JK
Jeffrey King <Jeffrey.King@appliedtm.com>
To Kraig McLane; Michelle Brown
Cc Andrew Sutherland; Fatih Gordu

Good Afternoon Mr. McLane –

This email briefly summarizes a March 3, 2022 project kick-off meeting and site visit. This meeting and site visit are task A of engineering and environmental services contract 32929, work order 3: an independent technical peer review of SJRWMD's Johns Lake (figure 1) ICPR4 simulation of minimum flows and levels in Johns Lake, in Orange and Lake Counties, Florida. This meeting was public and part of the CFWI peer review process.

This email is a brief summary of the meeting. No specific action items were identified during the meeting, for model review or documentation.

The kickoff meeting was convened at 9am as a Microsoft Teams virtual meeting (table 1). The site visit at Johns Lake and in the Johns Lake watershed began at 2pm (table 1). I observed hydrologic features being modeled (figures 1 and 2). These observations provided insight that will aid my review.

During the virtual meeting, Andrew Sutherland briefly described MFLs. He stated the following:

- Johns Lake provides recreational services.
- Wetlands exist along lake margins.
- Two conservation areas exist along the lake shoreline.
- Land use transitioned over several decades from a more rural use to residential and urban uses.
- WRIR 62.40 details ten water-resource values.

Olkeba Leta described a hydrologic simulation of water levels in Johns Lake, and in several other surface-water bodies in the Johns Lake watershed. He stated the following:

- Johns Lake has a transmissive connection to the Floridan aquifer system, and that the lake may be vulnerable to aquifer pumping.
- Sustainable yield is the yield available for withdrawal.
- The model was not a fully integrated model, in which groundwater flow and surface-water hydrology and hydraulics are linked at a temporal resolution on the order of surface-water or groundwater simulation timesteps.
- The simulation used one-dimensional mapped basins in the upper watershed and two-dimensional overland flow features in wetlands along the lake margin.
- The Upper Floridan aquifer is the bottom boundary.
- The simulation is based on 2014 land use, revised in 2019; SSURGO soils; and three Upper Floridan wells.
- Groundwater flows from 90 ft in southwestern part of the simulation domain to 70 ft in northeastern part.
- The long-term continuous simulation of the hydrologic cycle begins in 1948.
- Black Lake is the dominant water-balance inflow; vertical seepage to the Upper Floridan aquifer is the dominant water-balance outflow.

- Leakance is the most sensitive simulation parameter. The simulation is less sensitive to horizontal and vertical hydraulic conductivity.
- One primary objective of the simulation is to understand the influence of aquifer pumping on lake levels.

Olkeba Leta presented several model performance statistics.

I'm available to discuss this summary at your convenience, by telephone or return email.

Best Regards,

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