



Capital Area Ground Water Conservation Commission

Watching out for A Treasured Earth Resource



Dedicated to the conservation, orderly development and protection of quality of ground water in the Capital Area

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NEWSLETTER

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Commission & District News

Scheduled Meetings – The Technical Committee will meet at 1:30 p.m. Tuesday, March 8, 2011 in the conference room of the U.S. Geological Survey at 3535 South Sherwood Forest Boulevard, Baton Rouge, Louisiana. The regular meeting of the Board of Commissioners will be held at 9:30 a.m., Tuesday, March 15, 2011 in the conference room of the U.S. Geological Survey. The Administrative Committee will meet at 8:30 a.m. in the Commission office, Suite 129, 3535 South Sherwood Forest Boulevard, one hour before the regular meeting.

December Meetings –The Technical Committee met Tuesday, December 7, 2010 at 1:30 p.m. at the U.S. Geological Survey conference room, 3535 South Sherwood Forest, Baton Rouge, LA.

Chairman Mark Walton brought the meeting to order. Don Dial introduced the speaker, Dale Nyman, who is a retiree from the U.S. Geological Survey and now works as a consultant. He talked about the physical and hydraulic characteristics of the group of sands that comprise the Southern Hills aquifer system. His work is being funded by DOTD, Water Resources Section under Zahir “Bo” Bolourchi. The results of the study will be published later.

The study focuses on the recharge (outcrop) areas and includes all the sands containing fresh water from the “400-foot” sand to the “2,800-foot” sand. Below the “2,800-foot” sand is the Catahoula aquifer which contains fresh water north of East Baton Rouge Parish. This little-used sand is a source of recharge to the sands above it, which are heavily pumped in the industrial area.

Nyman described each sand starting with the “400-foot” sand, including the area of recharge, sand thickness, hydraulic conductivity and time of travel from the recharge area to 6 miles south of the north border of East Baton Rouge Parish. Potentiometric maps and hydrographs were shown for each sand. Time of travel from the recharge areas in some cases, such as the “2,000-foot” sand, may be slowed by clay beds with low hydraulic conductivity. The discontinuity of the sand may be the cause of low water levels in the industrial area.

Nyman’s conclusion was that we have a ground-water system of immeasurable value with a renewable source of water that will be available for generations to come.

Jason Griffith, USGS, gave a progress report on the Baton Rouge modeling study. Model calibration and parameter estimation are continuing with the PEST and MODFLOW programs. The primary problem of concern was the poor convergence between observed and simulated water levels in the “2,000-foot” sand near the Baton Rouge fault. For example, graphs showed that simulated levels at well EB-1028 north of the fault were higher than observed levels over the past 20 years. At well EB-803B south of the fault, the simulated levels were lower than observed levels over a 40 year period. The modeling team will try to determine which segments along the fault may be more or less leaky. A copy of the progress report is available at the District office.

Advocate Reports on Scavenger Wells

The November 8, 2010 issue of the Baton Rouge Advocate reported on the installation of scavenger wells to control saltwater encroachment moving toward the Lula Station. At present, six wells pump from the “1,500-foot” sand at that location, and

chloride concentrations have been rising in some wells.

The purpose of scavenger wells is to locate the wells south of Lula Street to intercept salty water moving northward. The first test well was scheduled to be drilled in November 2010, and the purpose was to locate the leading edge of salty water. The scavenger wells will be positioned to act as barrier wells to prevent further encroachment toward the pumping station. The zone at the base of the aquifer that contains the denser salty water will be screened and pumped simultaneously with the public-supply wells. Electrical logs of the test wells will be needed to define the interface between fresh and salty water.

USGS Well Survey

More than a third of the U.S. population has public water systems that use ground water as their source. The U.S. Geological Survey reported in a recent survey that over 20 percent of untreated samples from 932 public wells across the country contained at least one contaminant that could be a health concern. The study focused on untreated water before treatment rather than the finished water delivered to the customers. Naturally occurring contaminants such as radon and arsenic accounted for about 75 percent of the contaminant concentrations in untreated source water. The other 25 percent included man-made contaminants such as herbicides, insecticides, solvents, disinfection by-products, nitrate and gasoline chemicals. Most of these were detected in unconfined aquifers.

The USGS reported that contaminant detection did not necessarily indicate health problems because the agency’s analytical methods have improved to the point that they can detect contaminants at much lower concentrations than previously. Thus, many of the reported detections are

well below the maximum contaminant levels for the constituents.

The study was made to (1) determine the occurrence of contaminants in source water for public-supply wells and their effect on human health and (2) determine if the contaminants found in source water were removed in the finished water after treatment.

Ground-Water Withdrawal and Sea Level Rise

A recent article published in the *Geophysical Review Letter* (Nov. 20, 2010) indicated that runoff and evaporation from worldwide ground-water withdrawal accounts for about 25% of today's rising sea levels. It was reported that ground-water removal went from 99.7 million acre-feet in 1960 to 229.4 million acre-feet in 2000.

Researchers at Utrecht University (Holland) calculate the worldwide extraction of ground water to a rise in sea level of 0.8 mm per year. The total rise of 3.1 mm per year estimated by IPCC (Intergovernmental Panel on Climate Change) includes about 50% of the total to thermal expansion and 25% to runoff from glaciers and ice caps.

Ground-water mining is the process of extracting water from a source at a rate in excess of its replenishment rate causing ground-water levels to persistently decline. The final result would be exhaustion of the supply or a decline in pumping levels to uneconomic depths. Some areas of the world, e.g. Northern China, Northern India, the San Joaquin Valley in California and the U.S. High Plains area are heavily dependent on ground water as a major source of water.

In coastal areas the apparent sea level rise may be due, in part, to land subsidence resulting from the extraction of ground water. Subsidence from low-lying areas near the coast in the Houston-Galveston area faced disastrous results affecting whole neighborhoods.

New Wells in the District

Several new wells are planned or completed in the Capital Area. In East Baton Rouge Parish, Formosa Plastics Company is drilling a new well in the "1,200-foot" sand. In West Baton Rouge Parish, well WBR-218 was completed last spring in the "800-foot" sand at Hunter's Run site for West Baton Rouge Gas & Water. The parish also has another well near completion south of Hunter's Run on the west side of Highway 1. It is expected to be completed in the "800-foot" sand. Wells are also in the planning stages for a well for West Baton Rouge Water District No. 2 south of Port Allen and for West Baton Rouge District No. 4 on East Hugh Loop Road on the north side of U.S. Highway 190. Port Allen is expected to drill a new well later this year to augment their supply. It will replace an older well that will be abandoned or placed on standby.



Capital Area Ground Water Conservation Commission

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Freedom is never more than one generation away from extinction. We didn't pass it to our children in the bloodstream. It must be fought for, protected, and handed on for them to do the same, or one day we will spend our sunset years telling our children and our children's children what it was once like in the United States where men were free.

Ronald Reagan