

Everglades Geological Society

BULLETIN

Volume 10, Number 3

November 2003

Meeting This Month: November 18, 2003
6:00 P.M. at the Calusa Nature Center
(social hour starts at approximately 5:00)
BBQ from Woody's will be provided

Speaker: Donald E. Lindeman, P.E.

Topic: Seawater Desalination - The Tampa Bay Water Experience

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Everglades Geological Society
P.O. Box 61684
Fort Myers, FL 33906
www.evergladesgeologicalsociety.org

The Everglades Geological Society is an organization which seeks to promote interest in and understanding of Geology and the related Earth Sciences, and to provide a common organization for those individuals interested in geology and the related earth sciences. The Bulletin is a publication of the Everglades Geological Society, Inc.

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 Terry Bengtsson.....President
 Gordon Kennedy.....Vice President
 Curtis KlugSecretary/Treasurer
 David L. Hoffman.....Editor
 Clyde DabbsDirector
 Karen Cheney.....Director

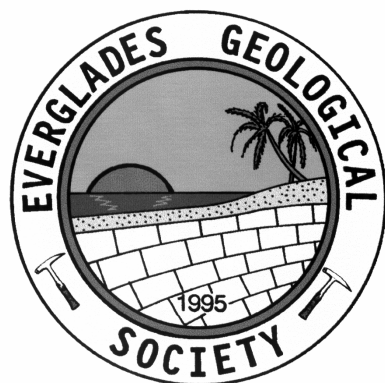
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Everglades Geological Society
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EGS MEETING THIS MONTH
TUESDAY
November 18, 2003

Calusa Nature Center
 Classroom 208
 3450 Ortiz Avenue
 Fort Myers, Florida 33905
 (239) 275-3435

Members and Prospective Members Come Join Us!!

Thanks to Gordon Kennedy for lining up the following guest speakers:

DATE	SPEAKER	TOPIC
9/16/03	Yale Yunsheng Zheng	Hydrogeology Review of SW Florida
11/18/03	Don Lindeman (CDM)	Seawater Desalination – The Tampa Bay Water Experience
1/20/04	Eugene Shinn (USGS)	Impacts of African Dust on Reef Communities
3/16/04	Jack Kindinger USGS)	Subsidence and Sea-Level Rise in SE Louisiana, Implications for Coastal Management and Restoration
5/18/03	Tom Missimer (CDM)	TBA

Everglades Geological Society Board Meeting

The officers of the Everglades Geological Society met at 5:30 pm on Thursday, 11/6/03 at the French Connection in Fort Myers. Officers present were President Terry Bengtsson, Vice-President Gordon Kennedy, Secretary/Treasurer Curtis Klug, Director Karen Cheney, Director Clyde Dabbs, and Editor David Hoffman. Topics discussed at the meeting included future sponsorship of membership meetings and alternate meeting locations, including Florida Gulf Coast University.



President's Message

by

Terry Bengtsson
(tbengts@sfwmd.gov)

Dear EGS Members

EGS would like to congratulate Karen Cheney, one of our Directors, and Ardaman and Associates for their efforts in assisting and livening-up the Calusa Nature Center's Dirt Day event. Karen had a hands-on display and used it to speak to kids, parents and others about the geotechnical field. She even managed to get her face on the TV nightly news!

Our speaker for the November meeting, Don Lindeman, will be discussing some of the issues of desalinization at Tampa Bay Water's treatment plant located on Tampa Bay. Some of the difficulties encountered at this plant have been publicized in the past, and it should be real interesting to hear about it from someone who has been involved with the project firsthand. The topic may be somewhat astray of geology, however, with the likelihood of a fair percentage of water demand in Southwest Florida being met with

treated water from reverse osmosis and desalinization treatment, I think all our members should take the opportunity to come to the meeting and hear this presentation and follow-up questions. The meeting will be held at the Nature Center on 11/18/03, and will be catered by Woody's Barbeque, courtesy of Johnson Engineering. Come on out and feed your head and face at the same time.

The presentation that we have planned for the January meeting, thanks to Gordon Kennedy our Vice-President, is on African dust influencing reef communities presented by Eugene Shinn. This sedimentation process has had some interesting consequences on island and coastal carbonate diagenesis, and may have current effects on reef health. I am not sure what the focus of his talk will be, but it should be a good one either way. EGS is planning to have the meeting at Florida Gulf Coast University to broaden the appeal and audience; perhaps even enlist some student members. The Director's should have selected an EGS scholarship winner by then and will be able to announce the winner at the January meeting. The arrangements have not been finalized with FGCU, so stay tuned for the exact where and when of this next meeting. The meetings in the spring will be held at varying locations based on venue, sponsors and membership requests.

See you next week,

Terry Bengtsson



Seawater Desalination - The Tampa Bay Water Experience

By

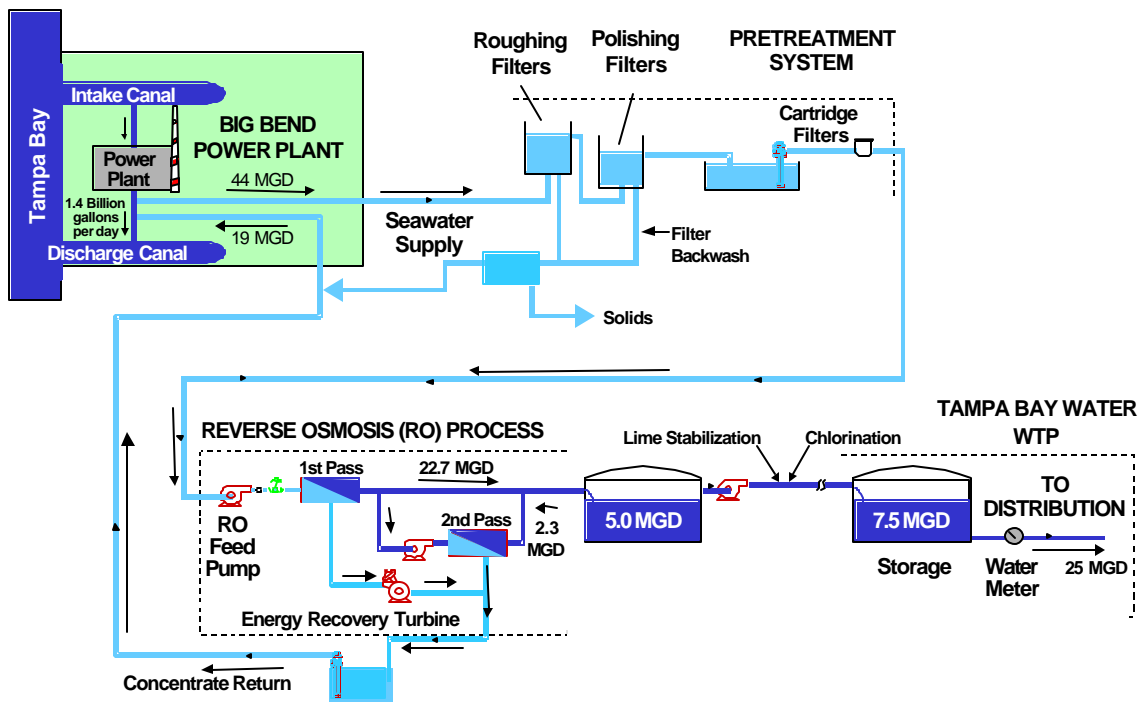
Donald E. Lindeman, P.E.

Tampa Bay Water supplies water to its six Member Governments, which provide drinking water to approximately 2.0 million people in three counties. Tampa Bay Water was looking at reducing traditional existing groundwater sources from 158 million gallons per day (mgd) in 1998 to 121 mgd in 2003 and finally to 90 mgd in 2008. To replace the existing supplies and meet area growth, the region would need to reduce consumption by 17 mgd and create 85 mgd of new supplies.

Tampa Bay Water requirements for new water sources are that they be:

- Diversified and sustainable
- Limited new groundwater (reduced total groundwater withdrawal)
- Drought resistant
- Reasonably priced

The overall operating strategy for the new regional system will be to baseload seawater desalination facilities, to use as much surface water as available and as can be treated during wet weather, and to rely more on existing and small additional groundwater supplies during dry weather when surface water may not be available. This strategy uses the Floridan Aquifer as a large storage reservoir to be filled during wet weather and withdrawn from during dry weather. This strategy is possible because groundwater use permits have reduced allowable average annual use, but peak rates of pumping and well capacities in the existing wellfields have not been changed



Tampa Bay Water elected to use a process to procure seawater desalination that is unconventional for the water industry in the U.S. We elected a design, build, own, operate, and transfer (DBOOT) procurement process. Our objective was to harness private sector ingenuity while transferring the development and operational risks to the developer while maintaining an appropriate level of control of our water supply.

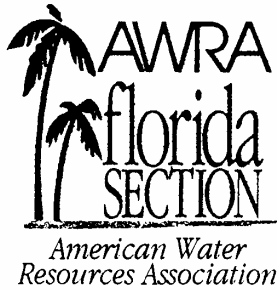
The Project consists of the seawater inlet structures, pumps and pipelines from both the TECO generating plant condenser outlets and the TECO seawater inlet pump station to the RO plant and the concentrate outfall pipeline from the RO plant back to the TECO condenser outfalls; the RO treatment plant; Product Water storage; pumping system; and Product Water transfer pipeline. The Product Water will be conveyed approximately 14.5 miles to the TBWRWTP site in Brandon, Florida for blending with other new sources of water being developed by TBW. The combined new source water will then be pumped into Tampa Bay Water's wholesale regional water distribution system for sale to its Member Governments.

The Developer for the Tampa Bay Seawater Desalination plant began acceptance testing in the spring of this year. The plant did not meet performance criteria and Tampa Bay Water entered an agreement with the Developer to allow them time to make the necessary corrections to the plant and meet the acceptance criteria.

Donald E. Lindeman, P.E., recently joined Camp Dresser and McKee as a senior project manager in the Fort Myers, Florida office. Previously Mr. Lindeman served as a project manager with Tampa Bay Water, Florida's largest water wholesaler. Mr. Lindeman was the project manager for the procurement of the 25mgd Seawater Tampa Bay Seawater Desalination project and the Gulf Coast Desalination project of Tampa Bay Water's Master Water Plan. He has over 16 years of professional experience both as a private consultant, and in public resource development. He has a comprehensive knowledge of water supply facility permitting, design, construction, financing, scheduling, and property acquisition.

Mr. Lindeman is a Board member of the American Membrane Technology Association, the American Society of Civil Engineers and the Florida Engineering Society. He received his Bachelor of Science degree in Civil Engineering from the University of Nebraska and his Master of Science degree in Civil Engineering from the University of Kansas. He is a registered Professional Engineer in the State of Florida.

Upcoming Conferences



**The 13th Annual
Southwest Florida Water Resources Conference**
Friday, November 21, 2003
8:00 am - 4:30 pm
Florida Gulf Coast University
Fort Myers, FL

“The Rising Tide: Emerging Coastal Issues”

This year's focus will be on Coastal Issues: Implications of rising water levels, Policies, Trends, Water Resources Issues, Land Planning, Flooding, and Water Quality. Program Chairs, Dr. Tom Missimer, CDM Missimer and Dr. Win Everham, FGCU, have a variety of speakers who will address local issues, statewide and national issues.



Attendees will include scientists, federal, state and local regulatory professionals, environmental professionals, engineers, geologists, ecologists, biologists, archaeologists, planners and other interested persons. Students are also welcome to attend and two scholarships will be awarded at the conference to student attendees.

For more information: call Mary Rawl, VanasseDaylor (239) 437-4601 or Ron Edenfield, ECT, Inc. (239) 277-0003



Orlando, December 9-12

The **2003 Ground Water Expo** is heading for the Sunshine State! You pack the sunscreen, we'll bring the show. Orlando, Florida is hosting this hallmark event. If you've never been to the Expo, we welcome you to attend. Attendees of the 2002 Ground Water Expo understand why we say, "The **Ground Water Expo** is the place to be for ground water professionals." The Orange County Convention Center will buzz with activity. You will be able to check out new equipment on the exhibit floor, advance your career with a full schedule of educational opportunities, and hear lectures and addresses from experts in the industry. Come take in new technology with our very successful TIPS -- hands-on Technical Interactive Presentations. See equipment in action at the exciting action demonstration sessions. So whether it is to experience cutting-edge technology, interact with current industry peers, make new important contacts, or meet your certification requirements, there won't be another event this year to compare with this show. For more information go to National Ground Water Association website at:

www.ngwa.org

DOWN & DIRTY DIRT DAYS

I represented the Everglades Geological Society at the "Down and Dirty Dirt Days" event that was held by the Calusa Nature Center on October 18th. Fun was had by all. I put together a booth to educate the



children and adults about soil sampling techniques, classification, and characteristics. The display included pictures of Ardaman & Associates' drill rig and soil laboratory, along with a split spoon for demonstration, core samples, soil sieves, and soil samples (sand, silt, clay). The kids had great fun sieving through tubs of dirt with various sized sieves and learning

about grain size. We even made clay worms! The adults seemed to enjoy the core samples and discussing subsurface exploration techniques. I was glad to represent the Everglades Geological Society at the event and help bring the world of "dirt" to the public.



Karen Cheney, Director

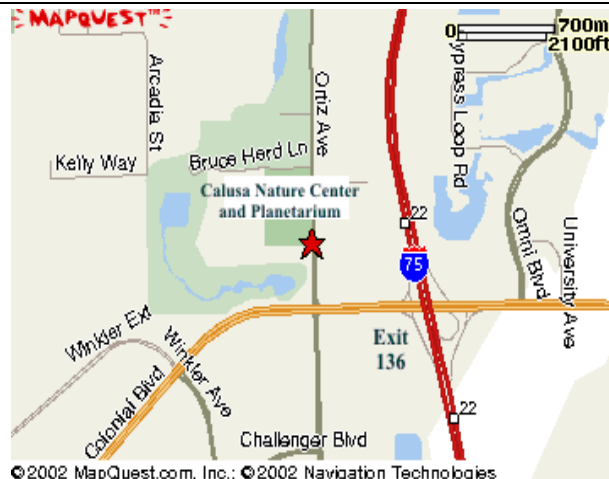
Everglades Geological Society

Meets on the third Tuesday every other month at the Calusa Nature Center on Ortiz Avenue in Fort Myers, Florida. Social hour starts at 5:00 PM. The meeting begins at 6:00 PM. No meetings are held in July or August.

Directions to the Calusa Nature Center (map provided below):

From north or south of Fort Myers take I-75 to Exit 136, west on Colonial Blvd to traffic light. Take a right on Ortiz Ave, The Calusa Nature Center entrance is 100 yards on the left.

From Sanibel or Fort Myers Beach take Summerlin Rd to Gladiolus Dr to 6-Mile Cypress Pkwy to Ortiz Ave. The Calusa Nature Center entrance is 100 yards past the light on Colonial on the left.



EGS MEETING CALENDAR 2003-2004

November 18

January 20

March 16

May 18

Join Everglades Geological Society

Application forms are available:
at meetings, by mail and on our web site.
<http://www.evergladesgeologicalsociety.org/>

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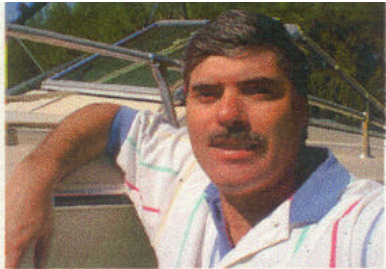
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JACK BRELAND, CPG

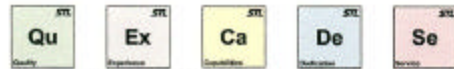
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