



Capital Area Ground Water Conservation District



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

2nd Quarter 2013

Louisiana Legislature Ramps Up Interest In Groundwater Issues

Several Bills and Resolutions related to groundwater were introduced for the 2013 Regular Session of the Louisiana Legislature:

SB 160 by Senator Yvonne Dorsey-Colomb provides that in any provision of law applicable to a groundwater conservation district located in a parish with population, according to the 2010 decennial census, in excess of four hundred thousand, the term "director of the Department of Public Works" shall mean the director of the municipal Department of Public Works for the municipality located in the district with the greatest population.

SB 203 by Senator Dan Claitor provides for certain groundwater restrictions as follows:

- (1) From August 1, 2013, to July 31, 2014, the commissioner must not authorize, issue or re-issue any permit which allows the use or withdrawal of 40 million gallons or more of groundwater per day.
- (2) From August 1, 2014, to July 31, 2015, the commissioner must not authorize, issue or re-issue any permit which allows the use or withdrawal of 35 million gallons or more of groundwater per day.
- (3) From August 1, 2015, to July 31, 2016, the commissioner must not authorize, issue or re-issue any permit which allows the use or withdrawal of 30 million gallons or more of groundwater per day.
- (4) From August 1, 2016, to July 31, 2017, the commissioner must not authorize, issue or re-issue any permit which allows the use or withdrawal of 25 million gallons or more of groundwater per day.
- (5) Beginning August 1, 2017, the commissioner must not authorize, issue or re-issue any permit which allows the use or withdrawal of 20 million gallons or more of groundwater per day.

The proposed law exempts agricultural or residential uses.

HB 208 by Representative Steven Pylant would exempt from the requirement that only certified water well drillers can drill wells, any wells drilled for agricultural purposes on the driller's own property.

HCR 150 by Representative Steven Pylant urges and requests the Dept. of Natural Resources, office of conservation, in consultation with the Water Resources Commission, to study, report, and make recommendations on the availability of qualified water well drillers, water well driller licensing requirements, and their impact on the rates charged for drilling water wells.

Upcoming Meetings

The Technical Committee will meet on Tuesday, June 11, at 1:30 p.m. in conference room of the U.S. Geological Survey, 3535 South Sherwood Forest Boulevard, Baton Rouge, Louisiana, while the regular meeting of the Board of Commissioners will be held at 9:30 a.m., Tuesday, June 18, 2013 in the same location.

The Administrative Committee will meet at 8:30 a.m. in the District conference room, Suite 137, 3535 South Sherwood Forest Boulevard.

March Meetings

Technical Committee

The Technical Committee met on Wednesday, March 4, in the Griffon Room of the LaSalle Building.

Commission Meeting

The Capital Area Ground Water Conservation Commission met at 9:30 a.m. on March 19, 2013 in the U.S. Geological Survey conference room at 3535 S. Sherwood Forest Blvd., Baton Rouge, Louisiana. The meeting was called to order by the Chairman, Mr. Joey Hebert.

The following Commissioners were present: John Adams, Trey Argrave, Dale Aucoin, John Cadenhead, Brian Chustz, Joey Hebert, Barry Hughhins, John Jennings, Amelia Kent, Dennis McGehee, Julius Metz, Mark Walton and John Westra.

Others attending the meeting were: Tony Duplechin and Shawn Scallan, Capital Area Ground Water Conservation District; Jason Griffith, U.S. Geological Survey; Megan Terrell, Louisiana Office of the Attorney General; Amy Wold and Bill Fig, The Advocate; Roy Waggenspack, Owen & White, Willie Fontenot, Sierra Club; Bruce Duhe, Layne Christensen Company; Bill McHie; Henry Graham, Louisiana Chemical Association; Hays Town, BR Citizens to Save Our Water; Elizabeth Caldwell & Steven Rothermal, Tulane Environmental Law Clinic; Liz Cooke, Baton Rouge Area Chamber; Luci Silva, Brown and Caldwell, Dr. Frank Tsai, LSU; and Bryan Harmon, East Baton Rouge, Dept. of Public Works.

The Administrative Committee met in the Capital Area conference room earlier in the morning.

Welcome to New Commissioner

The newest member of the Capital Area Groundwater Conservation Commission is Mr. Johan Forsman a geologist in the Office of Public Health at the Department of Health

and Hospitals. Mr. Forsman will serve as a representative of users in the district furnishing water supply for rural or municipal use.

PUMPAGE FEE UPDATE

The Final Rule was published in the March 20, 2013 Louisiana Register, and the fee increase went into effect April 1 of this year.

Office of Conservation, CAGWCC Coordinate Efforts

The Louisiana Office of Conservation and the Capital Area Groundwater Conservation Commission (CAGWCC) recently finalized an agreement to coordinate efforts related to the shared goal of maintaining the sustainability of the groundwater aquifer system that supplies East Baton Rouge Parish.

The Memorandum of Understanding formalizes the working relationship between the two agencies and helps clarify the roles of Conservation and CAGWCC, which have separate, but overlapping, authorities over management of the Southern Hills Aquifer system that supplies the Baton Rouge area.

The agreement creates a framework that allows CAGWCC to draw directly on the Office of Conservation's expertise in order to more quickly develop science-based plans for management of groundwater and issues related to salt water encroachment and act upon them effectively.

Sealing Unused Wells

Unused wells that are not properly abandoned, or decommissioned, can be a hazard. Along with potentially contaminating water supplies, unused wells that are not sealed can be dangerous to people and animals.

Wells can go unused for several reasons. The most common is that the well no longer provides water to the home or homes it was serving. Perhaps the well requires repairs that are not economically feasible, or it was used

for a service, such as water monitoring, that is no longer needed.

Regardless of the reason for well abandonment, it is imperative that unused wells are sealed by a professional contractor. States have different procedures that govern sealing wells, and some areas have standards that vary regarding private and public water wells. Professional contractors will be able to answer all questions regarding the necessary action for your area.

How does it work?

When sealing the well, the contractor will first remove all of the equipment in the well, such as pumps and pipes, so the well can be filled and sealed properly. Usually, an attempt to also remove the casing, liners, and screens will be made, but sometimes this is impossible to do. The required material used in the sealing process varies from state to state, but cement-bentonite or bentonite clay chips are used frequently. For the best results, the contractor will carefully seal the well from the bottom up, using a tremie pipe to assure there are no air pockets.

Once filled, homeowners in most states are required to provide abandoned well information to local environmental protection or water departments.

Why should I seal an old well?

Here are more detailed reasons for sealing unused wells.

Direct disposal of contamination

With rising disposal costs, some unscrupulous individuals or companies may be tempted to dispose of waste down unused wells, thinking, "The well isn't used, so it won't hurt anyone." However, that is far from the truth, as the potential for harm is real. Having a properly sealed well doesn't give those individuals that opportunity.

Physical hazards

One of the most obvious reasons for sealing an unused well is to prevent physical harm. There have been national news stories through the years where young children have fallen into abandoned wells that are 10 inches or

less in diameter. Small animals can fall into unused wells too, leading to water contamination in nearby wells.

Water mixing between aquifers

It is necessary to seal a well when water contamination is discovered in an area where there are multiple-aquifer systems because the contaminated water can migrate between the aquifers. This often occurs when a second well is drilled to a lower aquifer after contamination is discovered in the original, shallower well that has not been decommissioned. The contamination from the first well can work its way downward to the lower aquifer and impact the second well. Contaminated water can also move between aquifers when a well is improperly sealed. This is why it is important to always have the work done by a professional contractor.

Baton Rouge Geological Society holds Symposium

BRGS recently held its Seventh Annual Louisiana Groundwater & Water Resources Symposia. Some eight presentations were made on a variety of topics, including:

A Conceptual Model for the Evolution of the Permeability Architecture of the Baton Rouge Fault Zone, Southeastern Louisiana.

Jeffrey S. Hanor, Elizabeth L. Chamberlain and Frank T.C. Tsai

Reconstructing Baton Rouge aquifer-fault hydrostratigraphy using indicator geostatistics.

Ahmed S. Elshall, Frank T.C. Tsai and Jeffrey S. Hanor

Development of groundwater model for the "1,200-foot", "1,500-foot" and "1,700-foot" sands of the Baton Rouge area, Southeastern Louisiana.

Hai V. Pham and Frank T.C. Tsai

The 2010-2012 Drought's Impact on the Wilcox Aquifer's Potentiometric Levels and Water Quality.

Douglas Carlson, Marty Hom, Gary Hanson, Amanda Lewis and Dillion Soderstrom

Modeling of Potential Groundwater Recharge under Climate Change of Southern Hills Aquifer System, Southeastern Louisiana and Southwestern Mississippi.

Ehsan Beigi and Frank T.C. Tsai

Climate Change's Possible Impacts on Groundwater Recharge Rates in Northwest Louisiana and Northeast Texas.

Douglas Carlson

Evidence That Old Oil and Gas Fields Influence Wilcox Aquifer's Water Chemistry. Douglas Carlson and Marty Hom

Old Oil and Gas Field Properties that may influence Methane Concentrations in Wilcox Aquifer in Bossier, Caddo and De Soto Parishes Louisiana.

Douglas Carlson and Marty Hom

Baton Rouge Water Company Begins Installation of "Scavenger Well"

In an effort to prolong the life of their Lula Street pumping station wells, Baton Rouge Water Company (BRWC) has begun installation of a scavenger well system to catch saltier water before it gets to the Lula Street wells. Below is an excerpt from a study titled "Remedial Options for Saltwater Encroachment in the 1,500-Foot Sand," which was commissioned by BRWC and conducted by Layne Hydro. (References to illustrations have been omitted)

7.3 Scavenger wells

Scavenger wells have been employed successfully at select locations around the world as an inexpensive, practical solution for the long-term development of fresh groundwater. In a stratified aquifer, scavenger wells work by pumping saline water from the bottom of the aquifer without mixing with the overlying freshwater. The saltwater is pumped to waste. There are many advantages to the scavenger well approach, the most important of which are low capital costs, rapid improvement in water quality, and

optimal capture of freshwater and saline water. A disadvantage is that scavenger wells require routine management of pumping rates to optimize the capture of saline water and freshwater. In addition, the pumping rates of freshwater supply wells may need to be decreased to optimize the system.

The most effective design for scavenging saline groundwater combines both a freshwater pumping well and a saltwater pumping well in a scavenger couple. The scavenger couple design works by extracting groundwater both from above and below the saltwater-freshwater interface. Flow lines with arrows show the direction of groundwater flow in the figure, and the thick blue line represents the edge of the capture zone for the system. The combined pumping rate of the system, $Q_{total} = Q_{fresh} + Q_{salt}$, is limited only by the hydraulics of the pumping system and well construction. Increasing the total discharge of the couple does not cause increased mixing of fresh and saltwater as long as the tuned ratio of Q_{salt} to Q_{fresh} is maintained.

The scavenger well couple concept has been demonstrated to be effective in southern Louisiana. Long (1965) investigated this approach in Ascension Parish by modifying a production well in the town of Gonzalez previously abandoned due to saltwater contamination. At the site, the Gonzales Aquifer contained water with a chloride concentration of approximately 14 mg/L near the top and 2,000 mg/L near the base. Long modified the well by creating two sections of screen, a lower screen and an upper screen that could be pumped independently. Before modification, the supply well produced raw water with a chloride concentration of 400 mg/L. By tuning the pumping rates of the well couple, Long was able to produce freshwater with a chloride concentration near the background concentration. Long concluded that the scavenger well couple was an effective approach for extending the life of a supply well.

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