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# Wakulla Springs Alliance

*"Protecting and restoring water quality, spring flow and ecological health of Wakulla Spring."*

January 28, 2021

Mr. David Edwards  
Wakulla County Administrator  
P.O. Box 1263  
Crawfordville, FL 32327

Dear Mr. Edwards:

Thank you for meeting with members of the Wakulla Springs Alliance on January 6 to discuss Wakulla County's plans for siting a rapid infiltration basin (RIB) on the Jerry Moore property within the Wakulla Priority Focus Area (PFA) to dispose of treated effluent from the upgraded Otter Creek wastewater treatment facility (WWTF) and for continuing to communicate with the Alliance thereafter. After considering the information you have shared as well as the Dewberry Facilities Plan, the Wakulla Spring Basin Management Action Plan (BMAP), and related documents, we urge you and the Wakulla County Commission to undertake a formal assessment to identify an alternative site outside of the Wakulla PFA to dispose of any wastewater that is generated within the PFA and managed at the Otter Creek WWTF. While the new initiative to investigate the potential for adding an effluent finishing wetland is laudable, the fact remains that siting these facilities outside the Wakulla Spring PFA would better protect the spring from the impacts of new nitrogen discharges.

Relocating the new RIB to a site outside the PFA would avoid increasing the nitrogen pollution of Wakulla Spring from both existing and new sources within the PFA. Additional inputs of nitrogen to the aquifer within the PFA will set back progress towards achieving the total maximum daily load (TMDL) for nitrate nitrogen that is the basis for the Wakulla BMAP. Nitrogen in treated effluent from the Otter Creek WWTF that originates in wastewater currently generated within the PFA will comprise a new load to the PFA that would have to be offset to break even on progress toward achieving the TMDL. Nitrogen in treated effluent from wastewater that is generated from new sources within the PFA due to

new development or connection of existing septic systems to sewer also will add to the Wakulla Spring nitrogen burden if disposed of within the PFA.

The principal strategy available to accomplish such an offset is to convert existing septic systems (OSTDS) to advanced treatment OSTDS or to connect properties with existing OSTDS to sewer. The BMAP lists no substantial WWTF upgrades yet-to-be implemented and potential reductions from fertilizer and agricultural best management practices (BMPs) are relatively small and of uncertain impact.

As you are no doubt aware, mitigating existing OSTDS does not result in complete elimination of their discharges. While approximately 95 percent of the nitrogen in effluent from properties connected to central sewer will be removed if connected to an advanced wastewater treatment facility, the percent removal accomplished with OSTDS conversions depends greatly on the technology deployed. The in-ground nitrogen reduction biofilters being installed throughout much of the state following current state design regulations (64E-6.009(7) FAC) have not been demonstrated to achieve significantly better nitrogen removal than the conventional OSTDS they are replacing.

Given the limited strategies available for reducing current nitrogen discharges to the Wakulla basin aquifer and the fact that the BMAP does not account for new nitrogen inputs from population growth within the Wakulla basin, we believe a concerted effort should be made to avoid squandering opportunities for nitrogen reduction.

Locating a RIB on the Jerry Moore site could pose other risks that should be avoided. Nitrogen in treated effluent that meets the advanced wastewater treatment standard of 3.0 mg/L total nitrogen could promote growth of algae and nuisance aquatic plants in sinkhole lakes on private property near the site. In addition, residents of property proximate to the site who consume well water may be exposed to nitrate-nitrogen levels that are potentially unsafe. Numerous studies have found various health maladies associated with consuming drinking water with nitrate-nitrogen concentrations less than the federal and state maximum contaminant level of 10 mg/L nitrate-nitrogen in drinking water (see for example, Espejo-Herrera et al., 2016; Ward et al., 2018; Zeman et al., 2011).

We understand from your remarks during the January 6 meeting and your response to subsequent questions that the Jerry Moore parcel, which is situated within the Wakulla Spring Priority Focus Area, was the only site that met all of the county's selection criteria, i.e.

- 100 acres +/- 10-20 acres
- Sandy soil with a depth to groundwater of at least 10ft
- No observed karst features
- Within a 0.25 mile of existing or future planned effluent disposal infrastructure
- Willing seller
- County must own the land, no leases or agreements to spray.

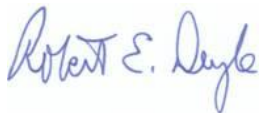
We urge Wakulla County to promptly undertake an expanded search for an effluent disposal site outside the Wakulla PFA by considering sites outside the 0.25-mile buffer as well as considering the option of extending sewer infrastructure as needed. We also recommend that the county delay moving forward with transmission infrastructure modifications that might otherwise not be necessary if the RIB site were located elsewhere.

Employing an effluent finishing wetland system such as the Palm Beach County Wakodahatchee wetlands prior to disposing of treated effluent to a RIB would not eliminate the need to offset some new nitrogen loading to the PFA and would entail substantial capital costs. A new discharge of treated effluent within the PFA also would require documenting the impact of the discharge on the nitrogen load to Wakulla Spring per the directive of sec. 373.811(1) Florida Statutes which stipulates that the Florida Department of Environmental Protection shall apply a treatment standard more stringent than 3 mg/L if the department determines that doing so is necessary to attain the TMDL for an Outstanding Florida Spring.

Siting the RIB at an alternative location outside the Wakulla PFA would avoid the costs of documenting the impacts of a RIB within the PFA. Siting the RIB outside the PFA also would enhance protection of Wakulla Spring as new development occurs within the PFA or additional properties with existing OSTDS within the PFA are connected to sewer, since all wastewater conveyed to the Otter Creek WWTF would be disposed of outside the PFA. Doing so also would minimize the potential for pollution of nearby sinkhole lakes or exposing consumers of local ground water to potentially harmful levels of nitrate-nitrogen.

We welcome your expressed willingness to collaborate as you proceed to further refine the county's plans for treated effluent disposal. We would appreciate receiving a response from you regarding our request and concerns. We also would appreciate receiving notification of future meetings of the County Commission when decisions are to be taken to implement the county's facilities plan.

Sincerely,



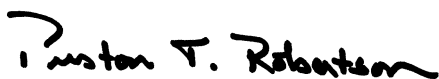
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Wakulla Springs Alliance



Grant Gelhardt, Chair  
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1000 Friends of Florida



Preston Robertson, President  
Florida Wildlife Federation





Ryan Smart, Executive Director  
Florida Springs Council



cc: Chuck Hess, Wakulla County Commission  
Mike Kemp, Wakulla County Commission  
Randy Merritt, Wakulla County Commission  
Quincee Messersmith, Wakulla County Commission  
Ralph Thomas, Wakulla County Commission  
Adam Blalock, Deputy Secretary, FDEP Ecosystem Restoration  
Trina Vielhauer, Director, FDEP Division of Water Restoration Assistance  
Julie Espy, Director, FDEP Division of Environmental Assessment and Restoration  
Benjamin Melnick, Director, FDEP Division of Water Resource Management  
Eric Draper, Director, FDEP Division of Recreation and Parks  
Amy Conyers, Park Manager, Wakulla Springs State Park  
Don Lanham, President, Friends of Wakulla Springs  
Vince Long, County Administrator, Leon County  
Reese Goad, City Manager, City of Tallahassee

#### References

- Espejo-Herrera, N., Gracia-Lavedan, E., Boldo, E., Aragonés, N., Perez-Gomez, B., Pollan, M., Molina, A.J., et al. 2016. Colorectal cancer risk and nitrate exposure through drinking water and diet. *International Journal of Cancer* 139 (2): 334-346. Doi: 10.1002/ijc.30083
- Ward, M.H., Jones, R.R., Brender, J.D., de Kok, T.M., Weyer, P.J., Nolan, B.T., et al., 2018. Drinking water nitrate and human health: an updated review. *International Journal of Environmental Research and Public Health*. 15 (7): pii: E1557. doi: 10.3390/ijerph15071557. [This paper reviews more than 30 epidemiological studies since 2004 and evaluates the consumption of drinking water nitrate and links with cancer, adverse reproductive outcomes, and other health effects.]
- Zeman, C., Beltz, L., Linda, M., Maddux, J., Depken, D., Orr, J., and Theran, P. 2011. New questions and insights into nitrate/nitrite and human health effects: A retrospective cohort study of private well users' immunological and wellness status. *Journal of Environmental Health* 74 (4): 8-19.