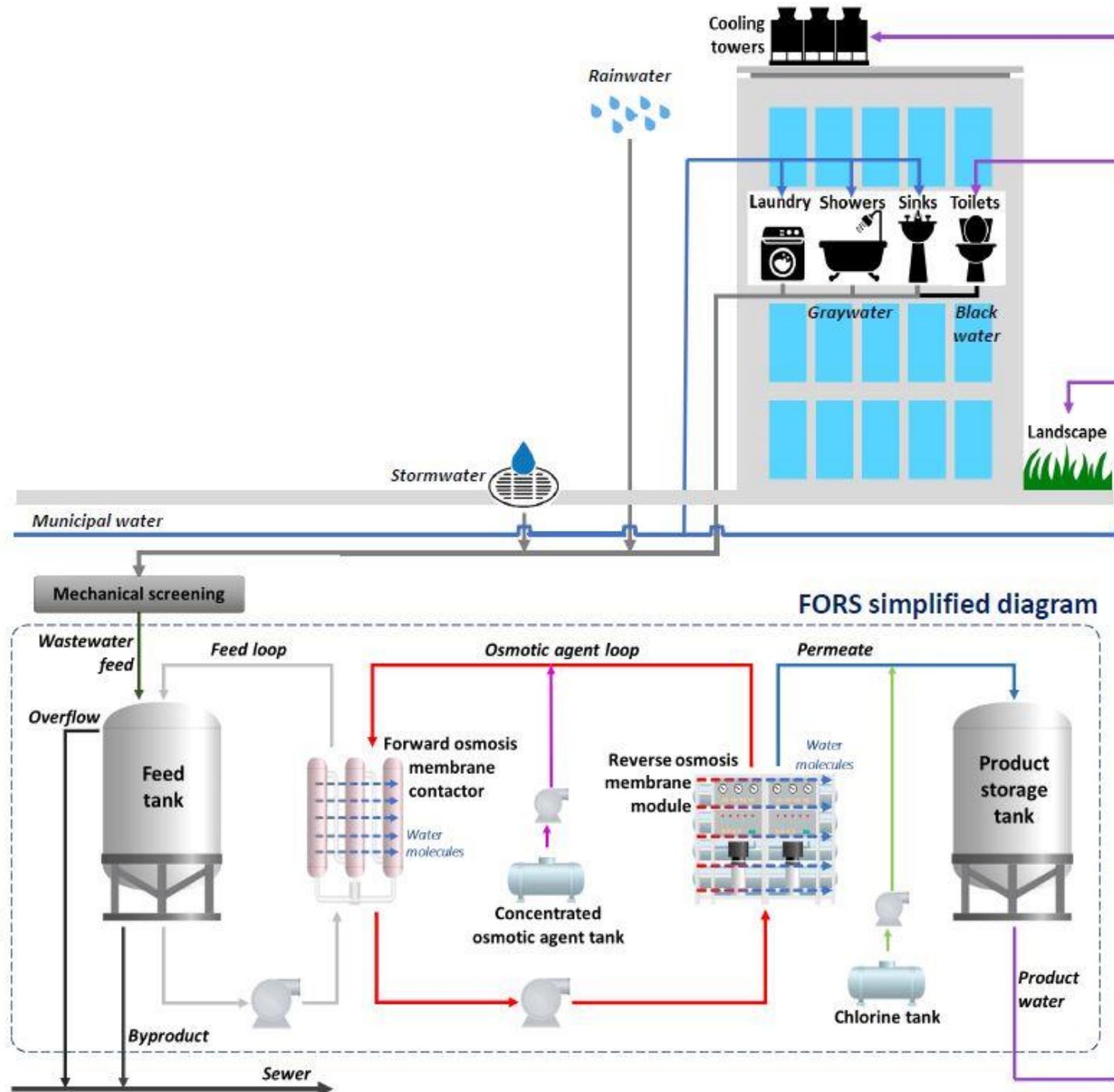


SMALL FOOTPRINT



MECHANICAL SYSTEM-  
LOWER OPERATIONS  
REQUIREMENT

# FO/RO MEMBRANE SYSTEM TECHNOLOGY



Building  
Water Uses

Treatment  
Process

# **PART 2: DEMONSTRATION TEST RESULTS**

## TREATMENT TRAILER by WH2O Inc,

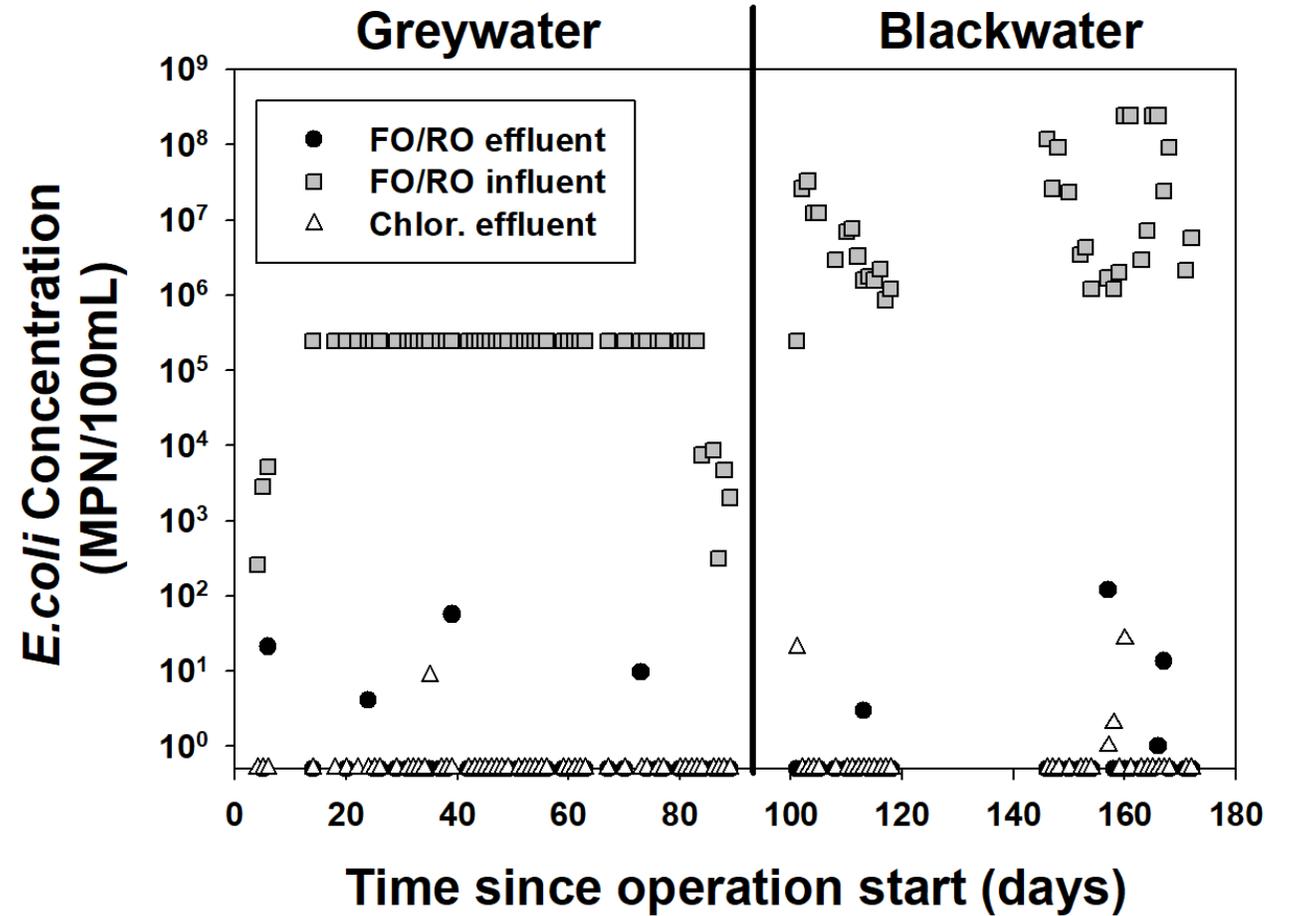
- 150 GPD
- Small footprint
- Modular unit allows for easy expansion



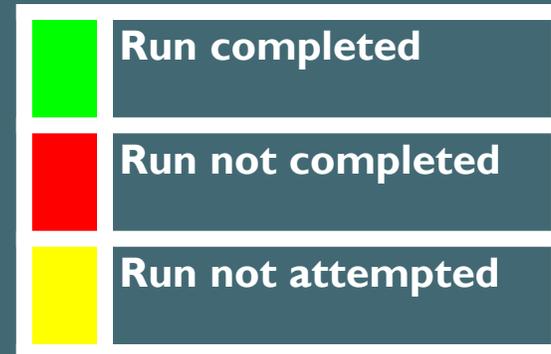
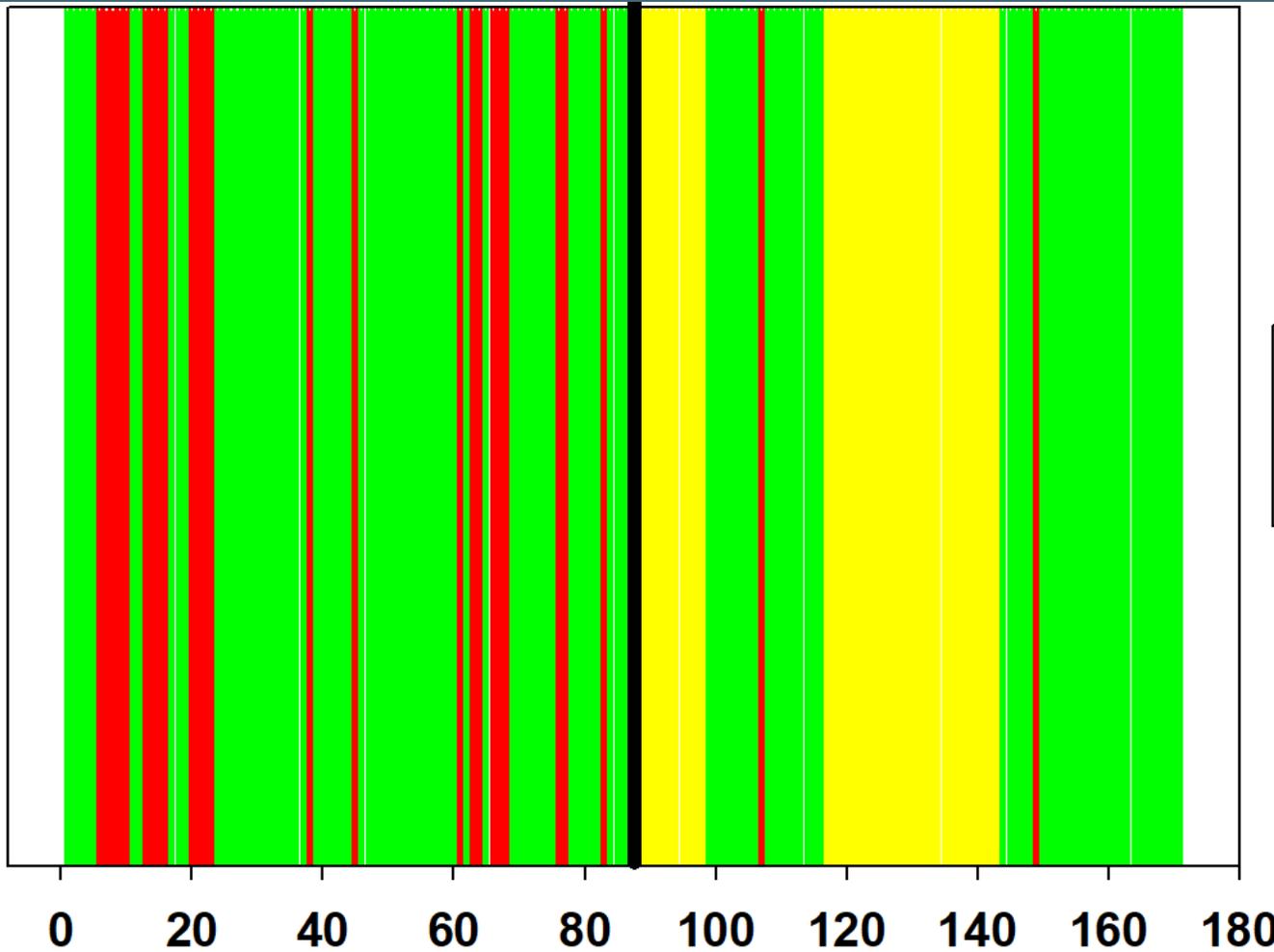
**FO/RO WATER  
QUALITY  
PERFORMANCE**

Meeting Performance Requirements?		
	Greywater	Blackwater
Total Coliform	When disinfection works	When disinfection works
<i>E. coli</i>	When disinfection works	When disinfection works
Total Cl Residual	No	Yes
Turbidity	Yes	Yes
Conductivity	Yes	Yes
TSS	Yes	Yes
BOD5	Yes	Yes
pH	No	Yes
Odor	Yes	Yes
COD	Yes	Yes
Ammonia	Yes	Yes
Nitrate	Yes	Yes
Nitrate	Yes	Yes
Total Phosphorous	Yes	Yes

# FO/RO TESTING PROGRAM



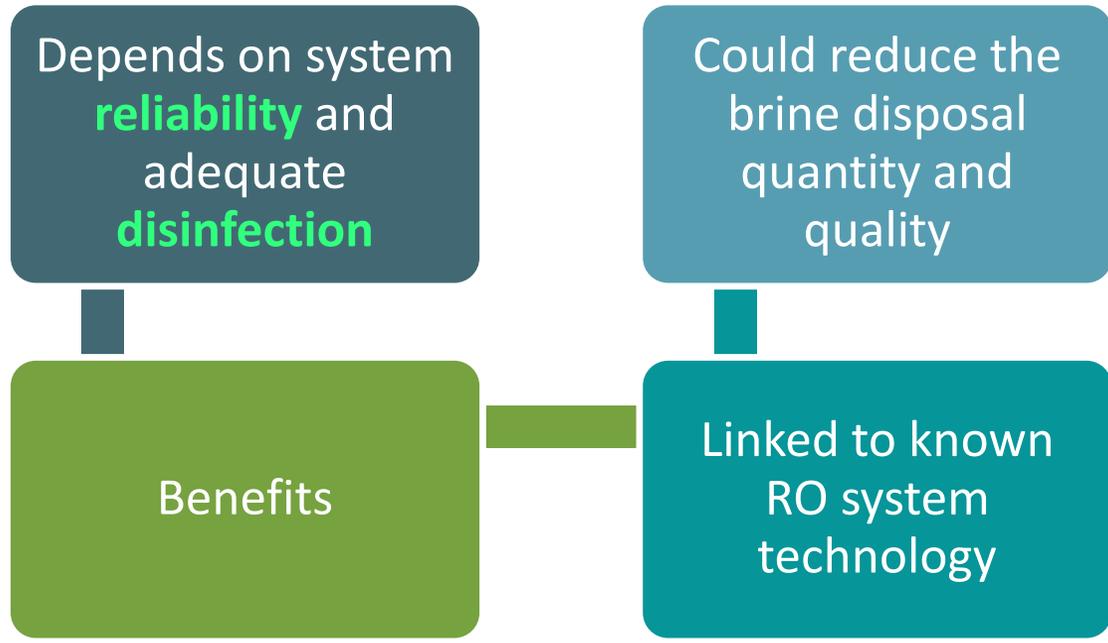
# FO/RO PERFORMANCE RELIABILITY



Number of Test Days

## PART 3: CONCLUSIONS & FUTURE THOUGHTS

- Proof of Concept – Yes
- System Reliability ?
- System disinfection needs to be more robust



# FO/RO APPLICABILITY FOR REUSE

# CONTACT INFORMATION



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# QUESTIONS & ANSWERS