



# Implementation Guidelines for SDWARS/UCMR

## Volume I: Introduction to CDX and UCMR Submissions

EP001S2  
EPA 816-R-01-022A

December 2001



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# Chapter 1

## Introduction

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### CENTRAL DATA EXCHANGE IMPLEMENTATION GUIDE

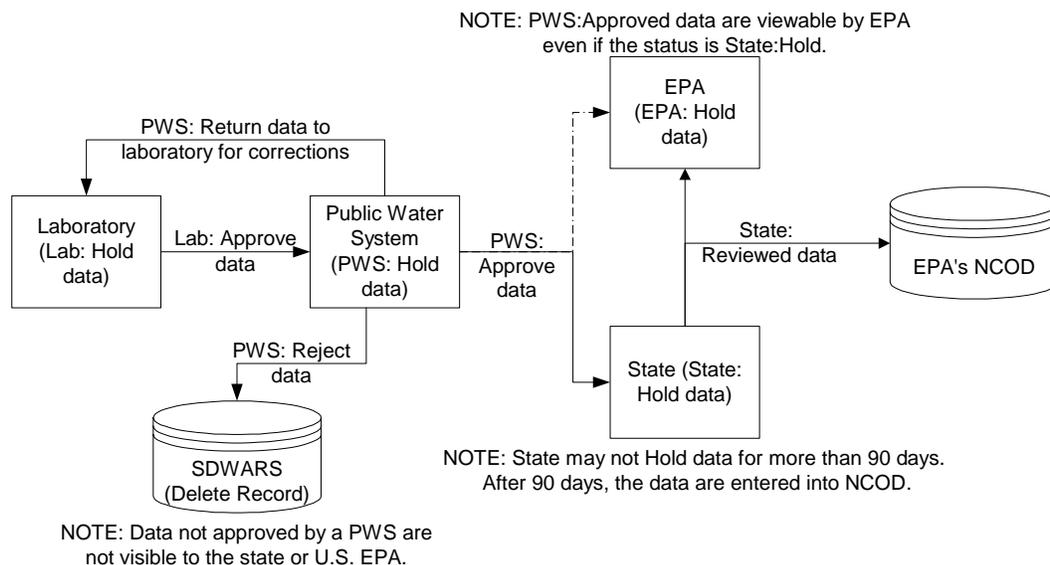
The U.S. Environmental Protection Agency's (EPA) Central Data Exchange (CDX) is the single point of entry for most environmental compliance reporting. It accepts compliance reports in electronic and paper format. This implementation guide (IG) is designed to assist you with submitting data through the CDX.

CDX is designed to support many EPA program areas and this IG covers standard CDX information. Some programs, however, have special requirements or may not require all the features or available functionality of CDX. Therefore, program-specific operations are distinguished at various points within this guideline. Subsequent volumes are more closely geared to program-specific implementations and issues.

### SPECIAL CONSIDERATIONS AND OVERVIEW FOR UCMR

This four-volume IG is written specifically to assist laboratories, public water systems (PWSs), state environmental agencies, and other entities with electronically submitting and reviewing data for the Unregulated Contaminant Monitoring Rule (UCMR) program to CDX. Information passes through CDX to the Safe Drinking Water Accession and Review System (SDWARS), which is the information system that supports the collection of data for the UCMR. Preliminary analysis data are first entered by laboratories on behalf of the PWSs participating under UCMR. The PWS can then review their data online (see Figure 1-1). Once approved by the PWS, data are then available for state and EPA review before transmission to the National Contaminant Occurrence Database (NCOD).

Figure 1-1. PWS Online Data Review



## ORGANIZATION OF GUIDE

This IG is the first volume of a five-volume set. This volume introduces the CDX and electronic reporting. The other volumes are listed below.

- ◆ *IG Volume II*—describes completing and submitting web forms in detail.
- ◆ *IG Volume III*—contains details about Electronic Data Interchange (EDI) in case EPA decides to exchange monitoring data using EDI (not applicable to UCMR).
- ◆ *IG Volume IV*—documents in detail the formatting requirements for XML to be used with the EPA-provided document type definition (DTD) to create a well-formed, valid XML document.
- ◆ *IG Volume V*—documents in detail the formatting requirements for a delimited flat file.

Additional information about the CDX and submitting data is available from the following sources:

- ◆ The publicly accessible EPA electronic commerce website at <<http://www.epa.gov/cdx>>
- ◆ The CDX website at <<http://epacdx.lmi.org>>

- ◆ The CDX technical support staff, at 1-888-890-1995 (8:00 a.m.–6:00 p.m. EST/EDT)
- ◆ E-mail at <EPACDX@lmi.org> with “UCMR technical support” in the subject line.

## PURPOSE OF THIS VOLUME

This volume introduces you to CDX by answering the following kinds of questions:

- ◆ How do I register to submit electronically?
- ◆ What sort of computer equipment do I need?
- ◆ How do I know that the EPA received my data?
- ◆ In what format do I send the data?

You may send electronic data to the CDX using any of four methods:

- ◆ Via a web form that you complete on your personal computer (PC) and transmit to the CDX via the Internet
- ◆ Via an EDI transaction
- ◆ Using Extensible Markup Language (XML) to transfer data to the CDX from a computer system at your site that maintains your data or
- ◆ Via a flat file created using the provided format and transmitted to the CDX via the Internet.

## RESPONSIBLE ENTITY

These guides are published under the authority of



Office of Environmental Information  
Information Collection Division  
Central Receiving Branch  
1200 Pennsylvania Ave, NW, Mail Stop 2823  
Washington, DC 20460

The Office of Environmental Information (OEI) helps ensure that EPA collects high-quality environmental information and makes it available to the American public. OEI provides guidance to assist the agency about the way EPA collects, manages, analyzes, and provides or allows access to environmental information.

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Within OEI is the Office of Information Collection (OIC). The OIC is the agency lead for information collection programs, including how EPA obtains and manages information. OIC works closely with many partners, stakeholders, facilities, other federal agencies, and states. The Central Data Exchange within OIC is the EPA's new infrastructure for supporting the exchange of environmental data between EPA and its external partners. Over the next several years, CDX will expand to become the point of entry for nearly all environmental data submissions to the agency. It will also improve collection, management, and sharing of environmental information among states, tribes, and EPA so they can achieve their respective and shared environmental goals.

The CDX Technical Support desk will answer questions about using XML for data monitoring or compliance reporting.

Support for electronic reporting is available via e-mail, fax, or telephone:

- ◆ *By telephone.* Person-to-person telephone support is available between 8:00 a.m. and 6:00 p.m. (EST/EDT) on our toll-free line at 1-888-890-1995.
- ◆ *By fax.* You may request assistance 24 hours a day; support personnel will return calls between 8:00 a.m. and 6:00 p.m. (EST/EDT). Our fax number is 703-917-7105.
- ◆ *By e-mail.* Send e-mail to <EPACDX@lmi.org> with "UCMR" in the subject line. Responses will be sent between 8:00 a.m. and 6:00 p.m. (EST/EDT).

## HOW TO USE THIS VOLUME

This volume will assist your understanding of the CDX electronic submission process. The other volumes of the IG explain *how* to submit data electronically.

Volume I answers the following questions:

- ◆ *Chapter 2—Central Data Exchange*
  - Why was the CDX started?
  - What are the goals and benefits of the CDX?
  - How does the CDX process data?

- ◆ *Chapter 3—Summary of UCMR Submission Options*
  - What are my submission options?
  - What is the flow through CDX using web forms, EDI, XML, and flat files?
- ◆ *Chapter 4—Implementation Considerations*
  - Who should consider submitting data using web forms?
  - Who should consider submitting data using XML?
  - Who should consider submitting data using flat files?
- ◆ *Chapter 5—Legal and Security Considerations*
  - What are the legal considerations for an electronic signature?
  - What should I keep for electronic records?
- ◆ *Chapter 6—Electronic Reporting Registration*
  - How do I register for electronic reporting?
  - Whom do I call if I have questions?
  - Does my facility have any responsibilities?

The other volumes will assist you with submitting data electronically, provide step-by-step instructions for submitting data electronically, and tell you where to find additional information or assistance. If you still have questions about electronic reporting after reading this volume, contact either the OIC at the address above or the CDX Technical Support desk.



# Chapter 2

## Central Data Exchange

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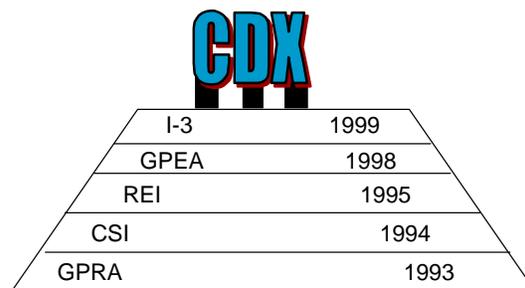
This chapter answers the following questions:

- ◆ Why was the CDX started?
- ◆ What are the goals and benefits of the CDX?
- ◆ How does the CDX process data?

### BACKGROUND

The CDX evolved from and is the culmination of several federal and EPA initiatives (see Figure 2-1).

*Figure 2-1. Foundation of CDX*



The federal and EPA initiatives shown in Figure 2-1 are described briefly below:

- ◆ *EPA Information Integration Initiative (I-3) of 1999.* This initiative developed an integrated environmental database for data about public health and the environment. I-3 is based on principles of shared stewardship and multimedia information that is facility-wide and geographically oriented. Goals of I-3 include
  - improved environmental decision making at all levels;
  - reduced burden and transaction costs for all who provide and use environmental and public-health information;
  - greater certainty for regulated businesses;
  - more reliable and easier access for the public and improved performance for EPA; and

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- more accurate, reliable, and high-quality environmental data that will promote better public access and understanding, improved compliance, and greater accountability.
  - ◆ *Government Paperwork Elimination Act of 1998 (GPEA)*. This law mandates that all federal agencies provide options to their stakeholders for conducting business electronically. The CDX meets this requirement and streamlines EPA's data-collection procedures and information technology infrastructure.
  - ◆ *EPA Reinventing Environmental Information (REI) Plan*. This 1995 plan defined EPA's strategy to work with states and industry to improve compliance reporting in four major areas:
    - Reducing the burden of reporting
    - Establishing electronic reporting
    - Better integrating of data across media programs
    - Improving public access.
  - ◆ *EPA Common Sense Initiative (CSI)*. This initiative, which began in 1994, was a joint EPA, state, and industry study that produced several important ideas, including
    - using the Internet and World Wide Web as an information conduit,
    - establishing a single point of entry (previously "one-stop") into EPA and state environmental agencies for compliance and other reporting, and
    - minimizing redundant data submitted by separating static facility data from recurring submissions and by standardizing and consolidating submission requirements.
  - ◆ *Government Performance and Results Act of 1993 (GPRA)*. This law directs all federal agencies to put customer service standards in place, use customer feedback to measure how well they are performing against these standards, and report to the public about that performance. All federal agencies also are urged to make information more understandable and easily accessible. The CDX is EPA's opportunity to better respond to the GPRA and the public's desire for renewed trust and confidence in EPA's ability to protect public health and safeguard the natural environment. The CDX is a common point for customer service, accelerated processing of collected data, and improved posting time for quicker public access.

EPA's establishment of the CDX and electronic reporting coincides with emerging trends in private industry. The number of electronic commerce (EC) and business-to-business (B2B) efforts have grown dramatically in the last few years.

Current technologies, tools, standards, process reengineering practices, and favorable attitudes toward EC did not exist five years ago when EPA initiated its efforts toward electronic reporting using EDI.

We are still on the technological edge of some aspects of electronic reporting, such as

- ◆ a variety of digital signature technologies, each with different advantages and disadvantages, which are fairly expensive and complex to implement;
- ◆ management and retrieval of electronic archives and records, which tend to vary by originating application and operating system, that become difficult to retrieve over time as applications evolve; and
- ◆ various hardware, operating systems, and configurations of commercial Internet browsers, which entail complex connections and pose interoperability challenges.

EPA is working with all stakeholders to collect input and pursue effective solutions to these challenges.

## GOALS AND BENEFITS OF THE CDX

The CDX meets the EPA and federal mandates by establishing the following goals:

- ◆ Improving environmental data quality
- ◆ Reducing burden on all stakeholders
- ◆ Reducing processing delays and improving public access
- ◆ Integrating data across systems
- ◆ Improving data security and distribution capacity.

As it attains these goals, the CDX will benefit all types of stakeholders who choose to participate in submitting data electronically.

## Benefits to Reporting Facilities

The CDX collects compliance and some sampling data from a variety of facilities, from small commercial firms to the largest companies in the country. Reporters include government installations, Indian tribes, and other special groups. Electronic reporting will be voluntary for all of the established compliance-reporting program stakeholders and may be mandatory for new initiatives. Therefore, the CDX must provide suitable reasons for moving from well-established paper processes. Some

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of the benefits to reporters of electronic reporting provided by the CDX are the following:

- ◆ Flexibility to support manual entry of data through web forms or machine-to-machine transfers using EDI, XML, or flat files
- ◆ A single point of entry for submissions and standard processes and formats across media programs and compliance forms
- ◆ One call for assistance
- ◆ Web forms that will simplify entry by containing substantial data edits and prepopulation of known data where appropriate (e.g., facility number, address, and permit number)
- ◆ Immediate receipt acknowledgement and (depending on the report) an official copy of record
- ◆ Elimination of the costs and delays of preparing, reproducing, mailing, storing, and other processing of paper forms
- ◆ Streamlined EPA and state processing so reporting facilities will be more confident that their data will be processed efficiently and accurately—providing a quicker and more accurate posting of their data for the public and demonstrating that the facility is environmentally compliant
- ◆ Encouragement for facilities to automate and reengineer their processes for collecting compliance data so they can forward data to EPA automatically—further reducing the cost of compliance reporting.

## Benefits to EPA

Electronic reporting and implementation of CDX will significantly benefit EPA:

- ◆ The system will eliminate the cost of entering data into information systems and correcting the associated errors.
- ◆ CDX will eliminate costs and delays inherent in receiving, processing, and storing paper forms.
- ◆ CDX will establish a single organization for helping receive, archive, secure, and distribute data. The CDX will increase substantially the economies of scale by discouraging the establishment of multiple and diverse versions for different national programs.
- ◆ The CDX will increase the capability for transforming (manipulating) data formats and exchanging data with other government organizations, including state environmental agencies.

- ◆ Indirectly, electronic reporting will foster an environment in which EPA can
  - apply newer IT tools
    - data warehousing, and
    - data mining, online analytical processing (OLAP), and other query and presentation techniques to improve analysis of data;
  - implement other data goals
    - developing a single, up-to-date database for sharing facility information with all program areas,
    - improving the standardization of data elements, and
    - consolidating and integrating reporting requirements.

## Benefits to the Public

The public will benefit from all of the foregoing changes. Users of public environmental data will notice better uniformity and accuracy in reported data, more timely posting of reports to databases, and better presentation of data through tools that will improve everyone's ability to query, manipulate, understand, and display meaningful environmental data.

## WHAT THE CDX WILL DO WITH YOUR DATA

CDX will not replace existing EPA program area databases. It will, however, be the single point of entry and perform the following important functions:

- ◆ Time- and date-stamp each submission and electronically acknowledge the receipt of the data.
- ◆ Scan for viruses and provide a firewall to reduce the risk of attack.
- ◆ Archive all incoming transactions.
- ◆ Verify the submitter's facility data.
- ◆ Authenticate (where needed) the submitter's digital signature.
- ◆ Perform limited data edit checks.
- ◆ Convert data from the inputted format to a format acceptable by the receiving EPA or government system.
- ◆ Forward data to the receiving system.

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After you have obtained a password and identification number through the registration process, you may log on to the CDX website. Data flows differently for machine-to-machine transfers and web submissions. Each program may have slightly different variations based on their requirements for signatures, certifications, and legal purposes. This section discusses the general flow; specific program flows are discussed in the other volumes of the IG.

Regardless of the submission type, the CDX has an extensive transaction log and error-messaging system. The CDX places every function, successful or not, into the transaction log, along with the date and time, result, and associated messages. The log stores these actions only. The actual data in the submission are stored in archives at various instances during processing.

The CDX distributes two types of messages—positive and error. The positive messages that you can expect are the acknowledgment of receipt of the data and the official copy of record (depending on the program requirements). If generated from the program, both are sent to your CDX mailbox. The error messages that may be generated during data processing include virus errors, security or signature-rejection messages, or translation errors. All of these messages are sent to you by e-mail. A notification message of error is sent to the system administrator to assist in correcting the problem.

## Chapter 3

# Summary of UCMR Submission Options

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This chapter answers the following questions:

- ◆ What are my submission options?
- ◆ What is the flow through CDX using web forms, EDI, XML, and flat files?

The CDX supports a number of electronic reporting options. These options give all reporting organizations flexibility, regardless of size. You should evaluate the options and decide which best fits your organization's information technology capabilities and business strategies, as well as what is most convenient. Because technology evolves, EPA will continue to test and evaluate new EC procedures, hardware, and software.

CDX operations will have to balance diverse user desires for formats, technologies, and methods that meet current business practices with the need to manage costs and avoid inefficiencies that may result from undue complexity. The following sections describe the CDX's current capabilities for receiving data from users.

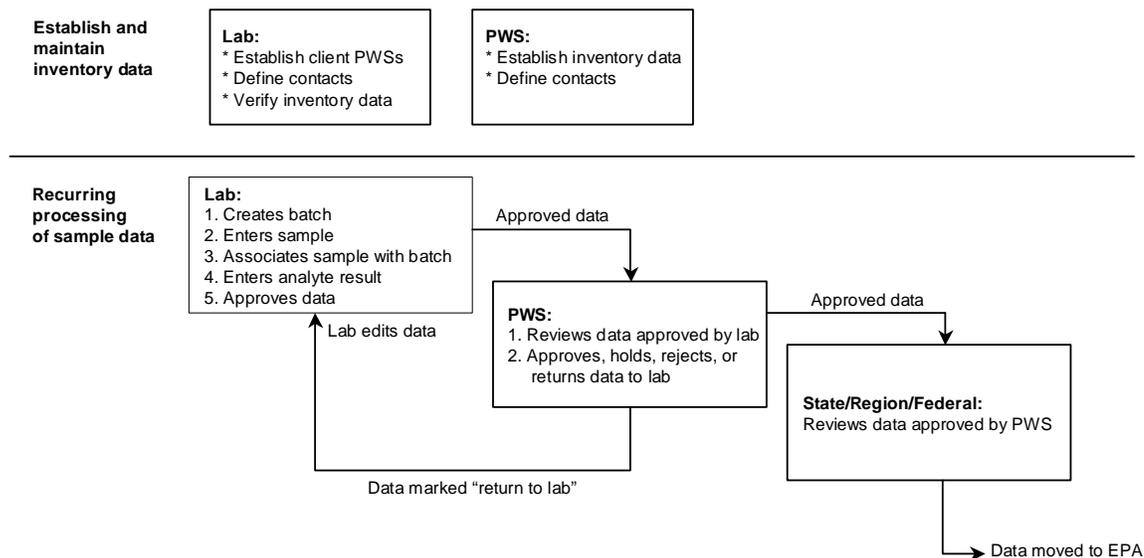
The following sections and similar sections in Chapter 4 are primarily intended for laboratories, as only they will have a choice as to how to enter analytical data into the SDWARS database. PWS, state agencies, and other entities may only use web forms to access and change status of SDWARS data.

## WEB SUBMISSION FLOW

When you log onto the CDX website, the CDX will verify your ID and password. Select which program you would like to access. For UCMR, you may choose to access SDWARS or a file upload link.

Initially, you will need to verify PWS, facility, and sampling point data and ensure that client lists and points of contact are correct (see Figure 3-1). Once this is done, you may perform recurring activities for processing a sample (see bottom half of Figure 3-1).

Figure 3-1. Web Form Process



Four web forms relate to the submission of UCMR data. The first web form records a batch and its quality control data. The second logs in samples. On this form, you will record the PWS, facility, sampling point, sample ID, and collection date. The third web form associates the sample to a batch. The fourth web form captures the analytical results drawn from the sample's associated batch.

After your laboratory has entered data into each form, you can review the data. Once approved, the data are placed into SDWARS for the PWS to review.

## EDI SUBMISSION FLOW

EDI will not be used for UCMR submissions.

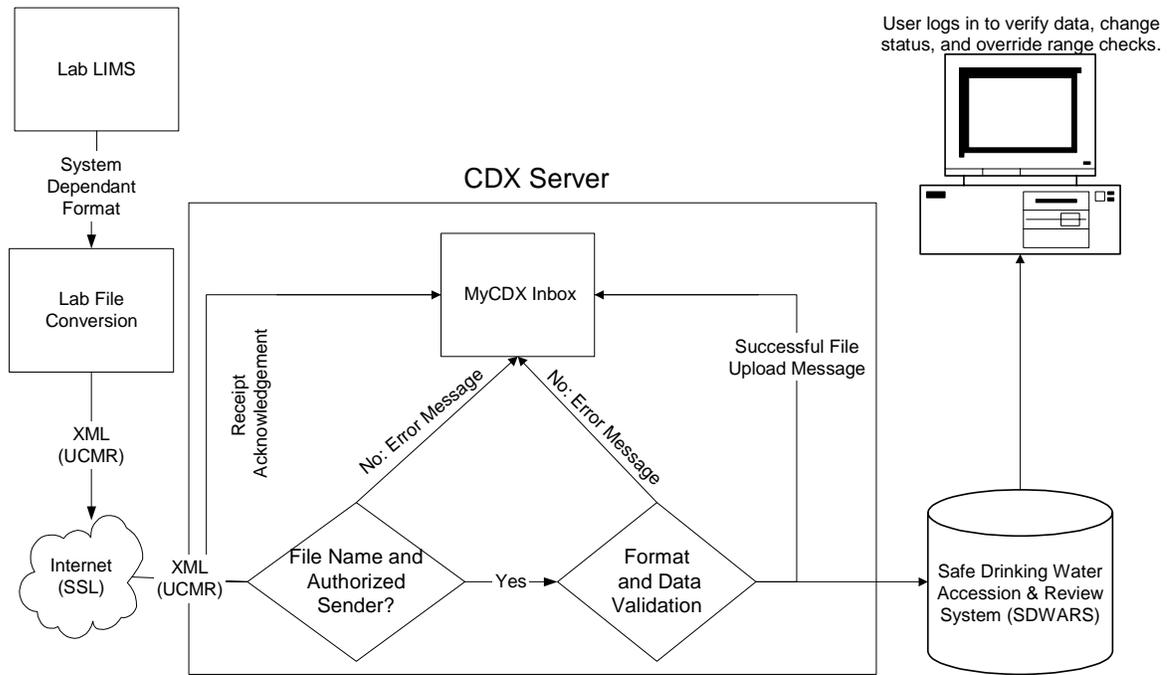
## XML SUBMISSION FLOW

XML submissions must comply with the appropriate DTD or XML schema. A copy of the latest XML DTD or schema is available from the CDX website. Your laboratory may create an XML submission by extracting data from your Laboratory Information Management System (LIMS). The various LIMSs may be programmed to extract and parse the XML document or you may use data transformation software to parse the data once extracted.

Your laboratory will submit data in XML to the CDX via the web (see Figure 3-2). The submission is scanned for viruses as it comes through the firewall. After successfully scanning the submission, the CDX sends a notification of receipt to your "MyCDX" inbox.

The data are then archived in the original submission format. At this point, CDX will look into the data to determine their form. Because the data are not signed, they are placed into the staging server for parsing into SDWARS.

Figure 3-2. CDX XML Process



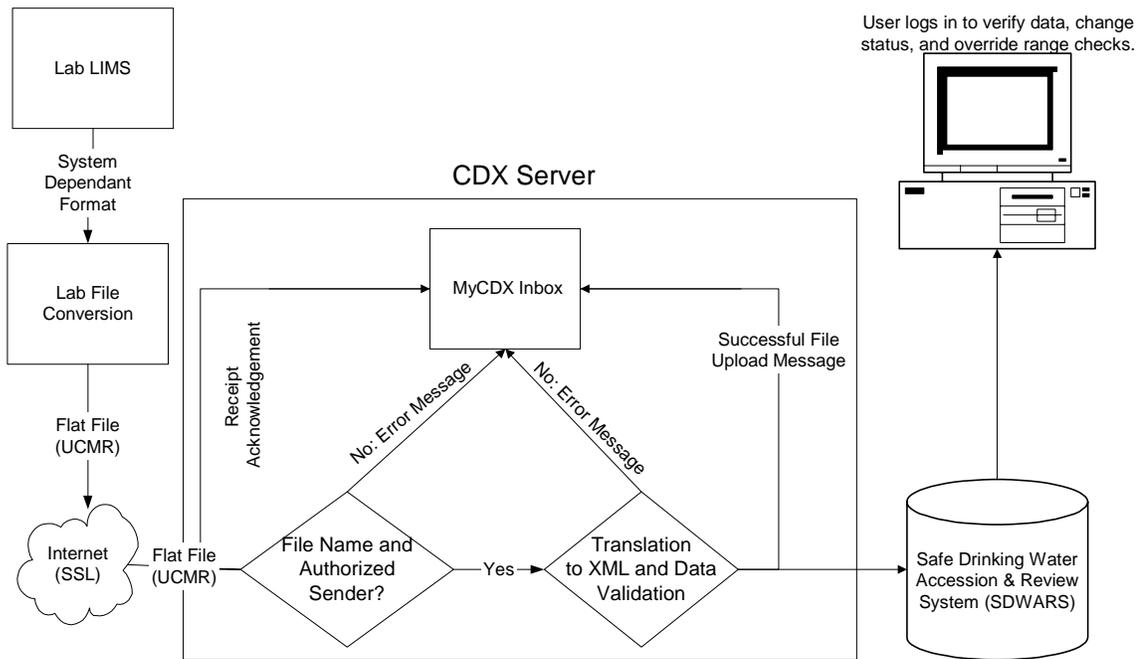
## FLAT FILE SUBMISSION FLOW

The first step to creating a flat file is to prepare the extraction of the data from your LIMS. Depending on the LIMS your laboratory uses, you may either program the LIMS to extract and parse the flat file elements or use data transformation software to parse the data once extracted.

The data must be parsed into the compliant flat file format. EPA maintains the most recent UCMR flat file format on the CDX website. You should validate the resulting flat file to ensure it complies with the structure of the format.

CDX will poll a mailbox on the CDX server and convert the flat files to the UCMR XML document (see IG Volume IV for a description of XML). The XML document is then sent to the CDX parser for validating and uploading into SDWARS. Figure 3-3 represents the processing of a UCMR flat file submission.

Figure 3-3. UCMR Flat File Submission Process



# Chapter 4

## Implementation Considerations

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This chapter answers the following questions:

- ◆ Who should consider submitting data using web forms?
- ◆ Who should consider submitting data using XML?
- ◆ Who should consider submitting data using flat files?

Regardless of the submission method you choose, you must consider resource requirements. You should especially consider knowledge resources (i.e., personnel and training), hardware and software, and business strategies. This guide is not meant to be the evaluation tool for your organization; however, it does highlight some areas that you should consider.

Knowledge resources are your personnel resources and the amount of training required to develop and maintain the business system you choose for your reporting. For instance, you may choose to report via the web form and keep paper files, or you may choose to keep all your files electronically. For the former option, you must ensure you have appropriate storage space; for the latter, you must appropriately train your personnel to use the electronic equipment.

Electronic reporting is evolving. To participate effectively, you must have appropriate computer hardware and software, which must be updated and maintained periodically. Electronic reporting also should be a natural extension of your organization's overall information technology (IT) strategies. Electronic reporting should be a convenient method for reporting required data to EPA; it should not introduce any additional burden.

This chapter will help guide you in determining which submission method would work best for you.

## SYSTEM REQUIREMENTS

To access CDX and SDWARS you will need the following:

- ◆ Personal computer with a 486 processor or better; Pentium or above is recommended
- ◆ One of the following versions of the Microsoft Windows operating system: Windows 95BY2K Service pack installed (Original Equipment Manufacturer Service Release 2); Windows 98; Windows NT3.0 (Service Pack 5); or Windows 2000

- 
- ◆ Web browser: either Internet Explorer 5.0 or higher with 128-bit encryption
  - ◆ Internet access.

To determine whether you have the Y2K upgrade installed in a Windows 95 or 98 environment, check for the presence of the Y2KW95.txt file in the Windows folder,

- ◆ Go to Windows Explorer, select View, then click on Details.
- ◆ Look in C:\Windows to find Y2KW95.txt file.

To determine whether you have the Y2K upgrade installed in a Windows NT environment, check for the presence of the Y2KW95.txt file in the Winnt folder,

- ◆ Go to Windows Explorer, select View, then click on Details.
- ◆ Look in C:\Winnt to find Y2KW95.txt file.

Call the CDX Technical Support line for assistance and more information at 1-888-890-1995.

While CDX and SDWARS software can operate with 486 processors and low speed Internet connections, increasing your processor speed, amount of RAM, and the speed of your Internet connection will definitely improve response times.

## WHO SHOULD CONSIDER SUBMITTING DATA USING WEB FORMS?

Completing the form electronically is easier than dealing with paper. However, it is time consuming to gather the data and enter them into the SDWARS web pages. If you have a lot of data to enter and an automated system for storage (e.g., the Laboratory Information Management System [LIMS]), you should compare the cost of setting up a flat file or XML submission to the cost (i.e., time) of entering the data into the web forms. If you do not have a lot of data to enter or you do not have the capability or technical expertise to implement flat files or XML, then entering data via the web forms may be your best option.

## WHO SHOULD CONSIDER SUBMITTING DATA USING XML?

### Organizational Attributes

Because of the complexity of XML implementation, an organization should possess at least one of the following attributes:

- ◆ *The organization should have IT competency.* The organization need not be large or have a large IT staff. Many small companies are very successful at implementing an appropriately sized XML solution. However, you must have staff members who can integrate the different components XML requires.
- ◆ *The organization should have sufficient electronic traffic.* This traffic need not be in reporting data to SDWARS exclusively. The electronic traffic may include other EPA (or state) reports or other XML exchanges, such as procurement, transportation, or inventory management. The organization's XML resources may be in another division or facility.
- ◆ *The organization should have a substantial environmental reporting obligation.* This obligation may require submitting multiple reports (forms); for the UCMR, it may entail reporting a large number of samples that might contain highly sensitive contaminants. Regardless of the nature of the obligation, it must be sufficient so the organization is willing to invest resources in collecting and managing environmental data.

### Requirements for Implementing XML

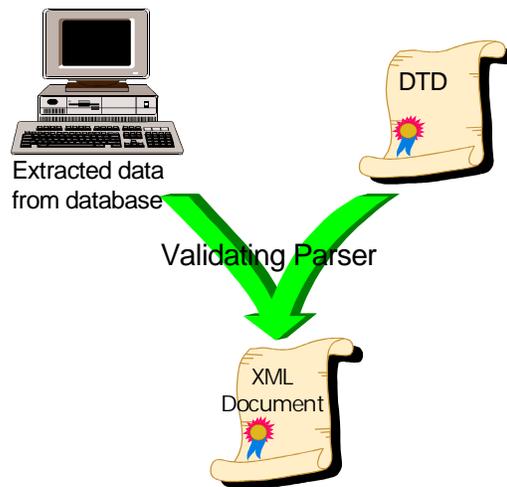
If your organization has the foregoing attributes or is migrating toward them, you should consider implementing XML. XML systems can be operated at any system level, from PCs to servers to mainframes. The requirements for operating an XML system can vary dramatically; the list below represents only an overview:

- ◆ An application system containing monitoring data (this system can be a spreadsheet, environmental management software, or a large-scale database system)
- ◆ Document type definition (DTD), which defines the rules the XML document must follow to be valid (provided by EPA)
- ◆ Validating XML parser to map the extracted data with the DTD. Commercial XML parsers are available in a variety of these packages and range in capabilities and cost, from free to thousands of dollars.

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- ◆ Telecommunications capability for the translator to access either the Internet, dial-up connections to EPA, or a value-added network
  - ◆ An IT system (e.g., printers, backup systems) and staff infrastructure (e.g., the ability to program and manage archive and related systems) to support EC operations
  - ◆ A PC system that is connected to EPA's CDX web environment. This connection is required because all UCMR forms will be submitted to the CDX for authentication of transmission and proper routing to SDWARS.

Once the XML parser maps the data with the DTD, a valid XML document can be formed. Figure 4-1 is an overview of an XML environment.

*Figure 4-1. Creation of an XML Document*



## WHO SHOULD CONSIDER SUBMITTING DATA USING FLAT FILES?

### Organizational Attributes

Because flat files are similar to XML but less complex, organizations considering submitting data in this method should possess attributes similar to those discussed in the previous section:

- ◆ *The organization should have IT competency.* The organization need not be large or have a large IT staff. Many small companies are very successful at implementing a solution. However, you must have staff members who can integrate the different components that extract or generate a flat file from your lab's system.

- ◆ *The organization should have sufficient electronic traffic.* If you are submitting a large volume of files regularly, creating the file and maintaining the file format may be worth the time and effort in case the format changes. On the other hand, if the organization only submits a couple of records a month, entering the data in the web form may be more efficient.

## Requirements for Implementing a Flat File

If your organization has the foregoing attributes, you should consider submitting flat files. The requirements for submitting a flat file include the following:

- ◆ Knowledge of your laboratory information system's architecture
- ◆ Process for extracting data from your laboratory system into a flat file.

## OTHER IMPLEMENTATION CONSIDERATIONS

In addition to reviewing your IT capabilities and business practices to determine whether to use web forms or implement XML or flat files, you should review two administrative aspects. To electronically submit data for UCMR, your organization must register an official and other representative company personnel who will enter data into the web form with the EPA's CDX. Moreover, you must continually update the information as personnel change. Similarly, you must keep your facility information current through the appropriate EPA offices.



# Chapter 5

## Legal and Security Considerations

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This chapter answers the following questions:

- ◆ What are the legal considerations for an electronic signature?
- ◆ What should I keep for electronic records?

This chapter focuses specifically on considerations for electronic reporting.

### PINs AND PASSWORDS

#### Security of PINs and Passwords

The CDX issues personal identification numbers (PINs) and passwords during the registration process for access to the CDX website. You are responsible for maintaining the integrity of your user ID and PIN or password. *Transactions made with your PIN or password are considered approved and submitted by you.* If you believe that your PIN or password has been compromised, notify the CDX technical support staff immediately.

#### Legal Considerations for PINs and Passwords

For forms that rely solely on a user ID, password, or PIN, EPA defines a “signature” as the filer’s typed name in the form. This signature is part of the document. Your ID, password, or PIN validates your identity but is not part of the document. The Federal Communications Commission (FCC) also uses this approach for certain filings. In *Report and Order on Electronic Filing of Documents in Rulemaking Proceedings*, the FCC states that

a signature will be considered any symbol executed or adopted by the party with the intent that such symbol be a signature, including symbols formed by computer-generated electronic impulses.<sup>1</sup>

Degrees of risk are associated with how an agency disseminates a PIN or password to a submitter. EPA requires that it knows who is logged onto the system at all times (EPA Directive 2100, *Information Resources Management Policy Manual*). The CDX will apply your user name and password on line for each filing; a confirmation will be sent electronically to the e-mail address

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<sup>1</sup> FCC, General Council Docket Number 97-113, p. 23.

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submitted by you in your “MyCDX” organization information. Your name and password will validate you.

## RECORD KEEPING

EPA recommends that you keep a copy of all transactions (including the time and date) sent to and received from EPA, or keep copies in accordance with your organization’s policies and procedures. These transactions may include submissions, receipt acknowledgments, error messages, resubmissions, and transmissions from the UCMR program area.

The saved copies are your audit trail for submissions to EPA. The original submission is maintained at the CDX as an official copy of record; the data are maintained by SDWARS.

Submitters may maintain electronic or paper audit copies. As a submitter, you should maintain copies of your UCMR data to generate an audit trail. The audit trail may include the following:

- ◆ Date and time of each submission
- ◆ Receipt acknowledgment (which contains the CDX tracking number)
- ◆ Error messages (e.g., virus, failed transmissions, failed translations)
- ◆ Error corrections and resubmissions
- ◆ Correspondence with SDWARS.

## BACKUP AND ARCHIVING CONSIDERATIONS

The UCMR does not require you to keep these documents; however, it is common business practice to back up and archive your electronic data in case the system fails. As technology progresses and you upgrade, you may want to consider backward compatibility for document retrieval. You also should consider keeping more than one copy as a backup in case the hardware or software fails, viruses attack, or other technological anomalies occur.

# Chapter 6

## Electronic Reporting Registration

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This chapter answers the following questions:

- ◆ How do I register for electronic reporting?
- ◆ Whom do I call if I have questions?
- ◆ Does my facility have any responsibilities?

All users that participate in electronic reporting—whether by web, flat file, or XML—must register with CDX. The registration information gives EPA an update and provides some of the general information required to pre-populate your submissions.

This chapter summarizes the process you must follow to access the CDX and to acquire a certificate, if needed, to sign forms. CDX registration has four objectives:

- ◆ Associate a logon ID and password to every user of CDX.
- ◆ Validate the personal and corporate information of each user.
- ◆ Determine the program areas of interest for each user so access to these applications can be granted.
- ◆ Provide access to digital certificates for users who require them.

CDX will offer two methods for registration—telephonic or through web-based forms. To facilitate registration, CDX also offers separate registration websites to government (e.g., states, regions, local governments) and non-government (e.g., PWSs, laboratories, companies) stakeholders.

### WEB-BASED FORMS REGISTRATION

Web-based forms are the preferred means of registering users of CDX. There are two options in the web-based approach: open and pre-registered.

#### Open Registration

Open registration forms are for individuals who want to participate in electronic exchanges with the EPA CDX but did not or have not received a letter of invitation. The registrant may have learned about CDX from a number of sources, such as *Federal Registry* notices or industry association newsletters or forums.

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NOTE: Government registrations cannot be requested through open registration. See the section on government registration following instructions for pre-registration.

To use the open registration web form

- ◆ connect to the Internet via a secure socket layer– (SSL-) protected session to the CDX and accept the EPA terms and conditions for using CDX,
- ◆ select a user ID and password,
- ◆ provide a question and answer for authentication purposes,
- ◆ provide personal and corporate information (e.g., postal address, phone numbers, e-mail address),
- ◆ indicate which EPA program applications you want to participate in, and
- ◆ select the role and the associated program ID and method of submission for that role.<sup>1</sup>

When you apply, the EPA program is notified of the request. If a legal or procedural reason exists for denying electronic reporting rights, the EPA program may direct CDX to terminate your access privileges.

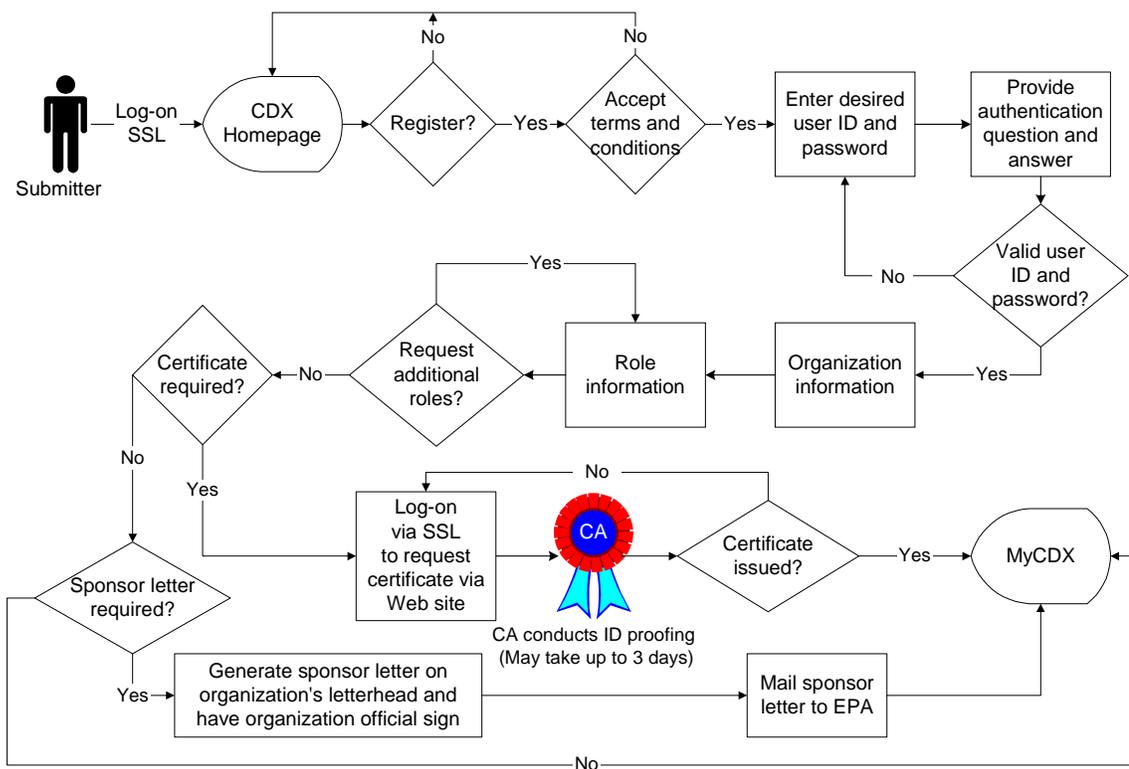
Some EPA programs may require you, the registrant, to mail in a sponsor letter. The sponsor letter is a business letter from your organization to EPA informing EPA that you are authorized to interact with the CDX on behalf of the organization. You will not be able to perform activities in the desired program area for the organization indicated by the client ID until the sponsor letter is processed through CDX.

Figure 6-1 shows the open registration process.

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<sup>1</sup> The program ID for the public water systems (PWSs) is the PWS ID number—a two-character postal state code followed by seven digits assigned by the state. To find a PWS ID number, contact the state. For laboratories, the EPA lab ID number is a two-character postal state code followed by five digits assigned by EPA. To find a lab ID number, contact the Safe Drinking Water Hotline at 1-800-426-4791.

Figure 6-1. Open Registration Process



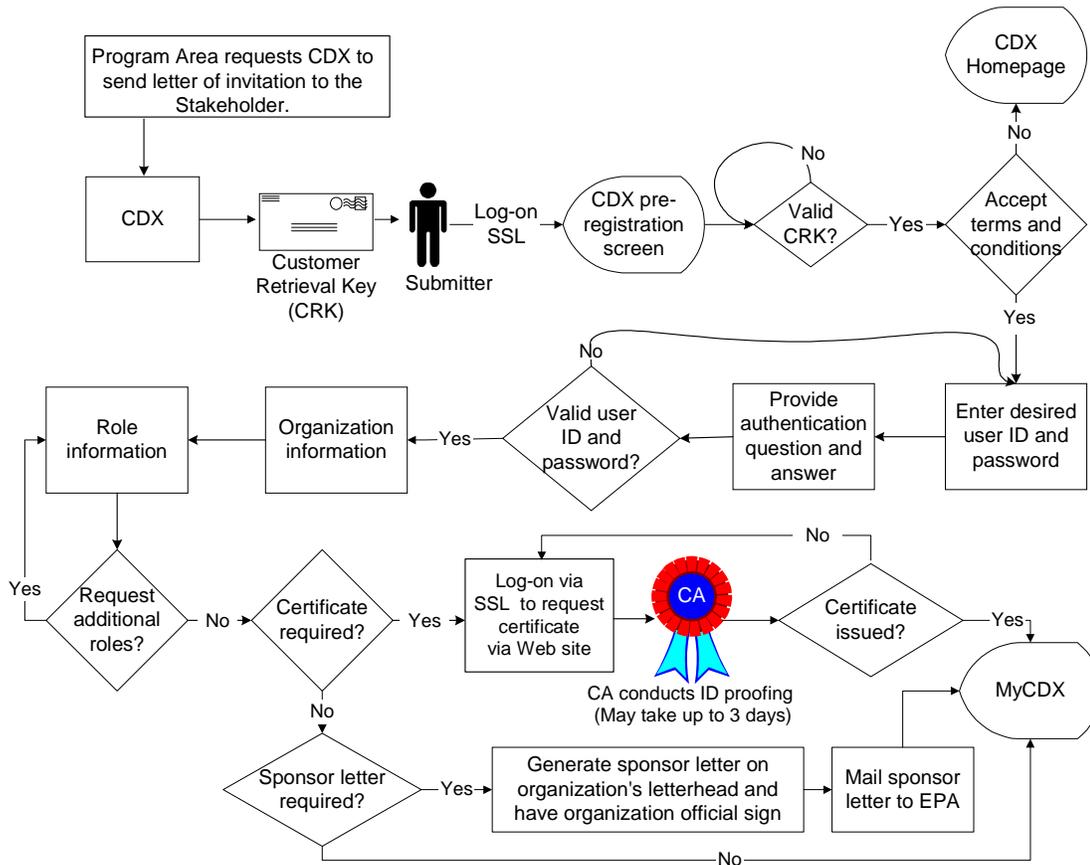
## Pre-Registration

Pre-registration reduces the burden for the submitter by pre-populating web forms with data from EPA data sources. Figure 6-2 illustrates the pre-registration process.

To use the pre-registration process, the registrant will

- ◆ receive an invitation letter, which contains a formal invitation to participate in electronic reporting; a uniform resource locator (URL); and a customer retrieval key (CRK). CRKs are valid for one-time use and then are eliminated from CDX registration. (The letter also will contain the EPA's terms and conditions for using the CDX for electronic compliance reporting.);
- ◆ log-on to CDX using the URL and the customer retrieval key; and
- ◆ approve or modify the data in the pre-populated forms to ensure accuracy. (If data are not provided from EPA data sources, the user must provide them just like in open registration.)

Figure 6-2. Pre-Registration Process



Some EPA programs may require you, the registrant, to mail in a sponsor letter. The sponsor letter is a business letter from your organization to EPA informing EPA that the registrant is authorized to interact with the CDX on behalf of the organization. You will not be able to perform activities in the desired program area for the organization indicated by the client ID until the sponsor letter is processed through CDX.

## Government Registration

Registering government users is a subset of the pre-registration process. As a government registrant you access the CDX registration through a web page reserved specifically for government users. The government registration process will present government roles only to registrants who enter through this unique portal. The basic sequence of registration parallels that of pre-registration, except government users will not be required to submit a sponsor letter.

When you complete the government registration, you will have the option to nominate other government employees for participation in electronic reporting. The nomination option currently is unique to government registration—it is not

offered to other CDX registrants. After experience is gained with the notion of nomination, this privilege may be extended to the public registrants.

## PROCESSING THE REQUEST

When you complete the online registration, the CDX activates a CDX account for you based upon the user ID and password you provided. You are notified that the CDX account is activated through two mechanisms: an e-mail to the e-mail address provided during registration and an e-mail to your “MyCDX” inbox. For programs that have no additional registration requirements, your “MyCDX” display also will contain a URL for the EPA program for which you just registered. The URL allows you to link directly to the CDX application for that EPA program directly from your “MyCDX” display.

Access to EPA programs that require additional documentation (e.g., sponsor letter) will only be granted after CDX has received the documentation. Once it is received, your registration status for that EPA program application is set to *active*. This triggers an e-mail notifying you that your status has changed, and ensures your “MyCDX” display contains the URL link to the EPA program application. The e-mail notification of the *active* status is sent to an OEI Lotus Notes database and to the EPA program point of contact (if desired), as well.

Some EPA programs supported by CDX may require a digital certificate for activities like SSL mutual authentication or digital signatures. If you register for one of these programs, a voucher number and a URL that links to the certificate authority’s (CA’s) website will be sent to you. The voucher number indicates you are approved to apply for a certificate using the procedures defined under GSA’s ACES<sup>2</sup> program.

You will receive a certificate within 3–5 days, after the CA completes the identity proofing. Once the CA validates your identity, the CA notifies you that your certificate is available to download. After downloading the certificate, you will have the authority to digitally sign documents.

Registered users will be able to participate in different EPA programs by modifying their registration profile to indicate their interest in reporting electronically to EPA programs as they are added. You also can modify your data to un-enroll from electronic reporting (either completely or by individual EPA program).

EPA also will require you to revalidate the registration data biannually to ensure all information remains current.

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<sup>2</sup> Access Certificates for Electronic Services, a federally chartered public key infrastructure sponsored by the General Services Administration.

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## TELEPHONIC REGISTRATION

The telephonic registration is intended to accommodate individuals with disabilities who may require additional assistance to complete the forms. To register using this method

- ◆ call the technical support staff and
- ◆ provide the information required to complete the web form.

The telephonic registration process is expected to be a low volume operation.

## FACILITY UPDATE RESPONSIBILITIES

You are responsible for maintaining the correct contact and facility information through your region or primacy state agency for updates to the SDWARS. You will be required to verify your current facility information for the initial registration. After the initial update, you will also be required to review your information periodically and notify EPA of any changes in order to update the SDWARS.

# Appendix

## Abbreviations

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ACES	Access Certificates for Electronic Services
B2B	business-to-business
CA	certifying agent
CDX	Central Data Exchange
CRK	customer retrieval key
CSI	Common Sense Initiative
DTD	document-type definition
EC	electronic commerce
EDI	Electronic Data Exchange
EPA	U.S. Environmental Protection Agency
FCC	Federal Communications Commission
GPEA	Government Paperwork Elimination Act
GPRA	Government Performance and Results Act
GSA	General Services Administration
I-3	Information Integration Initiative
ID	identification
IG	implementation guide
IT	information technology
LIMS	Laboratory Information Management Guide
NCOD	National Contaminant Occurance Database
OEI	Office of Environmental Information
OGWDW	Office of Ground Water and Drinking Water
OIC	Office of Information Collection
OLAP	online analytical processing
PE	performance evaluation
PIN	personal identification number
PC	personal computer
PWS	public water systems

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REI	Reinventing Environmental Information
SDWARS	Safe Drinking Water Accession and Review System
SSL	secure socket layer
UCMR	Unregulated Contaminant Monitoring Rule
URL	uniform resource locator
XML	Extensible Markup Language
Y2K	Year 2000

Office of Water (4601)  
Washington, DC 20460  
EPA 816-R-01-022A  
[www.epa.gov/safewater](http://www.epa.gov/safewater)  
December 2001