

## **MEMORANDUM**

**TO:** Governing Board Members

**FROM:** Deena Reppen, Deputy Executive Director, Regulatory and Public Affairs

**DATE:** May 13, 2010

**SUBJECT:** Authorization to enter into an Operational Agreement with the City of Lake Worth regarding its Surficial Aquifer Wellfield

### **Background**

The City of Lake Worth ("Lake Worth") owns and operates a public water supply utility, located in Palm Beach County. Lake Worth is authorized, under Water Use Permit No. 50-00234-W ("Permit"), to withdraw water from the Surficial and Floridan aquifers. Lake Worth's Permit was renewed and modified on or about February 8, 2006. During the application review process, District staff noted that long-term chloride monitoring detected increases in two of the monitoring wells (LWMW-2 and LWMW-4) located between the wellfield and the Intracoastal Waterway ("ICW").

Lake Worth submitted monitoring data in accordance with its Permit's Limiting Conditions. The monitoring data shows that the position of the saltwater front is unstable and moving towards the wellfield. Between the issuance of the Permit and the height of the water shortage in August 2007, chlorides in Lake Worth Monitor Well ("LWMW")-4 increased at a rate of about 130 parts per million per year ("ppm/year"). From August 2007 through December 2008, chlorides were relatively stable, increasing at a rate of only 24 ppm/year.

However, in early 2009, the salinity in this well began to rise more rapidly once more, causing renewed concern for the wellfield and the resource. On April 6, 2009, LWMW-2 and LWMW-4 showed increased chloride levels of 1,850 mg/L and 1,640 mg/L, respectively. Order No. 2009-098-DAO-WS was issued soon thereafter limiting Lake Worth's wellfield withdrawals to 5.28 mgd and retaining pumpage limitations on specified wells.

Despite the return of normal rainfall conditions and the seasonal rise in groundwater levels, Lake Worth monitor wells indicate chloride concentrations have not yet returned to 2008 levels. As of August 24, 2009, LWMW-2 and LWMW-4 showed chloride levels of 1,950 mg/L and 1,740 mg/L, respectively. PB-889 showed a chloride level of 8,000 mg/L.

In the interest of resolving the allegations referenced herein without the need for incurring additional expenses, Lake Worth and the District have determined that entry into an Operational Agreement is necessary to ensure no harmful impacts occur to the water resource. The Operational Agreement requires Lake Worth to 1) limit its withdrawals from the Surficial aquifer to 5.28 million gallons per day (mgd); 2) construct and operate a new monitoring well; 3) submit monthly pumpage and chloride concentration reports; 4) conduct a Safe Yield study; and, 5) submit an application to modify its Permit.

**How this helps meet the District's 10-year Strategic Plan:** The District is authorized to implement regulatory recommendations to ensure that proposed and modified uses are reasonable-beneficial, will not harm the water resources, and are consistent with the public interest.

**Funding Source:** There are no funding needs associated with the proposed Operational Agreement.

**This Board item impacts what areas of the District, both resource areas and geography:** This project is located within the Water Conservation Area No. 1/C-51 Water Use Basin with its wellfield located approximately one mile west of the Intracoastal Waterway. The item affects the Surficial Aquifer within the Basin.

**What concerns could this Board item raise?**

Due to the potential for saline water intrusion, there is concern over Lake Worth's continued use of the Surficial aquifer. However, during the term of the Operational Agreement, Lake Worth will be conducting a Safe Yield study to determine what volume of water, consistent with the District's permitting criteria, can be withdrawn from its Surficial aquifer wellfield without causing or contributing to further movement of the saline water interface to a greater distance inland toward a freshwater source or result in the sustained upward movement of saline water.

**Why should the Governing Board approve this item?**

Lake Worth will be allowed to continue to use the Surficial aquifer while it develops the Floridan aquifer as its alternative water source. Lake Worth will withdraw water from the Surficial aquifer at a decreased rate compared to its permitted allocation in order to alleviate the District's concerns that Lake Worth's withdrawals may be contributing in part to the westward movement of the saltwater front. Additionally, as stated above, Lake Worth will be conducting a Safe Yield study to determine what volume of water, consistent with the District's permitting criteria, can be withdrawn from its Surficial aquifer wellfield without causing or contributing to further movement of the saline water interface to a greater distance inland toward a freshwater source or result in the sustained upward movement of saline water.

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