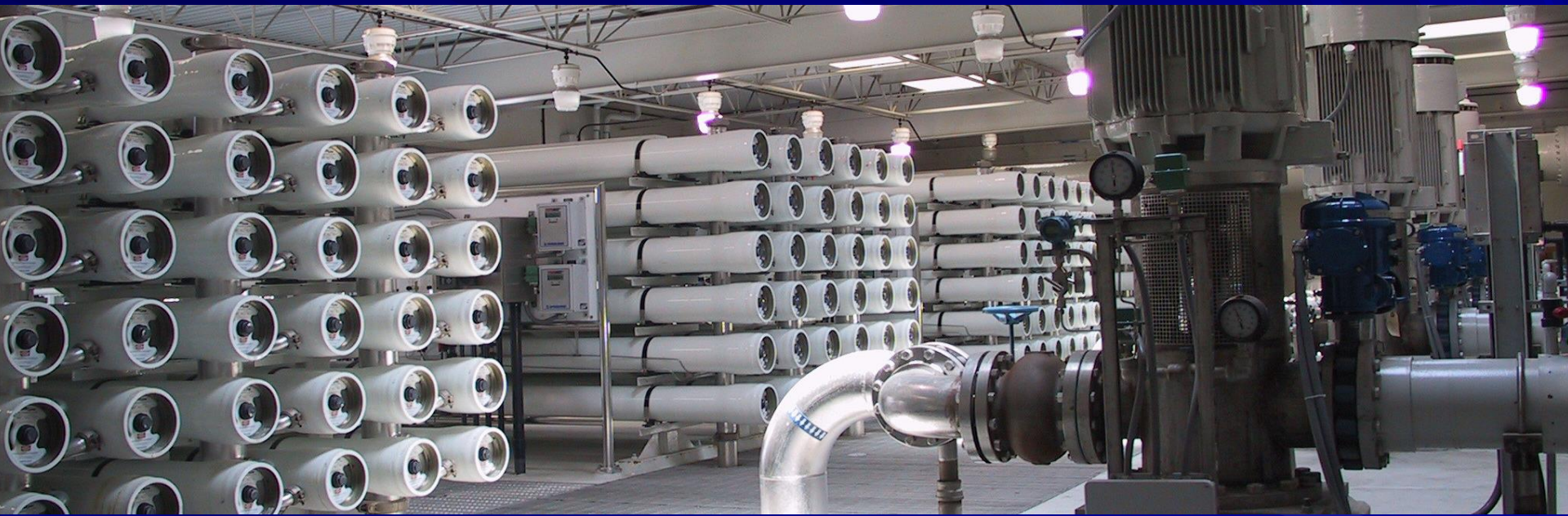


# Brine Discharge in the Santa Ana River Watershed



David Ruhl, Engineering Manager  
Santa Ana Watershed Project Authority



# Santa Ana River Watershed

- Largest coastal stream system in Southern California
- Covers over 2840 square miles in parts of four counties
- Home to 60 cities and 97 water related agencies
- Primarily urban home to over 5 million people





**SAWPA Member Agencies**



**IEUA**

**SBVMWD**

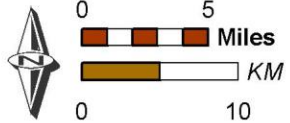
**WMWD**



**EMWD**

**OCWD**

*Santa Ana River*



# SAWPA Primary Activities

- Inland Empire Brine Line (formerly known as Santa Ana Regional Interceptor)
- “Roundtable” – facilitator of several multi-agency task force efforts
- Long term regional water planning - OWOW





# Over 30 years of Salt Management in Santa Ana River Watershed



# Origin of Salt in the SAR Watershed

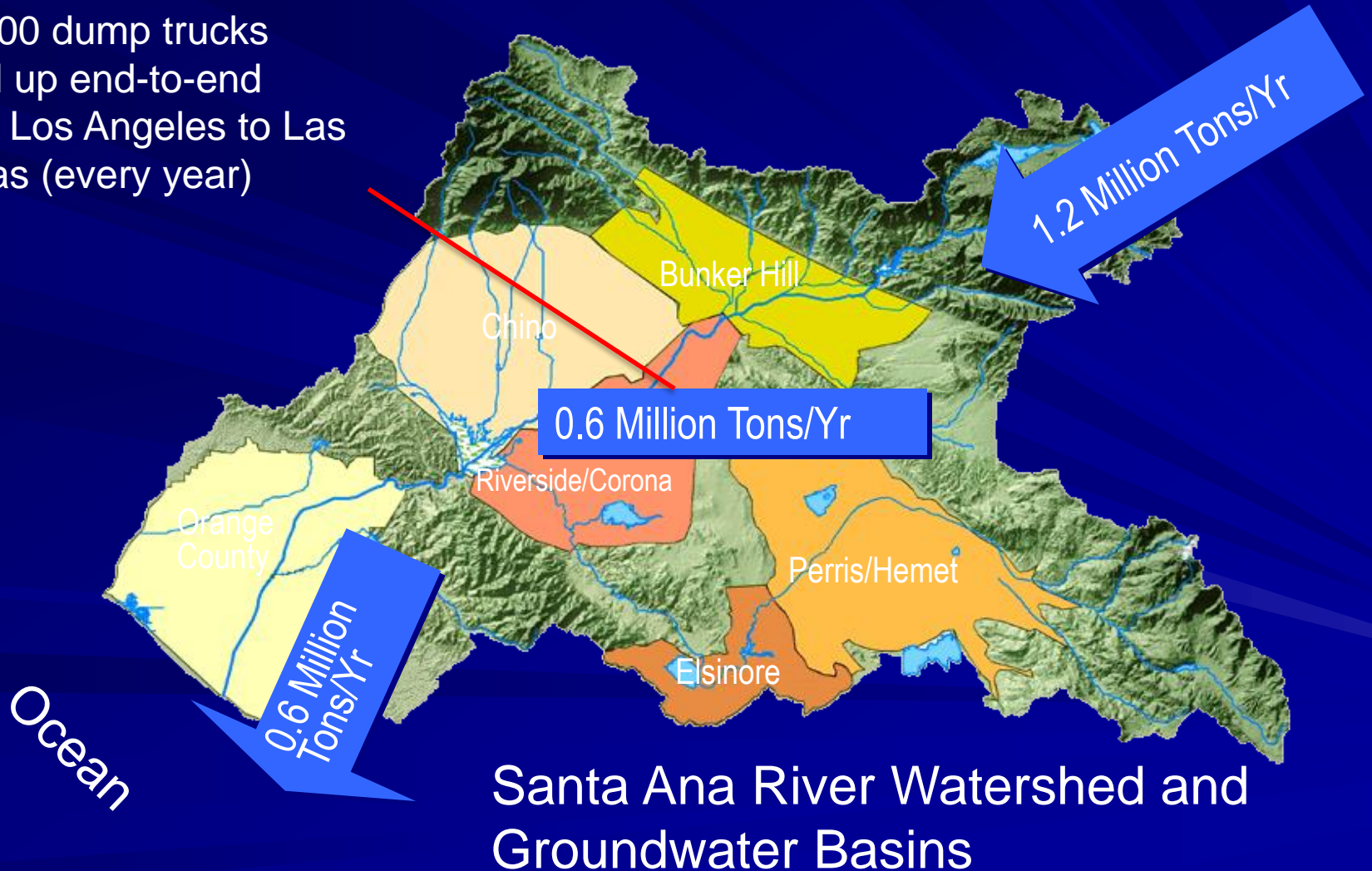
- Historical agricultural uses
  - irrigation of crops, dairies
    - Dairy Washwater, Manure
- Imported water from Colorado River, State Water Project
- Salt Imbalance
  - Long term





# SAR – Salt Imbalance

37,000 dump trucks lined up end-to-end from Los Angeles to Las Vegas (every year)



Santa Ana River Watershed and Groundwater Basins

# Brine Wastewater

- What is brine wastewater?
- How is it created?
- Where can it be safely disposed?



Inland Empire Brine Line



Treatment



Pacific Ocean



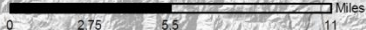
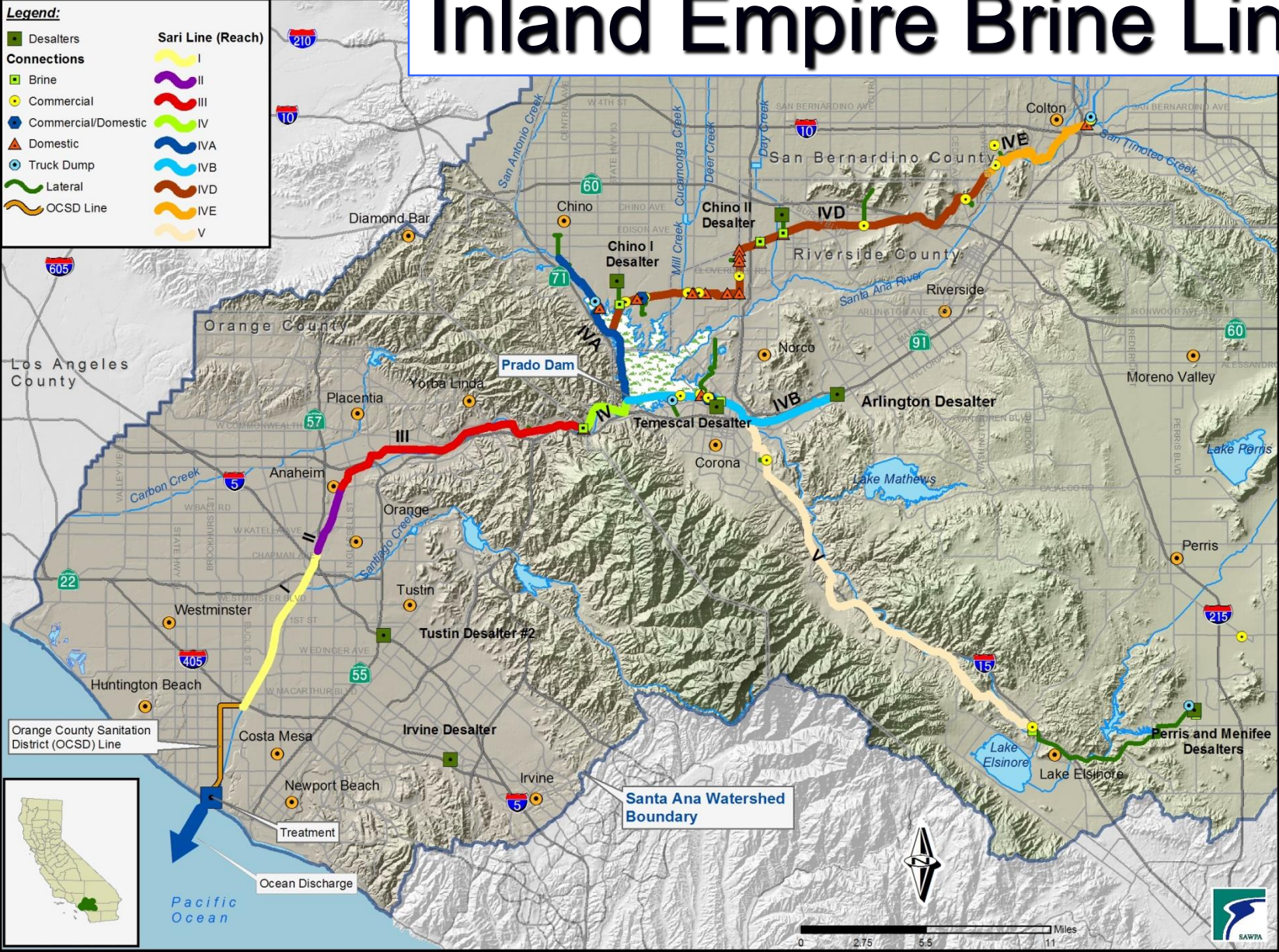
# Inland Empire Brine Line

**Legend:**

- Desalters
- Brine
- Commercial
- Commercial/Domestic
- Domestic
- Truck Dump
- Lateral
- OCSD Line

**Sari Line (Reach)**

- I
- II
- III
- IV
- IVA
- IVB
- IVD
- IVE
- V





# Protecting the Watershed



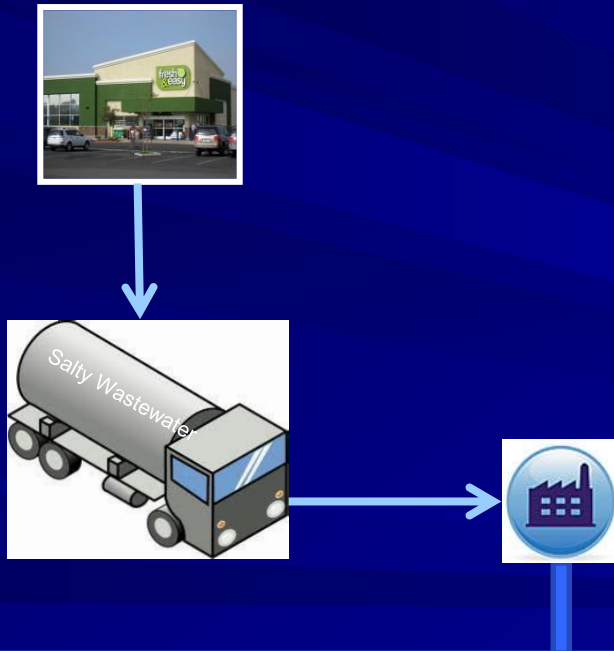


# Industries that can benefit from the Inland Empire Brine Line



# Two ways to Connect

## Trucked Disposal Process



## Direct Disposal Process



**Inland Empire Brine Line**



# What is the connection process?



Technical



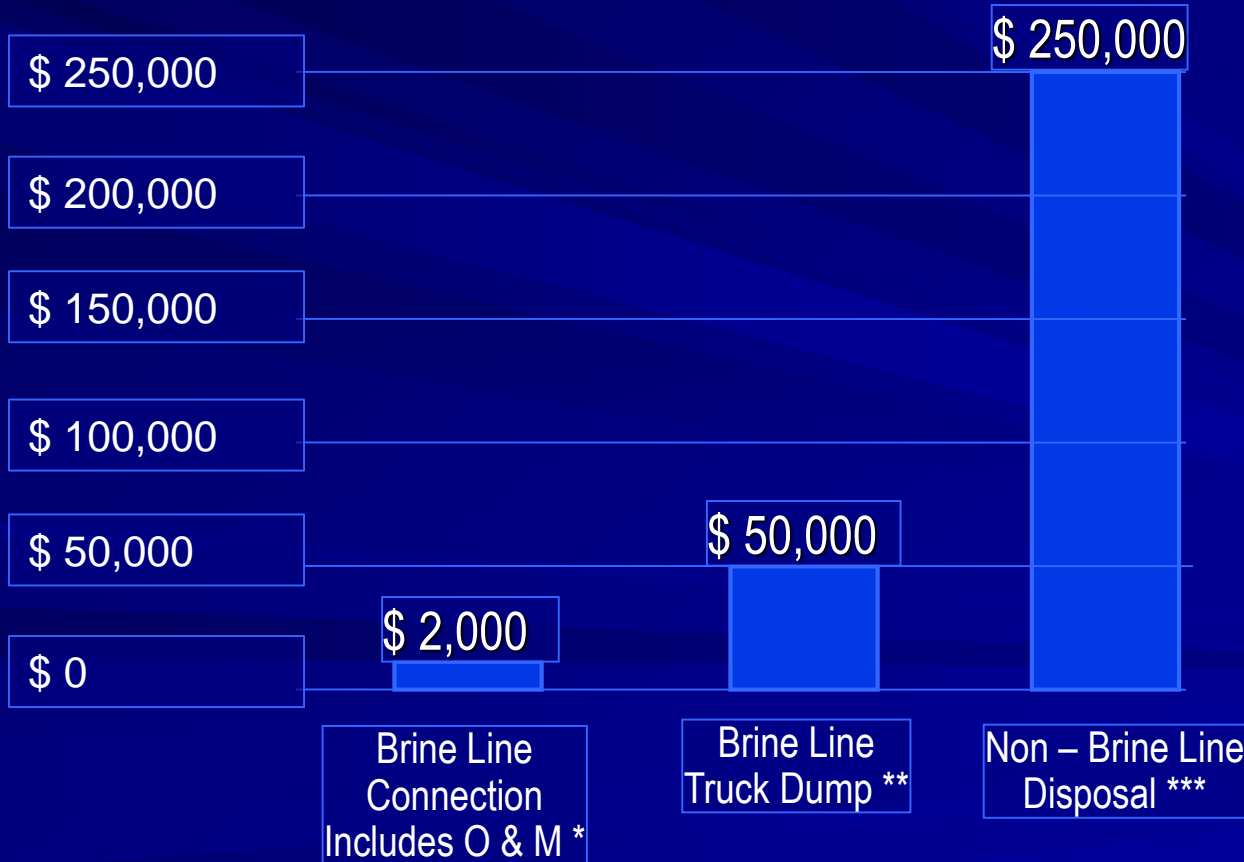
Financial



Administrative

# How much does it cost?

## Approximate Disposal Cost for $10^6$ Gallons of Brine



\* Does not include substantial treatment and treatment and capacity purchase/lease.

\*\* Does not include transport.

\*\*\* Based on \$.25 per gallon rate . Does not include transport.



# Brine Line Users

- Desalting



- Industrial Cooling



# Brine Line Users

- Food Processing



- Collection Stations

- Hospitals
- Water softening
- Semiconductor Mfg



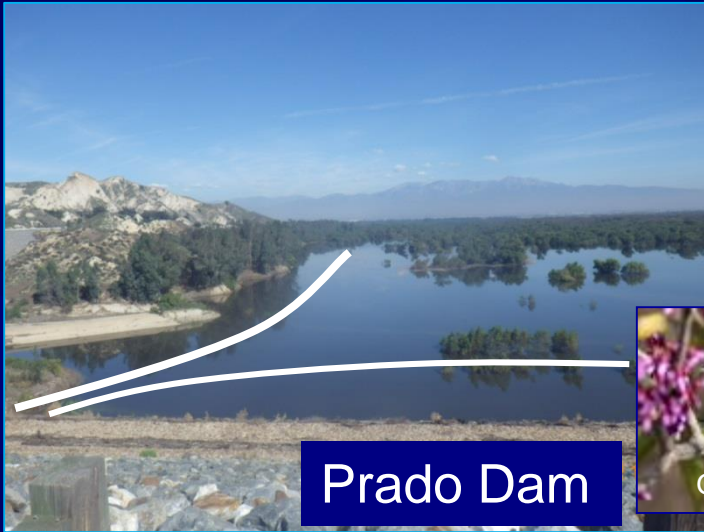


# Building and Operating the Brine Line

- Original Construction
- Operational Challenges
- Pretreatment Program
- Capital Repairs



# Operational Challenges



Prado Dam



Gnatcatcher



Riparian



Scale



Least Bell's Vireo



Aliso Creek



# Pretreatment Program

- SAWPA is considered a Delegated Authority and along with its Member and Contract Agencies administer the program by performing permitting, inspection, monitoring and enforcement
- 73 permitted users
  - 23 Indirect dischargers
  - 50 Direct dischargers
- 7 Agencies involved

# Capital Repairs





# What are customers saying?

*"The Brine Line is important to us because we discharge about 145,000 gallons of water per day. If we didn't have a way to dispose of that much water to the Brine Line, we would have to shut down the plant."*

-Viviano Del Villar | Vice President of Operations | Del Real Foods

*"Part of our mission statement as a company is to conserve the world's energy and resources. I think conserving water and being able to use the Brine Line is part of that mission statement. The Brine Line has been the most reliable, low cost option for us to remove water from the site."*

-Rick Glasmann | General Manager | International Rectifier

*"We wouldn't be able to operate without the Brine Line."*

-Ben Strasshofer | District Operations Manager | Mission Linen Supply

*"There are no other feasible alternatives to the Brine Line."*

-Inland Empire Energy Center

# Thank You!

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