

Summary of the November 9, 2016 Salinity Network Workgroup Meeting/Webinar

(Rick Copeland, FDEP)

Location:

Room 238B of the Martinez Building, Tallahassee, FL from 1:00-3:00 PM.

Attendees:

FDEP – Rick Copeland, Jay Silvanima, Carolyn Voyles, Andy Woeber, Joe Bauer, Nia Wellendorf,
Jennifer Claypool, Stephanie Sunderman-Barnes

NWFWMD – Tony Countryman

SRWMD – Tara Rodgers, Tom Mirti

SJRWMD – Don Boniol

SWFWMD – Steve DeSmith, Dave DeWitt, Jim Clayton

SFWMD – Jon Shaw, Lucia Baldwin, Steve Krupa, Kevin Rodberg

USGS – Scott Prinos

Alachua Co. – Greg Owens

Link to Salinity Workgroup Meeting Materials:

<http://www.dep.state.fl.us/water/monitoring/council/meeting.htm>

Summary

Rick Copeland (RC) gave an introduction and reviewed the four objectives currently being addressed by the Salinity Network Workgroup (SNW): (1) periodic production of groundwater level percentile ranking index (GWL PRI) maps for the Floridan aquifer system, (2) development of a Coastal Salinity Monitoring Network (CSMN), (3) development of protocols for sampling wells that monitor movement of the freshwater/saltwater interface, and (4) development of a saline groundwater quality index. Objective (4) is currently on hold.

GWL PRI

The SNW produces a GWL PRI map for each May and September. RC mentioned that the appendix of the pilot study's final report includes descriptions of the PRI calculations used by each participating entity. These methodologies need minor revisions. For each entity, three issues need to be described: (a) the exact equation used, (b) the period of record (POR), and (c) whether or not the PRI is seasonally adjusted. In addition, the report's main text needs to include a general discussion of these topics.

RC also discussed the May 2016 and September 2016 GWL PRI maps. The May map has been reviewed; however, RC still needs to write a description of the PRI conditions for this map and send it out for review. RC also needs to send the September 2016 map, along with a written description of corresponding groundwater conditions, to reviewers.

Lucia Baldwin (SFWMD) gave a presentation showing how GWL PRI can vary, depending on the equation(s) used. Lucia also mentioned that if the number of observations (n) over the POR increase, the differences in the PRI decrease.

Currently, four of the six entities who participate in generating GWL PRIs, compare a monthly value for May (or September) to all values over the POR. One entity compares a monthly value for May (or September) to all previous May (or September) values over the POR. Another entity compares a weekly

value in May (or September) to all previous corresponding weekly values over the POR. The exact method used by each entity needs to be presented in the main text of the revised document.

Could the SNW adopt one standardized methodology? Since two of the individuals who calculate the respective PRIs were not present at the meeting, RC will need to contact and discuss this topic with them at a later date. Could the entities produce both types of PRIs? Four of the six entities can do so. However, Tony Countryman (NFWMD) said that because his district only has a few wells, there would be insufficient data for calculating seasonally-adjusted PRIs. RC agreed to contact each entity separately, discuss the situation, and report back at the next SNW meeting.

Coastal Salinity Monitoring Network

RC discussed the status of the Coastal Salinity Monitoring Network's development. Previously, FDEP staff used these data and produced a series of maps. The maps represent areas of the state where the highest concentrations of specific conductance, total dissolved solids, chloride, and sulfate occur in the various aquifers. The highest concentrations tend to form a "rind" around the Gulf of Mexico and Atlantic Ocean portions of the state. Previously, SNW entities (mostly WMDs) supplied FDEP with well location and construction information for their monitoring wells (without the corresponding groundwater data). FDEP staff overlaid WMD well locations on the "rind" maps. Between May and November of this year, WMD staff have selected 355 wells for inclusion in the CSMN. Each well will be monitored, at a minimum, for sodium, chloride, sulfate, total dissolved solids, and specific conductance.

The CSMN in the SFWMD area is a special situation. A variety of governmental agencies previously have established salinity monitoring networks. If needed in the future, the SNW will inquire about using data from these wells.

Four wells are projected to be added to the CSMN within the NFWMD within a few months.

Presently, the SRWMD has identified 13 potential CSMN wells. FDEP will assist the SRWMD in the final selection of 10 of the 13 wells. In the near term, FDEP will sample these wells. Eventually the SRWMD will assume sampling responsibility.

Regarding the SFWMD region of Florida, Scott Prinos (USGS) demonstrated use of a USGS web page, under development, that displays data, trends, and graphs for groundwater and chloride levels in many south Florida wells. There was a discussion regarding the feasibility of adding CSMN wells to the USGS website. Because of varying formats, CSMN wells cannot be added now. Nevertheless, FDEP will investigate the feasibility of adding network wells to the USGS system. Scott suggested that WMD staff should select only a subset of their CSMN wells for inclusion to save on cost and labor.

Proposed Protocols to be Used to Monitor the Freshwater/Saltwater Interface

One objective of the SNW is to develop special sampling protocols for monitoring the movement of the freshwater/saltwater interface. Currently, FDEP has protocols for wells with in-place plumbing, or with a screen (or open hole) of less than 10 ft. Protocols for sampling wells with a screen (open hole) of greater than 10 feet need revision. RC gave an overview of the draft revised protocols he previously sent SNW participants for review. The protocols require either low-flow purging and a special option to use a non-isokinetic sampler such as a double check-valve bailer (or Kemmerer sampler). These protocols are to be used only when monitoring the interface.

Homework

FDEP:

Send text regarding May and September 2016 GWL PRI maps to participating entities for review.
Send September 2016 GWL PRI draft map to entities for review.
Inquire about the feasibility of SNW entities using either one standardized method for calculating GWL PRI, or using both the regular and seasonally-adjusted methods.
Ask each participating entity about their corresponding POR, PRI equation, and use of the seasonally-adjusted GWL PRI.
Inquire about the feasibility of adding CSMN wells to the USGS web page under development.
Work with the SRWMD to finalize selection of CSMN wells. Commence sampling wells until the SRWMD assumes sampling responsibility.

SNW entities:

Review proposed revisions to sampling protocols for monitoring freshwater/saltwater interface and return comments by **November 22**.
As needed, review and comment on pertinent material regarding the efforts of the SNW.
As needed, clarify equation used to calculate GWL PRI, the POR, and if the method used to calculate the PRI is seasonally adjusted.