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South Florida Water Management District
Director, Water Use Permitting Division
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Subj: Baywinds Homeowner Association Permit 50-08641-W and Use of Reclaimed Water

Greetings:

We represent B.W. Homeowners' Association, Inc. ("Baywinds"), the holder of the subject Water Use Permit ("Permit") issued by the South Florida Water Management District ("District") on April 28, 2014. The Permit authorizes Baywinds' continued use of surface water from on-site lakes for landscape irrigation of 240 acres of turf using a micro-sprinkler irrigation system with an annual allocation of 272.49 million gallons. Baywinds' surface water management system ultimately outfalls into the Hillsborough Canal, which then outfalls into the intercostal waterway and Atlantic Ocean. The 1,000 acre Baywinds PUD is comprised of Boca Winds, Boca Falls, and Ashley Park communities, totaling 1,808 units of single family housing and including approximately 250 acres of lakes. Baywinds is surrounded by waterways, lush tropical landscapes and schools serving all grade levels. Many of the approximately 7,000 residents include families and their children along with elderly persons celebrating their twilight years.

On March 7, 2019, Baywinds received documentation from the Palm Beach County Water Utilities Department ("PBCWUD") confirming that no reclaimed water supply was available to service Baywinds but noting that a proposed Reclaimed Water System Expansion by PBCWUD could "potentially make reclaimed water available . . . to the southwest Boca Raton area communities within the next five years."

Baywinds has been reviewing the implications of reclaimed water usage within the community. By way of this correspondence, Baywinds advises that, based upon its review and

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research, it categorically objects to the future introduction of reclaimed water within its community based on a number of grounds that are discussed herein.

Applicable Regulations

As you are aware, the District's Applicant's Handbook for Water Use Permit Applications (June 2022) ("Handbook") requires "the use of reclaimed water in place of higher quality water sources when it is readily available and environmentally, economically, and technically feasible." Handbook, § 2.2.4.

Environmental Feasibility

"Reclaimed water reuse is considered environmentally feasible if the Department [of Environmental Protection ("DEP")] has permitted the reuse facility that will provide the reclaimed water supply and has permitted the use or discharge of the reclaimed water to the receiving water body, if applicable." Handbook, § 2.2.4 B.2.a.

Baywinds contends that reclaimed water use is not environmentally feasible because it has not received information from DEP, PBCWUD, Broward County Water and Wastewater Services (the source of reclaimed water and location of the treatment facility) and/or the District identifying a permitted reuse facility or the permitted use or discharge of reclaimed water to Baywinds

Technical Feasibility

"Reclaimed water reuse is considered technically feasible if reclaimed water is available at the site of the proposed use to meet all or part of the applicant's water needs as defined herein. In the event the supply of reclaimed water available is not adequate to fully meet the project's 1-in-10 year drought demands, the applicant may request a partial allocation of water from a non-reclaimed water source." . . . "Available at the project site means the utility has initially provided the distribution facilities at its cost to the project boundary." Handbook, § 2.2.4 B.2.b.

As a preliminary matter, the Permit, at Limiting Condition number 23, states explicitly that "Reclaimed water is considered available when an agreement has been executed between both parties, the transmission lines are constructed to the project site, and the necessary on-site modifications are obtained." At this time, transmission lines are not constructed to Baywinds' location, Baywinds has not executed an agreement making reclaimed water available at the community, and Baywinds has not undertaken a comprehensive review of the necessary on-site modifications for introduction of reclaimed water to the community. Baywinds reserves the right

to raise any available legal, technical, scientific, or regulatory objections to technical feasibility within a reasonable time of receiving notification that reclaimed water is available to Baywinds.

Economic Feasibility

“If the applicant asserts that reuse is not economically feasible, then the applicant must provide the District with an assessment of the economic feasibility of use of reclaimed water use. In performing the assessment, the applicant shall contact the applicable reuse utility and request a letter stating that reclaimed water is not available or provide the following information and consider the response provided by the reuse utility in its analysis[.]” Handbook, § 2.2.4 B.2.c. (emphasis supplied).

Baywinds’ position is that reclaimed water within its community is not feasible because the use of reclaimed water has not been permitted at Baywinds, reclaimed water is currently not available at Baywinds, and an economic feasibility analysis is premature at this time. Furthermore, there is no information as to the timetable or the level of internal infrastructure needed to accommodate reclaimed water and its possible follow-on effects. The economic feasibility analysis described in the Handbook includes at least eight major data points, and the District has communicated to Baywinds that it will also require a 20-year present value analysis of the economic costs of building the infrastructure to receive reclaimed water.

Based on initial research and assessment, which are ongoing, there may be up to nine “startup” costs of accepting reclaimed water for irrigation systems at Baywinds:

- 1) Re-design distribution infrastructure connecting irrigation system to reclaimed water pipeline in conformity with Rule 62-610.521, F.A.C., “Setbacks”
- 2) Lining of lake system bottom to prevent seepage into human recreation areas
- 3) Install pressure regulating valves to control pressure of water flowing into irrigation system
- 4) Install water meter to monitor amount of reclaimed water used
- 5) Create storage pond or install storage tank and pump station to match reclaimed water supply with timing of water needs
- 6) For micro-sprinkler and drip irrigation systems, install or upgrade filtration and/or chemical injector systems to reduce clogging
- 7) Create reclaimed water disposal area such as ditch connection to pasture area during times when reclaimed water flows are higher than water needs
- 8) For turf and landscape, change plant material to more salt tolerant species
- 9) Other costs, if any, specific to the reclaimed water user associated with the provision of water for other uses from the existing water source due to the reclaimed water connection.

In addition, there are several long term, annualized costs of switching to reclaimed water:

- 1) Reclaimed water payment to the utility

- 2) Irrigation-related management associated with maintaining reclaimed water meter, pipeline, pump and storage pond; repairing pipeline due to fluctuating water pressure; and repairing or replacing rusty controllers, power boxes and equipment
- 3) Fertilizer management including water quality and plant tissue testing and nutrient evaluations
- 4) Salinity and pH management including chemical applications, water blending, soil leaching and mechanical means
- 5) Pest or algae management including cleaning or repairing microjets or drip nozzles, water chlorination, pesticide applications, and filter replacement
- 6) Recording water data and providing reports to the water management district and the FDEP

A previous Southwest Florida Water Management District survey of 17 recreational users of reclaimed water (16 golf courses and 1 HOA), identified four common complaints of reclaimed water use for irrigation purposes:

- 1) Problems with algae growth on the lawn/landscape, irrigation lines/heads or storage ponds.
- 2) Chloride or salt content of our irrigation water is higher than if we used a traditional water source and has negatively affected plant/grass quality.
- 3) Problems with clogged irrigation heads.
- 4) Not enough reclaimed water for irrigation needs.

Health and Safety

Finally, the residents of Baywinds challenge the scientific basis for the finding that the use of reclaimed water is environmentally acceptable and not a threat to public health and safety. *See* Fla. Stat. § 373.250(3)(c). The current literature on the effect of reclaimed water on human populations is limited at best:

Population-based studies, also called ecological studies . . . face significant challenges such as short study periods for chronic disease outcomes, changing exposures over time, nonspecific disease outcomes with unknown attributable risks, and the inability to know actual water consumption rates. Their use for quantitative risk assessment is extremely limited. Such studies simply cannot have the statistical power to achieve detection of the risk expectations established in public water supply regulatory standards such as 10⁻⁵ or 10⁻⁶ lifetime cancer risk. Population-based studies are probably best viewed as “scoping” or hypothesis-forming exercises. They cannot prove that there is no adverse effect from the reuse of water in these areas (indeed no study can do so), but they can suggest an upper bound on the extent of the impact if one did exist.

See Water Reuse: Potential for Expanding the Nation's Water Supply Through Reuse of Municipal Wastewater. NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE. (2012) <https://doi.org/10.17226/13303>. The results of toxicological *in vivo* testing between 1982 and 2002

showing limited adverse effects on mice and Japanese Medaka fish are similarly troubled. *Id.* (“the relevance of these findings to human health remains unclear”).

More concerning, and thoroughly under-researched, is the prevalence of perfluoroalkyl and polyfluoroalkyl substances (“PFAS”):

Reclaimed water is becoming an increasingly important source of water in arid regions worldwide. In the City of Tucson, Arizona, reclaimed water comprises approximately 10% of the annual water supply. It is used to recharge the local aquifer, create surface flow in the Santa Cruz River, and irrigate parks, golf courses, and recreational fields. In December 2018, concentrations of perfluoroalkyl and polyfluoroalkyl substances (PFAS) an order of magnitude higher than the EPA lifetime health advisory of 70 ppt were discovered in the city's reclaimed water system.

Tiffani T. Cáñez, et al., *Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) In Groundwater at a Reclaimed Water Recharge Facility*, 791 SCIENCE OF THE TOTAL ENVIRONMENT 147906 (2021) <https://doi.org/10.1016/j.scitotenv.2021.147906>. To the contrary, Baywinds has significant concerns about the health and safety of its residents and the public.

Therefore, Baywinds declines the introduction of reclaimed water in the community. It is respectfully requested that advance notification be provided to the undersigned with respect to any contemplated agency action in this matter.

Baywinds reserves all of its rights to raise any legal claims it may have; as well as its available legal, technical, scientific, and/or regulatory objections and challenges to environmental feasibility, technical feasibility, economic feasibility; and/or standards for health, safety, quality, and/or reliability within a reasonable time of receiving notification that reclaimed water is available to Baywinds.

Should you have any questions or comments, please do not hesitate to contact me. We hope that the District will thoughtfully consider Baywinds’ serious issues and concerns with the use of reclaimed water for irrigation within the community.

Sincerely,

/s/ John J. Fumero

John J. Fumero, Esq.