



United States Department of the Interior

U.S. GEOLOGICAL SURVEY

Reston, Virginia 20192

In Reply Refer To:
Mail Stop 150
GS13000887

JUN 28 2013

The U.S. Geological Survey (USGS) received email dated January 16, 2013, regarding an "Information Quality Act Request for Correction of Information" about three USGS publications related to water resources in Northeast Florida, which are found at <http://pubs.usgs.gov/pp/pp1656c/>, <http://pubs.usgs.gov/sir/2007/5031/>, and <http://pubs.usgs.gov/sir/2011/5031/>.

A team of USGS scientists has evaluated your request in which your recommendation for corrective action was: "retract the 3 papers." We used the general statements made throughout your request for correction of information, as the context for the evaluation of your request. The basis for the USGS decision is provided below and keyed to the principal concerns expressed in your request for action.

I have reviewed our scientists' evaluation of your request and find it to be comprehensive in relation to the USGS Information Quality Act requirements. The USGS has determined that the three reports will not be retracted as you requested. As stated in the attached response document, we find the three reports to be technically correct, unbiased, and objective. This is supported by the scientists' comments in reply to your general statements. The two editorial corrections, which you pointed out (one in each of two of the reports) will be made and are specified in the attached USGS response document.

Thank you for your interest in these products.

Sincerely,

Jerad D. Bales
Acting Associate Director for Water

Attachment

Attachment: USGS Response to the Request for Correction of the Three Water Publications

(RE: Initial Request at

[http://www.usgs.gov/info_qual/documents/Initial_%20Inquiry011613\(1\).pdf](http://www.usgs.gov/info_qual/documents/Initial_%20Inquiry011613(1).pdf))

Summary of USGS Comments in Reply to General Statements

Below are USGS comments in reply to the general statements made throughout the request document:

Estimated predevelopment potentiometric surfaces in the Suwannee River Water Management District area were determined in part from water-level measurements made in 1976.

- The estimated potentiometric surface prior to development presented in Johnston et al. (1980) in the area of the Suwannee River Water Management District was determined in part from water-level measurements made in May 1976 (Fisk and Rosenau, 1977) [Fisk, D.W., and Rosenau, J.C., 1977, Potentiometric surface of the Floridan aquifer in the Suwannee River Water Management District, Northern Florida, May 1976: U.S. Geological Survey Water Resources Investigations 77-1]. As noted in Johnston et al. (1980) the Fisk and Rosenau (1977) map was used with minor modification in the construction of the Johnston et al. (1980) map, because the water levels had been minimally affected by development in that area. Therefore the configuration of the contours in the altitude of groundwater levels in the Johnston et al. (1980) map for the Suwannee River Water Management District is in part based on conditions present in May 1976.

Predevelopment conditions are defined in relation to an equilibrium condition in the past. Water levels in 1976 in this part of Florida had been affected minimally by development, which was considered to be an equilibrium condition.

- Predevelopment conditions generally refer to a period in the past when the groundwater flow system was in equilibrium with water inputs to and losses from the aquifer [see Franke et al. 1987, Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems – an introduction: Techniques of Water-Resources Investigations of the United States Geological Survey, Chapter B5, Book 3, Applications of Hydraulics, 15 pages].

The definition of groundwater flow system boundaries from potentiometric maps is consistent with standard methods.

- The use of potentiometric surface maps in the three reports to define directions of groundwater flow and groundwater flow system boundaries, or divides, is consistent with

standard methods used in groundwater studies (for example see pages 114 to 115 in the textbook Fetter, C.W., 1994, *Applied Hydrogeology*, Prentice-Hall, Inc., Upper Saddle River, NJ).

The use of the term flow line is consistent with standard practice.

- The term groundwater flow-line used by the authors of the three reports is conceptually equivalent to that of a groundwater flow system divide. Topographic high points on the landscape (surface water watershed divides) determine which direction water falling on the land surface on either side of the divide will flow. In a similar way, the highest points in the potentiometric surface (groundwater flow system divides) define in which direction groundwater will flow on either side of the divide. Unlike the topographic divides of surface water watersheds, the groundwater flow system divides can move in response to changes in recharge from rainfall, or from the pumping of groundwater.

Comparison of potentiometric surfaces representative of different periods does document marked changes in the groundwater flow system.

- Potentiometric surface maps are representative for the period during which measurements were made to construct the maps. Comparison of potentiometric maps representative of different periods of time enable the determination of how groundwater flow systems and their boundaries change over time. The relative uncertainty in the depiction of contours in the potentiometric surface is a function of the number and location of wells used to define that surface. Comparison of potentiometric surface maps representative of different periods, however, do reveal when marked changes occur in the groundwater flow system. Comparison of the potentiometric surface derived from measurements made in May 1980 (Plate 5 in Bush and Johnston, 1988), in September 1990 (Figure 7 in Planert, 2007), and in May to June 2010 (Kinnaman and Dixon, 2011, Potentiometric surface of the Upper Floridan Aquifer in Florida and parts of Georgia, South Carolina, and Alabama, May –June 2010: U.S. Geological Survey Scientific Investigations Map 3182) can be used to examine what has occurred in the Jacksonville and Fernandia Beach area in relation to the Swannee River Water Management area.

Local fluctuations in the water table can occur in a relatively flat part of the potentiometric surface.

- The potentiometric surface map resulting from measurements made in May 1980 (Plate 5 in Bush and Johnston, 1988, Ground-water hydraulics, regional flow, and ground-water development of the Floridan Aquifer System in Florida and in parts of Georgia, South Carolina, and Alabama: U.S. Geological Survey Professional Paper 1403-C) shows that the potentiometric surface for the Upper Floridan is relatively flat in parts of Bradford, Union, and Baker counties. The Bush and Johnston (1988) report is the source of the contours shown in Figure 18 of Grubbs and Crandall (2007). In the inquiry this area is referred to as a “groundwater lake” when it simply is a relatively flat area in the potentiometric surface. Even within this relatively flat area of the potentiometric surface, local variations in water level can occur, as noted in the table within the statement

seeking action on the three reports. Thus, the local fluctuations in the water table identified by the requester for 8 wells are consistent with the fact that such local variations can occur in a relatively flat area in the potentiometric surface. We note that the USGS reports considered multiple data sources and, despite the information contained within the petitioner's statement, the totality of the data indicate that groundwater flow will be toward the edges of the flat area, to the southwest and northeast, and as a consequence a groundwater flow system divide exists within that area.

Content and intent of USGS reports

- USGS reports are the communication tools the USGS uses to transmit the basic scientific understanding of our nation's water resources to the public and to scientists. These reports are intended to be basic references for academicians, other scientists, industrialists, resource planners and managers, students, litigants in court actions, and many others, including the public.
- The three reports were produced in accordance with USGS review and approval requirements, each receiving two peer or colleague reviews prior to being approved for publication. The reports used potentiometric surface maps produced in accordance with standard methods of groundwater resource investigations. Use of information in these reports by third parties to limit water use is outside of the purview of the USGS.

USGS Response to the Specific Request for Corrective Action to Retract the Three Publications

The corrective action requested was that the three papers be retracted. The USGS finds the reports to be technically correct, unbiased, and objective as supported by our comments in reply to general statements above, and therefore, they will not be retracted as requested.

The request pointed out the need for editorial corrections in two of the reports. We agree these corrections are needed. The corrections concern the identification of a surface water feature and the date of publication for a cited report. Corrections will be made as follows:

- Scientific Investigations Report 2007-5031 (<http://pubs.usgs.gov/sir/2007/5031/>): Incorrect labeling of Ichetucknee River in Figures 18, 19, and 23 will be correctly labeled Olustee Creek.
- Scientific Investigations Report 2011-5031 (<http://pubs.usgs.gov/sir/2011/5031/>): The date 2005 for the citation for Grubbs and Crandall (2007) in Figures 1 and 2 will be changed to 2007.

These corrections will be made in accordance with USGS procedures for publication revision notices and when made will be indicated on the Web pages for the reports. We thank you for pointing out these errors.