

PURE SOJO

WATER PURIFICATION DEMONSTRATION PROJECT



PureSoJo
safe · reliable · sustainable



SOUTH JORDAN

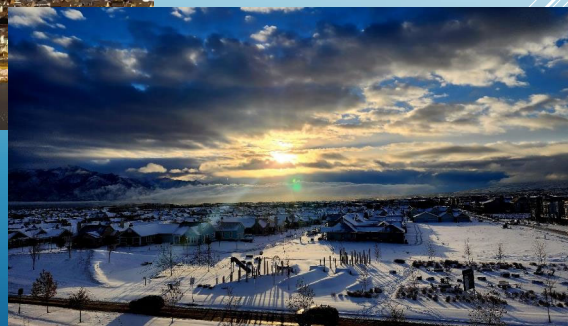
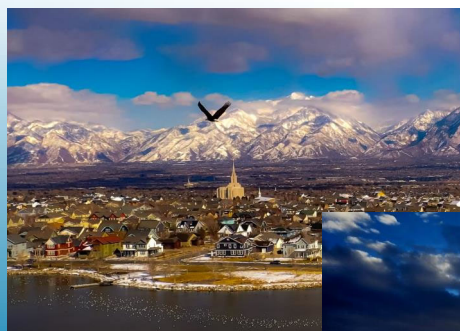
Nevada WaterReuse Symposium – January 29, 2024



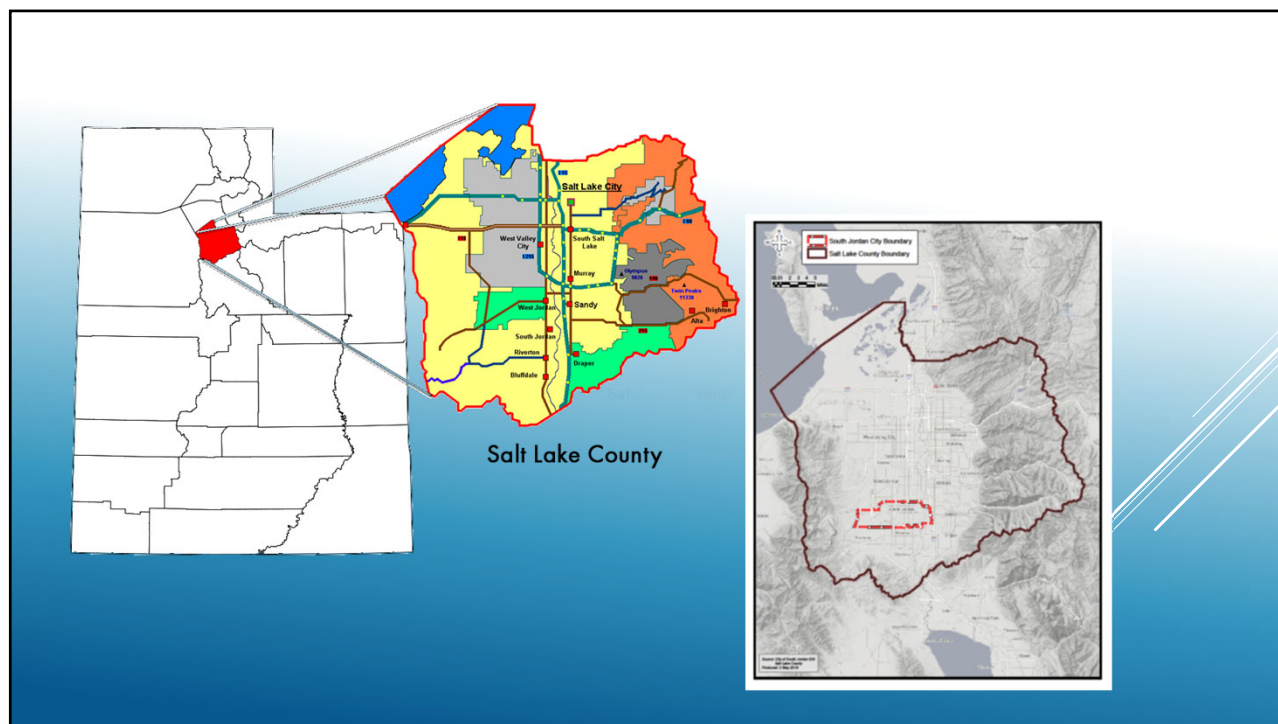
1

SOUTH JORDAN CITY

- Incorporated in 1935
- 22.1 square miles, situated in the southwest area of Salt Lake County
- Current Population: 89,142+



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WHO IS SOUTH JORDAN?

- ▶ Jordan Valley Water Conservancy District
- ▶ TransJordan Landfill
- ▶ Home of the Bees
- ▶ Jordan Basin Water Reclamation Facility
- ▶ Jordan River
- ▶ Kennecott Copper Mine



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SOUTH JORDAN CITY – WATER SOURCES



Drinking Water – supplied from Jordan Valley Water Conservancy District.



Irrigation Water – separate system that serves 15% of homes in the City for landscape irrigation.

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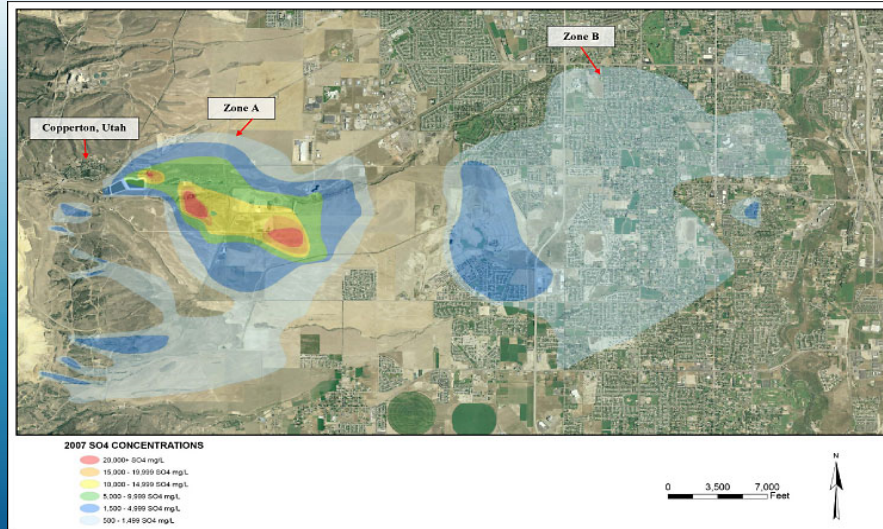
SOUTH JORDAN CITY – WHY POTABLE REUSE?

- Ground water contaminated from mining tailings
- No local drinking water supply



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MAP OF TWO PLUMES PLUMES



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SOUTH JORDAN

WATER SUPPLY CONCERNS

- Local Reservoir Storage Levels 2022:

➤ **43% Capacity**

- Total Statewide Reservoir Capacity 2022:

36%



- Local Reservoir Storage Levels 2023 (As of December):

➤ **82% Capacity**

➤ **39% Increase from 2022**

- Total Statewide Reservoir Capacity 2023 (December):

48%



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SOUTH JORDAN CITY – WHY POTABLE REUSE?

- Water recycling can be part of the answer for meeting water demand needs throughout the state



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WATER CONSERVATION EFFORTS

- Turf Removal – Nearly 62 Olympic-Size Tennis courts
- Many rebate programs available
- Advanced Metering
 - Leak Detection
 - Targeted Education
- Converting City owned park & Park Strips



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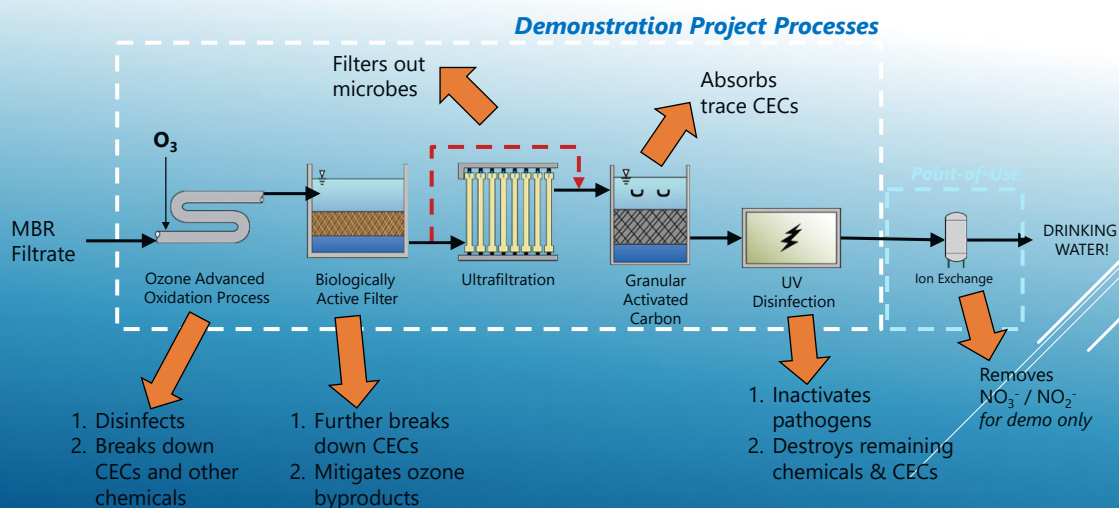
WHAT IS PURESZOJO?

- Demonstration project that treats wastewater effluent from the **Jordan Basin Water Reclamation Facility** to meet drinking water standards
- Processing 10 gpm through an advanced water treatment train

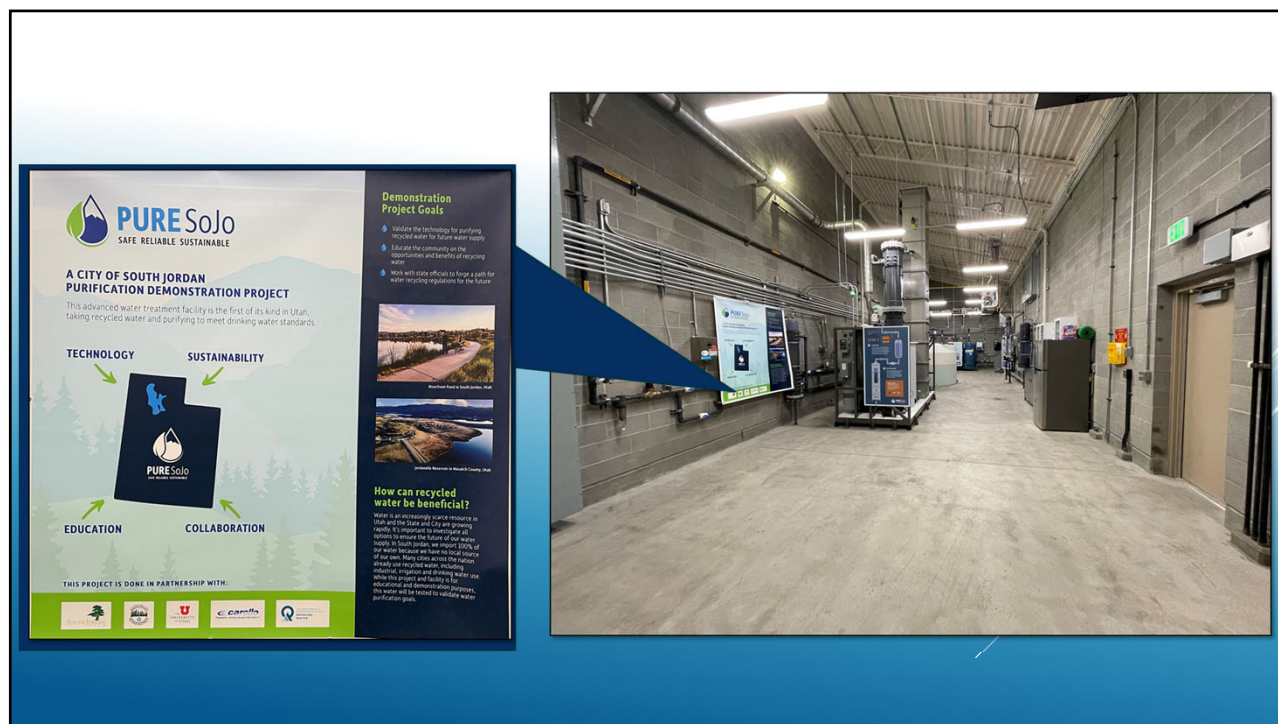


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ADVANCED TREATMENT PROCESS -



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Ultrafiltration



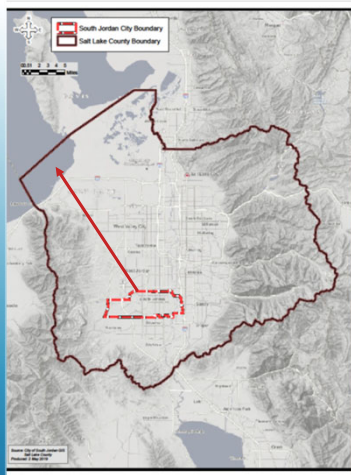
GAC



UV



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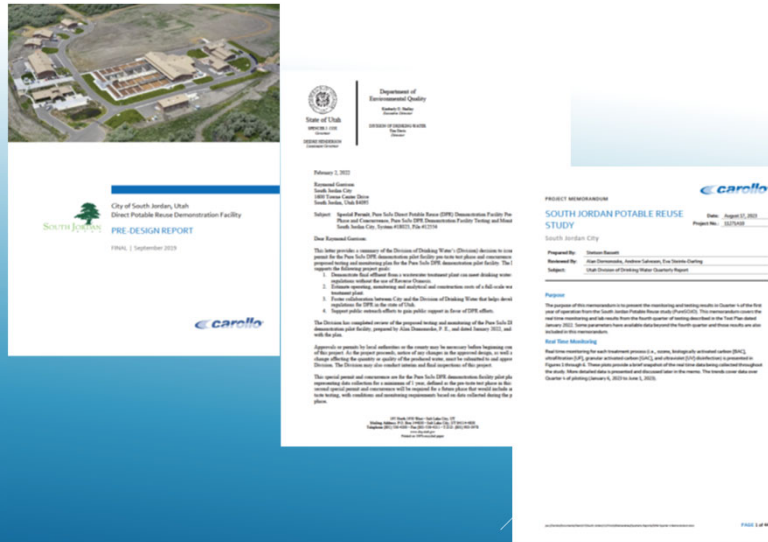
WHY CBAT TREATMENT PROCESS

- Visited many different Reuse projects.
- Difficulties for RO waste stream.
- Lower energy costs.
- Proven Technology

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ENGAGE REGULATORS

- Multiple meetings about the project.
- Shared pre-design report and construction drawings
- Quarterly Meetings to share results
- Operating Permit from Water Quality Board



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WHERE ARE WE NOW

- Approved sample plan
- Approved Operational Report
- Taste-Testing permit – Very close
- Approved Log Reduction
- Application for Water Reuse – State Engineer
- Water Right Change Application – State Engineer

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WHERE ARE WE NOW

- NWRI – Final Report
- Approved Log Reduction
- Final DPR/IPR Regulations – Division of Drinking Water



Pure Sojo DPR Demonstration Project

Independent Advisory Panel Meeting 1
July 12, 2022

Prepared for

South Jordan, Utah
Public Works

Prepared by

National Water Research Institute
18700 Ward St.
Fountain Valley, CA 92708

October 20, 2022



Pure Sojo Water Purification Project

Independent Advisory Panel Meeting
Report: Consensus Findings and
Recommendations

Meeting Held October 10, 2023

Prepared for

South Jordan, Utah
Public Works

Prepared by

National Water Research Institute
18700 Ward St.
Fountain Valley, CA 92708

November 28, 2023

18700 Ward St. • Fountain Valley, CA 92708 • nwri-usa.org

Table 3 Proposed Updated LRV Goals for Pure Sojo

Benchmark	Virus	Giardia	Cryptosporidium	Basis / Reference
Source water concentration ⁽¹⁾	< 0.25 MPN/L	< 0.108 cysts/L	< 0.121 oocysts/L	See Table 1
Drinking water goal	2.2×10^{-7} MPN/L	6.8×10^{-6} cysts/L	3.0×10^{-6} oocysts/L	See Table 2
Calculated LRV Gap	< 6.1-log	< 4.2-log	< 3.5-log	$\text{Log}_{10}(\text{Line1/Line2})$
Proposed LRV Goals	8-log	6-log	5.5-log	Minimum LRV requirements established by TCEQ (2022) and Colorado (2022).

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Project Impact to the GSL

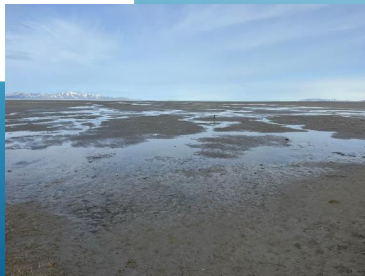
CITY OF SOUTH JORDAN
PURE SOJO WATER REUSE PROJECT
IMPACTS ON WATER QUANTITY AND QUALITY IN THE
JORDAN RIVER AND GREAT SALT LAKE,
SALT LAKE COUNTY, UTAH

Prepared for
City of South Jordan Public Works
10500 South Riverhead Road
South Jordan, Utah 84095

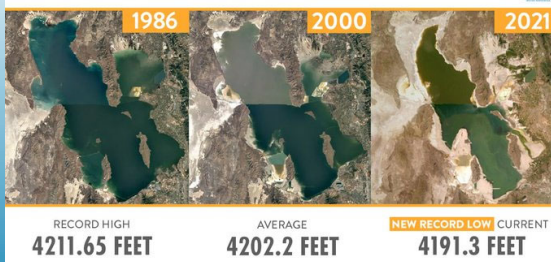
Prepared by
SMCA Environmental Consultants
307 East 200 South, Suite 200
Salt Lake City, Utah 84115

SMCA Project No. 75445

October 2023



GREAT SALT LAKE ELEVATION



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TASTE TEST EVENT

South Jordan Taste Testing Check List

Today's Date: _____

Scheduled Time for Taste Testing: _____

Pure Salt Operator: _____ Initials: _____

Item	Pass	Value	Description
1.	____	N/A	Has JMWSP been reminded 24 hrs prior to the taste testing event?
2.	____	N/A	Verify on day of taste testing that JMWSP has been operating normally for the last 24 hrs. -Turbidity less than 0.3 NTU (based on operating data) -Normal UV operations (no faults) -No process upsets (ammonia less than 1 mg/L as N)
3.	____	pH _____ Cal. Date: _____ Excav. Exempt: _____	Has AWT inlet been working properly for the last 24 hrs? -pH between 6 and 8 for last 4 hrs -pH meter calibrated in last 3 months -Excursion exemption requested (see notes below)
4.	____	TOC _____ Cal. Date: _____ Trans. OS TOC _____ Cal. Date: _____ Turbidity: _____ Cal. Date: _____ BIO Date: _____ Excav. Exempt: _____	Has Ozone/BIO been working properly for the last 24 hrs? -TOC -TOC analyzer cleaned within last month -Ozone -Transferred Ozone TOC ratio greater than 0.8 -Ozone gas monitor and ozone residual analyzer functioning and calibrated/cleaned within last 6 months -Turbidity -Filter effluent turbidity less than 0.25 NTU -Turbidimeter calibrated within last month -Backwash (verification of normal operations) -Filter backwashed less than 7 days prior -Rising headloss since previous backwash -Saniter cleaned headloss as previous 4 backwash cycles -Excursion exemption requested (see notes below)
5.	____	TMP _____ Cal. Date: _____ Excav. Exempt: _____	Has UF been working properly for the last 24 hrs? -TMP (verification of normal operations) -Sanitouch pattern over last week -TMP less than 25 psid -Turbidity -Effluent turbidity less than 0.1 NTU -Turbidimeter calibrated within last month -Successful direct integrity test within last 24 hrs -Excursion exemption requested (see notes below)
6.	____	Flow _____	Has GAC been working properly for the last 24 hrs? -Flow greater than 7 gpm

Enter all daily plant data on this page:

Make Taster Notes: South Jordan City
Transfer Point: 3 Backwash Station

Preparing for Backwash: _____
Backwash: _____
Backwash: _____

TOC TOC ratio: 0.8 (0.8-1.0) (1.0-1.2) (1.2-1.4) (1.4-1.6) (1.6-1.8) (1.8-2.0) (2.0-2.2) (2.2-2.4) (2.4-2.6) (2.6-2.8) (2.8-3.0) (3.0-3.2) (3.2-3.4) (3.4-3.6) (3.6-3.8) (3.8-4.0) (4.0-4.2) (4.2-4.4) (4.4-4.6) (4.6-4.8) (4.8-5.0) (5.0-5.2) (5.2-5.4) (5.4-5.6) (5.6-5.8) (5.8-6.0) (6.0-6.2) (6.2-6.4) (6.4-6.6) (6.6-6.8) (6.8-7.0) (7.0-7.2) (7.2-7.4) (7.4-7.6) (7.6-7.8) (7.8-8.0) (8.0-8.2) (8.2-8.4) (8.4-8.6) (8.6-8.8) (8.8-9.0) (9.0-9.2) (9.2-9.4) (9.4-9.6) (9.6-9.8) (9.8-10.0) (10.0-10.2) (10.2-10.4) (10.4-10.6) (10.6-10.8) (10.8-11.0) (11.0-11.2) (11.2-11.4) (11.4-11.6) (11.6-11.8) (11.8-12.0) (12.0-12.2) (12.2-12.4) (12.4-12.6) (12.6-12.8) (12.8-13.0) (13.0-13.2) (13.2-13.4) (13.4-13.6) (13.6-13.8) (13.8-14.0) (14.0-14.2) (14.2-14.4) (14.4-14.6) (14.6-14.8) (14.8-15.0) (15.0-15.2) (15.2-15.4) (15.4-15.6) (15.6-15.8) (15.8-16.0) (16.0-16.2) (16.2-16.4) (16.4-16.6) (16.6-16.8) (16.8-17.0) (17.0-17.2) (17.2-17.4) (17.4-17.6) (17.6-17.8) (17.8-18.0) (18.0-18.2) (18.2-18.4) (18.4-18.6) 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FIRST YEAR CHALLENGES



- Manufacturers
 - Build a relationship with them.
- Document
 - Can be a reference in future (full scale)
 - Trouble shooting problems
- Cross Train Employees
 - Always have someone to monitor\maintenance the plant.
- Aging Chlorine – purchased smaller amounts
- Nitrates
 - Added an Analyzer
 - Ion Exchange Unit



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FIRST YEAR CHALLENGES



- Distributors
 - Contact for information
 - Calibration Contracts
 - Replacement Parts
 - Bidding
- GAC disposal
- Removed Media from BAC
- Ion Exchange Media
- SCADA Programming
 - Scaling analyzers
 - Sequence of shut downs if equipment a

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SITE VISITS – LOCAL LEADERS & U.S. REPRESENTATIVES



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SITE VISITS



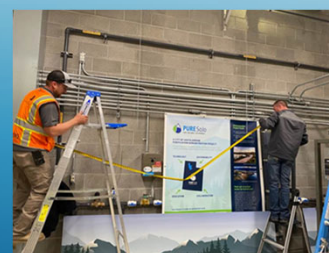
26

Public Perception

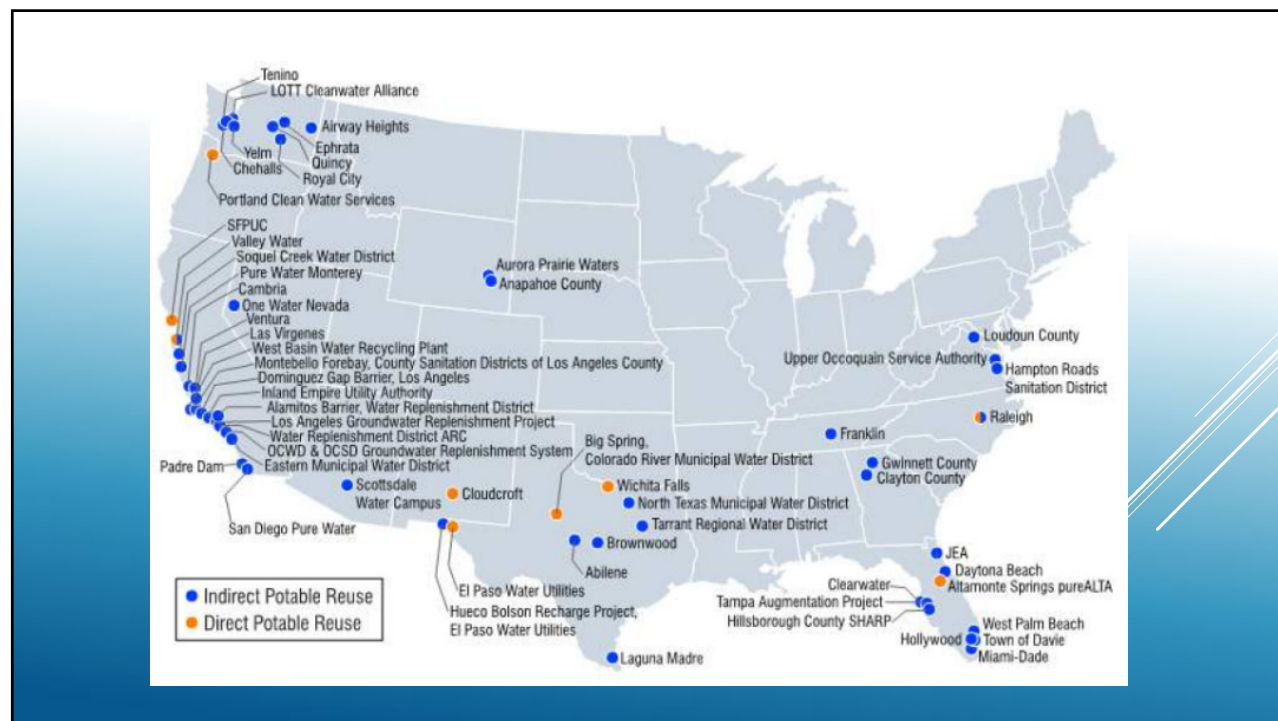


Public Perception

- Developing material – Pamphlets, Stickers
- Outreach Plan – Key Messages
- Staff Training
- Signage
- Water Bottle
- Video
- Preparing for Ribbon Cutting



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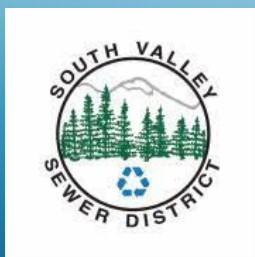
NEXT STEPS

- Finalize permit to offer purified water taste testing
- Media Event - March
- Demonstration Facility Tours & **Public Engagement**
- Continue Gathering Data
- Feasibility Study (Full Scale) & Grant



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PROJECT PARTNERS



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