



February 27, 2026

**Via E-Mail**

Bill Frechette, Unit Manager  
Water Supply Program – Groundwater Withdrawal Unit  
2 Martin Luther King Jr. Dr., S.E. East Floyd Towers, Suite 1052  
Atlanta, Georgia 30334  
[epd.comments@dnr.ga.gov](mailto:epd.comments@dnr.ga.gov)  
[Bill.Frechette@dnr.ga.gov](mailto:Bill.Frechette@dnr.ga.gov)

**Re: Comments on Groundwater Withdrawal Permit – City of Savannah – Pilot Study; Permit No. 025-0069**

Dear Mr. Frechette:

Ogeechee Riverkeeper 501(c)(3) (ORK) works to protect, preserve, and improve the water quality of the Ogeechee River basin, which includes the Canoochee River, tributary streams, and all of the streams flowing out to Ossabaw Sound and St. Catherine's Sound. The Ogeechee River system drains more than 5,500 square miles across 20 counties in Georgia. ORK works with local communities to retain the ecological and cultural integrity of rivers, streams, wetlands, and related habitats throughout the Basin. One of ORK's roles is to ensure the long-term health of the watershed's aquifers, including the Floridan Aquifer, which supports not only residents, but also the aquatic health of the Ogeechee and Canoochee Rivers as well as their tributaries.

One Hundred Miles (OHM) is a non-profit organization dedicated to protecting Georgia's 100-mile coast through education, advocacy, and community engagement.

Savannah Riverkeeper's (SRK) mission is to be the leading guardian of the Savannah River, actively protecting the entire basin through education, advocacy, and collaboration. Our vision is to sustain a healthy Savannah River, supporting communities and ecosystems across the basin.

ORK, OHM, & SRK offer these comments on the proposed withdrawal permit for the City of Savannah's Pilot Study. Entirely missing from the permit document is any ongoing monitoring or analysis of potential and foreseeable aquatic and environmental impacts, particularly to the water quality of surface waters, habitats and environmentally sensitive areas, and the vulnerable species dependent on consistent and healthy conditions. In addition, questions exist

pertaining to the oversight of shifting withdrawal regimes, relations to the existing permit, and the overall volumes of withdrawals permitted.

Ogeechee Riverkeeper, One Hundred Miles, and Savannah Riverkeeper respectfully request that the Georgia Environmental Protection Division (EPD) not continue to process this application, until clarity regarding the following issues is offered and more detail can be provided by the applicant regarding how this application applies to existing permitted withdrawals. The most pressing question being, **how can EPD justify violating the moratorium on new groundwater withdrawals that was instituted to manage saltwater intrusion in the Savannah/Hilton Head region by considering a temporary, yet still new, 2 million gallon a day (MGD) additional groundwater withdrawal?**

To best answer this question and offer assurance to the millions of Georgians dependent on healthy groundwater supplies, we request the EPD use this as an opportunity to more wholly understand the full extent of groundwater withdrawals' impacts on the aquatic environment. Beyond a sole focus on saltwater intrusion, this Pilot Study presents a fantastic opportunity to study and determine the nature of groundwater-surface water interconnection in the Savannah region. Until this still-outstanding question is fully considered, adequately studied, and conclusively explained, Georgia's aquatic resources cannot be sufficiently protected. This continued gap in the scientific and regulatory record threatens both the near-term and long-term health of Georgia's waters and all those people, species, businesses, and industries that rely on those aquatic resources. ORK, OHM, & SRK ask the EPD to make groundwater-surface water connection a core piece of this Pilot Study and this groundwater withdrawal permit.

1. Proven Floridan Aquifer-surface water connections highlight the need for closer study

The connection between groundwater and surface water in the greater Savannah region must be a central consideration in this permitting decision, as well as all decisions affecting groundwater. Over the last three decades, saltwater intrusion has been the main, and sometimes seemingly sole, focus when considering impacts to aquatic resources related to groundwater usage. Decades of non-consideration have resulted in a dearth of science-based information and administrative records addressing the impacts to the region's surface waters and their related habitats. As the EPD begins to reevaluate its coastal groundwater permitting strategy, the negative impacts to surface water must become a consideration on par with saltwater intrusion. With its consideration of this new withdrawal approach proposed in this permit, the EPD should also consider a parallel evaluation of surface water impacts. More broadly, a large-scale study of aquifer-surface water interaction in the greater Savannah region should accompany and inform permitting strategy reform to ensure the EPD is fully pursuing its mission and vision of protecting and restoring Georgia's environment in a sustainable way that protects our precious resources for current and future generations.

Scientific knowledge of aquifer-surface water interaction is growing. Areas where these waters were once considered wholly separate and without influence on each other, recent studies are finding connections. Chief among these studies is research out of the University of Georgia,<sup>1</sup> which showed that waters from the Okefenokee Swamp do

---

<sup>1</sup>Jaivime Evaristo *et al.* 2025. "Not so isolated: isotopic and hydraulic evidence of vertical connectivity between the Okefenokee Swamp and Floridan Aquifer." *Environ. Res.: Water* 1 045005. Available at: <https://iopscience.iop.org/article/10.1088/3033-4942/ae2653>

infiltrate into the underlying Floridan Aquifer. This **disproves the long-held assumption of hydraulic isolation** - that the Hawthorne Formation, which separates the Okefenokee Swamp and the Floridan Aquifer, acted as a barrier that hydrologically separated the two water resources. Instead, changes in surface water levels propagate down to the Floridan Aquifer in as quickly as 30 days. As a result, somewhere between 5-15% of annual rainfall infiltrates into the aquifer, where those recent surface-sourced waters make up between 27-95% of the Floridan Aquifer directly beneath the Okefenokee Swamp. This is a **clear and unequivocal rebuke of hydraulic isolation between surface waters and the Floridan aquifer**. As such, the EPD cannot assume that there is no interconnection between groundwater and surface water.

Further, evidence of upward exchange between the Floridan Aquifer and surface waters is being established. Research from Georgia Southern University<sup>2</sup> has highlighted how **“vertical conduits” bring Floridan Aquifer water to the surface**. These fissures in the ground allow freshwater to upwell to the surface, creating freshwater wetlands. While this research was conducted on St. Catherine’s Island, it is informative for the whole region. Researchers draw comparisons between the proven vertical conduits on St. Catherine’s Island and an abundance of evidence of similar occurrences as far west as Bulloch County. Further, the researchers draw a direct line between these vertical conduits and surface water connection prior to overutilization of groundwater, stating that the conduits “...facilitated artesian spring flow that fed the fresh water wetlands of the western lowlands prior to the industrial development of the Coastal Plain...”

This research clearly states that there is, in fact, a groundwater-surface water connection in Coastal Georgia. These facts cannot be ignored when making decisions on either individual permits or region-wide strategy. Failure to do so will overlook a wide range of potential negatives to state waters and those who rely on them. First, a loss or interruption of groundwater supply to surface waters could reduce both water quantity and quality. Second, a loss of water quantity could lead to habitats to dry up and be lost, including but not limited to wetlands and streams. Third, reduced water quality has wide-ranging impacts to habitats, species, and other beneficial uses of water. Already suffering fisheries could be further harmed. Threatened, endangered, and species of concern with sensitive habitat needs, such as the federally-listed Atlantic and shortnosed sturgeon relying on refugia, could see further harm directly linked to groundwater overuse. Water contact recreation may also be harmed if water bodies rely on groundwater springs to maintain their water quality. Further deterioration to already impaired water bodies like the lower Savannah River may worsen further, preventing projects ranging from water supply intakes, wastewater or other direct discharges, or even harbor expansion. These are just some of the potential direct impacts from a loss or diminishment of groundwater-surface connection. These impacts are likely to compound and create new, wide-ranging, and downstream impacts. With all of these impacts and their scientific bases as presented in the recent research in mind:

- **How will EPD adapt its modeling and all groundwater decision making to reflect this new information and consider these impacts?**

---

<sup>2</sup> Vance, R. Kelly, *et al.* 2018. "Geomorphic Expression of Subsurface Structure and Stratigraphy on St. Catherines Island, Georgia." *Earth, Environment & Sustainability: Faculty Presentations*. Presentation 171. Available at: <https://gsa.confex.com/gsa/2018SE/meetingapp.cgi/Paper/313067> and <https://digitalcommons.georgiasouthern.edu/geo-facpres/171>

- **What additional site-specific and regionally-representative research into the interconnection between the Floridan Aquifer and the greater Savannah region's surface waters is underway or planned to inform future permitting decisions?**

Groundwater-surface water interconnection should be included as a part of this permit. With the cone of depression squarely in the area of the permit, the City of Savannah and its groundwater withdrawal wells have likely had some of the largest impacts to surface waters. These historic impacts and the ongoing vulnerability that the Savannah region's surface waters face make it a prime candidate for further, and immediate, study. Leaving the impacts to surface waters out of the proposed pilot study overlooks an essential part of the EPD's duty to protect all of the state's waters. Resolving this scientific and factual blindspot can, and should, be achieved simultaneously with the scientific inquiry proposed in this permit and the accompanying study. Continuing to ignore or investigate the interconnection between these water bodies harms the state's water resources and the species, businesses, and Georgians who rely on them.

Specific questions regarding the management of groundwater withdrawals in Coastal Georgia include:

- Has EPD evaluated the recharge locations for historic, current, and proposed future withdrawals? While numerical models are often used to identify these areas, water-quality metrics (e.g., geochemical indicators, stable isotopes, dissolved noble gasses) should also be used to evaluate the accuracy of numerical predictions.**
- Has EPD evaluated the effect of groundwater withdrawals on Magnolia Springs in Jenkins County, near Millen? Magnolia Springs is a cultural and natural resource<sup>3</sup> whose discharge has declined over recent decades from 7 mgd to less than 1 mgd. Has EPD evaluated the effect of historic, current, and proposed future groundwater withdrawals on discharge from this and other springs?**
- Has EPD evaluated what and where historic, current, and proposed future groundwater withdrawals have affected subsidence and sinkhole formation? Davis et al. (1964)<sup>4</sup> document ground subsidence using geodetic data and relate this to the effects of aquifer pumping within and near Savannah, Georgia. Other states with similar geology have developed subsidence risk maps<sup>5</sup> to inform water-resource managers and others on the possible ground collapse and regional ground-surface subsidence. Is EPD considering these effects? If not, then provide a rationale for not having done so despite the scientific evidence.**
- Has EPD evaluated increased water conservation, reuse of treated wastewater for industrial reuse, and desalination as alternatives to groundwater withdrawals? Many coastal communities have developed programs and infrastructure to reduce and replace their reliance on surface and groundwater.<sup>6</sup>**

<sup>3</sup>Jenkins County, Georgia. "Multi-Hazard Pre-Disaster Mitigation Plan." Approved May 20, 2009. Available at: [https://csrarc.ga.gov/sites/default/files/csrarc/planning/HazMit/final\\_plan\\_with\\_appendix.pdf](https://csrarc.ga.gov/sites/default/files/csrarc/planning/HazMit/final_plan_with_appendix.pdf)

<sup>4</sup> Davis, G. H., J. B. Small, and H. B. Counts. "Land subsidence related to decline of artesian pressure in the Ocala Limestone at Savannah, Georgia." *Engineering Geology Case Histories* 4 (1963): 1-8.

<sup>5</sup> Florida Department of Environmental Protection. "Subsidence Incident Reports." Available at: <https://floridadep.gov/fgs/sinkholes/content/subsidence-incident-reports>

<sup>6</sup> Arnaud Valleteau de Moulliac. "Water stress in coastal areas: the solution of water desalination." Available at: <https://www.veolia.com/en/blog/water-stress-coastal-areas-solution-water-desalination>

In sum:

- Existing scientific research confirms an interconnection between the Floridan Aquifer and Coastal Georgia's surface waters;
- This interconnection occurs at a quick rate, brings fresh water to the surface, and is impacted by groundwater withdrawal rates;
- Failure to investigate and consider impacts to surface water from groundwater withdrawals in permitting and strategy decisions will harm Georgia's aquatic resources and those who rely on them; and
- The Pilot Study proposed in this permit can, and should, include a parallel study investigating impacts to surface waters.

2. Clarity needed in permit specifics - withdrawal volumes, permits' interaction, operational and study oversight, responsive actions

Beyond the need to expand this proposed permit's study parameters, there are specific questions regarding how the permit functions, ranging from interaction with existing permits, the volume of withdrawals being permitted, how compliance is overseen, and the mechanisms for responding to the changes.

First, this proposed permit does not clearly explain how it will interact with existing permits held by the City of Savannah. While Section 6(b) attempts to explain the interaction, it still leaves the situation unclear. Most centrally, it is not clear if this proposed permit will result in an increase in permitted withdrawal volumes. It appears that the City of Savannah will receive an additional 2 MGD in withdrawal capacity.

- **If this is the case, there are multiple concerns - how does this comport with the Coastal Georgia Water & Wastewater Permitting Plan for Managing Salt Water Intrusion's restriction on new withdrawal within the Red Zone?**
- **Will study results even be compatible or usable if pumping beyond normal limits?**
- **Has an independent analysis of impacts to the aquifer and aquatic resources been undertaken?**
- **Lastly, the draft permit requires the "permit holder to demonstrate an effort to increase water use efficiency, yet it does not explain how. Can EPD condition any expansion in water withdrawal capacity on compliance with the best practices established by the U.S. Environmental Protection Agency (EPA)?"**

Beyond withdrawal volume, there is a question as to why these wells will be controlled by two separate permits. As stated in § 6(b)(1), "The temporary permit encompasses the same wells as permit No. 025-0018."

- **If this proposed/temporary permit and the existing Permit No. 025-0018 cover the same exact wells, why is this study not sought through an amendment to the currently existing permit?**

---

<sup>7</sup> See U.S. Environmental Protection Agency. "Best Practices for Water Conservation and Efficiency as an Alternative for Water Supply Expansion." December 2016. Available at: <https://www.epa.gov/sustainable-water-infrastructure/best-practices-water-conservation-and-efficiency-alternative-water>

- **If the permit application will not result in a net increase in MGD withdrawn, how will the existing permit be retired? If there is no net increase in withdrawal amounts, what is the intent of § 6(b)(2)-(4)?**
- **Are wells allowed, under state law, to have two separate permits control their operations?**
- **Lastly, how does EPD justify allowing additional withdrawal with no clear plan to retire the existing wells?**

Likewise, there is only a passing mention to Permit No. 051-0115-01 in § 6(d). There is no other mention of how this proposed permit will interact with Permit No. 051-0115-01, nor is there any explanation as to why the proposed permit will have to operate in coordination with that permit.

- **How does the new permit interact with Permit No. 051-0115-01 and what are the long-term plans for that existing permit?**

Second, there is no discussion as to how monitoring wells were selected. Section 6(c)(2)(b) directs the permittee to provide monitoring from a select set of wells, but does not explain why. Confusingly, the permit does allow for “Well 8” to substitute for “Well 11,” but does not explain why the two are interchangeable, nor does it explain why Well 8 is not otherwise included.

- **Can EPD clarify how these wells were selected and provide the public needed justification that these selected wells will provide sufficient information for the EPD’s monitoring of operations?**

Third and finally, the proposed permit does not explain how the EPD will ensure the Pilot Study does not have a deleterious impact on the Floridan Aquifer or other aquatic resources and those who rely on them. Beyond the monthly reporting requirement established in § 4(b) and the daily production data points established in § 6(c)(1)(b)(i), there do not appear to be any guardrails, thresholds/triggers, or other ways to measure negative impacts.

- **While the EPD reserves the authority to modify the groundwater permit in § 3(b), can the agency explain when it might exercise this right?.**

In such a novel study, the lack of guidelines in evaluating harms is concerning. With only monthly reporting required, harms directly resulting from the Pilot Study could occur as long as a month before they are even reviewable in the submitted data. When considering the significant volume of data being submitted, it could take days, weeks, or months for EPD to even recognize a harm, if there is even an EPD staff member available to proactively review these data at all. Without that proactive review of a seemingly large amount of data, the effect of potential Pilot Study-related harms will be borne by others who rely on groundwater - other well-owners, aquatic species, recreators, businesses - who have otherwise not been informed of potential impact and may not be aware of the connection to this study. ORK, OHM, and SRK call on the EPD and the City of Savannah to more wholly consider the potential impacts from this proposed Pilot Study and to enshrine a better system for assessing, recognizing, and responding to potential harms from this proposed Pilot Study.

In sum, ORK, OHM, and SRK ask the EPD to:

- State whether this proposed permit results in a net increase of groundwater withdrawals, and if so, how it justifies that net increase;

- Clarify why the Pilot Study is best achieved through two separate permits rather than a modification to the existing permit, and if two separate permits can permissibly control the same set of wells;
- Explain how Permit No. 051–115-01 interacts with this proposed permit;
- Provide justification about the selection of the monitoring wells; and
- Revise the permit to create better monitoring and response mechanisms for potential harms resulting from this novel Pilot Study.

Thank you in advance for your time and consideration; please let me know if you have any questions:

[ben@ogeecheeriverkeeper.org](mailto:ben@ogeecheeriverkeeper.org).

Sincerely,

Ben Kirsch, Legal Director  
Ogeechee Riverkeeper

Alice M. Keyes, Senior Strategist  
One Hundred Miles, Inc.

Tonya Bonitatibus, Executive Director & Riverkeeper  
Savannah Riverkeeper