



Everglades Geological Society

BULLETIN

Volume 7, Number 2

October 2000

Meeting This Month: October 17, 2000
6:00 P.M. at the French Connection Cafe
(social hour starts at 5:00)

Speaker: Roger S. Copp, P.E.

Topic: Remediation of Landfill Leachate
from the South Dade County Landfill

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

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 monthly (September-June) publication of the Everglades Geological Society, Inc.

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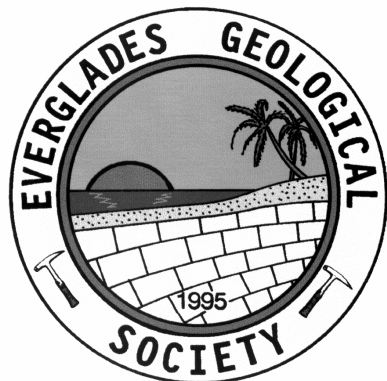
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EGS MEETING THIS MONTH

TUESDAY
October 17, 2000

The French Connection Cafe
2288 First Street (at Jackson Street)
Fort Myers, Florida
(941) 332-4443

CALL FOR PAPERS

Everglades Geological Society
Geology of the Big Cypress Basin

A field trip to examine the geology of the Big Cypress Basin is being organized by Clyde Dabbs. The trip, which is planned for the Spring of 2001, will visit locations of geologic interest in Southwest Florida, primarily in Lee, Hendry and Collier Counties. Areas of interest will include both surface and subsurface features such as quarries, roadcuts (!), outcrops and oilfields.

EGS members (and non-members) are encouraged to submit papers on relevant topics to include in the fieldtrip guidebook. Please submit abstracts to Clyde Dabbs by November 15, 2000. Upon selection, papers will be due by December 15.

Please send abstracts or papers to Clyde Dabbs at:

cdabbs@mediaone.net

Groundwater Investigations in Support of Remediation of Landfill Leachate from the Old South Dade Landfill in South Florida

by Roger Copp, Jim Oliver, and Eddie Smith,

Brown and Caldwell,
Tampa, Florida

ABSTRACT

Brown and Caldwell was selected to study alternatives for reducing the discharge of landfill leachate from the Old South Dade Landfill to Biscayne Bay. The Old South Dade landfill (OSDL) began receiving waste materials in 1952 prior to Dade County regulatory control of landfills. Remediation of the site was assigned to the Miami Dade Solid Waste Department in the late 1990's. Investigations were conducted and it was determined that elevated ammonia concentrations were present in the groundwater with movement of that ammonia-rich groundwater into Biscayne Bay. MDSWD worked with the Miami-Dade Department of Environmental Resources Management (DERM) and Florida Department of Environmental Protection (FDEP) to determine a remediation strategy for the landfill. The selected remediation plan included movement of remnant waste materials to a site further away from Biscayne Bay and construction of a landfill cap to minimize rainwater infiltration, a groundwater pump and treat system for the leachate, and re-injection of the treated water back into the aquifer.

Pump tests and injection tests were conducted at the site as part of the design-build remediation project. The pump test was conducted using a 16-inch diameter borehole and a 2,500 gpm pump. The test was conducted for 24 hours and groundwater response was monitored at a number of wells circling the borehole. The injection test was conducted using the same 16-inch borehole and a 2,100 gpm pump. The water was injected into the Biscayne aquifer below the salt water interface 60-100 feet below ground surface for a period of 12 hours. Results of these tests, the aquifer conditions, and MODFLOW modeling results will be summarized. The design of the pump and treat system and the injection system will be described. A status report of construction will also be provided along with a summary of the post-construction monitoring plan. Ground water supplies almost 90 percent of the water needs of Lee County in southwest Florida. The sources are seven aquifers separated by semi-impermeable clay and/or dolosilts of varying thickness. The uppermost four aquifers provide almost 75 percent of the supply. The thickness of the Water-table aquifer – the shallowest – varies from about 20 feet to 60 feet and is recharged almost entirely by the average annual 54 inches of rainfall. However, about two-thirds of the rainfall occurs during about one third of the year: June through September account for about 34 inches of the annual rainfall and can present potential flooding conditions when the Water-table aquifer starts rejecting recharge. The greatest stress on the ground-water resources is during the eight-month dry season when tourists and winter residents are present and water demands are greatest, but monthly rainfall averages less than three inches.

BIOGRAPHY

Roger S. Copp, P.E.. Mr. Copp has 22 years of experience in watershed management. Mr. Copp has an undergraduate degree in Biology from the College of Wooster in Ohio, a M.S. in Water Resources Management from the University of Michigan, and is a registered professional engineer in Pennsylvania. Mr. Copp has conducted watershed assessments for the following watersheds: Lake Nockamixon, PA;

SPEAKER BIOGRAPHY
(Continued)

Rivanna River, VA; Patuxent River, MD; Greenbelt Lake, MD; Bird River, MD; Accotink Creek, VA; Cub Run, VA; Twin Lakes Golf Course, VA; Mattawoman Creek tributary, MD; Rock Creek, Anne Arundel County, MD; Prince Georges County storm drains, MD; Sandy Springs, GA; and Jungle Lake, FL. All of those plans included watershed modeling ranging from spread sheet models to SWMM and BASINS. Mr. Copp has designed stormwater management facilities and has monitored pollutant removal effectiveness. Mr. Copp has worked on ground water/surface water interactions at a landfill in Dade County, FL. Mr. Copp is currently assisting in integrated surface water/ground water modeling in the Caloosahatchee Basin.

Gulf Coast Association of Geologic Societies
50th Anniversary Convention

"Remember the Past, Visualize the Future"

OCTOBER 25-27, 2000
Westin Galleria, Houston, TX

PAPERS, POSTERS, PRESENTATIONS, SHORT COURSES

The Gulf Coast Association of Geologic Societies (GCAGS) will hold their 50th Anniversary Convention in Houston this year. For information please visit their website at www.gcags.org. Information on submitting papers for the 2001 GCAGS convention to be held in Shreveport, La is also available at their website.

EGS members will be presenting the following papers at the convention (please let me know if I left anyone out!):

Misimer, Thomas; Anatomy of a Nearshore Mixed Siliciclastic-Carbonate Deposit, the Miami Limestone of Southern Broward County, Florida

Mitchell-Tapping, Hugh; Seagrass Sediment Particle Size and Content in Estero Bay, Southwestern Florida

Mitchell-Tapping; Hugh; Petrology of a Fractured and Faulted Carbonate Reservoir: Myrtle Springs Field, Van Zandt County, Texas

Speaking to you from Somewhere in the Mississippian

by Rick Shaver

Subtitle: "What I did on my summer vacation!"

Well, here we are – my son and I investigating the hydraulic gradient of the New River in Fayette County, West Virginia. We successfully avoided running into any Pennsylvanian age Pottsville Group house sized sandstone boulders. Right after this picture was taken, the captain (he's the one in the stern) managed to get the boat filled with water. No capsizing occurred though and we continued down river with most of our gear intact. The water drained out in about 5 seconds. My second successful river run with no capsizing! And Karl loved the rapids too!



Recent coverage of the beach party and canoe trip were great! I WILL make it to one or both this year! Don't want to miss the fun...

Pepper crop was OK in spite of solid clay soil we have here. Grew a handful of Cayennes, Dutch Hots, Bells, Jalapenos, and Tears of Fire...

My personal challenge to Jack McCoy, Duane Dungan, and all other EGS members: WRITE A COLUMN of your favorite geo experiences or memories! A column a year, that's all we ask! Apologies to the almond company.

Everglades Geological Society

Meets on the Third Tuesday of each month at the French Connection Cafe on First St. 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



EGS MEETING CALENDAR 2000

September 19

October 17

November 21

No Meeting in December

Join Everglades Geological Society

Application forms are available:
at meetings, by mail and on our web site.
<http://www.geocities.com/CapeCanaveral/1356>

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