

Representative Monthly Values for Use in Producing the Groundwater Level Percentile Ranking Index by Participating Agencies

(R. Copeland, November 2017)

The Salinity Network Workgroup (SNW) is a subdivision of the Florida Water Resource Monitoring Council. One of its priorities is to produce a groundwater level (GWL) percentile ranking index (PI) each May and September for the Upper Floridan aquifer. To produce the GWL PRI each agency determines a representative monthly value (RMV) for groundwater levels for each well in its corresponding network. For each well, the agency compares the May (or September) RMV to historical RMVs from the same well.

During the November 8, 2017 SNW meeting/webinar, it was requested that each agency producing the GWL PRI transfer all RMVs, and selected well information for each well in their corresponding network, to the Watershed Information Network (WIN) database. The agencies are: Alachua County Environmental Protection Department (ACEPD), Florida Department of Environmental Protection (DEP), along with the five water management districts (NFWWMD, SJRWMD, SFWMD, SWFWMD and SRWMD).

It was also requested that a written description of the RMV used by each participating agency be distributed to all SNW representatives. After the request was made it was pointed out that written descriptions were previously produced in the appendices of a SNW document describing the GWL PRI (Groundwater Level Conditions for the Upper Floridan Aquifer Based on Percentile Ranks Pilot Study for May 2010).

The table below presents a brief descriptive summary of the RMV used by each agency. Immediately below the table is a more detailed description taken from the SNW document.

Table 1. Description of Representative Monthly Groundwater Level Value Used by each of Agencies Producing Groundwater Level Percentile Ranks

Agency	Description of Representative Monthly Value for Each Well
ACEPD	Median value of month
DEP	Median value of month
NFWWMD	For wells with continuous recorders, the daily maximum value of the 15th of the month For wells without recorders, the value nearest 15 th day of the month
SJRWMD	Median value of month
SFWMD	Median value of month
SWFWMD	Interpolated median maximum daily value for same week of each year <i>For transferring data to WIN, the RMV is the median maximum daily value of the month.</i>
SRWMD	For wells with continuous recorders, the daily mean from the 27 th of the month For wells without recorders, generally a single value from first two weeks of month

ACEPD: Median values for the months sampled are used for analyses.

DEP: For each well, medians values are determined for each month that the well was sampled.

NFWWMD: Many monitoring wells have varying frequencies (daily, monthly, or quarterly) of GWL measurements over the POR. For such wells, water level data was reduced to either a

monthly or a quarterly frequency to minimize the potential for temporal bias. When monthly frequencies were used, the value nearest to the 15th day of each month was selected. When quarterly frequencies were used, values nearest to February 15th, May 15th, September 15th, and November 15th of each year were selected. When hourly or continuous water levels were available, the daily maximum water level for the 15th of the month was used in the analysis. All groundwater elevations were converted to feet above MSL.

SJRWMD: The median monthly value from each well is used for the calculations.

SFWMD: The median value ... was submitted as the final PR.

SWFWMD: ...daily maximum values are used. ... PRs are calculated from the interpolated record in weekly intervals to remove the effects of seasonality. That is, each week, data are compared to data from the same week from previous years.

Note for transferring data to WIN, after the meeting, the SWFWMD agreed to compute and send a RMV. It is the median maximum daily value of the month.

SRWMD: For ... manually-read wells, a single value, generally from the first two weeks of the month is used for PR calculations. The daily mean GWL from the 27th of a given month are used for PR calculations from continuously monitored wells