



**United States Department of the Interior  
U.S. GEOLOGICAL SURVEY**

Reston, Virginia 20192

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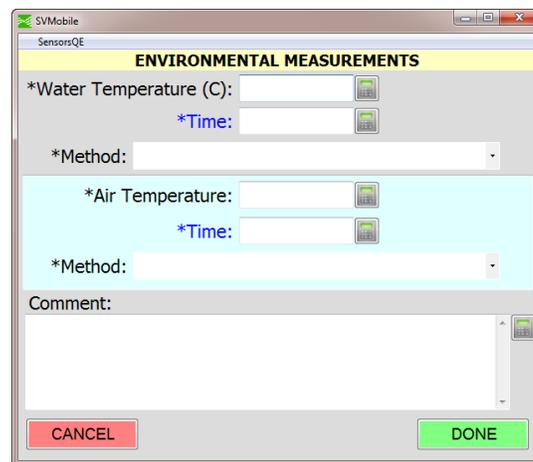
August 20, 2014

OFFICE OF SURFACE WATER TECHNICAL MEMORANDUM 2014.09

**SUBJECT:** Discontinuation of Use of Environmental Measurements in SWAMI

**Policy Summary**

The Environmental Measurement functionality (Figure 1) in the SWAMI application should no longer be used. In addition, this functionality will be removed in the next version of electronic field forms, SVMobile. Water temperature data collected for quality assuring measurements made with acoustic instruments must be entered at the channel level using the Acoustic Information page (see Figure 2 below) for ADV or ADCP measurements. Those using ADVs at index velocity stations must document temperature quality assurance readings in the inspection comment field for the velocity meter sensor. Water temperature measurements associated with Water Quality measurements must follow policies documented in Wilde (2006) which cannot be met using the Environmental Measurements capability of SWAMI/SVMobile.



**Figure 1. Screen capture of the Environmental Measurements page**

**Background**

In 2008, when NWIS SiteVisit was implemented, it included an Environmental Measurements table, which allowed both water and air temperature data to be stored using parameter codes 00010, 00011, 00020 and 00021. Since its implementation, this SiteVisit table has been used for many purposes, including storage of water temperature measurement data collected while obtaining field specific-conductance grab samples and storage of water temperature measurement data collected as a part of

acoustic measurement quality assurance (QA) practices. OSW requires the collection of QA water temperatures when using acoustic instruments such as ADCPs and ADVs for discharge measurements (OSW Technical Memo 2010.07). Functionality for entering these water temperature data was included in the SWAMI program as shown in Figure 1.

The USGS, Office of Water Quality (OWQ) has developed standards for field measurement of water temperature (Wilde, 2006). Moreover, OWQ with other discipline offices have developed requirements associated with storing temperature data in NWIS, in order to reduce data duplication, to provide more appropriate meta-data, as well as to ensure adherence to proper protocols and procedures for data going into NWIS. The data presently (2014) stored in the Environmental Measurements table vary in quality and are stored without meta-data such that is not possible to determine whether or not the data stored were collected using USGS standards.

## Policy

Given the varying quality and lack of metadata stored in the Environmental Measurements table, the Environmental Measurement functionality should no longer be used in SWAMI. In addition, the functionality will be removed in the next version of electronic field forms, SVMobile. QA water temperature data related to measurements made with acoustic instruments must be made at the channel level using the Acoustic Information page (see Figure 2 below) for ADV or ADCP measurements. Those using ADVMs at index velocity stations must document temperature quality assurance readings in the inspection comment field for the velocity meter sensor (location sensor 00055). Finally, for the same reasons, the Environmental Measurements table will not exist in the Aquarius Field Data Editor (the replacement for NWIS SiteVisit).

**Figure 2. Screen capture of the Acoustic Information page**

Videos documenting the processes of staging an ADCP and ADV measurement in SWAMI, which includes documenting comparison temperature readings, and videos documenting the process of a visit to an index velocity station, can be found on the USGS YouTube Channel under HydroTube Training:

<http://www.youtube.com/user/usgs/>.

Please direct questions and feedback on the procedures related to documenting acoustic temperature comparisons to the Hydroacoustic Work Group (HaWG) ([hawg@simon.er.usgs.gov](mailto:hawg@simon.er.usgs.gov)). Questions concerning SWAMI/SVMobile and field computing applications should be addressed to Terry Kenney ([tkenney@usgs.gov](mailto:tkenney@usgs.gov)) and Burl Goree ([bbgoree@usgs.gov](mailto:bbgoree@usgs.gov)). Questions related to the Aquarius database can be directed to the Commercial ADAPS Replacement Project team ([gs-w\\_carp\\_all@usgs.gov](mailto:gs-w_carp_all@usgs.gov)).

/signed/

Robert R. Mason, Jr.  
Deputy Chief, Office of Surface Water

### **References**

- Wilde, F.D., 2006, Temperature: U.S. Geological Survey Techniques of Water-Resources Investigations, book 9, chap. A6., sec. 6.1, March 2006, accessed July 31, 2014, from <http://pubs.water.usgs.gov/twri9A6/>.
- U.S. Geological Survey, 2010, Independent water temperature measurement for hydroacoustic measurements: U.S. Geological Survey, Office of Surface Water Technical Memorandum 2010.07 (<http://hydroacoustics.usgs.gov/memos/OSW2010-07.pdf>).

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