

# Desalination – It's Not For Everyone



**NORRISLEAL**  
ENGINEERING WATER

**THIS PRESENTATION IS RATED**

<b>R</b>	<b>RESTRICTED</b> 
	UNDER 17 REQUIRES ACCOMPANYING PARENT OR ADULT GUARDIAN <sup>®</sup>
Strong horror violence, Thematic elements, Images of terror, Intense situations of peril, Strong sexual content, and strong adult language	

**BY THE TEXASDESAL ASSOCIATION**



**MOTION PICTURE ASSOCIATION OF AMERICA**

# Southmost Regional Water Authority





**Gulf of Mexico**

**Rio Grande**

**Texas**

**Mexico**

**2001**



# Partners

- Brownsville PUB
  - 80%
- Laguna Madre WD
  - 14%
- Los Fresnos, VMUD, BND and Indian Lake
  - 6%



# The Opposition

- Desalination plant will kill San Martin Lake
- ..toxic mess will discharge high levels of mercury, lead, chromium..
- Perched water will dry up in three years
- El Paso Plant is putting in 8.7 mgd for \$8 million and this plant is \$30 for 7.5 mgd

## Community Forum

### Desalination plant will kill Lake San Martin

Editor:

The Southmost Regional Water Authority's desalination plant, which is funded by the Brownsville Public Utilities Board, sounds great in public relations news releases, but it is not what it seems.

The truth is that the remaining byproduct from the reverse osmosis process is toxic. The discharge permit of 4 million gallons per day contains high values for arsenic and zinc that are concentrated 4 to 1 in the process. These exceed saltwater acute/chronic aquatic protection.

The permit not yet issued by the Texas Commission for Environmental Quality allows 12,720 milligrams per liter of total dissolved solids per day to be discharged into Lake San Martin, not the ship channel, which includes 7,000 mg/l of salt. That is two ounces per gallon, or more than 150 tons of salt per day directly into a critical aquatic, bird and black mangrove habitat.

This toxic mess also contains high concentrations of mercury, lead, chromium and four other toxic metals, all not sampled or regulated. Why? I have never seen such an open permit as this one. Have the TCEQ, Sierra and Audubon organizations all lost interest in the environment? How can this mess support marine life?

The Florida plant has caused terrible damage to Tampa Bay. Similar plants in San Diego and Santa Barbara also are closed.

The only ray of hope is that the plant's water source is not an aquifer but a perched buried river bed that is not rechargeable and will dry up in a couple of years — too late for Lake San Martin but it may save the Laguna Madre.

I have asked for a public hearing on these permits but because I don't live within a mile of the plant I cannot speak for the doomed wildlife and plants.

El Paso Public Service is putting in a similar brackish water plant to produce 8 million gallons per day for \$8.7 million, while the SRWAS 7.5-million-gallon plant costs more than \$30 million. Along with killing Lake San Martin, you are going to hurt the ratepayers also.

Donald Buddecke  
Port Isabel

### DROP US A LINE

Your opinion is important to us, so let us hear from you. Please keep your letters to the Community Forum concise and to the point. Preference will be given to short letters. Some longer submissions may be published as Another View columns. All submissions must be signed and include a daytime phone number for verification purposes. We reserve the right to edit for clarity and length.

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# Water flows will be toxic

Posted: Friday, December 26, 2003 12:00 am

Editor:

We will hear a public relations news release from the Brownsville PUB, Southmost Regional Water Authority and the Rancho Viejo water district about how the Texas Commission on Environmental Quality approved the massive toxic wastewater discharge from the reverse osmosis units.

Soon 4.5 million gallons per day of concentrated toxic water will flow down Olmito and Cameron County draining ditches to empty into Lake San Martin and into the bay. The TCEQ refused to notice that the application substituted the intake water to the plant for the discharge water when in reality the discharge water will carry more than 1,000 pounds of arsenic, 1,500 pounds of zinc, 91,000 tons of extra salt in one year among other metals in to Lake San Martin and line the bottoms of the ditches and lake for hundreds of years.

The public be warned: keep children out of the drainage ditches and do not eat any fish coming out of Lake San Martin. I am a professional engineer with 30 years of experience in these conditions, but if youd rather believe PUB in a couple of years the dead fish and birds will lets us know who is right.

Donald Buddecke

Port Isabel

Via the Internet



## **Desalination runoff could hurt environment**

**Posted: Sunday, June 8, 2003 12:00 am**

Editor:

It is interesting that NRS consulting engineer Bill Norris says the Southwest Regional Water Authority desalination plant has a discharge permit from the Texas Commission on Environmental Quality without a public hearing and they dont know anything about it. He says the wastewater is not toxic but its double the federal limits for arsenic, five times the limits for dissolved solids and 10 times the limits for chlorides (salt), which will kill off our sports fishing in the bay at 3 million gallons per day. He says they will pump 10 million gallons a day from a static nonrechargeable groundwater source, which he says is forever.

Reprint this statement three years after its operation if it makes it, but more likely it end up like PUBs other white elephant, the Brownsville Weir.

Donald Buddecke

Port Isabel

Via the Internet

# Laguna Madre Water District

- The truths
  - Benefited the most
  - Alternative supply
  - 14% share of the plant
  - 100% share of \$4m pipeline w/ only 14% of costs
  - Increasing supply potential
- The myths
  - Political Pressure
  - Fear of annexation
  - Fear of not being in control
  - We can do our own thing
  - We have enough water rights
  - The engineer will make a lot of money

# Fast Forward to Today

- Well field much more prolific than expected
- Concentrate discharge improve the quality of the receiving water
- Expansion underway



# Where is Laguna Madre Today?

- Searching for water rights
- Passed a bond issue for seawater in 2011
  - No activity since



# City of Beeville - Historical Perspective

**Water woes: Beeville City Council agrees to meet with Water Supply District Board, engineers to ponder freshwater problem, solution**

by Gary Kent

5 years ago

**Beeville has ample fresh water supply, city leaders report**

by Gary Kent

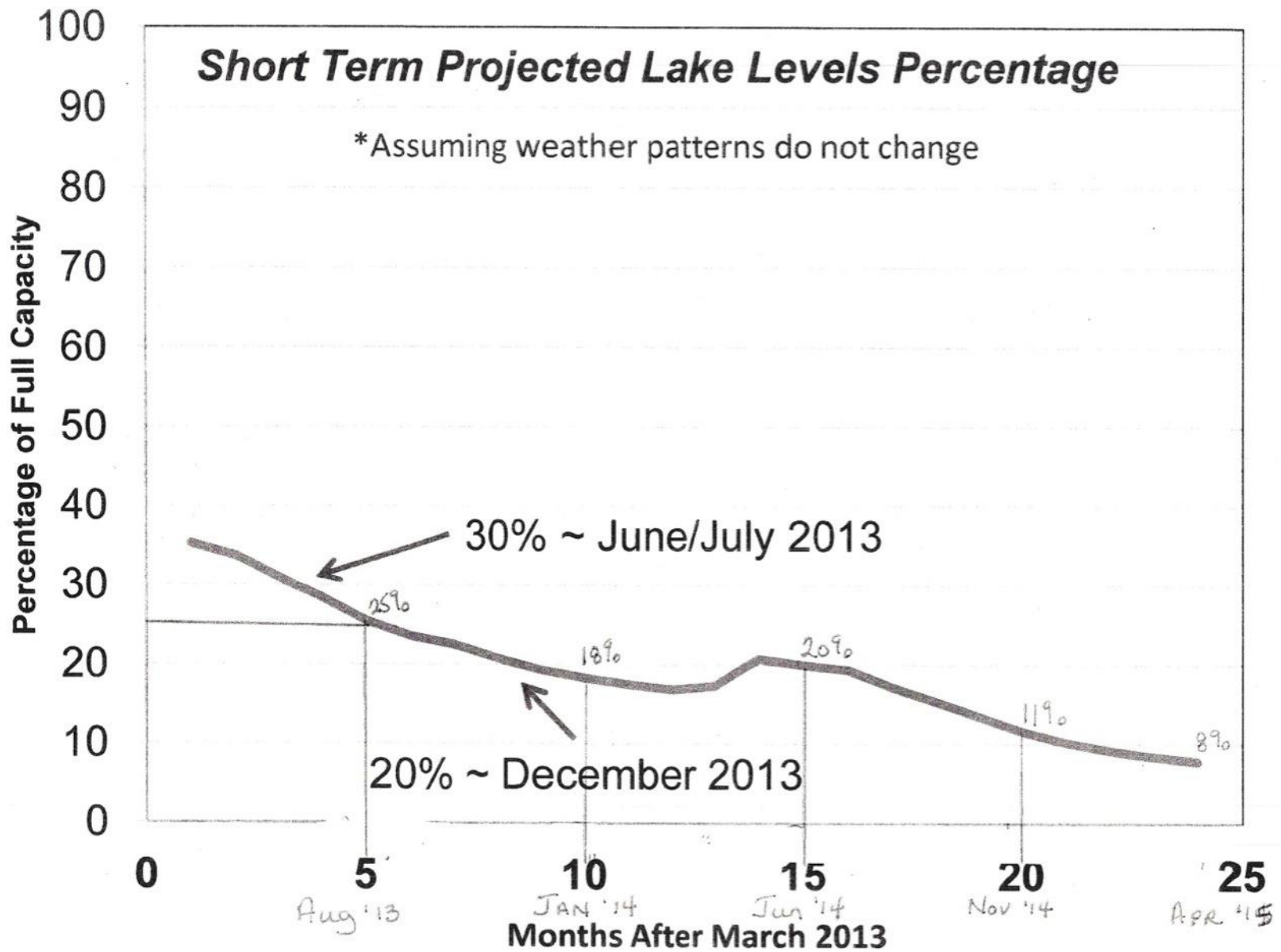
5 years ago

## *4B.3.1 City of Beeville*

*The City of Beeville contracts with City of Corpus Christi to purchase raw water from the CCR/LCC System. The contract allows the City to purchase only the water that it needs. No shortages are projected for the City of Beeville and no changes in water supply are recommended. **2006 Regional Water Plan***

## Short Term Projected Lake Levels Percentage

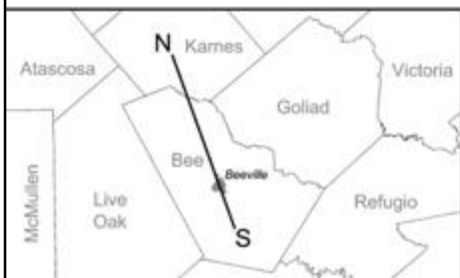
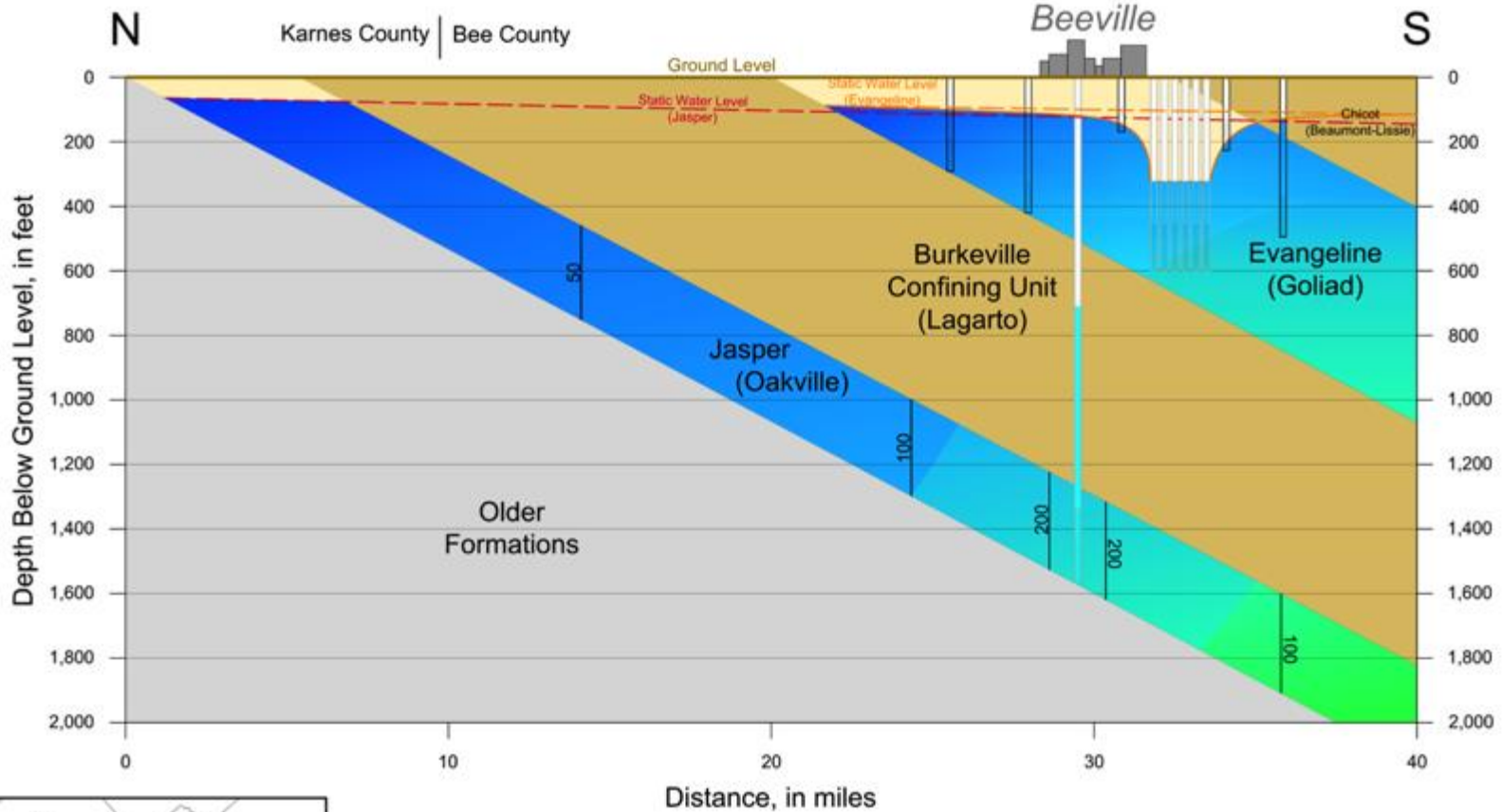
\*Assuming weather patterns do not change



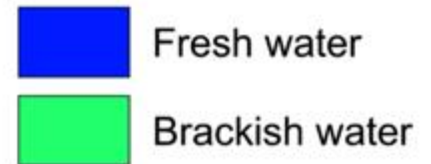
# Project Overview Options

- Option 1 – Continue to use surface water as sole source
- Option 2 – Groundwater from the Evangeline Aquifer
- Option 3 – Groundwater from the Jasper Aquifer





Drawing is not to scale  
 100X vertical exaggeration  
 Water quality is approximated  
 For illustrative purposes only





# Cost Comparison

Item	Existing Supply Corpus Christi	Outside City Wells (Evangeline )	Inside City Wells (Jasper)
Supply Water Cost	\$0.85	0.62	0.00
Project Costs for 3.0 mgd, Million \$	\$0	\$10.8	\$12.3
Upgrade to Plant, Million \$	\$10	\$0	\$0
Operation Costs/1000 gallons	\$0.70	\$0.60	\$0.70
Debt Service @3.9% for 20 years/1000 gal	\$0.39	\$0.71	\$0.81
Additional Treatment Capital Cost/1000 gal	0	\$0.22	0
<b>TOTAL COST PER 1000 GALLONS</b>	<b>\$1.94</b>	<b>\$2.15</b>	<b>\$1.51</b>

# Comparison Matrix

Item	Existing Supply Corpus Christi	Outside City Wells (Evangeline)	Inside City Wells (Jasper)
<b>Supply Water Cost</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Reliability in Drought</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Permitting</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Total Cost</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Potential Sale of Concentrate</b>	<b>3</b>	<b>3</b>	<b>1</b>
<b>Finished Water Quality</b>	<b>3</b>	<b>2</b>	<b>1</b>

## **Voters flush water bond** by Gary Kent

BEEVILLE — City Council members and City Manager Deborah Ballí are planning to start from scratch as they read the results of Saturday's \$15.3 million bond election.

**Voters shoot down the bond sale by a vote of 398 to 184** Saturday, letting the city know they had no intention of seeing their taxes raised

What If.....?

## **Reverse osmosis plant could get private funding**

by Gary Kent

BEEVILLE – Members of the City Council's Citizens Committee, appointed to study water supply alternatives, began to line up behind two proposed solutions to the dwindling lake levels at Lake Corpus Christi and Choke Canyon Reservoir when they met Monday evening.

By a narrow margin of eight to seven, the majority of the committee members apparently were beginning to support a proposal made by Bill Norris, one of the principals of NorrisLeal Engineering Water of Austin.



## Stacking the deck

Editor:

Everything is set and in motion. First, get rid of Jimmy "Jimbo" Martinez Jr. as mayor. Second, get rid of former City Manager Deborah Balli. Next, get a quorum of pro-BDA people in charge of your money, which now includes Trace Morrill, former BDA attorney; David Carabajal, present BDA board director; John Fulghum, joined at the hip of David Carabajal; and Libby Spires, personal friend of the BDA president.

How's that for stacking the deck? The perfect solution for getting at your money (taxes). The very personification of the "good ol' boy network" and, yet, Beeville, you do nothing. The time for a recall is now. If you wait for the election in May, you are going to wind up with a water contract with the BDA and who knows what else that will prop up the BDA, like lower sewer rates for this organization that was approved by the current council of BDA supporters. This council will continue to be propped up because you don't vote and their supporters do.

**George Balli**

*BDA changed its proposal to \$.31 per thousand for 3 million per day, asking the Bee County water conservation board to issue BDA a special permit to allow it to increase its daily max from about 1.3 MGD to 3 MGD – Tom Healy, Committee Member*

# Why Desalination Projects Fail to Materialize

- Prove unfeasible/Better Alternative
- Political
- Misinformation
- Communications
- Different
- “Too expensive”



# Conclusions

- Get the facts
- Don't succumb to the vocal minority
- Remember, the opposition does not have to tell the truth
- Good leadership
- Do what is good beyond the next election
- The easy way is hardly ever the best way
- You don't have to be a man to have balls



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