



# 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

April 2012

### Commission News

#### Upcoming Meetings

The Technical Committee will meet at 1:30 p.m. Tuesday, June 12, 2012 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, June 19, 2012 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.

### March Meetings

#### Technical Committee

The Technical Committee met twice in the first quarter; on Tuesday, March 14, and again on Thursday, April 19.

The March 14<sup>th</sup> meeting was held at the Baton Rouge Water Company's main administrative building on Goodwood Boulevard in Baton Rouge.

Chairman Dennis McGehee brought the meeting to order. The first order of business was a presentation by Dr. Jack Wittman of Layne Hydro on a report titled "Remedial Options for Saltwater Encroachment in the 1,500 Foot-Sand". This report was funded by Baton Rouge Water Company. Dr. Wittman presented information on the tongue of salt water in the "1,500 Foot-Sand" that extends from the Baton Rouge fault towards the Baton Rouge Water Company public supply wells at the Lula Street Pumping Station, paying particular attention to the vertical distribution of saltwater. He made mention of CAGWCC's "connector well", calling it a "brilliant move", and the positive effect it had on saltwater encroachment. He presented several options for addressing saltwater movement towards the Lula wells:

Recharge Wells – injection of freshwater into the aquifer, thereby maintaining a hydraulic barrier between Lula Station and the fault.

Interceptor Wells – pump saltwater travelling north towards Lula wells. This would require high-capacity wells resulting in lower water levels in the area and an increase in flow across the fault.

Scavenger Wells – pump saline water from the bottom of the aquifer. Most effective design combines both a

freshwater pumping well and a saltwater pumping well in a scavenger couple.

Dr. Wittman stated that scavenger wells are probably the best way to address the saltwater intrusion problem.

Mr. Owen stated that BRWC will be sending a permit application for the scavenger well couple to CAGWCC in the near future. BRWC plans to pump the Progress Park well as a scavenger well on an interim basis. New well will be drilled about half mile south of the Progress Park well. Timeframe for project implementation is about a year and a half. Well design, property acquisition and connection of the well couple into the existing system are underway. Water produced will be blended with water from other wells until such time as the salinity of the water from scavenger well got too high, at which time the produced water would be disposed of.

With respect to industry's impact on salt water intrusion across the fault, Dr. Wittman stated that any reduction in pumping north of the fault would have an effect on the amount of water coming across the fault, but that everyone needs to keep in mind that the current situation is manageable, and not a "panic" situation. Recognize the problem for what it is, and arrest the problem for several decades. Fine

tuning will be needed as time goes on. More wells may be needed in the future.

Jason Griffith (USGS) gave a short progress report on the Baton Rouge model (Simulation of Ground-Water Flow in the "1,500-foot" and "2,000-foot" Sands and Movement of Saltwater in the "2,000-foot" Sand of the Baton Rouge Area) that USGS has been working on, and solicited comments on future possible simulation scenarios for the modeling project.

The April 19<sup>th</sup> meeting was held in the conference room of the U.S. Geological Survey.

The first order of business was discussion of a resolution in support of Baton Rouge Water Company's "scavenger well" project. The resolution was read, and a minor amendment was adopted. The Technical Committee then voted to recommend adoption of the Resolution to the full Commission.

Jason Griffith, John Lovelace and Chuck Heywood (USGS) gave a presentation on the Baton Rouge model (Simulation of Ground-Water Flow in the "1,500-foot" and "2,000-Foot" Sands and Movement of Saltwater in the "2,000-Foot" Sand of the Baton Rouge Area) that the USGS has been working on and solicited comments on future possible simulation scenarios for the modeling project.

Mr. Griffith explained the purpose for the presentation, introduced the speakers and topics and reiterated the need for input from the Commission regarding the development of potential hypothetical scenarios for future saltwater encroachment mitigation strategies.

Mr. Lovelace gave a summary of the local groundwater conditions in the regional aquifer system and a brief history of the investigations and location of the advancing saltwater front in the "1,500-foot" and "2,000-foot" sands in the Baton Rouge area. Mr. Lovelace also explained the

impetus for and described the current modeling project. The purpose of the project is to construct a ground-water model to simulate past, current, and a variety of possible future conditions in the "1,500-foot" and "2,000-foot" sands. Ground-water flow will be modeled in the "1,500-foot" and "2,000-foot" sands and solute transport of saltwater will be modeled in the "2,000-foot" sand.

Mr. Heywood gave a presentation detailing the principle modeling tools and techniques that are being used to construct the current model. He also presented some preliminary results from the model that show historic (prior to 2007) groundwater flow patterns in the "1,500-foot" and "2,000-foot" sand model layers and northward movement of saltwater through the "2,000-foot" sand model layer from the Baton Rouge fault towards the public-supply and industrial pumping centers.

Then Mr. Heywood presented the preliminary simulated results of the status quo (using the same withdrawal rates as those in 2007) hypothetical scenario. The preliminary simulation of the status quo scenario showed the probable progression of the saltwater front in the "2,000-foot" sand from the likely location near North Street in 2007 to the industrial pumping centers by 2047.

The floor was then open for a discussion regarding the location of the saltwater front in the "2,000-foot" sand in the preliminary status quo simulation and possible alternate hypothetical scenarios to mitigate the northward encroachment of saltwater. Mr. Griffith explained that there are only plans in this modeling phase to build and document 4 or 5 hypothetical scenarios. Many ideas were discussed and noted. It was decided that a list of potential hypothetical scenarios would be composed and circulated to Commission members by May 4, 2012. The final list of 4 or 5 future hypothetical scenarios for this modeling phase will be culled from the list at the next technical committee meeting.

### Commission Meeting

The Capital Area Ground Water Conservation Commission met twice as well during the quarter. The first meeting was on Tuesday, March 20, in the Conference Room of the US Geological Survey.

BRWC's planned "scavenger well" project was discussed. Technical Committee Chairman Dennis McGehee gave a report on the presentation made by Dr. Jack Wittman at the March 14<sup>th</sup> Technical Committee meeting.

Mr. Rills asked how BRWC plans to dispose of the water from the scavenger wells. Mr. McGehee stated that at this time the plans are to find a path to the Mississippi River for the disposal. Mr. Chustz questioned Mr. Lovelace about the scavenger well that BRWC will be drilling. He stated that BRWC will not be shutting down their Lula Street pumping station therefore they will intentionally be pulling more saltwater across the fault and possibly disposing of it in the Mississippi River. Mr. Chustz wanted to know Mr. Lovelace's opinion on this method. Mr. Lovelace stated that the additional pumping at the site will not cause that much of a drawdown. He added that the installation of the scavenger well will intercept the bulk of the saltwater without causing a lot more saltwater across the fault. The model indicates that most of the saltwater will be intercepted and reduce the chloride levels at the Lula pumping station.

Mr. Bolourchi stated that hopefully the USGS would assist the Commission in evaluating the scavenger well procedure so that the Commission could set a policy. Mr. Griffith stated that the USGS could use this technique in one of their hypothetical scenarios for the model. Mr. Griffith added that as for as the application of that technique to the "1,500-foot" sand that the Commission along with BRWC will need to evaluate the scavenger well procedure.

Chairman Causey reported that at the Commission's December meeting, he

requested that the USGS prepare a schedule and scope of costs for future studies and maintenance of the existing model. Mr. John Lovelace, USGS, handed out a draft project proposal, "Development and Maintenance of a Computer Model to Simulate Groundwater Flow and Saltwater Encroachment in the Baton Rouge Sands, Louisiana". This proposal is to update, modify and calibrate the model to accurately simulate groundwater conditions in all ten Baton Rouge sands. The model would provide a tool for water planners and managers to assess the impacts of pumpage changes on all of the aquifers, evaluate possible management alternatives and to make decisions about future development on groundwater resources in the area. The proposal was set up so that one aquifer per year would be incorporated into the model. Groundwater flow and saltwater encroachment will be calibrated for each sand as needed in orders of priorities that would be recommended by the Capital Area Ground Water Conservation Commission. The proposed work schedule would be October 2012 through September 2023. Funding for the current model is from CAGWCC, USGS, LA DOTD and EBR City-Parish. Louisiana Department of Natural Resources representative did not know if his department could contribute to the funding for the modeling. The funding for this proposal will be discussed at the CAGWCC Administrative meeting in June.

The April 25<sup>th</sup> meeting was called to discuss the Resolution in support of the Baton Rouge Water Company's "scavenger well" project. Resolution was approved unanimously.

### **State Ground Water Resources Commission sends report to Legislature**

On March 15, the Louisiana Ground Water Resources Commission fulfilled a directive made by state legislators in 2010 to provide a report by 2012 on the state's ground water and surface water to members of the House Natural Resources and Environment Committee and the Senate Natural

Resources and Environmental Quality committees.

Department of Natural Resources (DNR) Secretary Scott Angelle, chairman of the state Ground Water Resources Commission, said that the report – being delivered in accordance with 2010's House Concurrent Resolution (HCR) 1, authored by Rep. Jim Fannin – is not an ending, but a continuation of the state's efforts to manage its water resources.

The document, "Managing Louisiana's Ground Water Resources, With Supplemental Information on Surface Water Resources: An Interim Report to the Louisiana Legislature," recognizes the enormous value of water resources; the need to aggressively expand monitoring and to take measures to sustain the resources; the inextricable connection between ground and surface water; as well as, the importance of conservation education and greater public awareness.

Angelle noted that the report can also provide information of use to other state agencies that regulate activities dealing with various aspects of water use – such as the Louisiana's Department of Agriculture and Forestry (LDAF) and Department of Environment Quality (DEQ).

The report addresses the needs of agriculture and forestry, noting that irrigation of croplands makes up more than 40 percent of total ground water use in the state, highlighting issues in aquifers where water for irrigation is an important need. Angelle said that the report provides a framework for discussion between different agencies and interests in creating sustainable models for water use.

Angelle said that a significant element of the recommendations contained in the report is planning to increase water-monitoring capabilities in the state, creating greater efficiencies in water management through improvements in the number of areas monitored and the frequency that the data is collected. The state has already received approval for federal funding in supporting that effort, and is seeking

approval from the state Legislature for the authority to make use of that funding.

Coinciding with the 105-page document is a history of ground water management since 1972, along with several appendices. Angelle said the recommendations in the report will positively benefit not only stressed aquifers, but management of all the state's aquifers.

In the opening message to the Legislature, the report refers to the complexity in the agencies managing water resources coupled with the complex laws governing water in Louisiana. In closing, it cites the need for public policy that embraces both ground and surface water while expanding the role and membership of the Commission. The interim report is a culmination of discussions with public and private water users, stakeholders, government agencies, and elected officials over the past two years.

"This report is an excellent overview and summary of the evolution, development and current status of water problems and potential water problems, water law and regulations as they currently exist in the state," said Eugene Owen, executive chairman of Baton Rouge Water Company and member of the state Ground Water Resources Commission. "Overall, this report deserves a 'well done' to all who had a hand in it, and it makes me proud to have been a part of the Ground Water Resources Commission during its formulation."

In final remarks, the Commission acknowledges the state's licensed water well drillers that help to bring residents and businesses a valuable resource and points out the need to protect and conserve this life-sustaining resource.

Source:  
LDNR Press Release – 15 MAR 2012

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