REGULATION OF GROUNDWATER RESOURCES GREATER BATON ROUGE AREA

CAPITAL AREA GROUND WATER CONSERVATION COMMISSION

PERFORMANCE AUDIT SERVICES
ISSUED MAY 9, 2019

LOUISIANA LEGISLATIVE AUDITOR
1600 NORTH THIRD STREET
POST OFFICE BOX 94397
BATON ROUGE, LOUISIANA 70804-9397

LEGISLATIVE AUDITOR
DARYL G. PURPERA, CPA, CFE

ASSISTANT LEGISLATIVE AUDITOR
FOR STATE AUDIT SERVICES
NICOLE B. EDMONSON, CIA, CGAP, MPA

DIRECTOR OF PERFORMANCE AUDIT SERVICES
KAREN LEBLANC, CIA, CGAP, MSW

FOR QUESTIONS RELATED TO THIS PERFORMANCE AUDIT, CONTACT
GINA V. BROWN, PERFORMANCE AUDIT MANAGER,
AT 225-339-3800.

LOUISIANA LEGISLATIVE AUDITOR
DARYL G. PURPERA, CPA, CFE

May 9, 2019

The Honorable John A. Alario, Jr.,
President of the Senate
The Honorable Taylor F. Barras
Speaker of the House of Representatives

Dear Senator Alario and Representative Barras:

This report provides the results of our performance audit of the Capital Area Ground Water Conservation Commission. We found that the Commission does not effectively regulate the withdrawal of water from the Southern Hills Aquifer so that saltwater encroachment can be reduced and the supply of fresh groundwater can be sustained.

Specifically, we found that the Commission does not have a complete inventory of all the wells it should be regulating. For 2,255 of the 2,600 wells under its jurisdiction, the Commission did not have information in its database about how much water each well is capable of pumping daily. We also identified seven wells for which the Commission did not have any information in its database.

In addition, while the Commission has taken certain measures, such as limiting the amount of water that can be withdrawn from the 1,500- and 2,000-foot sand levels of the aquifer, saltwater intrusion caused by groundwater withdrawals is still occurring. Despite the limits, the amount of water being withdrawn from the aquifer has not decreased. One measure the Commission could take to regulate groundwater use would be to limit withdrawal amounts by well, as is done in other states.

We also found that, during calendar year 2018, the Commission failed to monitor how much water was being withdrawn from 62 wells that appear to meet its standards for regulation. As a result, the Commission cannot ensure it is collecting all the fees owed from these wells. In addition, the Commission relies on self-reported production amounts when assessing fees on well owners, but does not conduct inspections to verify the reported amounts. Well owners are charged $10 for every million gallons of water they withdraw, which is less than the amount other states impose, and the fee is used by the Commission to fund its regulatory activities.

We found as well that since the Commission started issuing permits for the drilling and construction of wells, it did not issue permits for 25 of the 107 new wells in its district, as

required by policy and state regulations. In addition, unlike other districts that regulate groundwater, it does not charge fees for issuing permits or impose penalties when well owners drill before obtaining a permit.

While the Commission has a plan to manage the aquifer, as required by law, the plan is not as comprehensive as those in other districts. For example, the Commission's plan does not include a timeline or specific performance measures to control saltwater intrusion, and it does not include details on how to fund future projects.

We noted, too, that the Commission added Ascension Parish to its district in June 2018, but has not started regulating or collecting fees from the wells in that parish. Additionally, the board now has 18 members with the Ascension Parish representative, but state law says it should have no more than 17 members. We also found that some commission members receive salaries or benefits from entities regulated by the Commission, which could be a violation of state law.

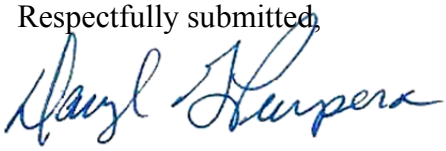
Finally, the Commission could improve its public outreach efforts, particularly compared to water districts in Arkansas, Colorado, Florida, Mississippi, and Texas. Because of the high withdrawal rates by both industry and public water suppliers, saltwater intrusion is threatening the quality of the fresh groundwater in the aquifer. Despite that, the Commission has not allocated any funds to educate the public about the seriousness of the issue or encourage conservation of water.

The report contains our findings, conclusions, and recommendations. Appendix A contains the Commission's response. Appendix B contains our scope and methodology, and Appendix C contains the Capital Area Ground Water Conservation District's fiscal year 2018 budget.

I hope this report will benefit you in your legislative decision-making process.

We would like to express our appreciation to the management and staff of the Capital Area Ground Water Conservation Commission for their assistance during this audit.

Respectfully submitted,



Daryl G. Purpera, CPA, CFE
Legislative Auditor

DGP/aa

CAPAREAGROUNDWATERCC

Louisiana Legislative Auditor

Daryl G. Purpera, CPA, CFE

Capital Area Ground Water Conservation Commission
Regulation of Groundwater Resources

May 2019

Audit Control # 40180019

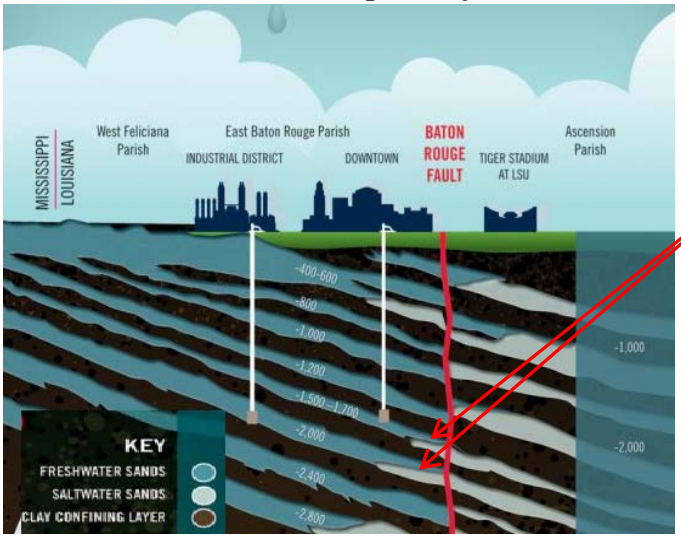
Introduction

We evaluated whether the Capital Area Ground Water Conservation Commission (Commission) has sufficiently regulated groundwater usage from the Southern Hills Aquifer System that supplies water for the greater Baton Rouge area, including Ascension,[1] East Baton Rouge, East Feliciana, Pointe Coupee, West Baton Rouge, and West Feliciana parishes. These parishes comprise the Capital Area Ground Water Conservation District (Capital Area District).

The Southern Hills Aquifer System is a renewable groundwater resource that supplies water for domestic, agricultural, light business, and industrial purposes. An average of 172 million gallons of water per day is drawn from the aquifer system from the greater Baton Rouge area, primarily for public supply and industrial use.

We conducted this audit because, according to the United States Geological Survey (USGS), groundwater withdrawals from the aquifer have resulted in saltwater intrusion.[2] Without effective regulation, saltwater intrusion threatens the long-term sustainability of the aquifer and groundwater resources. For example, if groundwater cannot be used for drinking water, the greater Baton Rouge area will have to identify alternative sources, such as the Mississippi River, which could result in possible increases in costs for users. Exhibit 1 shows a diagram of the Southern Hills Aquifer System.

Exhibit 1
Southern Hills Aquifer System



Saltwater Encroachment towards two major pumping centers in the 1,500 and 2,000 ft. sands

Source: Louisiana Department of Natural Resources, http://www.dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=1269&pnid=21&nid=27

[1] The Commission added Ascension Parish in June 2018.
[2] See https://www.cagwcc.com/site2015/technical/brmodels.htm for the USGS groundwater models for the Baton Rouge Area.

Louisiana Revised Statute (R.S.) 38:3071 *et. seq.* created the Commission in 1974. These laws require the Commission to effectively reduce and manage saltwater encroachment and manage groundwater withdrawals to ensure the availability of fresh groundwater from the entire aquifer. The types of wells the Commission regulates for water withdrawals includes industry and public supply, but excludes wells used for agricultural, horticultural, and individuals' domestic wells.

During calendar year 2018, users that the Commission regulates (users) pulled 62.9 billion gallons (an average of 172.4 million per day) of water from the aquifer. Exhibit 2 summarizes the top 10 users of the aquifer.

Exhibit 2
Top 10 Users in the Capital Area District
Calendar Year 2018

User	Gallons Used
1. Baton Rouge Water Company (public supply)	24.2 Billion
2. Georgia-Pacific (industry)	13.1 Billion
3. ExxonMobil (industry)	10.0 Billion
4. Entergy Louisiana (industry)	3.0 Billion
5. West Baton Rouge Gas and Water (public supply)	2.1 Billion
6. Eco-services (industry)	1.6 Billion
7. Honeywell (industry)	972.7 Million
8. City of Zachary (public supply)	926.4 Million
9. Louisiana State Penitentiary (public supply)	792.8 Million
10. City of Baker (public supply)	659.5 Million

Source: Prepared by legislative auditor's staff using information from the Commission.

The Commission is currently comprised of 18 members representing industry, public water suppliers, state agencies, and other stakeholders such as the Louisiana Cattleman's Association. R.S. 38:3076 outlines the powers of the Commission and states that the Commission, in conjunction with the Commissioner of Conservation, has the authority to take all necessary steps to prevent intrusion of saltwater or any other form of pollutant into the aquifer, including controlling pumping rates by users in any area threatened by intrusion of saltwater. Exhibit 3 summarizes the Commission's regulatory authority as defined in state law.

Exhibit 3
Authority of Capital Area Ground Water Conservation Commission
R.S. 38:3076

Authority	Description
Establishing Groundwater Use Priorities	• Establish groundwater use priorities, under conditions supported by research data (the Commission may enter into contracts and retain consultants for this purpose), which indicate depletion of water, and take all necessary steps to prevent intrusion of saltwater into any aquifer
Limiting Rate of Production	• Take all necessary steps to prevent intrusion of saltwater by controlling pumping rates by users in any area threatened by intrusion of saltwater. • Limit rates of production of water from any aquifer, after detailed research, considering both recharge and withdrawal data, when the quality or quantity of the supply of water is in danger, such as saltwater intrusion, or where danger of damaging subsidence exists
Permitting Wells	• Require permits for new wells that have a capacity to produce at least fifty thousand gallons per day* • Specify the spacing of new wells upon showing that the water quality or quantity of withdrawal threatens public interest • Require all users of groundwater within the district to submit the number, location, and capacity of wells owned or operated and classify each well as a commercial, rural, or municipal user
Assessing Fees	• Assess all users within the district a fee based on the annual rate of use of each user sufficient to meet costs and expenses of operation
Metering and Inspections	• Require information be recorded by users such as casing sizes and property descriptions, make investigations and inspections, and require metering of wells for accurate determinations of rates of use
Working with Other Entities	• Advise and consult with the Commissioner of Conservation and the Water Resources Commission on matters that impact water resources

*The law also gives the Commission the authority to register, but the Office of Conservation registers each well.
Source: Prepared by legislative auditor's staff using R.S. 38:3076(A).

The Commission's main source of revenue is production fees from users of the aquifer. During fiscal year 2018, the Commission collected $583,483 in production fees. The Commission uses these fees to fund its operations, including paying the salaries of a part-time Executive Director and a full-time Assistant Executive Director, and saves the remaining revenue to fund projects such as its contract with The Water Institute of the Gulf. Appendix C provides more detail on the Commission's revenue and expenses.

Our objective was:

To evaluate whether the Capital Area Ground Water Conservation Commission is effectively regulating the Southern Hills Aquifer System.

Our results are discussed in detail throughout the remainder of the report. Appendix A contains the Commission's response to this report, Appendix B details our scope and methodology, and Appendix C details the Commission's revenues, expenses, and net position for fiscal year ended June 30, 2018.

Objective: To evaluate whether the Capital Area Ground Water Conservation Commission is effectively regulating the Southern Hills Aquifer System.

While the Capital Area Ground Water Conservation Commission (Commission) has taken some actions to regulate water usage from the Southern Hills Aquifer System (aquifer), the Commission does not effectively regulate water withdrawals from the aquifer to reduce and manage saltwater encroachment and ensure the sustainability of fresh groundwater for the future. Specifically, we found the following:

- **The Commission does not have a complete inventory of all wells it should be regulating. Maintaining a complete inventory of wells is necessary to effectively regulate water withdrawal from the aquifer.** We found that 2,255 (86.7%) of the 2,600 wells in the Commission's database did not have a record of how much water the well is capable of pumping daily, which is a key component in determining whether the Commission should regulate a well. We also identified seven wells for which the Commission did not have any record of in its database. Without complete information, the Commission cannot effectively monitor water production of the Southern Hills Aquifer System, which affects how much fees the Commission collects and the rate of saltwater intrusion into the aquifer.

- **While the Commission has implemented certain measures to regulate the aquifer, these measures have not sufficiently addressed saltwater intrusion caused by the withdrawal of groundwater from the aquifer.** For example, limiting groundwater withdrawals from the aquifer is one of the primary actions the Commission has taken to regulate saltwater intrusion. While the Commission has set limits to restrict withdrawals from the 1,500- and 2,000-foot sands, these limits have not resulted in reducing the amount of water users withdraw from the aquifer, which according to USGS is causing saltwater intrusion.

- **Unlike other districts that regulate groundwater,[3] the Commission does not limit withdrawal amounts by well, which is another way to regulate groundwater usage.** Limiting the amount of withdrawal by well would allow the Commission to better manage aquifer usage and give it a mechanism to enforce limits they do set for each sand. For example, if the limit is exceeded within a certain sand, the Commission would not know which user to penalize because the production is not limited by well. Six of the nine districts we reviewed set

[3] During our review, we identified nine groundwater commissions for comparison purposes based on conversations with the Commission, the Louisiana Office of Conservation, and other various stakeholders. These districts are: Southwest Florida Management District (Florida), Harris-Galveston Subsidence District (Texas), Yazoo Mississippi Delta Joint Water Management District (Mississippi), Union County Water Conservation Board (Arkansas), Central Colorado Water Conservancy District (Colorado), Upper Trinity Groundwater Conservation District (Texas), Panhandle Groundwater Conservation District (Texas), Edwards Aquifer Authority (Texas), and Barton Springs/Edwards Aquifer District (Texas).

withdrawal limits on each well to control the amount of groundwater withdrawn from the aquifer on an annual basis.

- **The Commission did not monitor the withdrawal of water on 62 wells during calendar year 2018 that appear to meet its standards for regulation. As a result, the Commission cannot ensure it collected all fees owed from these wells. In addition, the Commission relies on self-reported production amounts when assessing fees on well owners and does not conduct inspections to verify the reported amounts.** We estimated the fees for 10 (16%) of the 62 wells and found that the Commission could have potentially collected $10,701 during 2018. Because we could only estimate the fees for 16% of the wells, the amount the Commission could collect annually may be much larger.

- **Although the Commission raised the withdrawal fee in 2016 from $5.00 to $10.00 for every million gallons of water withdrawn, the current fee is still lower than five other districts that regulate groundwater.** Raising the withdrawal fee to be consistent with the rates charged by districts in other states may help the Commission improve its regulatory activities. We found that although the 2016 increase doubled the yearly revenue, it is still lower than five of the nine districts we reviewed.

- **The Commission did not permit the drilling and construction for 25 (23.4%) of the 107 new wells constructed since 1997 in the Capital Area District, as required by a policy established by the Commission and state regulations.** In addition, it does not charge fees for issuing permits or issue penalties when wells are drilled before obtaining a permit.

- **While the Commission has a plan to manage the aquifer as required by law, this plan is not as comprehensive as plans in other districts that regulate groundwater.** Specifically, the Commission's plan does not include a timeline or specific performance measures on controlling saltwater, and does not include a financial plan on how to fund future projects.

- **Even though the Commission added Ascension Parish as part of its District in June 2018, it has not begun regulating or collecting fees from the wells in this area.** Additionally, with the addition of the Ascension Parish member, the board currently has 18 members; state law says it should have no more than 17 members.

- **Some Commission members receive salaries or benefits from entities that are regulated by the Commission, which may be in violation of state law.** According to R.S. 42:1111(C)(2)(d), all public servants are prohibited from receiving anything of economic value, including a salary, from any person or entity who has a contractual relationship with their agency or who conducts operations or activities that are regulated by their agency.

- **The Commission could improve its public outreach when compared to other districts in Arkansas, Colorado, Florida, Mississippi, and Texas that regulate groundwater.** According to USGS, groundwater withdrawals have caused

saltwater to encroach into freshwater-bearing aquifers beneath Baton Rouge, Louisiana. Despite the seriousness of this issue, the Commission has not allocated any funds for public outreach to educate users of this issue and encourage conservation of water.

Our findings are discussed in more detail below.

The Commission does not have a complete inventory of all wells it should be regulating. Maintaining a complete inventory of wells is necessary to effectively regulate water withdrawal from the aquifer.

State law outlines that the Commission should regulate all wells in the district that meet certain characteristics, as explained in Exhibit 4, in order to effectively reduce and manage saltwater intrusion. However, the Commission cannot effectively identify the population of wells it should be monitoring for water usage because its database does not contain complete information on wells in its district. During calendar year 2018, the Commission monitored 339 wells for water usage, but the Commission does not know if this is all the wells it should monitor.

Exhibit 4
Well Regulation Standards

The Commission regulates active wells within the district that have the following characteristics:

- Depth ≥ 400 ft.
- Have the capability to produce 50,000 gallons per day
- Not used for agricultural purposes
- Does not produce from the Mississippi River alluvial aquifer

Source: Prepared by legislative auditor's staff using R.S. 38:3076.

Commission staff enters well characteristics into the database when they approve a permit and obtain information from well owners or from the Office of Conservation.[4] The Commission's database contains certain characteristics of wells, such as pumping capability, well depth, the intended use of the well, the owner of the well, well location, etc. that is needed to identify which wells it should monitor for production and which wells are exempt. However, we found that the Commission's database did not contain complete information on all wells. For example, 2,255 (86.7%) of the 2,600 wells in the Commission's database did not have a record of how much water the well is capable of pumping daily, which is a key component in determining whether the Commission should regulate a well. We also identified seven wells for which the Commission did not have any record of in its database when compared to the Office of Conservation's[5] registry of all water wells throughout the state. Without complete information, the Commission cannot effectively monitor water production of the Southern Hills Aquifer System, which affects how much fees the Commission collects and the rate of saltwater intrusion into the aquifer.

[4] When the Office of Conservation receives notice of a proposed well, the Office of Conservation notifies the Commission by email of the proposed well and then it is up to the Commission to determine if the well falls under their regulation and reach out to the well owner.
[5] The Office of Conservation maintains a registry of all water wells throughout the state.

Recommendation 1: The Commission should ensure all information is complete in its database so the information can be used to monitor water withdrawal from the Southern Hills Aquifer System.

Recommendation 2: The Commission should reconcile its population of wells against the Office of Conservation's well registry to help ensure they have a complete population of wells to regulate.

Summary of Management's Response: The Commission agreed with both of these recommendations. However, the Commission did state in its response that this is a misleading conclusion based on the fact that the Office of Conservation's well registry contains inaccurate water well registration. The list of wells provided by the Office of Conservation shows many as active when in fact they are inactive and have been for many years. See Appendix A for management's full response.

LLA Additional Comments: The Commission is not currently using the Office of Conservation's data to determine if it is regulating all wells within its district that meet its well regulation standards. Even though the Office of Conservation's well registry may show a well as being active when it is actually inactive, we tested the reliability of the fields, such as depth of well, casing diameter, etc. and found these fields to be reliable. As a result, the Commission should use this registry as a way to obtain a complete list of wells that fall under its jurisdiction and then further investigate to determine a well's active status, if necessary. In addition, even though a well in its jurisdiction may be inactive now, at one point the well was active and should have been regulated by the Commission based on the well's characteristics.

While the Commission has implemented certain measures to regulate the aquifer, these measures have not sufficiently addressed saltwater intrusion caused by the withdrawal of groundwater from the aquifer.

R.S. 38:3076 gives the Commission the authority to take all necessary steps to prevent saltwater intrusion, including controlling pumping rates by user (i.e., limiting usage) in any area threatened by intrusion of saltwater. Although saltwater intrusion can be naturally occurring, according to a 2015 USGS report,[6] groundwater withdrawals have caused saltwater to further intrude into freshwater-bearing aquifers beneath Baton Rouge, Louisiana. Because saltwater is already intruding into two major sands of the aquifer (1,500- and 2,000-foot sands), it is important for the Commission to address saltwater intrusion to ensure the long-term viability of the aquifer and fresh

There are 10 major aquifer sands in the Southern Hills Aquifer System. This system is made up of individual sands at different depths that water flows through. Specifically, a sand is an underground layer of water bearing materials. The term "sand" is used to designate a layer of the aquifer based on its depth.

[6] Scientific Investigations Report 2015-5083; Version 1.1, September 2015

groundwater resources. While the Commission has implemented certain measures to regulate the withdrawal of water from the aquifer, these measures have not been sufficient at addressing saltwater intrusion caused by groundwater withdrawal. According to USGS, saltwater intrusion is still occurring. The Commission's measures to address saltwater intrusion include:

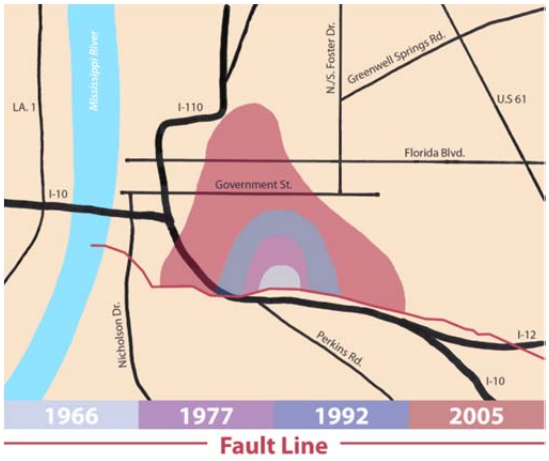
- Setting various production limits for the 1,500- and 2,000-foot sands
- Reserving the 1,500- and 1,700-foot sands for public supply since 1975
- Considering installing scavenger wells, which capture and remove saltwater from the base of the aquifer
- Requiring any new wells to be installed "northward away" from the fault line, where saltwater has been leaking into the aquifer

Limiting groundwater withdrawals from the aquifer is one of the primary actions the Commission has taken to regulate saltwater intrusion. While the Commission has set limits to restrict withdrawals from the 1,500- and 2,000-foot sands, these limits have not resulted in reducing the amount of water users withdraw from the aquifer, which according to USGS is causing saltwater intrusion. The USGS determined that historic withdrawal levels were causing saltwater intrusion into the aquifer. However, the Commission has not implemented a limit that decreases withdrawal levels to better address saltwater intrusion. For example, in March 2013 the Commission approved its plan to limit groundwater withdrawals from the 1,500-foot sand in East Baton Rouge Parish to 25 million gallons per day (MGD). However, the average rate of withdrawal from the 1,500-foot sand from calendar years 1988 to 2018 has been 24.2 MGD, which is lower than the limit.

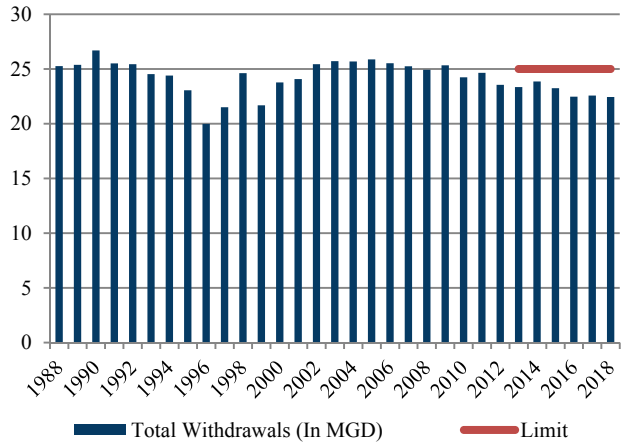
According to USGS, the rate of withdrawal from the 1,500-foot sand has caused saltwater intrusion into the aquifer north of the Baton Rouge fault line to the major public supply pump stations in Baton Rouge. Exhibit 5 shows the progression of saltwater intrusion into the 1,500-foot sand over time and the rates for withdrawal from this sand, as well as the limits set in place by the Commission. As the exhibit shows, saltwater intrusion has occurred under past rates of withdrawals. In addition, as the exhibit also shows, the limit set does not force users to decrease current rates of withdrawal because this limit was set higher than current withdrawal amounts.

Exhibit 5

Extent of Saltwater Intrusion
1,500-foot Sand



Total Withdrawals in East Baton Rouge Parish for the 1,500-foot Sand
Calendar Years 1988-2018

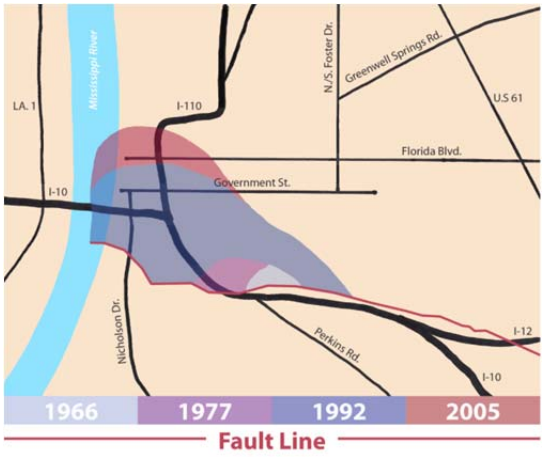


Note: This is the most recent data USGS has on the extent of saltwater intrusion.
Source: Prepared by legislative auditor's staff using information obtained from the Commission and USGS.

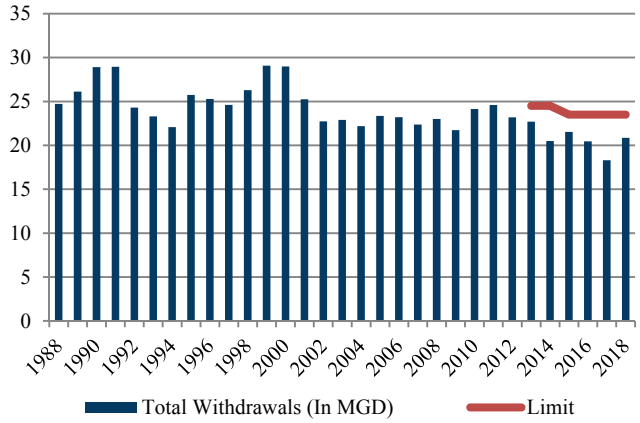
For the 2,000-foot sand, the Commission also approved limiting the 2,000-foot sand in East Baton Rouge Parish to 24.5 MGD in March 2013, and reduced the limit further starting at the end of calendar year 2014 to 23.5 MGD. However, the average rate of withdrawal from the 2,000-foot sand from calendar years 1988 to 2018 was 23.9 MGD, which is lower than the limit set in calendar year 2013. According to USGS, this rate of production has caused saltwater intrusion into the aquifer north of the Baton Rouge fault to North Baton Rouge along the Mississippi River (Industrial District). Exhibit 6 shows the progression of saltwater intrusion into the 2,000-foot sand over time and the rates for withdrawal from this sand, as well as the limits set in place by the Commission. As is the case with the 1,500-foot sand, this exhibit also shows that the limit set for the 2,000-foot sand does not force users to decrease current rates of withdrawal because this limit was set higher than current withdrawal amounts.

Exhibit 6

Extent of Saltwater Intrusion 2,000-foot Sand



Total Withdrawals in East Baton Rouge Parish for the 2,000-foot Sand Calendar Years 1988-2018



Note: This is the most recent data USGS has on the extent of saltwater intrusion.
Source: Prepared by legislative auditor's staff using information obtained from the Commission and USGS.

The Commission failed to restrict the 1,500-/1,700-foot sands for public use, as required by a policy established by the Commission, which resulted in approximately 14.25 years-worth of public consumption water being used for industry purposes since 1975 from these sands, based on 2018 production rates. According to its policy, the Commission reserved these sands for public supply in order to help guarantee the availability of fresh groundwater. However, according to the Office of Conservation's database on registered wells, 11 wells since 1975 have been installed for industry purpose in the 1,500-/1,700-foot sands in violation of this policy and have pumped a total of 65.5 billion gallons of water from these sands.

The Baton Rouge Water Company has installed a scavenger well in the 1,500-foot sand, and the Commission has plans to install one in the 2,000-foot sand. However, models in the most recent USGS report (2015) show that a scavenger well in the 2,000-foot sand will have the greatest impact when combined with a reduction in withdrawals from the sand. One method the Commission is planning to use to address saltwater intrusion is to install a scavenger well that intercepts saltwater before it reaches production wells in the 2,000-foot sand. While the Baton Rouge Water Company paid for the installation of a scavenger well in the 1,500-foot sand in 2014, the 2,000-foot well does not have a scavenger well. The Commission has plans to install a scavenger well in the 2,000-foot sand; however, this is at least 5-15 years away from being installed. In addition, it is still unclear how much impact the scavenger well will reduce the rate of saltwater intrusion. The Commission has contracted with Louisiana State University to conduct a study to determine if the scavenger well in the 1,500-foot sand has been successful at addressing saltwater intrusion.

The Commission has not defined "northward away," or how far from the fault line a well should be, when approving how close a new well can be installed to the Baton Rouge Fault Line. According to USGS, there is a concentration of wells located north of the fault line, which contributes to saltwater intrusion. To help address this, the Commission requires any new wells to be installed "northward away" from the fault line. However, the Commission has not established how far a well should actually be installed from the fault line to decrease the rate of saltwater intrusion. For example, it is unclear if "northward away" means 5 miles or 15 miles from the fault.

Recommendation 3: The Commission should consider setting limits to restrict withdrawals from the 1,500- and 2,000-foot sands that actually will decrease production from the aquifer in order to address saltwater intrusion.

Recommendation 4: The Commission should ensure it reserves the 1,500-/1,700-foot sands for public supply by not allowing any new wells to be installed in these sands unless they are for public consumption purposes.

Recommendation 5: The Commission should continue to monitor the scavenger well in the 1,500-foot sand to determine if it is successful in addressing saltwater intrusion and whether it is an appropriate option for the 2,000-foot sand.

Recommendation 6: The Commission should define "northward away" when approving how close a new well can be installed to the Baton Rouge Fault Line.

Summary of Management's Response: The Commission agreed with these recommendations and stated that it is in the process of designing and engineering a scavenger well in the 2,000-foot sand to help address saltwater intrusion and has installed certain measures or limits to regulate the withdrawal of groundwater for industrial pumping purposes and have been effective. The Commission also stated that limits to restrict withdrawals in the 1,500- and 2,000-foot sands should only be considered since the date implemented and not over the history of the Commission, and the endeavors to reserve certain sands for public supply is a resolution and not a rule or regulation. See Appendix A for management's full response.

Unlike other districts that regulate groundwater, the Commission does not limit withdrawal amounts by well, which is another way to regulate groundwater usage.

Although R.S. 38:3076 gives the Commission the authority to limit usage in any area threatened by the intrusion of saltwater, the Commission has only limited production for two of the sands, as discussed in the previous finding. The Commission does not limit withdrawal rates by well, like groundwater districts do in other states. Limiting production by well would allow the Commission to better manage aquifer usage and give it a mechanism to enforce the limits they do set for each sand. For example, if the limit is exceeded within a certain sand, the Commission would not know which user to penalize because the production is not limited by well.

Nine Comparison Districts

During our review, we identified nine groundwater commissions for comparison purposes based on conversations with the Commission, the Louisiana Office of Conservation, and other various stakeholders. These districts are: Southwest Florida Management District (Florida), Harris-Galveston Subsidence District (Texas), Yazoo Mississippi Delta Joint Water Management District (Mississippi), Union County Water Conservation Board (Arkansas), Central Colorado Water Conservancy District (Colorado), Upper Trinity Groundwater Conservation District (Texas), Panhandle Groundwater Conservation District (Texas), Edwards Aquifer Authority (Texas), and Barton Springs/Edwards Aquifer District (Texas). All nine of these districts regulate groundwater usage.

While the Commission has set overall water withdrawal limits for two of the sands, it does not set limits for individual wells. Five[7] of the nine districts we reviewed set withdrawal limits on each well to control the amount of groundwater that can be withdrawn from the aquifer on an annual basis. For example, the Southwest Florida Management District limits the amount of water that can be withdrawn annually based on the size of the well and purpose of the well. Other districts limit water withdrawal for other reasons such as groundwater level decline, saltwater intrusion, land subsidence,[8] etc.

Important Consideration

Even though the Commission has the authority to control pumping rates by users [R.S. 38:3076(A)(18)], R.S. 38:3076 (B) states that limiting rates of production shall not deny any land owner "reasonable opportunity to produce and beneficially" use their equitable share of groundwater supply affected by an order limiting rates of production.

In addition, four[9] of the five districts that limit withdrawal also include expiration dates for withdrawing groundwater. This allows these four districts to continually monitor production amounts and adjust the limits if there are threats to the aquifer. Defining limits on each well would allow the Commission to have better control of the aquifer as a whole and know which specific users are exceeding the limits.

[7] These five include the Southwest Florida Management District (Florida), Harris-Galveston Subsidence District (Texas), Barton Springs/Edwards Aquifer District (Texas), Panhandle Groundwater Conservation District (Texas), and Edwards Aquifer Authority (Texas).

[8] According to the USGS, land subsidence is a gradual settling or sudden sinking of the Earth's surface causing subsurface movement of Earth materials.

[9] Of the five districts we reviewed that set limits for individual wells, the Edwards Aquifer Authority is the only one that does not include expiration dates for withdrawing groundwater.

Limiting the amount of water withdrawn by well would also enable the Commission to penalize users who exceed the limit. Because the Commission does not set withdrawal limits for each well, it cannot penalize particular users for over usage. For example, we found that the Barton Springs Edwards Aquifer District has a fee structure established that includes a disincentive fee, essentially a penalty, for permittees who exceed their annual permitted withdrawal amount. Exhibit 7 summarizes this district's disincentive fee.

Exhibit 7
Over Production Disincentive Fees Schedule
in Barton Springs Edwards Aquifer District

Well Capacity	Violation	Overage Fee
More than 500,000 gallons	Over withdrawal of up to 25% of permitted pumpage	$0.50 per 1,000 gallons plus the applicable production fee
	Over withdrawal of up to 25%-100% of permitted pumpage	$1.00 per 1,000 gallons pumped plus applicable production fee
	Over withdrawal of over 100% of permitted pumpage	$2.00 per 1,000 gallons plus applicable production fee
500,000 gallons or less*	Any overproduction amount	$0.17 per 1,000 gallons
		$0.44 per 1,000 gallons

*Overage fee dependent on the type of permit.
Source: Prepared by legislative auditor's staff using information obtained from other state's entities.

If the Commission decides not to limit the amount of withdrawal by well, it should consider other fee structures that would encourage conservation. According to the US Department of Environmental Protection, using a tiered pricing schedule that increases with water usage encourages water conservation. The Commission could encourage conservation by implementing a fee structure that charges a higher fee for higher rates of withdrawal. However, the Commission needs to ensure it still meets R.S. 38: 3076(A)(14), which states that fees charged to users must be uniform for all users. The Commission may want to clarify with the Legislature if this means that the Commission can enforce a fee structure for rates of usage as long as it is the same rate structure for all users of the aquifer. Exhibit 8 shows the five highest users of the 1,500 and 2,000 foot sands for calendar year 2018. As shown, these users combined are responsible for over 90% of the total water withdrawn from these sands.

Exhibit 8
Top Five Users for 1,500- and 2,000-foot Sands

1,500-foot Sand Top Five Users Calendar Year 2018	
Owner	**Gallons**
1. Baton Rouge Water Company	3.9 Billion
2. Georgia-Pacific*	3.5 Billion
3. West Baton Rouge Gas and Water	671.9 Million
4. ExxonMobil	480.3 Million
5. City of Plaquemine	450.6 Million
Total-Top 5	**9.0 Billion**
Total 1,500 Sand	9.56 Billion
Percent used by Top 5	**94.6%**

***The amount used by Georgia-Pacific includes its usage from the 1,700-foot sand because the Commission considers this part of the 1,500-foot sand.
Source: Prepared by legislative auditor's staff using information obtained from the Commission.

2,000-foot Sand Top Five Users Calendar Year 2018	
Owner	**Gallons**
1. Entergy Louisiana	3.0 Billion
2. Baton Rouge Water Company	2.4 Billion
3. ExxonMobil	1.8 Billion
4. Louisiana State Penitentiary	792.8 Million
5. Honeywell	365.3 Million
Total-Top 5	**8.4 Billion**
Total 2,000 Sand	8.7 Billion
Percent used by Top 5	**96.5%**

Source: Prepared by legislative auditor's staff using information obtained from the Commission.

Recommendation 7: The Commission should consider limiting usage by well in order to better manage the withdrawal of water from the aquifer and give it a mechanism to enforce the limits it sets for each sand.

Recommendation 8: The Commission should consider other fee structures to encourage conservation, such as implementing a fee structure that charges a higher fee at a higher rate of production. This should include working with the Legislature to clarify that R.S. 38: 3076(A)(14) allows the Commission to enforce a fee structure for rates of usage as long as it is the same rate structure for all users of the aquifer.

Summary of Management's Response: The Commission agreed with these recommendations but stated that it is their understanding that it lacks legal authority to impose limiting withdrawal amounts by individual well. See Appendix A for management's full response.

The Commission did not monitor the withdrawal of water on 62 wells during calendar year 2018 that appear to meet its standards for regulation. As a result, the Commission cannot ensure it collected all fees owed from these wells. In addition, the Commission relies on self-reported production amounts when assessing fees on well owners and does not conduct inspections to verify the reported amounts.

According to R.S. 38:3076(A)(14), well owners should pay a fee on the withdrawal of water equal to the amount of $10 per million gallons used. In addition, the Commission has the authority to assess a fee that is sufficient to meet its operational costs and expenses. The Commission typically collects approximately $600,000 in fees per year for production of these wells. Collecting sufficient fees is important because the Commission uses these fees to operate the district and address saltwater intrusion.

The Commission did not monitor withdrawal of water on 62[10] wells during calendar year 2018 that appear to meet the regulation standards requiring well owners to pay a fee on the water withdrawn from the aquifer. We identified 62 wells that did not report a withdrawal amount to the Commission during calendar year 2018 when, according to Office of Conservation data, these wells appear to meet the characteristics to be regulated by the Commission.[11] As a result, the Commission cannot ensure it collected all fees owed from these wells. We estimated the fees for 10 (16%) of the 62 wells and found that the Commission could have potentially collected $10,701 during 2018 for the withdrawal of water from these wells. Because we could only estimate the fees for 16%[12] of the wells, the amount the Commission could collect annually may be much larger.

[10] We provided the Commission the results of this analysis to investigate if these wells were still active. These numbers reflect the results of the Commission's investigations as of April 9, 2019; however, the Commission had not finished investigating all wells we provided to them. Additionally, this number includes 10 wells that were for the purposes of fire protection, observation, etc. that are not specifically exempt in law, but according to the Commission, likely do not have significant withdrawal amounts.

[11] We were not able to determine a definitive population of wells that should have their withdrawal amounts reported using data from the Office of Conservation because not all characteristics of each well was recorded, such as the water production capability.

[12] We could only estimate the potential fee amount for 16% of the wells because we did not have the proposed withdrawal rates for all 62 wells.

Although the Commission has the authority to require meters on all wells, it has not done so. In addition, the Commission relies on self-reported withdrawal amounts when assessing fees on well owners and does not conduct inspections to verify the reported amounts. The Commission does not require all wells in the district to have meters to measure withdrawal from that well. Without requiring meters, the Commission must rely on estimated withdrawal amounts submitted from the well owner, instead of actual amounts. We found that seven of the nine districts we examined[13] require wells to be metered in some capacity. Metering is important for accurately monitoring withdrawal amounts and to ensure well owners are paying correct withdrawal fees.

In addition, state law gives the Commission the authority to inspect wells to verify the accuracy of withdrawal amounts. The seven districts that require wells to be metered in some capacity verify withdrawal amounts reported by well owners such as conducting inspections to read meters or asking the well owner to submit a photograph of the meter along with production reports. Currently, the Commission does not inspect meters or require owners to submit documentation verifying the amounts reported, such as a picture of the meter with the usage amount like in other states. Without verifying this information, the Commission does not know how much is actually being pumped from the aquifer.

Recommendation 9: The Commission should ensure it collects fees on all wells that meet the regulation standards.

Recommendation 10: The Commission should consider using its authority in state law to require all wells regulated by the Commission to be metered for recording withdrawal amounts.

Recommendation 11: The Commission should develop a process to conduct inspections to verify withdrawal amounts on wells to ensure they are collecting the correct amount in fees.

Summary of Management's Response: The Commission agreed with these recommendations and stated that it is in the processing of resolving the 62 wells we identified in the report. See Appendix A for management's full response.

[13] These seven include the Southwest Florida Management District (Florida), Harris-Galveston Subsidence District (Texas), Central Colorado Water Conservancy District (Colorado), Upper Trinity Groundwater Conservation District (Texas), Panhandle Groundwater Conservation District (Texas), Edwards Aquifer Authority (Texas), and Barton Springs/Edwards Aquifer District (Texas).

Although the Commission raised the withdrawal fee in 2016 from $5.00 to $10.00 for every million gallons of water withdrawn, the current fee is still lower than five other districts that regulate groundwater. Raising the withdrawal fee to be consistent with the rates charged by districts in other states may help the Commission improve its regulatory activities.

As mentioned previously, well owners pay a fee on the withdrawal of water equal to the amount of $10 per million gallons withdrawn. The Commission's annual revenue is made up primarily of pumpage income, totaling approximately $600,000 dollars annually following the increase from $5.00 to $10.00 per million gallons in 2016. The majority of the revenue is used to pay for the salaries of one full-time employee and one part-time employee. The rest of the revenue is used to pay for studies and any measures the Commission wants to implement for saltwater remediation efforts, such as paying for a scavenger well.

However, the Commission has not used current withdrawal fees to focus on improving its regulatory activities, such as conducting inspections, enhancing public outreach, or hiring additional staff to ensure correct information is recorded in its database, which could help them regulate groundwater usage. We found that although the 2016 increase doubled the yearly revenue, it is still lower than five of the nine districts we reviewed, as shown in Exhibit 9.

Exhibit 9
Withdrawal Fees and Funding In Other State's Water Management Districts

Entity	Funding Mechanism	Amount
1. Southwest Florida Water Management District	Ad Valorem Taxes	$108 million in 2018
2. Harris-Galveston Subsidence District	Withdrawal Fees	$22.00 per million gallons
3. Barton Springs Edwards Aquifer Conservation District*	Withdrawal Fees	$80.00 per million gallons
		$170.00 per million gallons
		$440.00 per million gallons
4. Edwards Aquifer Authority	Withdrawal Fees	$84.00 per acre/foot for permitted groundwater
		$2.00 per acre/foot for irrigators
5. Panhandle Groundwater Conservation District*	Withdrawal Fees	$25.00 per million gallons
6. Upper Trinity Groundwater Conservation District	Withdrawal Fees	$220.00 per million gallons
7. Central Colorado Water Conservancy District	Withdrawal Fees	Production fee is in the contract and based on "acre feet of consumptive use"
8. Union County Water Conservation Board	Water Sales to Industry	$0.704 per 1,000 gallons
		$0.743 per 1,000 gallons
		$0.91 per 1,000 gallons
		$0.993 per 1,000 gallons
9. Yazoo Mississippi Delta Joint Water Management District	Tax Millage	Unknown

***Fees in this District are based on the type of water use permit. The fees in the Panhandle Groundwater Conservation District are transport fees assessed on water that is transported outside of the District.
Source: Prepared by legislative auditor's staff using information obtained from other state's entities.

The Commission voted to increase its production fee to $20 per million gallons during its March 2019 meeting. The Commission projects this rate should cover its efforts to better regulate water withdrawals from the aquifer to help ensure the sustainability of fresh groundwater.

Recommendation 12: The Commission should periodically evaluate the withdrawal fees and decide whether the fees should be raised to in order to meet its regulatory needs.

Summary of Management's Response: The Commission agreed with this recommendation and stated that it is in the process of promulgating rules to increase the fee from $10 per million gallons of water pumped to $20 per million gallons of water. See Appendix A for management's full response.

The Commission did not permit the drilling and construction for 25 (23.4%) of the 107 new wells constructed since 1997 in the Capital Area District, as required by a policy established by the Commission and state regulations. In addition, it does not charge fees for issuing permits or issue penalties when wells are drilled before obtaining a permit.

R.S. 38:3076, enacted in 1974, gives the Commission the authority to require permits for the approval of drilling and constructing *new* wells that have a capacity to produce in excess of 50,000 gallons per day. Even though the Commission was created in 1974, it did not pass a resolution to start permitting new wells until 1996, effective January 1997.[14] Wells constructed prior to 1997 were grandfathered in and do not require a permit. Permitting wells is important because it allows the Commission to determine if that well will adversely impact the aquifer and cause a particular sand to exceed its usage limit. Permitting wells gives the Commission an opportunity to enforce regulatory efforts such as restricting industrial wells in the 1,500-foot sand and requiring wells to be drilled away from the fault line. The Commission reviews what the effect of the proposed well will have on existing wells by reviewing the well depth, location of well to other wells, proposed water yield and daily pumpage, and casing and screen sizes. Although the Commission has never denied a permit, it has worked with the well owner to find a location that will not adversely impact other wells or a particular sand.

The Commission did not permit 25 (23.4%) of the 107 wells that appear to meet permitting standards and were constructed and drilled since January 1997. We reviewed the Department of Natural Resources-Office of Conservation's water well registry and compared it to the wells that the Commission has in its database. We found that 107 active wells have been installed since 1997 and appear[15] to meet permitting standards established by the Commission.

[14] LAC 36:V.9

[15] We were not able to determine a definitive population of wells that should have been permitted using data from the Office of Conservation because not all characteristics of each well was recorded such as the water production capability.

However, we also found that the Commission did not permit 25 (23.4%) of the 107 wells. As a result, the Commission was not able to review these wells for how they could adversely impact the aquifer.

The Commission's new well permitting process could be strengthened by requiring fees for permits and developing fines for well owners who do not obtain a permit before construction. We also compared the Commission's permitting process to the nine other groundwater districts in other states. We found that six[16] districts charge an application fee for a permit ranging from $10.00 to $2,000 based on type of well and production capacity. However, the Commission does not charge a permit fee. In these six districts, the permit fee is used to fund the application review of the proposed well and for general operations of the district. Charging a permit fee would help the Commission pay for the operations of the district. We also found that four[17] of the nine districts issue penalties ranging from $50.00 to $10,000 for wells that are not permitted.

Recommendation 13: The Commission should ensure all wells are permitted before being constructed.

Recommendation 14: The Commission should consider charging an application fee for new well permits and developing penalties to well owners if they fail to obtain a permit before installing a new well.

Summary of Management's Response: The Commission agreed with these recommendations and stated that it is investigating these wells. See Appendix A for management's full response.

While the Commission has a plan to manage the aquifer as required by law, this plan is not as comprehensive as plans in other districts that regulate groundwater. Specifically, the Commission's plan does not include a timeline or specific performance measures on controlling saltwater, and does not include a financial plan on how to fund future projects.

R.S. 38:3075, which was enacted in 1974, states that the Commission should begin immediately formulating and considering a plan for the conservation of groundwater and where appropriate, prevention or alleviation of damaging or potentially damaging land surface subsidence and groundwater quality degradation. It is also the mission of the Commission to develop, promote, and implement management strategies to provide for the conservation,

[16] These six include the Southwest Florida Management District (Florida), Harris-Galveston Subsidence District (Texas), Yazoo Mississippi Delta Joint Water Management District (Mississippi), Barton Springs/Edwards Aquifer District (Texas), Panhandle Groundwater District (Texas), and Edwards Aquifer Authority (Texas)

[17] These four include the Harris-Galveston Subsidence District (Texas), , Barton Springs/Edwards Aquifer District (Texas), Panhandle Groundwater District (Texas), and Edwards Aquifer Authority (Texas)

preservation, protection, recharging, and prevention of waste of groundwater resources. The Commission developed its first management plan in 2013 and updated this plan in 2017. However, this plan is not comprehensive enough to fully address saltwater migration when compared to plans in other districts that regulate groundwater.

Seven of the nine districts we evaluated[18] had a management plan to guide the regulation of their district. Based on our review, we identified four consistent areas that address the main aquifer issues of a specific district that the Commission's plan does not include. Exhibit 10 summarizes the management plan in other districts compared to the Commission's plan.

Exhibit 10
Comparison of Capital Area Ground Water Conservation Commission's Management Plan to Selected Water Districts in Other States

Areas/Number of Districts with Area	Example: Barton Springs Edwards Aquifer Conservation District (Texas)	Capital Area Ground Water Conservation Commission's (Commission) 2017 Plan
1. Forecasting of Management Plan – Provides a timeline to implement and review plan (6 of the 7 districts)	Barton Springs has a time period for the plan is five years from the date of the approval by the Texas Water Development Board. Projections, for both population and water, are through a 50-year period.	The Commission does not have a long term plan. While they do have a long term study being done by the United States Geological Survey, which is set to finish in the next three years, Capital Area's plan does not have a time period for implementation strategies to mitigate saltwater migration.
2. Approval Process – Clearly states who oversees the implementation of plan (6 of the 7 districts)	Barton Springs' plan must be approved by the Texas Water Board, and readopted and reviewed by the district every five years.	The Commission does not have an oversight authority to ensure that the Commission is planning for the future and making progress on reaching the goals.
3. Goals and Performance Measures – Provides measureable outcomes each priority (6 of the 7 districts)	Barton Springs has an extensive list of goals and strategies. There are 8 different overarching goals with each having specific strategies that are measured with multiple performance standards to gauge the success for the District.	The Commission's plan does not contain measurable outcomes such as preventing saltwater migration, public outreach, etc.
4. Financial Planning – Projecting the cost and revenues to meet priorities (4 of the 7 districts)	Barton Springs' management plan ensures that the District has the near-term and long-term financial means to support its mission.	The Commission's plan does not include any specific financial planning for future priorities. While it does discuss the increase in pumpage fees by $5.00 per million gallons to finance one scavenger well and geophysical test wells, there is no mention on how the Commission will finance future projects to address saltwater migration.

Source: Prepared by legislative auditor's staff using information from eight other districts with aquifer and the Commission's management plan.

[18] These seven include the Southwest Florida Management District (Florida), Harris-Galveston Subsidence District (Texas), Yazoo Mississippi Delta Joint Water Management District (Mississippi), Upper Trinity Groundwater Conservation District (Texas), Panhandle Groundwater Conservation District (Texas), Edwards Aquifer Authority (Texas), and Barton Springs/Edwards Aquifer District (Texas).

The Commission's management plan states, "To manage saltwater migration in a sand, the [Commission] compiles a list of alternative management techniques that could be used to control saltwater movement." As shown in Exhibit 10, this plan does not include a timeline to update the plan, specific performance measures on controlling saltwater, and does not include a financial plan on how to fund future projects. In addition, without a long term plan, the Commission cannot know how much in fees it needs to charge to implement future projects. A Commission member brought this issue up at the December 2018 meeting noting that the lack of financial planning causes concerns for the funding of future projects.

The Commission entered into an agreement with the Water Institute of the Gulf in December 2018[19] to develop a long-term plan to address saltwater migration. The Water Institute's work will include a three-phase approach. Phase I, which was approved in December 2018, involves the facilitation of workshops and a scientific review of the science in order to frame and identify and develop alternatives to the Commission's potential problems. Phase II will be an analysis of the alternatives to determine what best combination of actions will help the Commission meet its stated objectives. Finally, Phase III will develop a long-term strategic plan in partnership with the Commission and other experts in the field. The Commission needs to ensure this strategic plan includes the provisions listed in this section. The Commission predicts each phase of this contract will cost approximately $250,000.

> **Recommendation 15:** The Commission should ensure its management plan includes a timeline to control saltwater movement, specific performance measures on controlling saltwater, and a financial plan to ensure the Commission's revenues meet their regulatory priorities they establish.
>
> **Summary of Management's Response:** The Commission agreed with this recommendation and stated that it has contracted with The Water Institute of the Gulf to help the Commission to develop a workable, new management plan that provides sustainability for 50 years. See Appendix A for management's full response.

Even though the Commission added Ascension Parish as part of its District in June 2018, it has not begun regulating or collecting fees from the wells in this area. Additionally, with the addition of the Ascension Parish member, the board currently has 18 members; state law says it should have no more than 17 members.

Even though the Commission added Ascension Parish as part of its District in June 2018, it has not begun regulating or collecting fees from these wells. The Commission added representation from Ascension Parish because the Baton Rouge Water Company is selling a large amount of water from the Southern Hills Aquifer to the parish. State law does give the

[19] The Commission signed a Cooperative Endeavor Agreement with the Coastal Protection and Restoration Authority as a pass-through entity for the payments made from the Commission to the Water Institute and to act as the contract monitor.

Commission the authority to expand the district to include adjacent parishes, upon approval by the Commission.[20] As of March 2019, the Commission has not taken actions to identify the wells in Ascension Parish that should be under its regulation. Although these wells do not pull from the Southern Hills Aquifer, because Ascension Parish was added to the district, these wells fall under the regulation requirements of the Commission. State law (R.S. 38:3071 *et. seq.*) indicates that the Commission should regulate all wells in its district, regardless of whether a well is pulling from the Southern Hills Aquifer.

In addition, with the addition of Ascension Parish, the board now has 18 members instead of 17, which is against state law. R.S. 38: 3074 states that the Commission shall consist of seventeen members who shall be appointed by the governor. Ascension Parish did not have a seat on the board until June 2018 and is currently not listed as part of the Commission's district in state law. According to an Attorney General's opinion, the Legislature would need to amend the law (R.S. 38:3074) to allow for the Board to have 18 members instead of 17. Because the representative from Ascension Parish (the eighteenth member) is not a duly-appointed member, he should not be participating in any votes or other official business of the Commission.

Recommendation 16: The Commission needs to start taking actions to incorporate Ascension wells into its district, including regulating water withdrawal and collecting fees based on the amounts withdrawn.

Recommendation 17: The Commission needs to work with the Legislature to amend R.S. 38:3071 to include Ascension Parish as part of its district. This will allow Ascension Parish to have representation on the Commission.

Summary of Management's Response: The Commission agreed with these recommendations and stated that it is in the process of identifying Ascension Parish wells and is addressing the number of Commissioners allowed on the Commission during the 2019 regular session. See Appendix A for management's full response.

Some Commission members receive salaries or benefits from entities that are regulated by the Commission, which may be in violation of state law.

At least six members of the board currently receive salaries or benefits from entities that are regulated by the Commission, which may be a violation of state law. Members of the Commission are public servants pursuant to R.S. 42:1102(18)(a) and, as such, are subject to the provisions of the Louisiana Code of Governmental Ethics. According to R.S. 42:1111(C)(2)(d), all public servants are prohibited from receiving anything of economic value, including a salary, from any person or entity who has a contractual relationship with their agency or who conducts operations or activities that are regulated by their agency. Given this statutory restriction, the Commission should seek an opinion from the Ethics Board regarding the status of these members, as the applicability of the Ethics Code to specific factual circumstances is exclusively

[20] Per R.S. 38:3076 (A)(22)

within the jurisdiction of the Ethics Board. According to the Commission, it discussed obtaining an opinion from the Ethics Board in the past, but decided against it.

Recommendation 18: The Commission should obtain an opinion from the Ethics Board regarding whether the composition of the board is in violation of R.S. 42:1111(C)(2)(d).

Summary of Management's Response: The Commission agreed with this recommendation and stated that this is an issue to be resolved by the Louisiana Board of Ethics. See Appendix A for management's full response.

The Commission could improve its public outreach when compared to other districts in Arkansas, Colorado, Florida, Mississippi, and Texas that regulate groundwater.

According to USGS, groundwater withdrawals have caused saltwater to encroach into freshwater-bearing aquifers beneath Baton Rouge, Louisiana. Despite the seriousness of this issue, the Commission has not allocated any funds for public outreach. While the Commission's website contains information on the threats saltwater migration poses to the aquifer, the Commission could do more to educate citizens on the need for water conservation and how to reduce withdrawals from the aquifer.

Although the Commission is not required by law to provide educational resources and outreach to users of the aquifer, we found that eight of the nine water districts we reviewed[21] in other states provide public outreach explaining the importance of water conservation and suggestions on how to preserve water. These districts also emphasize the risk to the aquifer from over usage. For example, the Barton Springs Edwards Aquifer Conservation District in Texas has a communication and outreach team that provides information on how to educate citizens on the importance of conserving water. Its website has educational documents providing information on outdoor and indoor water conservation, and the district offers a stewardship award to deserving individuals, organizations, companies, or agencies that have invested exemplary effort towards the protection and conservation of water resources.

Efforts used by other districts include partnering with a book company to provide books on water conservation to students and having a booth at fairs, conventions, and water conservation exhibits. The Commission should consider coordinating with the Louisiana Office of Conservation to expand its educational outreach. The Office of Conservation has already started a campaign titled "Water Wise in Baton Rouge" to educate the public on water use in the Baton Rouge area.

[21] This does not include the Yazoo Mississippi Delta Joint Water Management District (Mississippi).

Recommendation 19: The Commission should consider investing in educating citizens on the need for conservation and how to reduce withdrawals from the aquifer to help reduce saltwater migration.

Summary of Management's Response: The Commission agreed with this recommendation and stated that its cooperative agreement with The Water Institute of the Gulf will address public outreach in their management plan. See Appendix A for management's full response.

APPENDIX A: MANAGEMENT'S RESPONSE

CAPITAL AREA GROUND WATER
ANTHONY J. DUPLECHIN
DIRECTOR

CONSERVATION DISTRICT
3535 S. Sherwood Forest Blvd., Suite 137
Baton Rouge, Louisiana 70816-2255
Telephone (225) 293-7370

May 1, 2019

MEMORANDUM

To: Daryl G. Purpera, Legislative Auditor

From: Anthony J. Duplechin, PG, Executive Director,
Capital Area Groundwater Conservation District

Re: Performance Audit

Mr. Purpera,

Attached please find the Capital Area Groundwater Conservation Commission (Commission) response to Louisiana Legislative Auditor, Performance Audit Services' Audit Recommendations for the audit titled "Regulation of Groundwater Resources-Greater Baton Rouge Area" (Audit Report Number: 40180019).

We appreciate the opportunity to provide our responses to this audit. If there are any questions please do not hesitate to contact me.

Capital Area Groundwater Conservation District

Responses to Audit Recommendations

PREFACE

The Commission believes this audit, while constructive, is somewhat misleading and does not adequately characterize the Commission's activities over the past eight years. The United States Geological Survey (USGS) has indicated historical saltwater intrusion has occurred in the Southern Hills Aquifer System in the Baton Rouge area's 1,500- and 2,000-foot sands; however, the Commission has taken the following steps to provide management of saltwater:

The Commission has instituted mandatory industrial withdrawal limits to control groundwater water consumption. Every quarterly Commission meeting includes a review of the water consumption limits by Industry and are closely monitored for adherence to the limits.

The 1500-foot sand has been reserved for public supply.

The Commission has committed to a long-term active program to define and enhance control the saltwater plume causing the saltwater intrusion; and consists of the following elements;

The United States Geological Survey (USGS), through a cooperative agreement with the Commission has constructed a subsurface model of the Baton Rouge Aquifer to simulate the groundwater flow using Modflow® for the simulation of groundwater usage and salt water intrusion. As a result, the USGS has recently produced a report based on the simulation which shows long-term pumping effects predicted by the model. The study has shown that saltwater movement is very slow; and can be measured in feet per year.

The Louisiana State University (LSU) Engineering Department works with the Commission through a cooperative agreement to develop a subsurface model of the Baton Rouge Aquifer to simulate the groundwater flow using Modflow® for the simulation of groundwater usage and salt water intrusion. This effort is led by Dr. Frank T.-C. Tsai, Ph.D.

The Commission has embarked on a program to place saltwater scavenger wells at strategic locations along the fault and leading edge of the salt water plume based on the models to help control the saltwater migration. Currently the Commission has started a program to verify and determine placement of the scavenger wells using exploratory wells where the models predict saltwater movement through the fault.

The Commission has entered into a cooperative agreement with The Water Institute of the Gulf (TWI) to an in-depth study of the groundwater usage of the Southern Hills Aquifer system (Baton Rouge Aquifer) in the Baton Rouge area. TWI has begun Phase I of a three Phase program. This program will include public meetings with fact and data gathering as part of Phase I. Upon completion of the Phase I sometime in the end of this year, the Commission will decide the next steps or Phase II of the study based on the findings of TWI. As part of this study, public outreach in the form of public meetings will be used to get public input.

Because the Commission is largely dependent on the Louisiana Department of Natural Resources' Strategic Online Natural Resources Information System (SONRIS), which contains inaccurate water well registration information, it is sometimes difficult to ensure all wells are permitted by the Commission.

Groundwater Law in Louisiana has always been considered to be the "rule of capture," that is, each landowner has the ability to capture as much groundwater as they can put to a beneficial use. A legislative bill would need to be introduced to change this law. To compare the Commission to other water management districts is not an adequate or fair comparison, as the Louisiana groundwater law, statewide fee systems, overall availability of groundwater as compared to other states is quite abundant and geologic systems are different in Louisiana.

Finding No.1

The Commission does not have a complete inventory of all the wells it should be regulating. Maintaining a complete inventory of wells is necessary to effectively regulate water withdrawal from the aquifer.

Response:

Misleading conclusion based on the fact that the Louisiana Department of Natural Resources' Strategic Online Natural Resources Information System (SONRIS) contains inaccurate water well registration information. The list of wells provided shows many as active when in fact they are inactive and have been for many years.

As part of the audit the CAGWCC has RECENTLY VERIFIED the condition of many of the wells listed on SONRIS as active only to find they are abandoned, inactive or destroyed with no record on SONRIS of this condition.

The District is currently working with the Office of Conservation to identify wells that are no longer active.

Finding No. 2

While the Commission has implemented certain measures to regulate the aquifer, these measures have not sufficiently addressed saltwater intrusion caused by the withdrawal of groundwater from the aquifer.

Response:

Measurements are only valid over geological periods of time. It's difficult to measure instantaneously or in real time, since groundwater movement can be measured in feet per year. One cannot expect a response over the short term.

The Commission is in the process of designing and engineering a scavenger well in the 2,000-foot sand to help address saltwater intrusion. These efforts take time because of the cost and it also involves a public resource so the Commission cannot make a mistake and make the situation worse.

USGS professional reports show success of these measures in preventing saltwater intrusion by reducing groundwater withdrawals.

The limits to restrict withdrawals in the 1,500- and 2,000-foot sands should only be considered since the date implemented and not over the history of the Commission.

The CAGWCC has installed certain measures or limits to regulate the withdrawal of groundwater for industrial pumping purposes and have been effective.

The Commission endeavors to reserve the 1,000-, 1,500- and 1,700-foot sands for public supply wells, as stated in the resolution dated November 17, 1975. Bear in mind that this is a resolution and not a rule or regulation.

Finding No. 3

Unlike other districts, the Commission does not limit withdrawal amounts by well which is another way to regulate groundwater usage.

Response:

Groundwater Law in Louisiana has always been considered to be the "rule of capture," that is, each landowner can capture as much groundwater as they can put to a beneficial use. A legislative bill would need to be introduced to change this law.

Based on the CAGWCCC's discussions with legal counsel prior to this audit, the CAGWCC's understanding is that the Commission lacks legal authority to impose limiting withdrawal amounts by individual well. The CAGWCC's legislation requires that the Commission treat all well owners the same; therefore, treating users differently would be viewed as a taking and could subject the district to significant liability.

Regulation on a well by well basis would require technical input on a well by well basis. This would be a very dubious process. Regulation without proper technical basis would be arbitrary and capricious and would again subject the Commission to potential liability.

Many ground water management districts have geology different from the State of Louisiana. Limiting withdrawal amounts by well would not only be economically impractical but it is not an effective management practice for this geology.

The Commission has considered other fee structures, but is limited by language found at 38:3076.A(14), "To assess against all users within the district a charge based upon the annual rate of use of each user sufficient to meet costs and expenses of operation. Such charges must be uniform as to all users, being assessed on the basis of units of water used, whether a cubic, acre-foot, or other unit be used, and without distinctions or graduations as to total amounts of water produced by individual users or classes of users, except that no charge shall be made against the quantity of water pumped from the Mississippi River alluvial aquifer. Further, such charges shall be assessed, and income therefrom used only to defray the costs and expenses of operation of the district assessing them."

Finding No. 4

The Commission did not monitor the withdrawal of water on 62 wells during calendar year 2018 that appear to meet regulation standards. As a result, the Commission cannot ensure it collected all fees owed from these wells. In addition, the Commission relies on self-reported production amounts when assessing fees on well owners and does not conduct inspections to verify the reported amounts.

Response:

The Commission is in the process of resolving the remaining 62 wells that the auditors stated the Commission should have collected fees in 2018. Of the 62 wells, most have been determined to be plugged and abandoned, destroyed and inactive. By our latest count there are eighteen (18) wells upon which the Commission should have assessed fees. Please see attached file "Wells Identified with No Pumpage – Responses."

The Commission's regulatory scheme relies on the voluntary cooperation of the regulated community. The Commission addressed the issue of metering in a resolution on May 16, 1977. Because of potential economic hardships on small water systems the Commission decided not to implement the regulation but to urge installation of meters on new wells.

The District staff consists of one FTE and one part-time employee. Inspections to verify withdrawal amounts would be very difficult without additional staff.

Finding No. 5

Although the Commission raised the withdrawal fee in 2016 from $5.00 to $10.00 for every million gallons of water withdrawn, it is still lower than other districts. Raising the withdrawal fee to be consistent with the rates charged by districts in other states may help the Commission improve its regulatory activities.

Response:

Each ground water management district has a unique set of circumstances. Comparing the CAGWCC fees to other districts without comparing the economy and geologic setting isn't a fair comparison. These comparisons are without context.

The Commission felt that the amount of the rate increase in 2017 was justified. In addition, the Commission is in the process of promulgating rules to increase the fee from $10 per million gallons of water pumped to $20 per million gallons of water pumped.

Finding No. 6

The Commission has not permitted the drilling and construction for 25 (23.4%) of the 107 new wells in its District, as required by a policy established by the Commission and state regulations. In addition, it does not charge fees for issuing permits or issue penalties when wells are drilled before obtaining a permit.

Response:

The District is investigating this. In reviewing our records, we have discovered that eight (8) of the identified wells have indeed been permitted, or were determined exempt (pre-requirement, <400' deep or mis-coded in our permit list). In one instance the identified well was drilled on December 12, 2018 and not yet in our system as a producing well for the reporting period. By our count the number of unpermitted wells is 13. Please see attached file "Missing Wells"

The requirement for permitting was promulgated in the January 20, 1997 edition of the Louisiana Register.

Finding No. 7

While the Commission has a plan to manage the aquifer as required by law, this plan is not as comprehensive as plans in other districts. Specifically, the Commission's plan does not include a timeline or specific performance measures on controlling saltwater and does not include a financial plan on how to fund future projects.

Response:

The Commission has contracted with The Water Institute of the Gulf to help the Commission to develop a workable, new management plan that provides sustainability for 50 years. Prior to the signing of the contract, the Commission had discussions with The Water Institute of the Gulf for approximately 2 years. The management plan will be technically, economically and socially sustainable.

Finding No. 8

Even though the Commission added Ascension Parish as part of its District in June 2018, it has not started regulating or collecting fees from these wells. Additionally, with the addition of the Ascension Parish member, the board currently has 18 members and state law states it should have no more than 17 members.

Response:

The Commission is in the process of identifying the Ascension Parish wells. The provisions of our Enabling Statute (R.S. 38: 303071-3074) contain some conflicting language, as far as the addition of Ascension Parish to the District. While the Commission's enabling statue states the board shall consist of 17 members, it also allows the Commission to expand the District. The Commission is addressing this with Senator Eddie J. Lambert, (R)-District 18, to achieve a legislative resolution. SB 231 is currently under consideration in the 2019 Regular Session of the Louisiana Legislature.

Finding No. 9

Some Commission members receive salaries or benefits from entities that are regulated by the Commission, which may me in violation of state law.

Response:

This is an issue to be resolved by the Louisiana Board of Ethics.

Finding No. 10

The Commission could improve its public outreach when compared to other districts that regulate groundwater.

Response:

The cooperative agreement with The Water Institute of the Gulf will address public outreach in their management plan.

Prior to this audit, the Commission looked into ways of improving its public outreach, but the cost was prohibitive based on the District's other needs. The Commission has prioritized their spending with the drilling of exploratory wells and a scavenger well.

"Missing" permits

Water Well Use Description	Owner_Name	Date Completed	Well Number	Parish_Name	Parish_Code	Drillers_Company Name	Aquifer_Name	Available Info	
Public Supply	BATON ROUGE WW	5/1/1997	001276	EAST BATON ROUGE	33	LAYNE (BR) CHRISTENSEN COMPANY	1000-FOOT SAND OF BATON ROUGE AREA	EDMQ PW	Approved, not assigned a permit #
Public Supply	BATON ROUGE WW	8/1/1998	001287	EAST BATON ROUGE	33	LAYNE (BR) CHRISTENSEN COMPANY	1200-FOOT SAND OF BATON ROUGE AREA	EDMQ PW	CAGWCC #8
Irrigation	COUNTRY CLUB	9/1/2009	001371	EAST BATON ROUGE	33	GUICHARD OPERATING COMPANY, INC.	[TO BE DETERMINED]	D W	< 400' deep
Industrial	DOLESE CONCRETE	7/1/2000	001300	EAST BATON ROUGE	33	ECONOMY WATER WELL SERVICE, INC.	600-FOOT SAND OF BATON ROUGE AREA	D W	unknown
Power Generation	ENTERGY GULF	5/1/2002	001313	EAST BATON ROUGE	33	STAMM-SCHEELE , INC.	2000-FOOT SAND OF BATON ROUGE AREA	EDM PW	Unknown
Industrial	FORMOSA PLASTIC	12/1/1996	001273	EAST BATON ROUGE	33	STAMM-SCHEELE , INC.	1200-FOOT SAND OF BATON ROUGE AREA	ED W	Pre-Permit requirement
Industrial	GENESIS CRUDE OIL, LP	9/3/2014	001433	EAST BATON ROUGE	33	LAYNE CHRISTENSEN COMPANY	600-FOOT SAND OF BATON ROUGE AREA	-	Working on Resolution
Industrial	HONEYWELL	4/1/2000	001301	EAST BATON ROUGE	33	STAMM-SCHEELE , INC.	1200-FOOT SAND OF BATON ROUGE AREA	EDMQ PW	Unknown
Public Supply	PARISH WATER CO	5/1/2001	001306	EAST BATON ROUGE	33	LAYNE (BR) CHRISTENSEN COMPANY	2000-FOOT SAND OF BATON ROUGE AREA	EDMQ PW	Permitted CAGWCC # 22
Heat Pump	ST ANTHONY CHUR	5/1/2004	08804Z	EAST BATON ROUGE	33	COLE'S DRILLING, LLC	600-FOOT SAND OF BATON ROUGE AREA	D W	Determined Exempt
Industrial	BENGAL PIPELINE	8/1/2007	000304	EAST FELICIANA	37	LAYNE CHRISTENSEN COMPANY	[UNKNOWN]	EDM W	Working with owner
Industrial	COLONIAL PIPELINE COMPANY	5/20/2014	000311	EAST FELICIANA	37	LAYNE CHRISTENSEN COMPANY	1200-FOOT SAND OF BATON ROUGE AREA	-	Working with Owner
Public Supply	JACKSON, LA	10/1/2017	000315	EAST FELICIANA	37	GRINER DRILLING SERVICE, INC.	2400-FOOT SAND OF BATON ROUGE AREA	-	Miss-coded 037-301
Public Supply	NORWOOD, LA	1/1/1999	000295	EAST FELICIANA	37	GRINER DRILLING SERVICE, INC.	1500-FOOT SAND OF BATON ROUGE AREA	EDM PW	Unknown
Public Supply	WILSON, LA	1/1/1999	000296	EAST FELICIANA	37	GRINER DRILLING SERVICE, INC.	1500-FOOT SAND OF BATON ROUGE AREA	EDMQ PW	Unknown
Public Supply	INNIS WATER CORPORATION INC	3/4/2015	000458	POINTE COUPEE	77	MID SOUTH WATER, LLC	2000-FOOT SAND OF BATON ROUGE AREA	-	Working with town

Industrial	LA GENERATING	12/1/2009	000383	POINTE COUPEE	77	LAYNE CHRISTENSEN COMPANY	[TO BE DETERMINED]	D W	Replacement well - not permitted at the time
Power Generation	LOUISIANA GENERATING, LLC	12/12/2018	000460	POINTE COUPEE	77	LAYNE CHRISTENSEN COMPANY	1200-FOOT SAND OF BATON ROUGE AREA	-	Permitted 11/7/2017 CAGWCC 80
Public Supply	M & S WTR SYS	1/1/1998	000328	POINTE COUPEE	77	STAMM-SCHEELE , INC.	2400-FOOT SAND OF BATON ROUGE AREA	EDMQ PW	Unknown
Public Supply	OLD RIVER WATER	4/1/2006	05556Z	POINTE COUPEE	77	MEYERS' WATER WELL DRILLING & SERVICE	1500-FOOT SAND OF BATON ROUGE AREA	D PW	Unknown
Public Supply	PC WTR DIST #2	4/1/2005	000366	POINTE COUPEE	77	GRINER DRILLING SERVICE, INC.	ZONE 3 FLORIDA PARISHES AND POINT COUPEE PARISH	EDMQ PW	Unknown
Rig Supply	WISES OIL	1/1/1998	05235Z	WEST FELICIANA	125	RAYBORN DRILLING, INC.	1700-FOOT SAND OF BATON ROUGE AREA	D W	rig supply wells were exempt

Unpermitted wells: These 5 wells were identified in CAGWCC's spreadsheet maintained on permits as not being permitted prior to their installation.

Unpermitted stated by CAGWCC Permit Spreadsheet

CAGWCD Permit No.	Permit Approval Date	DOTD Well No.	Owner	Use	Location	Aquifer	Notes	
Unpermitted	7/11/2000	077-349	Livonia	Public Supply		1,500-ft sand	drilled w/o permit	
Unpermitted	4/1/2004	077-364	City of New Roads	public supply	New Roads	2800-ft sand	** did not apply for permit	
Unpermitted	3/1/2006	037-302	EF Rural Water	public supply	Hwy 68 nr Wilson	2800-ft sand	** no permit; DNR Info sheet	
Unpermitted	2/1/2009	037-305	Slaughter	Public Supply	North well	2,800-ft sand	DNR 19-0002	Completed 2/20/09
Unpermitted	11/1/2008	077-378	Fordoche	No Permit			did not apply for permit	

Wells Identified With No Pumpage

Owner_Name	Parish	Well Num	Well Use	Well_Depth	Date_Completed	2018 Status	
GENERAL SER ADM	33	392	Public Supply	1464	1942-09-01 00:00:00	No Pumpage	Inactive - as per BREC
LA TRAINING INS	33	432	Public Supply	1942	1946-03-01 00:00:00	No Pumpage	owner is Jetson Correctional, last pumped 2001
IDEAL CEMENT CO	33	537	Industrial	600	1951-05-01 00:00:00	< 50,000 GMD	As per Facility Manager with Holcim, US - sanitary
PLANTATION PIPE	33	570	Other	1285	1954-10-01 00:00:00	< 50,000 GPD	(Fire Protection)
PARISH WATER CO	33	659	Public Supply	1295	1958-10-01 00:00:00	No Pumpage	out-of-service; last pumped 1995 (per manager)
DOLESE CONCRETE	33	745	Industrial	503	1958-06-01 00:00:00	No Pumpage	owner is Sorrento Lumber-well not in use, on city water
GEORGIA PACIFIC	33	840	Industrial	785	1967-12-01 00:00:00	No Pumpage	Converted to Observation well in '90's
U S ARMY	33	875	Public Supply	1277	1968-09-01 00:00:00	<50,000 GPD	Port Hudson Cemetary - Sanitary needs - per manager
LA CHEM POLYMER	33	965	Industrial	2547	1968-07-01 00:00:00	No Pumpage	Last pumped 1993
SHENANDOAH CC	33	986	Irrigation	674	1971-07-01 00:00:00	No Pumpage	Course closed - Last pumped in 1994
RICE-CARDEN	33	1152	Industrial	1231	1987-05-01 00:00:00	No Pumpage	New owner is NPC - last pumped 1997
DOLESE CONCRETE	33	1169	Industrial	685	1988-03-01 00:00:00	No Pumpage	owner is Sorrento Lumber-well not in use, on city water
ETHYL CORP	33	1191	Industrial	405	1988-12-01 00:00:00	No Pumpage	Last pumped 2008
LA CONCRETE	33	1197	Industrial	566	1967-05-01 00:00:00		sending pumpage reporting forms
LA CONCRETE	33	1198	Industrial	545	1984-11-01 00:00:00		sending pumpage reporting forms
FRENCHTOWN A WS	33	1210	Public Supply	900	1978-01-01 00:00:00	No Pumpage	Out of Business - Not on D of H records
HAVER, JIM	33	1244	Industrial	620	1985-03-01 00:00:00	No Pumpage	No Evidence of Well in field. Probably destroyed
BENNYS CAR WASH	33	1263	Public Supply	650	1994-12-01 00:00:00	<50,000 GPD	as per manager
DOLESE CONCRETE	33	1300	Industrial	585	2000-07-01 00:00:00	No Pumpage	owner is Sorrento Lumber-well not in use, on city water
JESTC-STATE	33	1314	Public Supply	2003	2002-06-01 00:00:00		Sending pumpage reporting forms to Richard Perry
OCHSNER MEDICAL CENTER	33	1415	Industrial	860	2011-11-03 00:00:00	<50,000 GPD	determinedExempt
GENESIS CRUDE OIL, LP	33	1422	Industrial	425	2014-06-06 00:00:00		Checking on status
GENESIS CRUDE OIL, LP	33	1433	Industrial	525	2014-09-03 00:00:00		Checking on status
CAMP AVONDALE	37	226	Public Supply	1051	1971-05-01 00:00:00	No Pumpage	Observation
CAMP AVONDALE	37	227	Public Supply	1078	1972-02-01 00:00:00	No Pumpage	Observation
BENGAL PIPELINE	37	304	Industrial	622	2007-08-01 00:00:00	< 50,000 GPD	Sending pumpage reporting forms to Jamie Godbold
COLONIAL PIPELINE COMPANY	37	311	Industrial	605	2014-05-20 00:00:00	< 50,000 GPD	Sending pumpage reporting forms to Jamie Godbold
VILLAGE OF WILSON	37	313	Public Supply	1544	2016-09-26 00:00:00	No Pumpage	Reported no pumpage for 2018
ALMA PLANTN LTD	77	17	Public Supply	1286	1919-06-01 00:00:00		Working with mill on report submission
U S CORPS ENGRS	77	71	Public Supply	611	1966-06-01 00:00:00	<50,000 GPD	as per Lockmaster
ALMA PLANTN LTD	77	154	Industrial	1263	1972-06-01 00:00:00		Working with mill on report submission
INNIS WW	77	164	Public Supply	1019	1973-09-01 00:00:00		Working with Water System on Report Submittal
SUN OIL CO	77	178	Industrial	1013	1969-03-01 00:00:00		Working with New Operator (Tellus) on Form Submittal
SUN OIL CO	77	179	Other	1013	1969-09-01 00:00:00		Working with New Operator (Tellus) on Form Submittal
INNIS WW	77	191	Public Supply	623	1977-10-01 00:00:00		Working with Water System on Report Submittal
PC POLICE JURY	77	192	Public Supply	638	1964-01-01 00:00:00	No Pumpage	Penal Facility - Inactive- as per Joe Zaback
PC WW CORP	77	210	Public Supply	1644	1970-08-01 00:00:00	No Pumpage	No More PC WW Corp - Not on D of H site
PC WW CORP	77	212	Public Supply	1800	-	No Pumpage	No More PC WW Corp - Not on D of H site
BIG RIVER IND	77	224	Industrial	1560	1952-01-01 00:00:00	< 50,000 GPD	in our files
AMOCO PROD CO	77	260	Industrial	965	1981-10-01 00:00:00	< 50,000 GPD	in our files

Wells Identified With No Pumpage

AMOCO PROD CO	77	261	Industrial	1248	1982-04-01 00:00:00	< 50,000 GPD	in our files
M & S WTR SYS	77	262	Public Supply	2032	1984-08-01 00:00:00	No Pumpage	As per operator
CHEVRON	77	271	Other	1500	1981-07-01 00:00:00	< 50,000 GPD	Fire Supression
CHEVRON	77	272	Other	1500	1981-07-01 00:00:00	< 50,000 GPD	Fire Supression
AMOCO PROD CO	77	279	Industrial	1096	1980-06-01 00:00:00	<50,000 GPD	Fire Supression - In our files
FALSE RIVER AIR	77	281	Public Supply	485	1988-02-01 00:00:00	No pumpage	On City Water since 1995 - As per Airport Manager
PC POLICE JURY	77	295	Public Supply	1575	1990-11-01 00:00:00		Penal Facility - Active - send paperwork to Joe Zaback
U S CORPS ENGRS	77	296	Public Supply	605	1989-10-01 00:00:00	< 50,000 GPD	as per Lockmaster
PC SCHOOL BOARD	77	309	Public Supply	830	1990-03-01 00:00:00		STEM Academy of PC - trying to contact school
ALMA PLANTN LTD	77	325	Industrial	1252	1997-10-01 00:00:00		Working with mill on report submission
INNIS WATER CORPORATION INC	77	458	Public Supply	837	2015-03-04 00:00:00		Working with Water System on Report Submittal
LOUISIANA GENERATING, LLC	77	460	Power Generation	540	2018-12-12 00:00:00	No Pumpage	No record of this well - NRG
COOTS BOILER CO	121	11	Industrial	1450	1937-01-01 00:00:00		Coordinating report submission with owner
WBR SCHOOL BRD	121	31	Public Supply	416	1951-12-01 00:00:00	No Pumpage	destroyed as per Brusly Middle maintenance supervisor
SALTER, J	121	69	Public Supply	1343	1948-01-01 00:00:00	No Pumpage	No evidence of well
WBR WTR DIST 4	121	138	Public Supply	958	1977-03-01 00:00:00	No Pumpage	Standby well - as per WBR Gas & Water
LA STATE PRISON	125	40	Public Supply	632	1953-07-01 00:00:00	No Pumpage	possibly destroyed
LA STATE PRISON	125	41	Public Supply	484	1955-10-01 00:00:00	No Pumpage	No longer in operation as per Robert Becker
CAMP MARYDALE	125	155	Public Supply	650	1949-05-01 00:00:00	< 50,000 GPD	as per Camp Ranger Troy Vernon
LA STATE PRISON	125	231	Industrial	650	1963-01-01 00:00:00	< 50,000 GPD	Standby -
WF SCHOOL BOARD	125	254	Public Supply	793	1963-11-01 00:00:00	No Pumpage	Bains Elementary - Probably destroyed
WAKEFIELD CATTL	125	258	Industrial	866	1976-04-01 00:00:00	No Pumpage	Parish Water on 10/30/00 as per Scott Floyd
HANCOCK CONST	125	287	Rig Supply	662	1988-05-01 00:00:00	Unknown	It seems rig supply wells were deemed exempt

Louisiana Legislative Auditor
Performance Audit Services

Checklist for Audit Recommendations

Agency: Capital Area Ground Water Conservation Commission

Audit Title: Regulation of Groundwater Resources-Greater Baton Rouge Area

Audit Report Number: 40180019

Instructions to Audited Agency: Please fill in the information below for each recommendation. A summary of your response for each recommendation will be included in the body of the report. The entire text of your response will be included as an appendix to the audit report.

Finding 1: The Commission does not have a complete inventory of all the wells it should be regulating. Maintaining a complete inventory of wells is necessary to effectively regulate water withdrawal from the aquifer.
Recommendation 1: *The Commission should ensure all information is complete and accurate in its database so the information can be used to monitor water withdrawal from the Southern Hills Aquifer System.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com
Recommendation 2: *The Commission should reconcile its population of wells against the Office of Conservation's well registry to help ensure they have a complete population of wells to regulate.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com

Finding 2: While the Commission has implemented certain measures to regulate the aquifer, these measures have not sufficiently addressed saltwater intrusion caused by the withdrawal of groundwater from the aquifer.
Recommendation 3: *The Commission should consider setting limits to restrict withdrawals from the 1,500 and 2,000 foot sands that actually will decrease production from the aquifer in order to address saltwater intrusion.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com
Recommendation 4: *The Commission should ensure it reserves the 1,500/1,700 foot sands for public supply by not allowing any new wells to be installed in these sands unless they are for public consumption purposes.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com
Recommendation 5: *The Commission should continue to monitor the scavenger well in the 1,500 foot sand to determine if it is successful in addressing saltwater intrusion and whether it is an appropriate option for the 2,000 foot sand.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com
Recommendation 6: *The Commission should define "northward away" when approving how close a new well can be installed to the Baton Rouge Fault Line.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com

Finding 3: Unlike other districts, the Commission does not limit withdrawal amounts by well which is another way to regulate groundwater usage.
Recommendation 7: *The Commission should consider limiting usage by well in order to better manage the withdrawal of water from the aquifer and give it a mechanism to enforce the limits it sets for each sand.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com
Recommendation 8: *The Commission should consider other fee structures to encourage conservation, such as implementing a fee structure that charges a higher fee at a higher rate of production. This should include working with the Legislature to clarify that R.S. 38: 3076(A)(14) allows the Commission to enforce a fee structure for rates of usage as long as it is the same rate structure for all users of the aquifer.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com

Finding 4: The Commission did not monitor the withdrawal of water on 62 wells during calendar year 2018 that appear to meet regulation standards. As a result, the Commission cannot ensure it collected all fees owed from these wells. In addition, the Commission relies on self-reported production amounts when assessing fees on well owners and does not conduct inspections to verify the reported amounts.
Recommendation 9: *The Commission should ensure it collects fees on all wells that meet the regulation standards.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com
Recommendation 10: *The Commission should consider using its authority in state law to*

require all wells regulated by the Commission to be metered for recording withdrawal amounts.
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com
Recommendation 11: *The Commission should develop a process to conduct inspections to verify withdrawal amounts on wells to ensure they are collecting the correct amount in fees.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com

Finding 5: Although the Commission raised the withdrawal fee in 2016 from $5.00 to $10.00 for every million gallons of water withdrawn, it is still lower than other districts. Raising the withdrawal fee to be consistent with the rates charged by districts in other states may help the Commission improve its regulatory activities.
Recommendation 12: *The Commission should periodically evaluate the withdrawal fees and decide whether the fees should be raised to in order to meet its regulatory needs.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com

Finding 6: The Commission has not permitted the drilling and construction for 25 (23.4%) of the 107 new wells in its District, as required by a policy established by the Commission and state regulations. In addition, it does not charge fees for issuing permits or issue penalties when wells are drilled before obtaining a permit.
Recommendation 13: *The Commission should ensure all wells are permitted before being constructed.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com
Recommendation 14: *The Commission should consider charging an application fee for new well permits and developing penalties to well owners if they fail to obtain a permit before installing a new well.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com

Finding 7: While the Commission has a plan to manage the aquifer as required by law, this plan is not as comprehensive as plans in other districts. Specifically, the Commission's plan does not include a timeline or specific performance measures on controlling saltwater, and does not include a financial plan on how to fund future projects.
Recommendation 15: *The Commission should ensure its management plan includes a timeline to control saltwater movement, specific performance measures on controlling saltwater, and a financial plan to ensure the Commission's revenues meet their regulatory priorities they establish.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com

Finding 8: Even though the Commission added Ascension Parish as part of its District in June 2018, it has not started regulating or collecting fees from these wells. Additionally, with the addition of the Ascension Parish member, the board currently has 18 members and state law states it should have no more than 17 members.
Recommendation 16: *The Commission needs to start taking actions to incorporate Ascension wells into its district, including regulating water withdrawal and collecting fees based on the amounts withdrawn.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com
Recommendation 17: *The Commission needs to work with the Legislature to amend R.S. 38:3071 to include Ascension Parish as part of its district. This will allow Ascension Parish to have representation on the Commission.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com

Finding 9: Some Commission members receive salaries or benefits from entities that are regulated by the Commission, which may be in violation of state law.
Recommendation 18: *The Commission should obtain an opinion from the Ethics Board regarding whether the composition of the board is in violation of R.S. 42:111(C)(2)(d).*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com

Finding 10: The Commission could improve its public outreach when compared to other districts that regulate groundwater.
Recommendation 19: *The Commission should consider investing in educating citizens on the need for conservation and how to reduce withdrawals from the aquifer to help reduce saltwater migration.*
Does Agency Agree with Recommendation? √ Agree Disagree
Agency Contact Responsible for Recommendation:
Name/Title: Anthony J Duplechin, PG, Executive Director
Address: 3535 S. Sherwood Forest Blvd., Ste. 137
City, State, Zip: Baton Rouge, LA 70816
Phone Number: 225-293-7370
Email: tony@cagwcc.com

APPENDIX B: SCOPE AND METHODOLOGY

This report provides the results of our performance audit of the Capital Area Ground Water Conservation Commission (Commission). We conducted this performance audit under the provisions of Title 24 of the Louisiana Revised Statutes of 1950, as amended. This audit covered the regulation of the aquifer from the Commission's inception in 1974 through calendar year 2018. Our audit objective was:

To evaluate whether the Capital Area Ground Water Conservation Commission is effectively regulating the Southern Hills Aquifer System.

We conducted this performance audit in accordance with generally-accepted *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide reasonable basis for our findings and conclusions based on our audit objective. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. To answer our objective, we reviewed internal controls relevant to the audit objective and performed the following audit steps:

- Researched and reviewed relevant state statutes and regulations relating to the Commission and regulating the Southern Hills Aquifer System (aquifer) to understand the purpose of the Commission and identify criteria.

- Obtained and reviewed any policies and procedures on regulating the aquifer from the Commission. This included obtaining management plans, resolutions of the Commission, financial statements, and the 2018 financial audit.

- Obtained and reviewed any Attorney General Opinion's related to the Commission.

- Attended Commission meetings to observe proceedings and met with Commission staff and the chair of the Commission several times to discuss our objective and results.

- Researched recommended best practices regarding pricing structure for water from the United States Environmental Protection Agency and what should be included when developing a water management plan from the United States Department of Energy.

- Reviewed the agreement between the Commission and the Coastal Protection and Restoration and summarized the scope of work to be performed for the Commission by the Water Institute of the Gulf to evaluate the Commission's future long-term plans for addressing saltwater intrusion.

- Obtained and reviewed the results from multiple United States Geological Survey reports. Met with United States Geological Survey to gain an understanding of their reports and discuss the advancement saltwater intrusion in the aquifer.

- Met with multiple stakeholders, including the Office of Conservation and the Water Institute of the Gulf, to discuss the impact of saltwater intrusion in the aquifer. From these stakeholder interviews, including information obtained from the Commission, we identified nine districts in other states that we compared to the Commission's regulatory activities because they all regulate groundwater usage. These districts included the Southwest Florida Management District (Florida), Harris-Galveston Subsidence District (Texas), Yazoo Mississippi Delta Joint Water Management District (Mississippi), Union County Water Conservation Board (Arkansas), Central Colorado Central Conservation District (Colorado), Upper Trinity Groundwater Conservation District Texas), Panhandle Groundwater District (Texas), Edwards Aquifer Authority (Texas), and Barton Springs/Edwards Aquifer District (Texas).

- Reviewed the Commission's regulatory efforts compared to what is required in law and best practices. This included evaluating the limits on withdrawals, reserving certain sands for public use, installation of scavenger wells, and placement of wells away from the fault line.

- Obtained and analyzed multiple sources of data including (1) the Commission's database on wells that it regulates and the usage amounts of each well from calendar years 1975 through 2018, (2) the Commission's permitting spreadsheet on wells drilled starting in 1997, and (3) the Office of Conservation's registry of water wells in the state. We used these three databases to identify deficiencies in the Commission's regulation of the aquifer.

- To assess the completeness and accuracy of key data fields in the Office of Conservation's well registry (registry), we randomly selected 30 of the 64 parishes and then pulled the paper file on one well from that parish to compare to the Office of Conservation's registry using the Excel random number generator for each selection. From this evaluation, we determined that the key data fields (date completed, owner name, latitude/longitude coordinates, well depth, and casing diameter) we tested were complete and accurate for the purpose of answering our audit objectives.

    - The well capacity is not recorded in the Office of Conservation's registry. This is an important determination in whether the Commission is required to regulate a well. In order to account for this, we used the pipe casing diameter field in the Office of Conservation's registry, which gives an indication of the well capacity. We confirmed this methodology with both the Office of Conservation and the Commission.

- To assess the completeness and accuracy of the Commission's database on wells that it regulates and the usage amounts of each well from calendar years 1975

through 2018, as well as the Commission's permitting spreadsheet on wells drilled starting in 1997, we compared the Commission's information to the Office of Conservation's well registry. From this evaluation, we found completeness and accuracy issues in the Commission's information and we documented these issues as findings in the report.

- Reviewed the board composition of the Commission and compared to state law requirements.

- Reviewed the resolution adding Ascension Parish as part of the Capital Area Conservation Groundwater Commission in June 2018 and what actions the Commission took to comply with the resolution.

- Provided our results to Commission staff to review for accuracy and reasonableness.

APPENDIX C: CAPITAL AREA GROUND WATER CONSERVATION DISTRICT REVENUES, EXPENSES, AND NET POSITION FISCAL YEAR ENDED JUNE 30, 2018

Revenues	
Pumpage Fees	$583,483
Interest Income	2,429
Total Revenue	**$585,912**
Expenditures	
Salaries/Other Employee Expenses	$138,969
Depreciation	10,385
Information Technology	8,661
USGS-Real Time Network	8,820
USGS- Subsidence Wells	6,250
USGS-Modeling	67,919
Saltwater Remediation	85,747
Meetings	798
Office Supplies	1,639
Rent	16,200
Travel	5,084
Postage	425
Insurance	413
Dues and Subscriptions	2,895
Printing	732
Miscellaneous	1,621
Professional Fees	26,528
Total Expenditures	**$383,086**
Net Position	
Total Net Position, as of 7/1/2017	$815,896
Total Net Position, as of 6/30/2018	$1,018,722
Source: Prepared by legislative auditor's staff using the Commission's Independent Auditor's Report for Fiscal Year 2018.	