



ELECTRONIC SANITARY SURVEY PROJECT BULLETIN

JULY 1, 2004

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ABOUT THE DRINKING WATER ACADEMY

The Drinking Water Academy is a long-term training initiative whose primary goal is to expand EPA, State, and Tribal capabilities to implement the 1996 Amendments to the Safe Drinking Water Act.

For more information on the DWA or on the electronic sanitary survey project, visit the Web site at www.epa.gov/safewater/dwa.html or contact Jamie Bourne at Bourne.James@epa.gov or at (202) 564-4095.

NATIONAL CONFERENCE: USING PDAS AND TABLET PCS TO ENHANCE WATER SECURITY AND SAFE DRINKING WATER ACT IMPLEMENTATION

On May 26 and 27, 2004, the Association of State Drinking Water Administrators (ASDWA) and EPA's Drinking Water Academy (DWA) sponsored a national conference in Austin, Texas, on using PDAs and Tablet PCs to enhance water security and Safe Drinking Water Act (SDWA) implementation. The conference was attended by approximately 75 state staff, federal agency staff, and contractors. Attendees represented three areas of interest: the public water system supervision and underground injection control (UIC) programs under SDWA, and water security.

Over the 2 days, speakers provided insights on the development and implementation of software programs to enhance SDWA implementation. The Electronic Sanitary Survey (ESS) provides field inspectors with a PDA- or Tablet PC-based tool to record their findings in the field, upload the data to a desk-top database, generate inspection reports, and provide analytical data. The UIC program has developed two different tools for primacy and direct implementation states to conduct Class V inventory and



Approximately 75 drinking water professionals from around the country attended the DWA – ASDWA conference on using PDAs and Tablet PCs, which was held in May.

other inspections. These tools increase consistency and efficiency in conducting inspections, reduce the likelihood of errors, and provide flexibility to the users. Speakers also raised the audience's awareness of how these tools can be used to support water security activities, as well as issues regarding the security of the hardware and data collected by the users.

Speakers representing the U.S. Forest Service and Florida's Volusia County gave presentations that expanded the horizons of technology use to support water programs. Participants were also given an opportunity to brainstorm about how technology could be used to

support their programs, network during an evening reception and during breaks, and participate in working sessions on the ESS and UIC software. Door prizes—PDAs—were awarded to two lucky attendees.

Thank You
The EPA Drinking Water Academy and the Association of State Drinking Water Administrators thank The Cadmus Group, Inc., for hosting a reception for the conference attendees on Wednesday evening, May 26, 2004.

SPEAKERS AT ASDWA – DWA CONFERENCE PRESENT LESSONS LEARNED IN IMPLEMENTING TECHNOLOGY IN THE FIELD

Speakers presented a variety of points of view in describing their experiences implementing technology-driven solutions to support SDWA implementation. Some of the conclusions they reached included the following advice for managers:

- ✦ Get staff buy-in to ensure cooperation and participation, particularly in the early stages of learning to use the tool in the field.
- ✦ Make the technology fit your goals, not vice versa.
- ✦ Physical possession of the appliance increases familiarity; where resources allow, each user should have one.
- ✦ Provide adequate training so that users are comfortable with the technology.

- ✦ Continue emphasizing the value of personal interactions with operators.

Speakers also addressed security issues, both the physical security of the hardware and the security of the data that reside in it.

- ✦ Managers need to take precautions similar to those taken for personal computers: passwords, protection against viruses and corrupted data, and encryption.
- ✦ Managers must consider non-technological access to data (e.g., freedom of information requests).
- ✦ Managers need to provide backups that do not rely on electronics and are

accessible during emergencies.

Several speakers talked about ways they have used the electronic sanitary survey or other environmental field data collection software to enhance their programs:

- ✦ Iowa uses electronic sanitary survey data to support its capacity development program.
- ✦ Volusia County, Florida, uses data from PDAs in a variety of field applications

to support its public health program by mapping disease incidents to see if there are any relationships to exposure sources.

- ✦ The U.S. Forest Service compiles sanitary survey data to support its capital improvement and budget planning activities.

The use of computer technology for field applications is in its infancy. The speakers and audience were very excited about the tools and technologies discussed and shown.

ENHANCED SANITARY SURVEY SOFTWARE AVAILABLE NATIONALLY

The enhanced sanitary survey (ESS) software is available nationally through an FTP (File Transfer Protocol) site maintained by the DWA's contractor, Northbridge Environmental. To access the Northbridge FTP site, type <ftp://12.170.50.10> in your Web browser. Log in with the following identification information:

- ✦ Username: Client
- ✦ Password: nbftp

For the desktop sanitary survey software, open the

"Sanitary Survey Files" folder and copy the file "ESS Setup.exe" to your computer, then double-click it to start the setup program that will install the application.

For the Tablet PC sanitary survey software (which is still in draft), open the "Sanitary Survey Files" folder and copy the file "Tablet ESS Setup.exe" to your computer, then double-click it to start the setup program that will install the application.

STATUS OF ESS SOFTWARE

TABLET PC VERSION

After completing the PDA-based Enhanced Sanitary Survey (ESS) software, EPA began to adapt it for use on Tablet PCs. Some states prefer to use the larger Tablet PCs, and EPA wanted to ensure that states had this option.

The software, which is almost complete, is similar to the desktop ESS software, without the PDA references or the ability to create a new survey. Another feature the Tablet PC ESS software has over the PDA software is the ability to add a survey component (e.g., source, treatment) while in the field.

Survey navigation on the Tablet is a little different from the desktop version. On the Tablet, the survey outline is displayed along with a

scrollable list of questions, displayed 10 at a time, and a process indicator, all on a single screen. An on-screen keyboard will display when a question requiring a text answer is selected. The on-screen keyboard can be minimized.

Once a survey is completed, it is uploaded to the desktop application using the "Retrieve/Review a Survey" button and clicking "Retrieve Survey from Tablet." The user picks the survey to retrieve and the data is uploaded to the desktop application.

SMALL SYSTEM VERSION

In response to feedback about the size of the ESS question set, the DWA has developed a small system version of the ESS. This version contains 175 questions that are applicable to a typical small water system.

INDUSTRY REPRESENTATIVE TALKS ABOUT THE FUTURE

Jerry Hamrock, a sales manager from Dell Inc., discussed improvements in hand-held computer technology that will make it even more powerful and versatile.

The first improvement he spoke about is in LCD (liquid crystal display) technology, which will enable more detail in a smaller space. Thus, users will be able to see more detail on the screen.

The other improvements are in wireless technology. These improvements will give hand-held computers more mobility and range. Examples of this

include WiFi (wireless local area networks) and wireless person area networks (PAN), such as Bluetooth. These technologies allow wireless connection of electronic devices including mobile phones, PCs, hand-held devices, and printers.

Thank You

The Association of State Drinking Water Administrators and the EPA Drinking Water Academy thank DellTM for providing the two PDAs that were awarded as door prizes.

MASSACHUSETTS PDA SOFTWARE CUSTOMIZATION

Massachusetts sanitary survey staff tested the Enhanced Sanitary Survey (ESS) software in the field and identified a number of changes to tailor the software to their needs.

The state formed a workgroup to review the sanitary survey questions and develop a revised, and reduced, sanitary survey question set for use on the PDA. In mid-May the workgroup produced a first draft of changes, which have been incorporated into the ESS desktop and successfully loaded to the PDA.

The Massachusetts ESS takes more of an "outline" or "checklist" approach, which requires a slight modification of the PDA software. That software change is being analyzed and should be implemented by early July to allow for full testing of the changes in the field.

The final step in the Massachusetts effort is to map the state's database (WQTS) to the new question set. That effort is under way by state staff.

SDWIS/STATE AND THE ELECTRONIC SANITARY SURVEY

SDWIS/STATE was developed to work easily with other drinking water data systems and data sets. The main SDWIS/STATE tool for interacting with other sources information is the Migration-to-SDWIS/STATE module (MTS). MTS enables a SDWIS/STATE user to electronically migrate data into the main SDWIS/STATE data tables.

The DWA began working with the SDWIS/STATE team to build a working bridge from the PDA to SDWIS/STATE in the fall of 2003. This bridge will allow data to be transferred to and from the PDA and SDWIS/STATE databases. The first step in the process was to expand the MTS protocol to allow greater

flexibility in moving data to and from SDWIS/STATE.

In 2004, EPA expanded the capabilities of MTS (MTS 8.1) to allow the modification of existing records and the appending of new records. Previously, MTS would allow only new records to be added.

The SDWIS team is now working with the Drinking Water Academy to further facilitate information-sharing between SDWIS/STATE and the Electronic Sanitary Survey software by writing the queries needed to extract data out of SDWIS/STATE.

It is the goal of the DWA and SDWIS/STATE teams to develop a seamless flow of data from the field to the state database and back to the PDA. The enhanced data flow will better assist states as they implement their drinking water programs and will promote better health protection.

Data Flow Between SDWIS/STATE and the ESS

