

# San Felipe Pueblo: Going the Distance on a Comprehensive Wastewater Project

New Mexico Infrastructure Finance Conference  
-2008 -



October 28, 2008



# Agenda

- Background: Project need
- Evaluating alternative paths
- The search for funding
- Pulling it all together: The path
- Results



# Background:

## The need for the project

In 2003, the Tribal Utilities Group & leaders of the Pueblo realized they had multiple groups working on the wastewater treatment needs of the Pueblo

- The BIA was working on a school expansion
- The economic development area needed additional capacity
- Pueblo lagoons needed to be upgraded or replaced
- All new homes in unsewered areas were constructing ST/DF
- Each area had a different manager and a different funding source



# Alternative Paths

Pueblo used its own resources to fund the Preliminary Engineering Report (PER).

The PER looked at:

- Decentralized Systems
- Two or three WWTP's on Pueblo
- One WWTP in three different locations
- Different treatment alternatives
- Ability to expand, handle regional needs, and produce outstanding water quality



# The Chosen Path

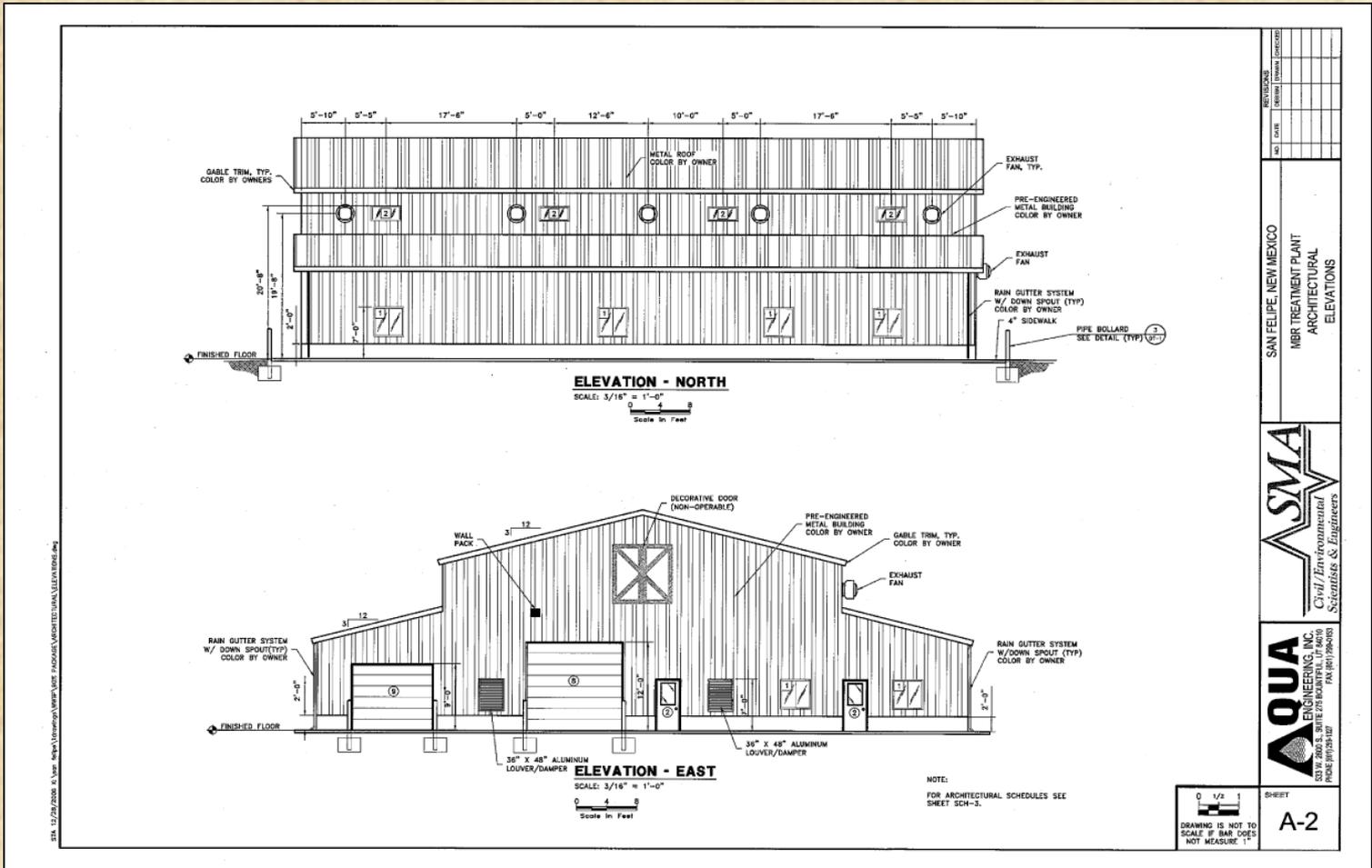
Membrane Bioreactor (MBR) technology was selected by the Pueblo.

- Competitive capital cost
- Lowest operating cost
- Most publicly appealing
- Smallest footprint (25% of conventional size)
- Allows complete reuse of treated wastewater
- Project could be phased
- System could be expanded



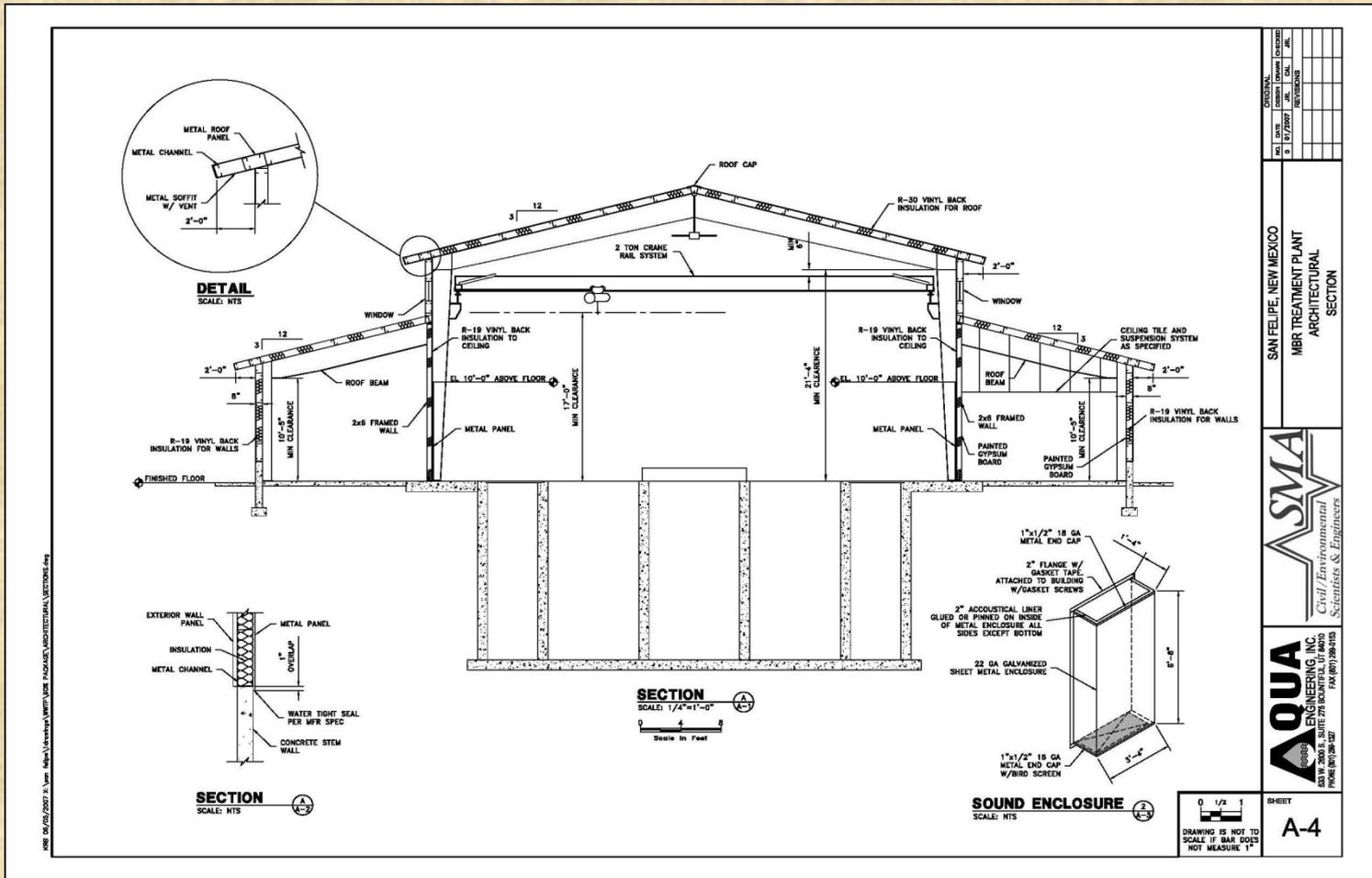
# Oakley Utah Water Reclamation Plant





Preliminary Design of Building for Pueblo: 90'X90'





Building Cross section showing 17' deep basins



# Treatment Plant Design Considerations

## Outstanding Treated Water Quality:

- TSS from 200 mg/l to 0 mg/l
- BOD from 200 mg/l to 0 mg/l
- Nitrates from 30 mg/l to < 8 mg/l
- Phosphorous from 4 mg/l to 2 mg/l
- Fecal and Total Coliform to 0

## System easily expandable:

- 200K GPD now to 800K GPD 20 years from now



# The Search for Funding

- PER developed to seek USDA-RUS funding
- Martha Torres and Lydia Gurule provided valuable assistance with project kickoff and soliciting support from Senators Udall and Bingaman
- IHS kicked in funding for aerial mapping
- BIA committed funds from school wastewater system.
- Governor Richardson's office contributed funds through Water Innovation Fund.  
*(for advanced treatment allowing complete reuse of WW)*



# Search for Funding (cont.)

Pueblo actively sought State funding

- NM Indian Affairs Dept - ST and GF (2005)
- Governor's Tribal Infrastructure Fund (2005-2006)
- NM Capital Outlay STB and GF (2006-2007)
- State and Tribal Assistance Grants (STAG)
- New Mexico Finance Authority low interest loan



# Funding

## Sources and Amounts:

<b>Funding Source</b>	<b>Funding Type</b>	<b>Amount</b>
<b>Indian Health Service (IHS)</b>	<b>Donation</b>	<b>\$60,000</b>
<b>Bureau of Indian Affairs (2004)</b>	<b>Grant</b>	<b>\$300,000</b>
<b>Governor's Water Innovation Fund (2004)</b>	<b>Grant</b>	<b>\$400,000</b>
<b>NM Indian Affairs Department - ST (2005)</b>	<b>Grant</b>	<b>\$50,000</b>
<b>NM Indian Affairs Department - GF (2005)</b>	<b>Grant</b>	<b>\$75,000</b>
<b>Governor's Tribal Infrastructure Fund (2006)</b>	<b>Grant</b>	<b>\$300,000</b>



# Funding

## Sources and Amounts:

<b>Funding Source</b>	<b>Funding Type</b>	<b>Amount</b>
<b>New Mexico Capital Outlay - STB (2006)</b>	<b>Grant</b>	<b>\$200,000</b>
<b>New Mexico Capital Outlay - GF (2006)</b>	<b>Grant</b>	<b>\$100,000</b>
<b>New Mexico Capital Outlay - STB (2007)</b>	<b>Grant</b>	<b>\$500,000</b>
<b>New Mexico Capital Outlay - GF (2007)</b>	<b>Grant</b>	<b>\$25,000</b>
<b>New Mexico Finance Authority (NMPPRF) (2007)</b>	<b>Loan</b>	<b>\$10,850,000</b>



# Funding Summary

- Pueblo constantly searching for grants
- Pueblo used grants for specific tasks
- Determination made that low interest loan could maintain project momentum yet keep costs down



# Project Path

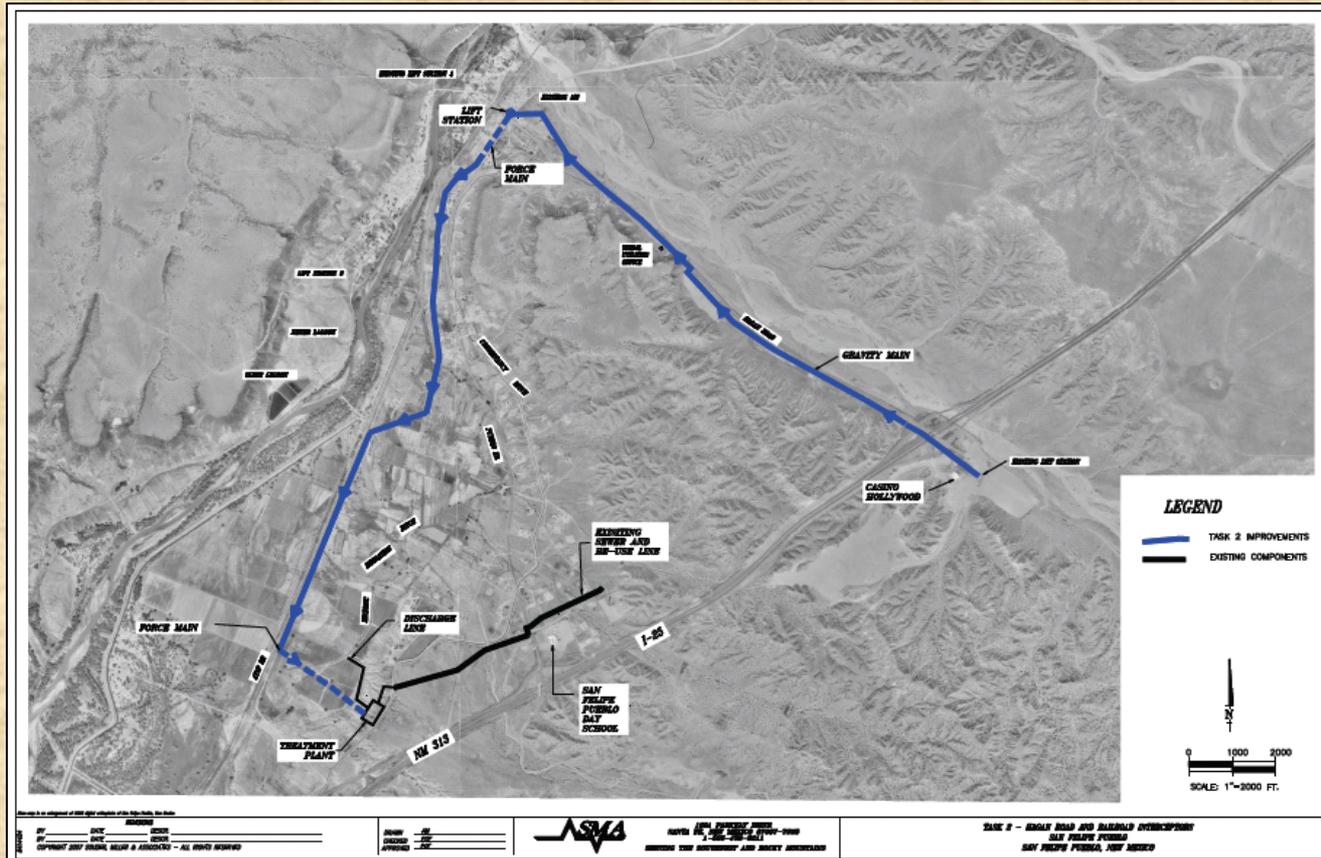
## Project broken into five tasks

- Task 0: School to WWTP Line
- Task 1: Wastewater Treatment Plant Construction
- Task 2: Hagan Road Interceptor and Railroad Interceptor to WWTP
- Task 3: Historic Pueblo Collection System Rehab & River Crossing
- Task 4: SE Residential Collection System
- Task 5: Re-use System/Project Contingency  
(still to be determined)



# Phases 0, 1, & 2

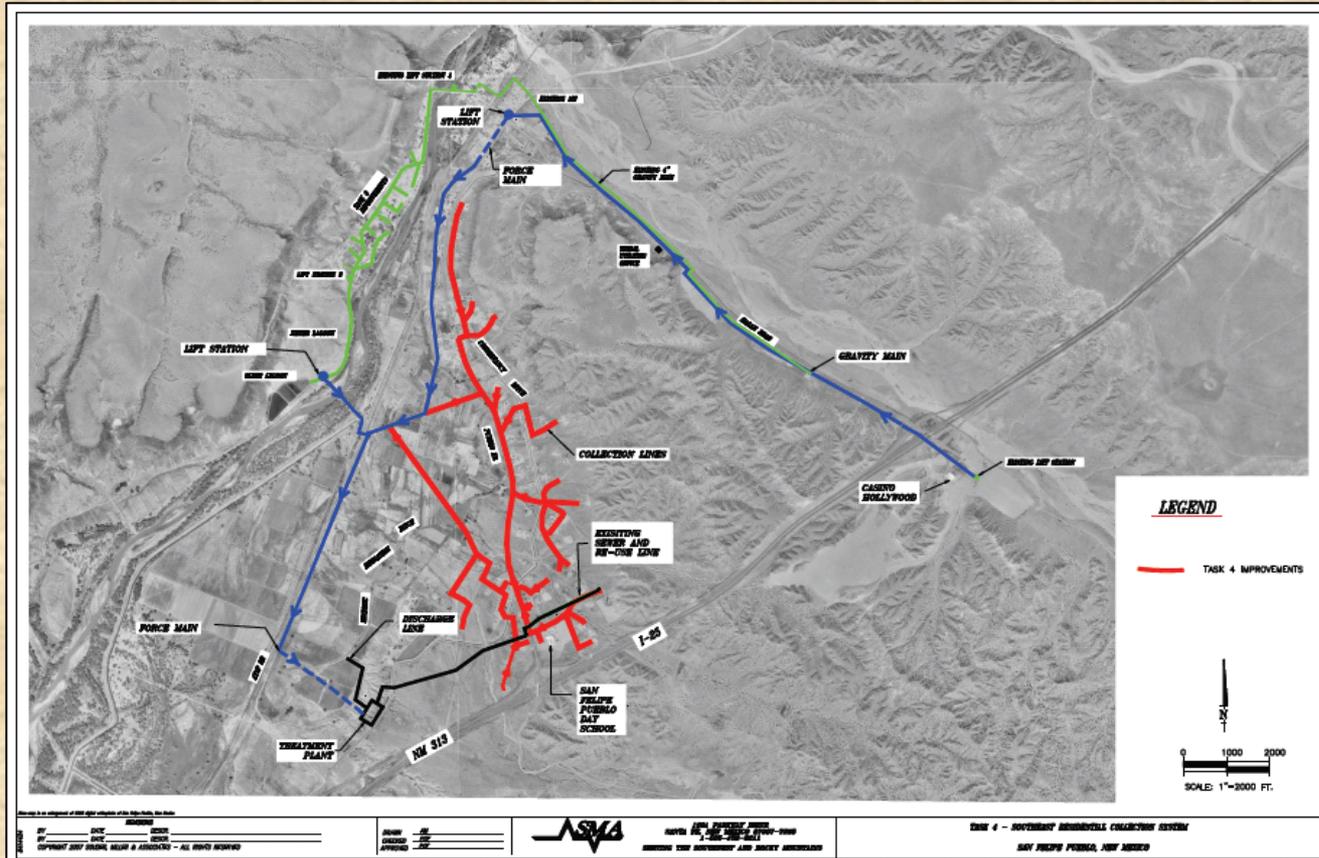
(School, WWTP, Hagen Road)





# Phase 4

(SE Housing Area)



# Construction!

(Phase 0 - School to WWTP)



# Construction WWTP



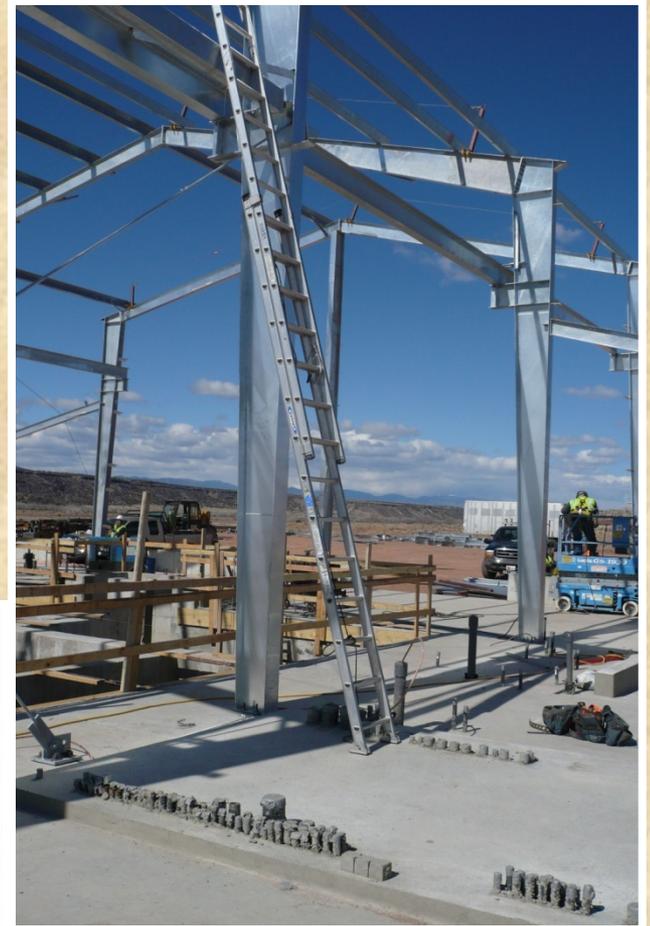
# WWTP November 2007



# WWTP January 08



# WWTP March 08



# April 2008

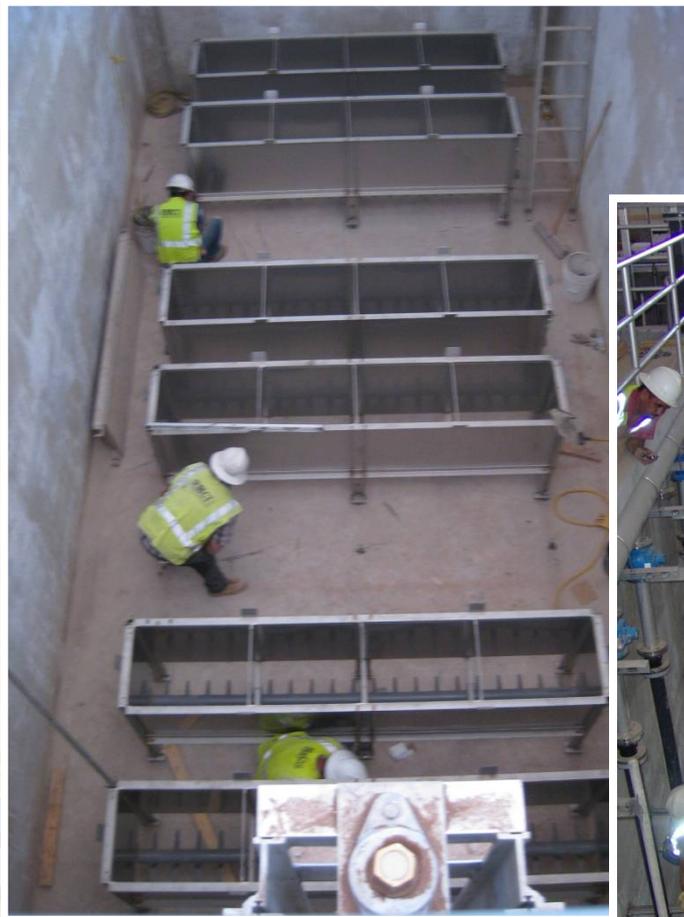


# May 2008



# May 2008

## Setting and testing membranes



# May 2008





# Summer 2008



# Construction Phase 2

## Collection lines



# Summary

- The plant is state of the art and the design allows for expansion to handle regional development
- Input was required from all areas
- The search for funding was continuous
- Ultimately, a low interest loan which enabled the Pueblo to remain in control was the selected path to funding the project



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