

```
XMLSchema" xml version="1.0" encoding="UTF-8"
enetwork" <xsd:schema
nDefault="unqualified" targetNamespace="http://www.epa.gov/exchangenetwork"
mon_v3_0.xsd" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:nei="http://www.epa.gov/exchangenetwork" elementFormDefault="qualified"
version="3.0">
<xsd:include schemaLocation="EN_NEI_Common_v3_0.xsd" />
- <!--
XML 3.0 Start of Schema Header
-->
<xsd:annotation base="http://www.w3.org/2001/XMLSchema"
enetwork</xsd:documentation>
Point</xsd:documentation>
XML 3.0 Point data</xsd:documentation>
Available:http://www.epa.gov/exchangenetwork/
cumentation>
<xsd:documentation base="http://www.epa.gov/exchangenetwork"
Environmental Protection Agency
ncoding="UTF-8" ?>
user</xsd:documentation>
ce="http://www.epa.gov/exchangenetwork"
p://www.w3.org/2001/XMLSchema" encoding="UTF-8"
p://www.epa.gov/exchangenetwork"
fault="qualified" attributeFormDefault="unqualified"
chemaLocation="EN_NEI_Common_v3_0.xsd"
ader
'>
chemaLocation="EN_NEI_Common_v3_0.xsd"
>
ntation>Schema Name: NEI XML 3.0
d:documentation>
ntation>Current Version
http://www.epa.gov/exchangenetwork/
n>
ntation>Description: The NEI XML 3.0 Point data
nat</xsd:documentation>
ntation>Application: Varies by
:documentation>
ntation>Developed By: Environmental Protection Agency
ng="UTF-8" ?>
http://www.epa.gov/exchangenetwork/
www.w3.org/2001/XMLSchema"
www.epa.gov/exchangenetwork"
"qualified" attributeFormDefault="unqualified"
chemaLocation="EN_NEI_Common_v3_0.xsd"
n>Schema Name: NEI XML 3.0
umentation>
n>Current Version
http://www.epa.gov/exchangenetwork/
>Description: The NEI XML 3.0 Point data
d:documentation>
Application: Varies by
tation>
```

# Integrated Compliance Information System – National Pollutant Discharge Elimination System (ICIS- NPDES) XML Schema User's Guide

Version 1.5 – for DMR Batch

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## Table of Contents

1	Introduction .....	1-1
1.1	Overview of Document.....	1-1
1.2	Intended Audience .....	1-2
1.3	Data Files .....	1-2
1.4	Other Useful ICIS-NPDES Documents .....	1-2
1.5	Questions/Comments.....	1-2
1.6	Acronyms .....	1-3
1.7	Glossary .....	1-4
2	ICIS-NPDES DMR Batch Processing Overview .....	2-1
2.1	ICIS-NPDES DMR Batch Processing .....	2-1
2.2	Roles and Responsibilities .....	2-2
2.2.1	State Roles and Responsibilities .....	2-2
2.2.2	Implementer of Record .....	2-2
2.2.3	Batch Submitter Roles and Responsibilities .....	2-3
2.2.4	EPA Headquarters Roles and Responsibilities .....	2-3
2.2.5	EPA Region Roles and Responsibilities .....	2-4
3	Preparing for ICIS-NPDES Batch .....	3-1
3.1	Batch Generation Software .....	3-1
3.2	Transactional Processing.....	3-4
3.2.1	New Transactions .....	3-5
3.2.2	Change Transactions.....	3-5
3.2.3	Replace Transactions .....	3-5
3.2.4	Delete Transactions.....	3-5
3.2.5	Mass Delete Transactions .....	3-5
3.2.6	Processing Order of Transactions .....	3-5
3.3	Naming Conventions and Field Level Rules for XML Instance Documents .....	3-7
3.4	Data Type Formats .....	3-8
3.4.1	Character Data Type.....	3-8
3.4.2	Integer Data Type .....	3-9
3.4.3	Fixed Decimal Fields.....	3-9
3.4.4	Date Fields.....	3-10
3.4.5	Empty Fields .....	3-10
3.5	File Format Conventions for XML Instance Documents .....	3-10
3.5.1	Root Element and Header Block .....	3-10
3.5.2	Payload Block .....	3-11
3.5.3	Record Block.....	3-12
3.5.4	Data Blocks and Child Blocks .....	3-15
3.6	Generic Edits.....	3-15
3.6.1	CDX Edit Checks .....	3-16
3.6.2	ICIS-NPDES Pre-Parser Edit Checks.....	3-16
3.6.3	ICIS-NPDES Parser Edit Checks .....	3-16
3.6.4	ICIS-NPDES System Edit Checks .....	3-16
3.6.5	ICIS-NPDES Multi-Value Edit Checks .....	3-17
4	Working with ICIS-NPDES Schema Files .....	4-1

4.1	ICIS-NPDES Batch Processing and IDEF, PCS.....	4-1
4.2	ICIS-NPDES Schema, Examples and Data Dictionary.....	4-1
4.3	Working With ICIS-NPDES Schema.....	4-1
4.4	Validating XML Files With ICIS-NPDES Schema.....	4-4
4.4.1	Schema Validation Software.....	4-4
4.4.2	Schema Validation with Stylus Studio.....	4-5
5	Establishing Access to CDX and ICIS-NPDES.....	5-11
5.1	CDX Web Form Access.....	5-11
5.2	Establishing and Configuring a Node on the Exchange Network.....	5-22
6	Submitting Files to ICIS-NPDES Batch.....	6-1
6.1	Submitting ICIS-NPDES Batch Files Manually Through the CDX Web Form for ICIS.....	6-1
6.2	Submitting ICIS-NPDES Batch Files Electronically Through a Node on the Exchange Network.....	6-8
6.2.1	SOAP Message Templates.....	6-10
6.3	E-mail Submission Notifications.....	6-14
7	Viewing ICIS-NPDES Batch Submission Results.....	7-1
7.1	ICIS-NPDES Batch Audit Reports.....	7-1
7.1.1	Rejected Transactions Report.....	7-3
7.1.2	Accepted Transactions Report.....	7-4
7.1.3	Batch Transactions Summary Report.....	7-6
8	Data Mapping AND Rules.....	8-1
8.1	Discharge Monitoring Report Mapping and Rules.....	8-1
8.1.1	Discharge Monitoring Report Mapping.....	8-1
8.1.2	Rules for Parsing State Submitted DMR XML Files.....	8-6
9	Error Messages.....	9-1
9.1	ICIS-NPDES Batch Error Messages.....	9-1
9.1.1	DMR Batch Error Messages.....	9-1
9.2	Schema Validation Error Messages.....	9-14
9.3	ICIS-NPDES Unexpected Error Messages.....	9-21
9.4	CDX Node Submittal Error Messages.....	9-22

# 1 INTRODUCTION

The Integrated Compliance Information System – National Pollutant Discharge Elimination System (ICIS–NPDES) is being enhanced to support an integrated data flow to process electronic batch submissions using eXtensible Markup Language (XML) technology. Authorized states, tribes, and EPA regional users submit National Pollutant Discharge Elimination System (NPDES) data via batch to ICIS–NPDES. They compose their transactions into predefined XML formatted files contained in a zip archive file and submit them electronically through a Node on the Exchange Network (EN) or manually by uploading them using an interactive web form hosted on EPA's Central Data Exchange (CDX) site. The files are then submitted to ICIS–NPDES by CDX for processing.

Upon receipt of the zip archive submission file, CDX performs important functions such as validating the submitted data against approved XML schemas, scanning for viruses, archiving all XML files, and authenticating the submitters prior to making the XML files available for processing. CDX provides a Web services interface for distributing files to ICIS–NPDES for processing.

A Web service is deployed in the ICIS–NPDES environment to receive XML files from CDX. ICIS–NPDES is responsible for receiving and extracting data out of the XML files or “parsing” the data, sequencing the transactions, and processing the transactions against the ICIS–NPDES service tier. For any transactions that are not successfully processed, detailed business-rule based errors will be generated. Finally, ICIS–NPDES records the batch processing results and sends the processing status back to CDX.

This document describes procedures for State, tribe and EPA regional users to provide NPDES data to ICIS-NPDES Discharge Monitoring Report (DMR) data in an XML format, check the results, and correct common errors that may occur to their submissions. While similar procedures may be developed for processing the other data families (other than DMRs) in the future, this document is focused exclusively on the DMR data family.

## 1.1 OVERVIEW OF DOCUMENT

This document is divided into nine sections:

Section 1 (Introduction) – defines the intended audience for this Guide and describes the general purpose and outline of this document.

Section 2 (ICIS-NPDES Batch Processing Overview) – describes the roles and responsibilities of participants and the lifecycle for submitting data to ICIS-NPDES.

Section 3 (Preparing for ICIS-NPDES Batch) – provides detailed information on mapping state data into ICIS-NPDES schema, formatting XML submission files, file naming conventions, field data types, and types of edits used for each ICIS-NPDES data submission.

Section 4 (Working with ICIS-NPDES Schema Files) – describes schema XML validation tools how to validate XML submission files with the ICIS-NPDES schema.

Section 5 (Establishing Access to CDX and ICIS-NPDES) – explains the types of access needed and how to register for CDX and ICIS-NPDES.

Section 6 (Submitting Files to ICIS-NPDES Batch) –discusses the method of submitting an XML file to ICIS-NPDES Batch using EPA’s Central Data Exchange (CDX).

Section 7 (Viewing ICIS-NPDES Batch Submission Results) – walks through the steps in viewing the results of submissions to ICIS-NPDES Batch.

Section 8 (Data Mapping and Rules) – lists XML submission file tags and how they are used and stored by ICIS-NPDES Batch.

Section 9 (Error Messages) – lists typical error messages that occur during the processing of XML files, why they occur and how they should be handled.

## 1.2 INTENDED AUDIENCE

The intended audience for this Guide is any state, tribe or EPA region using its own software and procedures to extract NPDES DMR data and submit it to EPA Headquarters (HQ) for inclusion in the ICIS-NPDES system. This Guide also describes processes that are being planned for future submittal of all other NPDES data and will be revised as necessary when development of this capability begins. These users are called batch submitters and are referred to as such throughout this document.

This document was written assuming the reader is familiar with the ICIS-NPDES system, understands basic computer concepts and terminology, is experienced in XML and Schema technology, and is familiar with CDX.

## 1.3 DATA FILES

Batch submitters provide ICIS-NPDES data to EPA HQ via a series of files called “XML instance documents”. The structure and relationships of these files are detailed in this Guide. Other formats for data transfer, such as Oracle to Oracle, ASCII comma delimited and ASCII flat fixed-format data transfers, are not supported by ICIS-NPDES Batch.

The remainder of this Guide describes in detail the steps necessary to ensure a successful NPDES DMR data submission, the format and rules files that must be followed for each submission and technical aspects of the file creation process.

## 1.4 OTHER USEFUL ICIS-NPDES DOCUMENTS

In addition to this Guide, users may find the following other documents useful in understanding how to use ICIS-NPDES and prepare their DMR data for submission:

- ICIS-NPDES Batch DMR Flow Configuration Document
- ICIS-NPDES XML Data Exchange Template
- ICIS-NPDES Example XML Instance Document
- ICIS-NPDES Batch Technical Specification
- ICIS-NPDES XML Schema Documentation

## 1.5 QUESTIONS/COMMENTS

Readers with questions or comments about any aspect of ICIS-NPDES Batch processing should direct them to either the CDX Help Desk or ICIS User Support depending upon the topic, as shown in Table 1-1.

<b>CDX Help Desk</b>	<b>ICIS User Support</b>
----------------------	--------------------------

State/Tribal Node access questions or problems	CDX Web Form access requests
CDX Web Form access problems	ICIS-NPDES password resets
CDX Web Form password resets	ICIS-NPDES access problems
State/Tribal Node file transfer questions or problems	XML file schema validation error questions or problems
Validate, Submit, getStatus and Download web method questions or problems	ICIS-NPDES batch rejection report questions or problems
SOAP message questions or errors	

**Table 1-1. Contact Assistance for ICIS-NPDES Batch**

Contact the CDX Help Desk using one of these three methods:

- By Telephone: Person-to-person telephone support is available from 8:00 am to 6:00 pm (EST). Call our toll-free line at 888-890-1995
- By Fax: Assistance requests are accepted 24 hours a day at 301-429-3905. Support personnel will respond to faxed requests Monday through Friday from 8:00 am to 6:00 pm EST/EDT
- By E-mail: Send e-mail to one of the following address with "Tech Support" in the Subject line
  - ✓ [nodehelpdesk@csc.com](mailto:nodehelpdesk@csc.com) (State/Tribe Nodes)
  - ✓ [epacdx@csc.com](mailto:epacdx@csc.com) (CDX Web Form)

Contact ICIS User Support at (202) 564-7756 or via e-mail at [ICIS@epa.gov](mailto:ICIS@epa.gov).

## 1.6 ACRONYMS

Acronyms used within this document are listed in Table 1-2.

Acronym	Representation
ASCII	American Standard Code for Information Interchange
CDX	Central Data Exchange
COTS	Commercial Off the Shelf
DMR	Discharge Monitoring Report
EPA	Environmental Protection Agency
HQ	Headquarters
ICIS	Integrated Compliance Information System
ICIS-NPDES	Integrated Compliance Information System – National Pollutant Discharge Elimination System
IDEF	Interim Data Exchange Format
IOR	Implementer of Record
IT	Information Technology
NPDES	National Pollutant Discharge Elimination System
PCS	Permit Compliance System
SIC	Standard Industrial Classification
SOAP	Simple Object Access Protocol
W3C	World Wide Web Consortium
XML	eXtensible Markup Language

**Table 1-2. List of Acronyms**

## 1.7 GLOSSARY

A glossary of terms used within this document is defined in Table 1-3.

Term	Definition
<b>CDX Node</b>	EPA's point on the Exchange Network that hosts web services used for requesting and publishing data between other Nodes.
<b>CDX Web Form</b>	An interactive web page hosted on CDX that allows a state, tribe or EPA staff member to manually upload a zipped file containing XML Submission File(s) to ICIS-NPDES.
<b>Child Block</b>	A series of common elements or tags with data sandwiched between them that are clustered under a parent block.
<b>Client Node</b>	Software residing on a Node that interactively invokes web services to manually submit a zipped file containing XML Submission File(s) to ICIS-NPDES Batch. ICIS-NPDES Batch recommends the use of the CDX Web Form instead of Client Node software.
<b>Element</b>	Formally, a unique start and end tag within an XML Submission File that has data sandwiched in between. Also informally called a Tag.
<b>Exchange Network</b>	EPA's hardware and software mechanism for exchanging data between states, tribes, EPA regions and EPA offices via Nodes.
<b>Full Batch</b>	Authorized NPDES states submitting more than just DMR data to ICIS-NPDES Batch and manually entering some or no data into ICIS-NPDES directly.
<b>Full Node</b>	Software residing on a Node that invokes CDX web services to electronically submit a zipped file containing XML Submission File(s) to ICIS-NPDES Batch.
<b>Header Block</b>	The second-level parent block within ICIS-NPDES XML Submission Files that provides information about the submitter and contents of the file.
<b>Hybrid Batch</b>	Authorized NPDES states electronically submitting only DMR data to ICIS-NPDES Batch and manually entering other data into ICIS-NPDES directly.
<b>Implementer of Record</b>	State, tribe or EPA Region responsible for data entry and management of ICIS-NPDES data.
<b>Node</b>	A point on the Exchange Network where data is requested or published from. Typically, it is hosted at a state, tribe or EPA region.
<b>Node Administrator</b>	State, tribe or EPA Region staff member responsible for a Node.
<b>Parent Block</b>	A high level element or tag that has child elements or tags below it instead of data sandwiched in between.
<b>Parser</b>	The part of the ICIS-NPDES Batch software that extracts data out of an XML Submission File and attempts to save it into ICIS-NPDES.
<b>Parsing</b>	The process of extracting data out of an XML file for processing.
<b>Payload Block</b>	A repeatable parent block of transactions for one data family.
<b>Record Block</b>	A repeatable parent block of transactions under the Payload Block.
<b>Root Element</b>	The single top-level element or tag within an XML file. The root element for ICIS-NPDES XML Submission Files is <Document>.
<b>Schema</b>	A series of master XML files that dictate the placement and characteristics of data and their elements or tags within an XML

Term	Definition
	Submission File.
<b>Schema Validation</b>	The process of comparing the layout and content of an XML Submission File against the ICIS-NPDES Batch schema using a special software package designed to check perform valid (tag location and data characteristics) and well-formed (start and end tags not missing) checks.
<b>SOAP Messages</b>	Type of electronic messages sent and received by a Full Node.
<b>Tag</b>	Informally, a unique start and end tag within an XML Submission File that has data sandwiched in between. Also formally called an Element.
<b>Transaction ID</b>	The ID assigned by CDX to a zipped file submitted to ICIS-NPDES Batch.
<b>Web Methods</b>	Java-based CDX functions invoked by a Node through SOAP messages. The CDX web methods used for ICIS-NPDES Batch are Authenticate, Submit, getStatus and Download
<b>Well-formed</b>	An XML Submission File that has all of its start and end tags present with no misspellings.
<b>World Wide Web Consortium</b>	Group of industry who developed XML, schema, SOAP and other web service technologies.
<b>XML File</b>	An ASCII text file that contains a list of elements or tags with data sandwiched between the tags.
<b>XML Submission File, XML Instance Document</b>	An XML file generated by a state, tribe or EPA region that is to be submitted to ICIS-NPDES Batch for processing.

**Table 1-3. Glossary of Terms**

## 2 ICIS-NPDES DMR BATCH PROCESSING OVERVIEW

### 2.1 ICIS-NPDES DMR BATCH PROCESSING

The ICIS-NPDES DMR Batch load processing lifecycle consists of a state or Region submitter generating and submitting XML file(s) to ICIS-NPDES via their CDX node or CDX Web Form, CDX extracting and performing file validation on submitted files before sending them to ICIS-NPDES Batch, ICIS-NPDES DMR Batch processing the transactions within the submission files, then the state or Region submitter viewing the results of their submission. Figure 2-1 illustrates this lifecycle.



**Figure 2-1. Lifecycle for ICIS-NPDES DMR Batch Processing**

Figure 2-2 illustrates the flow of events for ICIS-NPDES DMR Batch Processing that state and EPA region submitters experience. ICIS-NPDES DMR Batch participant roles and responsibilities are described in the following subsection, and a discussion of each step in the ICIS-NPDES DMR Batch lifecycle will be discussed in more detail starting with Section 3.

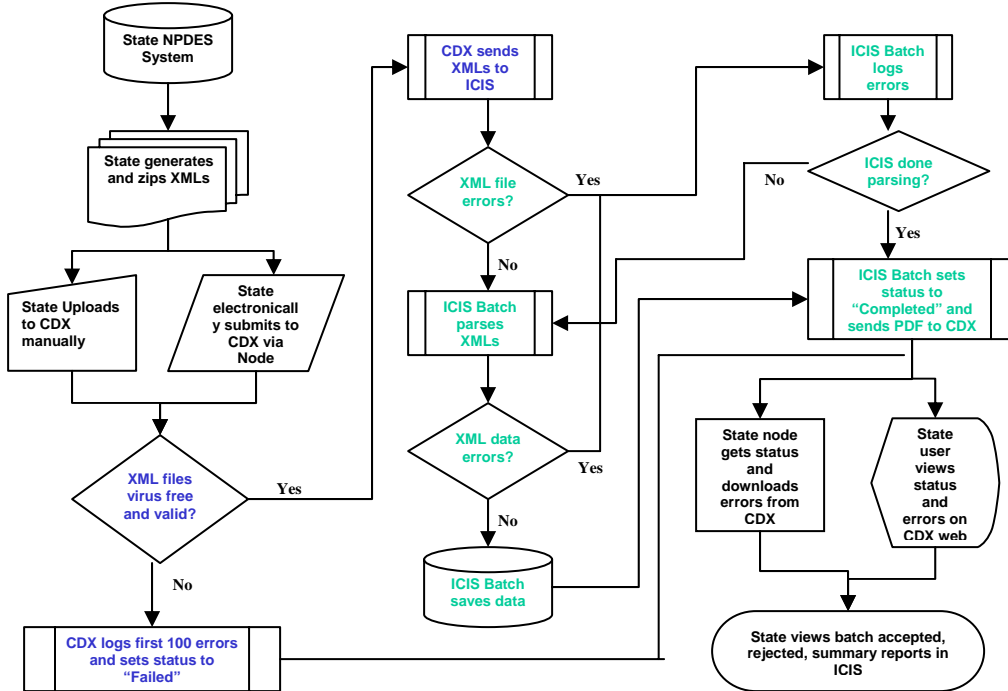


Figure 2-2. Flow of Events for ICI S-NPDES DMR Batch Processing

## 2.2 ROLES AND RESPONSIBILITIES

The following section details the roles and responsibilities needed to ensure successful processing of electronic data by CDX and ICIS-NPDES DMR Batch.

### 2.2.1 State Roles and Responsibilities

The ICIS-NPDES batch process contains several steps that must all be successfully implemented to complete the process. These steps include:

- 1) producing the XML instance documents,
- 2) submitting the XML instance documents to EPA through CDX,
- 3) monitoring the load process,
- 4) retrieving processing errors,
- 5) fixing rejected data,
- 6) and resubmitting XML instance documents with corrected data through CDX.

It is very important to assign responsibilities for each of these steps to ensure successful processing and to avoid miscommunications that could lead to the loading of erroneous data into the ICIS-NPDES Production system.

### 2.2.2 Implementer of Record

Implementer of Record (IOR) is the term used to describe the agency (state, tribe or EPA region) responsible for data entry and management of ICIS-NPDES data. Data entry and management responsibility does not equate to programmatic responsibility. States, tribes and EPA regions are responsible for determining data ownership areas and accurately reflecting these agreements in ICIS-NPDES.

Although National data in ICIS-NPDES resides in the same physical database, each authorized state, tribe or EPA region owns and controls access to its data. Security functions implemented at both the database and application levels prevent unauthorized users from changing data.

The IOR is implemented in ICIS-NPDES for data in which a state, tribe or EPA region is wholly responsible for their data within a given state. The ICIS-NPDES XML parsing software checks the first 2 characters of a Permit Identifier against internal mapping of ICIS User IDs and their allowable states. Data not owned by an IOR submitting batch files will not be processed.

### 2.2.3 Batch Submitter Roles and Responsibilities

The XML data must provide an accurate representation of NPDES DMR activity for a given state, tribe or EPA region as an XML instance document in a format acceptable to the ICIS-NPDES Batch XML parser. DMRs must, of course, be accurately identified to a particular permit and pipe.

Each ICIS-NPDES DMR batch submitter is responsible for:

- obtaining an ID for the ICIS Web upload form hosted on CDX,
- obtaining access to the ICIS Batch Node through their own Node on the Exchange Network and invoking the Web Methods supported by ICIS Batch submissions
- obtaining an ICIS-NPDES system ID,
- creating and maintaining code to produce XML instance documents from their data in a format acceptable to the ICIS-NPDES Batch parser and the ICIS-NPDES Production system,
- validating XML instance documents against the ICIS-NPDES schema before submission,
- uploading XML instance documents to CDX or routing them through their Network Node to the ICIS-NPDES Node,
- monitoring the movement of their data through CDX and ICIS-NPDES,
- correcting errors that cause their data to be rejected by CDX, the ICIS-NPDES Batch parser, or the ICIS-NPDES Production system, and
- notifying the CDX Help Desk or ICIS User Support of problems related to the movement of their data through CDX and into the ICIS-NPDES system.

### 2.2.4 EPA Headquarters Roles and Responsibilities

CDX is responsible for:

- providing software and instructions on implementing Nodes on the Exchange Network,
- assigning unique CDX IDs and mapping IDs into the ICIS-NPDES Batch Web upload form and Node,
- resetting passwords for CDX IDs,
- accepting and validating XML instance documents from submitters,
- file movement and communication with ICIS-NPDES Batch,
- operation and maintenance of CDX security, access and web methods,
- operation and maintenance of the Exchange Network software and hardware,
- archiving files submitted to ICIS-NPDES Batch,
- performing virus scans and schema validation on incoming XML files,
- providing e-mail status and CDX errors to submitters,
- responding to problems in a timely manner, and
- hosting the ICIS-NPDES schema

ICIS-NPDES DMR Batch is responsible for:

- providing the ICIS-NPDES schemas containing the XML specifications,
- assigning unique IDs for the ICIS-NPDES system,
- resetting passwords for ICIS IDs,
- accepting and validating XML instance documents from CDX
- processing XML instance documents provided by CDX,
- electronically notifying CDX of the success or rejection of files during ICIS-NPDES Batch processing,
- operation and maintenance of the ICIS-NPDES parser and the ICIS-NPDES system,
- properly storing acceptable data into ICIS-NPDES,
- responding to problems in a timely manner, and
- notifying submitters of schema updates as changes occur.

### **2.2.5 EPA Region Roles and Responsibilities**

Regardless of how the roles and responsibilities for the step-by-step batch submittal process are assigned between the state or tribe and EPA region, it is the region's responsibility to ensure that regular updates of the data are successfully loaded into ICIS-NPDES and coordinate among state and tribal submitters and Headquarters EPA as necessary. DMR batch updates are recommended at a minimum frequency of once a month (or more frequently if desired by the EPA region).

### 3 PREPARING FOR ICIS-NPDES BATCH

In order to be able to submit files to the ICIS-NPDES Production system, submitters must first map their data into the ICIS-NPDES schema, then develop and use their own software to generate XML files in a format acceptable to ICIS-NPDES Batch, obtain IDs to access CDX and the ICIS-NPDES system, and establish their own Node on the Exchange Network. Submitters then either submit their files manually via the ICIS-NPDES Batch Web upload form hosted on CDX, or electronically through their Node on the Exchange Network using CDX web services.

Submitters who use the ICIS-NPDES Production system to enter all data except DMRs (“hybrid batch”) will view the results of their batch submissions in ICIS by generating Batch Audit Reports. Submitters who do not enter data directly into the ICIS-NPDES Production system (“full batch”) will receive the results of their submissions electronically.



*Submitters should identify and correct any submissions that are rejected by CDX or ICIS-NPDES Batch and resubmit the corrections before submitting any new files to ICIS-NPDES Batch!*

#### 3.1 BATCH GENERATION SOFTWARE

States, tribes and EPA regions must develop their own software that extracts NPDES DMR data out of their system, reformats the data into an XML file or “XML instance document” that is fully compatible with the ICIS-NPDES schema and the ICIS-NPDES Production system fields, use an XML Schema Validation software tool to validate the schema against the ICIS-NPDES Schema files, and compress the file before submitting it to ICIS-NPDES Batch.

Typical steps that a state, tribe or EPA region will follow to develop their generation software:

1. NPDES staff take mapping from Section 8 of this document and identify the screen and fields from their own NPDES system that relate to each ICIS-NPDES Batch tag as shown in the first yellow column in the example in Step 2.
2. Computer or Information Technology (IT) staff use the screens and fields mapped by NPDES staff and identify the tables and columns from their NPDES database as shown in the second yellow column in the example below:

XML Tag Name	PCS Counterpart	PCS Code Table	ICIS Code Table	Comments	State, Tribe, or Region System Screen and Field	State, Tribe, or Region System Table and Column
PermitIdentifier	Permit Number (NPID)			Must have postal code as the first 2 characters. Same postal codes as PCS except for Gulf of Mexico permits: GE is to be used by Region 4 and GM is to be used by	Permit Screen, “NPDES ID”	Permit.npdes_id

XML Tag Name	PCS Counterpart	PCS Code Table	ICIS Code Table	Comments	State, Tribe, or Region System Screen and Field	State, Tribe, or Region System Table and Column
				Region 6.		
PermittedFeatureIdentifier	Discharge Number (VDSC)			Same as PCS but allows 3 to 4 characters instead of just 3 and 3 characters do not require padding of zeroes or spaces on the left or right to make it 4 characters. One physical outfall should only have one PermittedFeatureIdentifier in ICIS with variations of that outfall's limit requirements assigned to their own unique LimitSetDesignators.	Outfall Screen, "Outfall Number"	Outfall.outfall_number

3. IT staff look at the examples in the [ICIS-NPDES Example XML Instance Document](#) (Figure 3-1) to learn how to structure their XML files for New, Change, Replace, Delete and Mass Delete transactions by data family.
  - Tags in bold or blue must exist in the XML file, tags in green can be repeated more than once
  - Pay attention to guidelines provided above each example New, Change, Replace, Delete and Mass Delete XML

**Adding a Permit Tracking Event to ICIS**

- XML files for adding new records must contain data for the tags shown below in bold typeface.
- Tags not in bold may or may not be in the XML submission file. RIDE elements should be in the XML submission file.
- Tags in green may be repeated consecutively more than one time.
- Empty tags such as `</FirstName>` or `<FirstName></FirstName>` are not allowed.

```
<?xml version="1.0" encoding="UTF-8"?>
<Document xmlns="http://www.exchangeworknet/schema/icis2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Header>
    <ID>UUStaff</ID>
    <Author>Jane Doe</Author>
    <Organization>UU Department of Environmental Protection</Organization>
    <Title>Permit Tracking Event Submission</Title>
    <CreationTime>2001-12-17T09:30:47.0Z</CreationTime>
    <Comment>Address: final of rejected transactions from. May submissions</Comment>
    <DataService>ICIS</DataService>
    <ContactInfo>123 Main Street, Anytown UU, 00555, (888) 555-1212, jane.doe@uudq.state.us</ContactInfo>
    <Property>
      <name>SchemaName</name>
      <value>ICIS_y2.0.xsd</value>
    </Property>
  </Header>
  <Payload Operation="PermitTrackingEventSubmission">
    <PermitTrackingEventData>
      <TransactionHeader>
        <TransactionType>N</TransactionType>
        <TransactionTimestamp>2001-12-17T09:30:47.0Z</TransactionTimestamp>
      </TransactionHeader>
      <PermitTrackingEvent>
        <PermitIdentifier>AL1005932</PermitIdentifier>
        <PermitTrackingEventCode>ANC</PermitTrackingEventCode>
        <PermitTrackingEventDate>2005-12-31</PermitTrackingEventDate>
        <PermitTrackingCommentsText>Application returned to applicant 3 times</PermitTrackingCommentsText>
      </PermitTrackingEvent>
    </PermitTrackingEventData>
  </Payload>
</Document>
```

**Figure 3-1. ICIS-NPDES Example XML Instance Document Example**

4. IT staff look at the ICIS-NPDES XML Data Exchange Template (Figure 3-2) to compare state fields against ICIS fields and adjust data as necessary:
  - Truncate fields (state may be storing first and last names with 50 characters but ICIS only stores 30 characters)
  - Convert fields (state may be storing N/A for quantity or concentration values but ICIS only stores a number)
  - Reformat fields (state may be storing dates as 31-DEC-2007 but ICIS stores dates as 2007-12-31)

**ICIS-NPDES Data Exchange Template**

Element Name	Example	Required	Repeatable	Description	XML Data Type	Schema Max Restriction	Schema Min Restriction	Business Rules
PermitIdentifier	<PermitIdentifier>ZZ1005932</PermitIdentifier>	Yes	Yes for FormalEnforcement and InformalEnforcement. No for all others	The ICIS-NPDES permit number in ssa999999 format, where ss is the State postal code or Region number, a is a letter or number, and 9999999 is a unique sequence of numbers. Either <PermitIdentifier> or facility location information must be ...	xsd:string	9	9	
PermitIssueDate	<PermitIssueDate>2004-12-31</PermitIssueDate>	No	No	The date the permit was issued.	xsd:date	10	10	ccyy-mm-dd

**Figure 3-2. ICIS-NPDES XML Data Exchange Template Example**

5. IT staff build a link between state codes and ICIS codes by using the ICIS table named in the Business Rules column of the ICIS-NPDES Data Exchange Template (Figure 3-3):
  - States using codes from EPA's Permit Compliance System (PCS) can use a spreadsheet provided by ICIS staff that maps PCS codes into ICIS codes
  - Names of the PCS and ICIS code tables are provided in the ICIS-NPDES XML Data Exchange Template

**ICIS-NPDES Data Exchange Template**

Element Name	Example	Required	Repeatable	Description	XML Data Type	Schema Max Restriction	Schema Min Restriction	Business Rules
NumericConditionText	<NumericConditionText>C3</NumericConditionText>	Yes	No	Identifies whether the limit value is for one of two available quantities or three available concentrations.	xsd:string		2	2 See ref_value_type table for acceptable values
NumericConditionUnitMeasureCode	<NumericConditionUnitMeasureCode>D1</NumericConditionUnitMeasureCode>	Yes when adding a Limit	No for all others	The code representing the unit of measure for the quantity or concentration limit value for the given parameter and limit set.	xsd:string		2	1 See ref_unit table for acceptable values

**Figure 3-3. ICIS-NPDES XML Data Exchange Template with Example**

6. IT staff read the ICIS Batch Technical Specifications to understand how to build their XML files
7. IT staff create module to generate XML files in the format required by ICIS Batch
8. IT staff incorporate a way to validate the XML files against the schema and zip them before sending them through CDX
9. Program staff upload zipped XML file(s) using the CDX web form for ICIS, or IT staff (Node Administrator) set up automated submissions using their state Node on the Exchange Network
10. Program staff review the ICIS-NPDES Batch Audit Report results and fixes any rejections

The following subsections explain in detail how to generate the XML file in a format that is wholly compatible with ICIS-NPDES Batch.



*Be sure to use the detailed information in the:*

- \* *ICIS-NPDES Data Exchange Template,*
- \* *ICIS-NPDES Example XML Instance Document, and*
- \* *ICIS-NPDES Batch Technical Specification*

*to generate your XML submission files for ICIS-NPDES Batch!*

**3.2 TRANSACTIONAL PROCESSING**

ICIS-NPDES DMR Batch processes incoming XML instance documents by performing one of three activities on each record it encounters:

- 1) Change transaction (C)

- 2) Replace transactions (R)
- 3) Mass Delete transaction (X).

The planned design of ICIS-NPDES Full Batch processes incoming XML instance documents by performing one of five activities on each record it encounters: 1) New transaction (N); 2) Change transaction (C); 3) Replace transactions (R); 4) Delete transaction (D); or 5) Mass Delete transaction (X). The DMR Batch transactions and planned Full Batch transactions are described in the next subsections.

### **3.2.1 New Transactions**

The New transaction is intended to establish a new record in ICIS-NPDES with the data provided in the elements. Data for the key fields must exist along with fields that are mandatory for saving a record in ICIS-NPDES. The New transaction type is planned to be available for many data families except DMRs.

### **3.2.2 Change Transactions**

The Change transaction modifies non-key field data in ICIS-NPDES. Data for the key fields must be provided and only those fields in ICIS-NPDES to be changed are submitted with this transaction type. An element with an asterisk denotes a field to be blanked out in ICIS-NPDES. The Change transaction type is being implemented for DMRs and is planned to be available for most other data families.

### **3.2.3 Replace Transactions**

The Replace transaction uses the key fields provided to add a record if it does not exist in ICIS or change non-key field data in ICIS-NPDES if the record exists in ICIS. Data for the key fields must be provided along with all fields in ICIS-NPDES that need to be added or changed when using this transaction type. Any fields missing from the XML or present in the XML with an asterisk will be blanked out in ICIS-NPDES. The Replace transaction type is being implemented for DMRs, and is planned for the permit schedule and compliance schedule data families.

### **3.2.4 Delete Transactions**

The Delete transaction deletes a record from ICIS-NPDES only if no other records are associated with it. Data for the key fields must be provided. Data in any non-key fields are ignored. The Delete transaction type is planned for only those records that do not have dependencies or child records, such as permit tracking events.

### **3.2.5 Mass Delete Transactions**

The Mass Delete transaction deletes a record from ICIS-NPDES irregardless of whether other records are associated with or linked to it, or in the case of scheduled DMRs removes data from the DMR record and automatically generates non-receipt violations if applicable. When using a Mass Delete transaction, data for the key fields must be provided but data in any non-key fields are optional and will be ignored. The Mass Delete transaction type is being implemented for DMRs and is planned to be available for most data families that have dependencies or child records such as violations or links to other records. It is not being planned for the basic permit, general permit, master general permit, facility and permit reissuance data families.

### **3.2.6 Processing Order of Transactions**

The ICIS-NPDES Batch system will not allow batch submitters to add, change or delete data (either by full replacement or change method) that the submitter does not own. A batch

submitter's XML submission file may include a combination of new, change and delete methods. For example, the delete transaction for enforcement action "A" above can be submitted at the same time as the delete transaction for limit "B" because ICIS-NPDES will process the limit change first. Parent records must exist in ICIS-NPDES before a child record can be added or changed. This parent can exist as a new transaction record in the same XML file as the child if it does not already exist in ICIS-NPDES.

Transactions are processed in an order similar to the order used by PCS batch submissions. Data families representing parent records, such as basic permit and formal enforcement actions, are deleted, added, then changed before children records such as tracking events and DMR violations, are deleted, added or changed. Table 3-1 presents transaction types acceptable for DMRs.

Submission Type	Transaction Types Allowed
Discharge Monitoring Report	X, C, R

**Table 3-1. Transactions Allowed for DMRs**

This Guide only addresses the DMR submission type since that functionality will be in production in ICIS-NPDES in Spring 2008. The transaction types for other data families are based on a design only and development on these other data families is on hold until FY2009 (October 2008). Table 3-2 lists each planned submission type for the other data families and in the order in which they are anticipated to be processed by ICIS.

Submission Type	Transaction Types Allowed
Facility	N, C
Permit Reissuance	C
Permit Basic (Individual Permits)	N, C
Master General Permit	N, C
General Permit Covered Facility	N, C
Unpermitted Facility	N, C
Biosolids Permit Component	N, C
CAFO Permit Component	X, N, C
CSO Permit Component	X, N, C
Pretreatment Permit Component	X, N, C
POTW Permit Component	X, N, C
SW Construction Permit Component	X, N, C
SW Industrial Permit Component	X, N, C
SW MS4 Medium/Large Permit Component	X, N, C
SW MS4 Small Permit Component	X, N, C
Permitted Feature	X, D, N, C
Limit Set	X, D, N, C
Limit (Permit)	X, D, N, C
Change Keys (Limit only)	C
Effluent Trade Partner	X, N, C
Narrative Condition	X, D, N, C
Permit Schedule	X, D, N, C
Permit Tracking Event	D, N, C
Biosolids Program Report	X, N, C
CAFO Annual Report	X, N, C
CSO Event Report	X, N, C
Local Limits Report	X, N, C
Pretreatment Performance Summary	X, N, C
SSO Annual Report	X, N, C
SSO Event Report	X, N, C
SSO Monthly Event Report	X, N, C
SW Event Report	X, N, C
SW MS4 Program Report	X, N, C
Compliance Monitoring	X, N, C

Submission Type	Transaction Types Allowed
CAFO Inspection	X, N, C
CSO Inspection	X, N, C
Pretreatment Inspection	X, N, C
SSO Inspection	X, N, C
SW Inspection	X, N, C
Compliance Monitoring Linkage	X, N
Formal Enforcement Action	X, N, C
Informal Enforcement Action	X, N, C
Sub Activity	D, N, C
Compliance Schedule	X, D, N, C
Limit (Enforcement Action)	X, D, N, C
Change Keys (EA Limits)	C
<b>Discharge Monitoring Report</b>	<b>X, C, R</b>
DMR Program Report Linkage	D, C, R
DMR Violation	C
Single Event Violation	X, N, C
Enforcement Action Violation Key	X, N

**Table 3-2. Planned Transactions for ICIS Data Families**



*When a permit is reissued, the permit reissuance XML must be submitted in the same batch with its effluent (permitted feature, limit set, and limit) data!*

### 3.3 NAMING CONVENTIONS AND FIELD LEVEL RULES FOR XML INSTANCE DOCUMENTS

The ICIS-NPDES Batch DMR XML instance documents should follow the naming convention of **ICISSSCCYYMMDDaaaa.xxx** where:

<b>ICIS</b>	=	Abbreviation for ICIS-NPDES
<b>SS</b>	=	State Postal Code of the Activity Location for this submission or Region Code (R1 through R0 for Region 1 through Region 10)
<b>CC</b>	=	Two digit century
<b>YY</b>	=	Two digit year
<b>MM</b>	=	Two digit month
<b>DD</b>	=	Two digit day
<b>aaaa</b>	=	Any length of optional characters to be selected by the submitter to provide further identification and uniqueness
<b>.xxx</b>	=	File extension of .ZIP or .XML

XML data files must be developed using the W3C XML standards and be well-formed and valid according to the ICIS-NPDES schema posted on the Exchange Network site. Submitters must perform well-formedness and validation checks on the XMLs before submitting them to CDX. If rejected, CDX will identify the first 100 schema validation errors encountered and report this information back to the users within a file called submission-metadata.xml.

If one or more files combined exceed 80 megabytes when zipped, the file or files must be split into two or more zip compressed files. Zip compressed files must conform to PKWARE's (de facto) compression, which are available for download at <http://www.winzip.com> or <http://www.pkware.com>. A java utility for zipping compressed files before submitting them to CDX can be downloaded at <http://java.sun.com/j2se/1.4.2/docs/api/java/util/zip/package-summary.html>.

Due to the large size of XML files, Headquarters EPA requires the compression of all XML instance documents into one zipped file before submitting them to CDX. XML and zip compressed submission files should be named using the convention specified above. If a submission file is not zipped or contains a file other than an XML file, is not valid according to the ICIS-NPDES Batch schema or is infected with a virus, the CDX interface will return a (Simple Object Access Protocol) SOAP error message or XML file describing the first 100 errors encountered.



*Be sure to zip XML files before submitting them to ICIS-NPDES Batch via your CDX Node or the CDX Web Form!*

### 3.4 DATA TYPE FORMATS

The next five subsections detail the data type formats that are allowable for tags or elements within the XML files.

#### 3.4.1 Character Data Type

Elements in the ICIS-NPDES XML Data Exchange Template having the character data type contain alphanumeric data. The length of the data is specified for each element. This data should have leading and trailing spaces removed.

Valid characters for alphanumeric fields are limited to:

**~ ! # \$ % ^ \* ( ) \_ + - [ ] \ = : ; ? , . / @ 1 2 3 4 5 6 7 8 9 0 A a B b C c D d E e F  
f G g H h I I J j K k L l M m N n O o P p Q q R r S s T t U u V v W w X x Y y  
Z z**

Invalid characters for alphanumeric fields include:

**{ } | < > & ' " (curly brackets, pipe or concatenation character, less than, greater than, ampersand, apostrophe, quotation mark)**

The symbols for less than, greater than, ampersand, apostrophe and quotation mark must be substituted as:

Invalid Character	Valid Substitution
>	&gt;
<	&lt;
&	&amp;
'	&apos;
“	&quot;

Examples of character elements with alphanumeric data are:

<Address>123 Main Street, #5</Address>

<Comment>The corner of Main &Franklin streets</Comment>.

### 3.4.2 Integer Data Type

Elements in the ICIS Tag Element Dictionary having the integer data type contain numbers 0-9 and numeric operation characters such as < > - + . (decimal point). The length and format of the data is specified for each element. Common formats are whole numbers, numbers with floating decimals and number within a range such as 01 to 60. Leading and trailing spaces should be removed from integer the data. Leading and trailing zeroes are acceptable but an operation character must be located to the immediate left of the number.

Examples of an integer element with correct and incorrect numeric data are shown below:

Value	Incorrect	Correct	Correct
-456	456-	-456	-00456.0
789	789+	+789.0	+0789

### 3.4.3 Fixed Decimal Fields

Elements in the ICIS Tag Element Dictionary having the fixed decimal data type contain numbers 0-9 and numeric operation characters such as < > - + . (decimal point) beginning with an optional operation character followed by a string of numbers in varying length, then a decimal point followed by a string of numbers as specified.

Dictionary specifications indicate the total number of digits and the number of digits after the decimal that the data element is allowed. For example, “D11,6” indicates that the number may have up to 11 digits total: 6 digits after the decimal and the remaining 5 digits before the decimal (99999.999999). The period (.) character, representing the decimal, must be included for fixed decimal fields. The field length includes the decimal character. For D11,6 the field length would be 12 (the 11 digits plus the decimal).

Leading and trailing spaces should be removed from integer data. Leading and trailing zeroes are acceptable, but an operation character must be located to the immediate left of the number.

Examples of integer elements with a correct and incorrect data with fixed decimal of 6,2 is shown below:

Value	Incorrect	Correct	Correct
\$25	25	25.00	+000025.00
<b>467.358</b>	467.358	467.36	467.00

### 3.4.4 Date Fields

Elements in the ICIS Tag Element Dictionary having the date data type must be provided in CCYY-MM-DD format where CC is the century, YY is the year, MM is the month and DD is the day. Leading zeros must be provided where appropriate.

Examples of date field elements with correct and incorrect data are shown below:

Date	Incorrect	Incorrect	Correct
<b>January 31, 1999</b>	990131	Jan. 3, 1999	1999-01-31
<b>January 31, 2001</b>	20010131	01-31-01	2001-01-31

### 3.4.5 Empty Fields

All mandatory tags must be present in an XML instance document submitted to ICIS. All non-mandatory tags have constraints placed upon them by ICIS-NPDES batch schema to avoid data quality issues. If a non-mandatory tag is present in the XML file it must contain data – empty tags such as <FirstName></FirstName> and null tags like <FirstName> that are missing data will cause a record to be rejected.

## 3.5 FILE FORMAT CONVENTIONS FOR XML INSTANCE DOCUMENTS

ICIS-NPDES Batch is currently designed to accept up to 47 different types of XML instance documents based upon ICIS-NPDES data families, although only the DMR data family will be in production in Fiscal Year 2008. Data for these families can be submitted as one large XML instance document with all data families combined or one XML instance document for each data family. To avoid having difficulties finding errors in large files, users may want to submit each data family in its own XML file unless adding a new permit with its associated data.

### 3.5.1 Root Element and Header Block

All incoming XML instance documents must have the “Document” tag as the root element followed by a group of mandatory header elements or a “header block”. The Document tag provides the location of the ICIS-NPDES schema and the name of the main schema to validate against.

The header block elements provide information on the submitter and the XML instance document being submitted. Figure 3-4 shows an excerpt of a valid XML instance document with the correct placement and use of the document root element and the header block. Details on the characteristics of the elements for this header block are included in ICIS-NPDES XML Tag Dictionary. Lines in bold typeface must always be in the XML file and lines in blue must be in the XML file only if the parent tag is present.

<?xml version="1.0" encoding="UTF-8"?>

```
<Document xmlns="http://www.exchangenetwork.net/schema/icis/1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
  <Header>
    <Id>UUStaffer1</Id>
    <Author>Jane Doe</Author>
    <Organization>UU Department of Environmental Protection</Organization>
    <Title>Basic Permit Submission</Title>
    <CreationTime>2001-12-17T09:30:47.0Z</CreationTime>
    <Comment>2nd resubmittal of rejected transactions from May submission</Comment>
    <DataService>ICIS</DataService>
    <ContactInfo>123 Main Street, Anytown UU, 00555, (888) 555-1212, jane.doe@uudeq.state.us</ContactInfo>
    <Property>
      <name>e-mail</name>
      <value>doe.john@state.gov</value>
    </Property>
  </Header>
  ...
</Document>
```

**Figure 3-4. Document Root Element and Header Block of an ICIS XML Instance Document**

### 3.5.2 Payload Block

Below the Header block is the “payload block”. The payload tag starting this block acts as the parent tag for the start of submission for one of the planned 47 submission types by using an Operation attribute to identify which submission type follows. The Operation attribute format is: Operation= “xxx”, where xxx is the name of one of the submission types recognized by the ICIS-NPDES schema.

At least one payload block must be present in an XML instance document in order for it to be processed. Multiple payload blocks can exist as long as there is only one for each submission type. Figure 3-5 is an excerpt of a valid XML instance document with the correct placement and use of only one record block with its Payload tag and its Operation attribute set to “DischargeMonitoringReportSubmission”. Lines in bold typeface must always be in the XML file and lines in blue must be in the XML file only if the parent tag is present.

```
<?xml version="1.0" encoding="UTF-8"?>
<Document xmlns="http://www.exchangenetwork.net/schema/icis/1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
  <Header>
    <Id>UUStaffer1</Id>
    <Author>Jane Doe</Author>
    <Organization>UU Department of Environmental Protection</Organization>
    <Title>Basic Permit Submission</Title>
    <CreationTime>2001-12-17T09:30:47.0Z</CreationTime>
    <Comment>2nd resubmittal of rejected transactions from May submission</Comment>
    <DataService>ICIS</DataService>
    <ContactInfo>123 Main Street, Anytown UU, 00555, (888) 555-1212, jane.doe@uudeq.state.us</ContactInfo>
    <Property>
      <name>e-mail</name>
      <value>doe.john@epa.gov</value>
    </Property>
  </Header>
  <Payload Operation="DischargeMonitoringReportSubmission">
    ...
  </Payload>
</Document>
```

**Figure 3-5. Single Payload Block of an ICIS XML Instance Document**

Figure 3-6 is an excerpt of a valid XML instance document with the correct placement and use of multiple payload blocks, one with an Operation attribute of “BasicPermitSubmission” and the other with an Operation attribute of “DischargeMonitoringReportSubmission”. Note that “BasicPermitSubmission” and “DischargeMonitoringReportSubmission” can only be used as Operation attributes once in an XML submission file. Lines in bold typeface must always be in the XML file and lines in blue must be in the XML file only if the parent tag is present.

```
<?xml version="1.0" encoding="UTF-8"?>
<Document xmlns="http://www.exchangenetwork.net/schema/icis/1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <Header>
    <Id>UUStaffer1</Id>
    <Author>Jane Doe</Author>
    <Organization>UU Department of Environmental Protection</Organization>
    <Title>Basic Permit Submission</Title>
    <CreationTime>2001-12-17T09:30:47.0Z</CreationTime>
    <Comment>2nd resubmittal of rejected transactions from May submission</Comment>
    <DataService>ICIS</DataService>
    <ContactInfo>123 Main Street, Anytown UU, 00555, (888) 555-1212, jane.doe@uudeq.state.us</ContactInfo>
    <Property>
      <name>e-mail</name>
      <value>doe.john@epa.gov</value>
    </Property>
  </Header>
  <Payload Operation="BasicPermitSubmission">
    ...
  </Payload>
  <Payload Operation="DischargeMonitoringReportSubmission">
    ...
  </Payload>
</Document>
```

**Figure 3-6. Consecutive Repeating Payload Blocks of an ICIS XML Instance Document**

### 3.5.3 Record Block

The next block in the XML instance document is the “record block”. This block represents one record to be added, changed or deleted by ICIS-NPDES Batch. The tag name is identical to the name used as the Operation attribute except the “Submission” suffix is replaced with a “Data” suffix.

Each record block contains a “transaction type block” followed by a “data block”. The transaction block tells the ICIS-NPDES parser whether to add, change, replace, delete or mass delete the record whose key and optional data are in the data block. Refer to Section 3.2 (Transactional Processing) for an explanation of each transaction type planned for the various data families.

One record block must be present in an XML instance document in order for it to be processed. Multiple record blocks should be repeated consecutively for each record to be processed by ICIS. Figure 3-7 shows an excerpt of an XML instance document with repeating DischargeMonitoringReportData record blocks, each containing only one transaction block and one DischargeMonitoringReport data block. Lines in bold typeface must always be in the XML file and lines in blue must be in the XML file only if the parent tag is present.

```
<?xml version="1.0" encoding="UTF-8"?>
3-12
```

```

<Document xmlns="http://www.exchangenetwork.net/schema/icis/1" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
  <Header>
    <Id>UUStaffer1</Id>
    <Author>Jane Doe</Author>
    <Organization>UU Department of Environmental Protection</Organization>
    <Title>Basic Permit Submission</Title>
    <CreationTime>2001-12-17T09:30:47.0Z</CreationTime>
    <Comment>2nd resubmittal of rejected transactions from May submission</Comment>
    <DataService>ICIS</DataService>
    <ContactInfo>123 Main Street, Anytown UU, 00555, (888) 555-1212, jane.doe@uudeq.state.us</ContactInfo>
    <Property>
      <name>e-mail</name>
      <value>doe.john@state.us</value>
    </Property>
  </Header>
  <Payload Operation="DischargeMonitoringReportSubmission">
    <DischargeMonitoringReportData>
      <TransactionHeader>
        <TransactionType>N</TransactionType>
        <TransactionTimestamp>2001-12-17T09:30:47.0Z</TransactionTimestamp>
      </TransactionHeader>
      <DischargeMonitoringReport>
        ...
      </DischargeMonitoringReport>
    </DischargeMonitoringReportData>
    <DischargeMonitoringReportData>
      <TransactionHeader>
        <TransactionType>C</TransactionType>
        <TransactionTimestamp>2001-12-17T09:30:47.0Z</TransactionTimestamp>
      </TransactionHeader>
      <DischargeMonitoringReport>
        ...
      </DischargeMonitoringReport>
    </DischargeMonitoringReportData>
    <DischargeMonitoringReportData>
      <TransactionHeader>
        <TransactionType>D</TransactionType>
        <TransactionTimestamp>2001-12-17T09:30:47.0Z</TransactionTimestamp>
      </TransactionHeader>
      <DischargeMonitoringReport>
        ...
      </DischargeMonitoringReport>
    </DischargeMonitoringReportData>
    <DischargeMonitoringReportData>
      <TransactionHeader>
        <TransactionType>X</TransactionType>
        <TransactionTimestamp>2001-12-17T09:30:47.0Z</TransactionTimestamp>
      </TransactionHeader>
      <DischargeMonitoringReport>
        ...
      </DischargeMonitoringReport>
    </DischargeMonitoringReportData>
  </Payload>
</Document>

```

**Figure 3-7. Discharge Monitoring Report Record Blocks of an ICIS XML Instance Document**

Table 3-3 provides a listing of each planned submission type with its Payload Operation attribute value to use, along with the record block tag name and data block tag name. Again, only the DMR submission types will be in production in Fiscal Year 2008.

Submission Type	Payload Operation Attribute	Record Block	Data Block
Basic Permit	"BasicPermitSubmission"	BasicPermitData	BasicPermit
Biosolids Permit Component	"BiosolidsPermitSubmission"	BiosolidsPermitData	BiosolidsPermit
Biosolids Program Report	"BiosolidsProgramReportSubmission"	BiosolidsProgramReportData	BiosolidsProgramReport
CAFO Annual Report	"CAFOAnnualReportSubmission"	CAFOAnnualReportData	CAFOAnnualReport
CAFO Inspection	"CAFOInspectionSubmission"	CAFOInspectionData	CAFOInspection
CAFO Permit Component	"CAFOPermitSubmission"	CAFOPermitData	CAFOPermit
Compliance Monitoring Linkage	"ComplianceMonitoringLinkageSubmission"	ComplianceMonitoringLinkageData	ComplianceMonitoringLinkage
Compliance Monitoring	"ComplianceMonitoringSubmission"	ComplianceMonitoringData	ComplianceMonitoring
Compliance Schedule	"ComplianceScheduleSubmission"	ComplianceScheduleData	ComplianceSchedule
CSO Event Report	"CSOEventReportSubmission"	CSOEventReportData	CSOEventReport
CSO Inspection	"CSOInspectionSubmission"	CSOInspectionData	CSOInspection
CSO Permit	"CSOPermitSubmission"	CSOPermitData	CSOPermit
DMR Violation	"DMRViolationSubmission"	DMRViolationData	DMRViolation
Discharge Monitoring Report	"DischargeMonitoringReportSubmission"	DischargeMonitoringReportData	DischargeMonitoringReport
Enforcement Action Violation Key	"EnforcementActionViolationKeySubmission"	EnforcementActionViolationKeyData	EnforcementActionViolationKey
Effluent Trade Partner	"EffluentTradePartnerSubmission"	EffluentTradePartnerData	EffluentTradePartner
Facility	"FacilitySubmission"	FacilityData	Facility
Formal Enforcement Action	"FormalEnforcementActionSubmission"	FormalEnforcementActionData	FormalEnforcementAction
General Permit Covered Facility	"GeneralPermitSubmission"	GeneralPermitData	GeneralPermit
Informal Enforcement Action	"InformalEnforcementActionSubmission"	InformalEnforcementActionData	InformalEnforcementAction
Limit Set	"LimitSetSubmission"	LimitSetData	LimitSet
Limit	"LimitsSubmission"	LimitsData	Limits
Local Limit Program Report	"LocalLimitsProgramReportSubmission"	LocalLimitsProgramReportData	LocalLimitsProgramReport
Master General Permit	"MasterGeneralPermitSubmission"	MasterGeneralPermitData	MasterGeneralPermit
Narrative Condition	"NarrativeConditionSubmission"	NarrativeConditionData	NarrativeCondition
Permit Reissuance	"PermitReissuanceSubmission"	PermitReissuanceData	PermitReissuance
Permit Schedule	"PermitScheduleSubmission"	PermitScheduleData	PermitScheduleEvent
Permit Tracking Event	"PermitTrackingEventSubmission"	PermitTrackingEventData	PermitTrackingEvent
Permitted Feature	"PermittedFeatureSubmission"	PermittedFeatureData	PermittedFeature
Pretreatment Inspection	"PretreatmentInspectionSubmission"	PretreatmentInspectionData	PretreatmentInspection
Pretreatment	"PretreatmentPermitSubmission"	PretreatmentPermitData	PretreatmentPermit

Submission Type	Payload Operation Attribute	Record Block	Data Block
<b>Permit Component</b>			
<b>Pretreatment Program Summary</b>	"PretreatmentProgramSummarySubmission"	PretreatmentProgramData	PretreatmentProgram
<b>Schedule Event Violation</b>	"ScheduleEventViolationSubmission"	ScheduleEventViolationData	ScheduleEventViolation
<b>Single Event Violation</b>	"SingleEventViolationSubmission"	SingleEventViolationData	SingleEventViolation
<b>SSO Annual Report</b>	"SSOAnnualReportSubmission"	SSOAnnualReportData	SSOAnnualReport
<b>SSO Event Report</b>	"SSOEventReportSubmission"	SSOAnnualReportData	SSOAnnualReport
<b>SSO Inspection</b>	"SSOInspectionSubmission"	SSOInspectionData	SSOInspection
<b>SSO Monthly Event Report</b>	"SSOMonthlyEventReportSubmission"	SSOMonthlyEventReportData	SSOMonthlyEventReport
<b>SSO Permit Component</b>	"SSOPermitSubmission"	SSOPermitData	SSOPermit
<b>Storm Water Construction Permit</b>	"SWConstructionPermitSubmission"	SWConstructionPermitData	SWConstructionPermit
<b>Storm Water Event Report</b>	"SWEventReportSubmission"	SWEventReportData	SWEventReport
<b>Storm Water Industrial Permit</b>	"SWIndustrialPermitSubmission"	SWIndustrialPermitData	SWIndustrialPermit
<b>Storm Water Inspection</b>	"SWInspectionSubmission"	SWInspectionData	SWInspection
<b>Storm Water MS4 Large Permit</b>	"SWMS4LargePermitSubmission"	SWMS4LargePermitData	SWMS4LargePermit
<b>Storm Water MS4 Program Report</b>	"SWMS4ProgramReportSubmission"	SWMS4ProgramReportData	SWMS4ProgramReport
<b>Storm Water MS4 Small Permit</b>	"SWMS4SmallPermitSubmission"	SWMS4SmallPermitData	SWMS4SmallPermit
<b>Sub Activity</b>	"SubActivitySubmission"	SubActivityData	SubActivity

**Table 3-3. Operation Attribute, Record Block and Data Block for each Submission Type**

### 3.5.4 Data Blocks and Child Blocks

Data blocks contain key field tags at the top to identify the record followed by other tags and child blocks of data for adding or changing. Only key field tags need to be provided for delete and mass deleting of records - if non-key field tags are present the ICIS-NPDES parser will ignore them.

Child blocks represent a set of fields associated with the record that can be repeated. If a child block is optional and is submitted in an XML instance document, one or more tags in that block must exist. The ICIS-NPDES XML Instance Document provides examples of XML submission files with all key field and optional tags in formats acceptable to the ICIS-NPDES parser, and the ICIS-NPDES Data Exchange Template contains the Data Dictionary for each tag.

### 3.6 GENERIC EDITS

When a file is submitted, CDX and ICIS-NPDES Batch perform various generic edits as explained below.

### 3.6.1 CDX Edit Checks

The data provided in the file submission must meet data quality standards. CDX will reject XML instance documents and report the first 100 errors that occur when:

- XML instance document has an extension other than .xml or .zip, or has a filename that is unrecognizable or invalid,
- zip compressed file is empty,
- XML instance document has empty or null tags, is incomplete, corrupt, not valid, and/or not well formed,
- submitter ID and/or password not valid for CDX,
- a data flow indicator code mismatch from state nodes (must be "ICIS-NPDES")
- a file infected with a virus

### 3.6.2 ICIS-NPDES Pre-Parser Edit Checks

ICIS-NPDES may encounter file-level problems such as retrieving a submission file or processing it due to communication, database access, or file corruption problems. When any of these situations are encountered ICIS-NPDES logs the error with a generic message of "Unable to parse file <filename> because <java method>; <error message>" and sends CDX a PDF file containing the error.

### 3.6.3 ICIS-NPDES Parser Edit Checks

The ICIS-NPDES parser will reject XML instance documents if it cannot extract and process data for the following reasons:

- mandatory data missing,
- one or more header block elements missing,
- prohibited character found in alphanumeric field,
- invalid character found or incorrect format in numeric field,
- invalid character found in date field,
- invalid date found in date field,
- the a primary key has a space or invalid alphanumeric,
- transaction code is not allowed for the submission type according to Table 3-1,
- submitter ID not valid for ICIS-NPDES,
- submitter ID does not have rights to add/change/delete data in ICIS-NPDES, or
- submitter ID is not allowed to add/change/delete data belonging to another state, tribe or EPA region.

### 3.6.4 ICIS-NPDES System Edit Checks

Other errors may be discovered at the time ICIS-NPDES system receives and processes the data. These errors include:

- parent record not found for child record to be added,
- record already exists for record to be added,
- record non existent for change, delete transactions,
- data not valid for database field edit checks,
- prohibited character(s) found in the XML submission record,
- mandatory data missing, or
- invalid code.

### 3.6.5 ICIS-NPDES Multi-Value Edit Checks

Many of the ICIS data families are planned to contain single tags or parent blocks for which multiple values can be entered, such as Crop Types Planted in Discharge Monitoring Reports and SIC Codes in Permits. Table 3-4 lists the multiple value single tags and parent blocks.

Schema Name	# Multi-Value Items	Schema Data (p = parent tag, s = single block)	Comments
BasicPermitData	5	1. SICCodeDetails (p) 2. NAICSCodeDetails (p) 3. OtherPermits (p) 4. AssociatedPermit (p) 5. PermitContact (p)	
BiosolidsPermitData	3	1. BiosolidsTypeCode (s) 2. BiosolidsEndUseDisposalType (s) 3. BiosolidsPermitContact (p)	
BiosolidsProgramReportData	0		
CAFOAnnualReportData	1	1. ReportedAnimalType (p)	
CAFOInspectionData	6	1. CAFOContact (p) 2. AnimalType (p) 3. ManureLitterProcessedWastewaterStorage (p) 4. Containment (p) 5. LandApplication (p) 6. CAFOInspectionViolationTypeCode (s)	
CAFOPermitData	5	1. CAFOContact (p) 2. AnimalType (p) 3. ManureLitterProcessedWastewaterStorage (p) 4. Containment (p) 5. LandApplication (p)	
ComplianceMonitoringData		1. ComplianceMonitoringActionReasonCode (s) 2. ComplianceMonitoringAgencyTypeCode (s) 3. InspectorContact (p)	Asterisks are not allowed for ComplianceMonitoringActionReasonCode and ComplianceMonitoringAgencyTypeCode.
ComplianceMonitoringLinkageData	0		
ComplianceScheduleData	0		
CSOEventReportData	0		
CSOInspectionData	0		
CSOPermitData	1	1. SatelliteCollectionSystem (p)	
DischargeMonitoringReportData	2	1. CropTypesPlanted (s) 2. CropTypesHarvested (s)	
DMRProgramReportLinkageData	0		
DMRViolationData	0		
EffluentTradePartnerData	0		
EnforcementActionViolationKeyData	0		

Schema Name	# Multi-Value Items	Schema Data (p = parent tag, s = single block)	Comments
<b>FacilityData</b>	6	1. FacilityClassification (s) 2. PolicyCode (s) 3. OriginatingPrograms (s) 4. SICCodeDetails (p) 5. NAICSCodeDetails (p) 6. FacilityContact (p)	FacilityClassification, PolicyCode, and OriginatingPrograms should be changed to Max Unbounded in the schema. This is being noted in the 1.4d schema analyses.
<b>FormalEnforcementActionData</b>	3	1. PermitIdentifier (s) 2. EnforcementActionTypeCode (s) 3. ProgramsViolatedCode (s)	Asterisks are not allowed for these three items.
<b>GeneralPermi Data</b>	5	1. SICCodeDetails (p) 2. NAICSCodeDetails (p) 3. OtherPermits (p) 4. AssociatedPermit (p) 5. PermitContact (p)	
<b>InformalEnforcementActionData</b>	3	1. PermitIdentifier (s) 2. EnforcementActionTypeCode (s) 3. ProgramsViolatedCode (s)	Asterisks are not allowed for these three items.
<b>LimitsData</b>	1	1. MonthLimitApplies (s)	Asterisks are not allowed for this item.
<b>LimitSetData</b>	1	1. LimitSetMonthsApplicable (s)	Asterisks are not allowed for this item.
<b>LocalLimitsProgramReportData</b>	2	1. LocalLimitsPollutantCode (s) 2. RemovalCreditsPollutantCode (s)	
<b>MasterGeneralPermitData</b>	6	1. SIC Code (p) 2. NAICS Code (p) 3. MasterGeneralPermitContact (p) 4. PermitComponentTypeCode (s)	
<b>NarrativeConditionData</b>	0		
<b>PermitScheduleData</b>	0		
<b>PermittedFeatureData</b>	3	1. PermittedFeatureCharacteristics (s) 2. PermittedFeatureTreatmentTypeCode (s) 3. SiteOwnerContact (p)	
<b>PermitTrackingEventData</b>	0		
<b>POTWPermitData</b>	1	1. SatelliteCollectionSystem (p)	
<b>PretreatmentInspectionData</b>	2	1. LocalLimitsPollutantCode (s) 2. RemovalCreditsPollutantCode (s)	
<b>PretreatmentPerformanceSummaryData</b>	2	1. LocalLimitsPollutantCode (s) 2. RemovalCreditsPollutantCode (s)	
<b>PretreatmentPermitData</b>	1	1. PretreatmentContact (p)	
<b>ScheduleEventViolationData</b>	0		
<b>SingleEventViolationData</b>	0		
<b>SSOAnnualReportData</b>	0		
<b>SSOEventReportData</b>	3	1. ImpactofSSOEvent (s) 2. SSOSystemComponent (p) 3. SSOSTeps (p)	
<b>SSOInspectionData</b>	3	1. ImpactofSSOEvent (s) 2. SSOSystemComponent (p) 3. SSOSTeps (p)	

Schema Name	# Multi-Value Items	Schema Data (p = parent tag, s = single block)	Comments
SSOMonthlyEventReportData	0		
SubActivityData	0		
SWaterConstructionPermitData	3	1. StateWaterBodyName 2. ReceivingMS4Name 3. StormWaterContact (p)	
SWEventReportData	1	1. StormWaterContact (p)	
SWIndustrialPermitData	3	1. StateWaterBodyName (s) 2. ReceivingMS4Name (s) 3. StormWaterContact (p)	
SWInspectionData	2	1. ProjectedSourcesofFunding 2. StormWaterContact (p)	
SWMS4LargePermitData	3	1. StateWaterBodyName (s) 2. ReceivingMS4Name (s) 3. StormWaterContact (p)	ProjectedSourcesofFundingCode is a single-select in the application and max unbounded in the schema. This tag is also used in the SWMS4ProgramReportData and SWInspectionData schemas, and in those cases it really is a multi-select. A different tag is needed for this field on the Storm Water Permit components. This has been noted in the 1.4d schema analyses. If this change is not made, then ProjectedSourcesofFunding must be added to this list of multi-value fields and the application must be updated.
SWMS4ProgramReportData	2	1. ProjectedSourcesofFundingCode (s) 2. StormWaterContact (p)	
SWMS4SmallPermitData	3	1. StateWaterBodyName (s) 2. ReceivingMS4Name (s) 3. StormWaterContact (p)	ProjectedSourcesofFundingCode is a single-select in the application and max unbounded in the schema. This tag is also used in the SWMS4ProgramReportData and SWInspectionData schemas, and in those cases it really is a multi-select. A different tag is needed for this field on the Storm Water Permit components. This has been noted in the 1.4d schema analyses. If this change is not made, then ProjectedSourcesofFunding must be added to this list of multi-value fields and the application must be updated.
UnpermittedFacilityData	0		

**Table 3-4. Multiple value single tags and parent blocks.**

Whenever tags for one of these multi-value items are included in an XML, ICIS will handle the list as if the Transaction Type for that portion of the XML is Replace and delete any previously existing data for these lists then add the values included in the XML. Tables 3-5 through 3-10 below illustrate this concept.

Crop Types Planted in ICIS DB	CropTypesPlanted in XML (Transaction Type of Change or Replace)	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007 – Transaction Type = Change or Replace		
BC – Broccoli	<CropTypesPlanted>BC</CropTypesPlanted>	BC – Broccoli

Crop Types Planted in ICIS DB	CropTypesPlanted in XML (Transaction Type of Change or Replace)	Result saved to ICIS DB
CO – Corn	<CropTypesPlanted>WH</CropTypesPlanted>	WH – Wheat
LE – Legumes		
WH - Wheat		

**Table 3-5. Remove two crops from existing list of four Crop Types Planted.**

Crop Types Planted in ICIS DB	CropTypesPlanted in XML (Transaction Type of Change or Replace)	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007 – Transaction Type = Change or Replace		
BC – Broccoli	<CropTypesPlanted>TO</CropTypesPlanted>	TO - Tomatoes
CO – Corn		
LE – Legumes		
WH – Wheat		

**Table 3-6. Alter an existing list of Crop Types Planted to one new crop.**

SIC Codes in ICIS DB	SICCodeDetails in XML (Transaction Type of Change or Replace)	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007 – Transaction Type = Change		
8041 – Primary	<SICCodeDetails> <SICCode>8041</SICCode> <SICPrimaryIndicatorCode>Y</SICPrimaryIndicatorCode> </SICCodeDetails> <SICCodeDetails> <SICCode>9511</SICCode> <SICPrimaryIndicatorCode>N</SICPrimaryIndicatorCode> </SICCodeDetails>	8041 - Primary
8734		9511
9511		
8063		

**Table 3-7. Remove two SIC Codes from existing list of four SIC codes.**

SIC Codes in ICIS DB	SICCodeDetails in XML (Transaction Type of Change or Replace)	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007 – Transaction Type = Change or Replace		
8041 - Primary	<SICCodeDetails> <SICCode>8071</SICCode> <SICPrimaryIndicatorCode>Y</SICPrimaryIndicatorCode> </SICCodeDetails> <SICCodeDetails> <SICCode>8099</SICCode> <SICPrimaryIndicatorCode>N</SICPrimaryIndicatorCode> </SICCodeDetails>	8071 - Primary
8734		8099
9511		
8063		

**Table 3-8. Alter an existing list of four SIC Codes to two new SIC Codes.**

To remove all existing codes or data for a multi-value item, submit an asterisk for the single tag or an asterisk in each of the required tags within a multi-value parent block. Exhibit 13 illustrates

how to submit asterisks in single tags and exhibit 14 shows how to submit asterisks in multi-value parent blocks.

Crop Types Planted in ICIS DB	CropTypesPlanted in XML (Transaction Type of Change or Replace)	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007 – Transaction Type = Change or Replace		
BC – Broccoli	<CropTypesPlanted>*</CropTypesPlanted>	No Crop Types Planted for this DMR
CO – Corn		
LE – Legumes		
WH - Wheat		

**Table 3-9. Remove all existing Crop Types Planted codes using the CropTypesPlanted single tag.**

SIC Codes in ICIS DB	SICCodeDetails in XML (Transaction Type of Change or Replace)	Result saved to ICIS DB
NPDES ID VA1234567 – Transaction Type = Replace		
8041	<SICCodeDetails> <SICCode>*</SICCode> <SICPrimaryIndicatorCode>*</ SICPrimaryIndicatorCode>	No primary or secondary SIC Codes for this Permit
8734		
9511		

**Table 3-10. Remove all existing SIC codes using the SICCodeDetails parent block.**

All items listed in Exhibit 8 can be removed from a record except the ComplianceMonitoringActionReasonCode, ComplianceMonitoringAgencyTypeCode, PermitIdentifier, EnforcementActionCode, ProgramsViolatedCode, MonthLimitApplies and LimitSetMonthsApplicable items. These items must have at least one permit identifier for an enforcement action, one code for an enforcement action or inspection, or one month associated with a limit set or limit.

## 4 WORKING WITH ICIS-NPDES SCHEMA FILES

The ICIS-NPDES schema files adhere to version 1 of the XML Design Rules and Convention and the names of applicable schema elements match EPA data element standards and XML tag data standards approved as of June 2006. The ICIS-NPDES schema files for DMRs only will be subject to a second round of Exchange Network review and are expected to be approved in Spring 2008.

It is important that batch submitters review the valid codes for ICIS-NPDES and convert existing codes to the ICIS-NPDES codes. These codes can be retrieved from the ICIS-NPDES Ad Hoc Reports module or from ICIS User Support.



*ICIS-NPDES Batch does not use or support Schematron files!*

### 4.1 ICIS-NPDES BATCH PROCESSING AND IDEF, PCS

Data specifications for ICIS-NPDES Batch differ significantly from the Interim Data Exchange Format (IDEF) schema. ICIS-NPDES DMR Batch, e-DMR, and PCS batch submitters will need to create or modify their software to generate XML instance documents that are valid and well-formed according to version 1.5 of the ICIS-NPDES schema. In addition, submitters must validate their XML submittal files against the ICIS\_V1.5.xsd schema file with an XML validation tool before submitting the XML to CDX.

### 4.2 ICIS-NPDES SCHEMA, EXAMPLES AND DATA DICTIONARY

ICIS-NPDES schema files are located at <http://www.exchangenetwork.net/schema/icis/1>. Complete data specifications for all elements to be submitted in XMLs and the mapping between ICIS tags, IDEF tags and PCS fields are provided in the ICIS-NPDES XML Tag Dictionary located in the ICIS-NPDES XML Data Exchange Template document.



*The most current version of ICIS schema files are accessible by your XML schema validation software on the web at <http://www.exchangenetwork.net/schema/icis/1> !*

### 4.3 WORKING WITH ICIS-NPDES SCHEMA

States creating modules to generate their own XML instance documents will find it easier to work from submission examples rather than translate the ICIS-NPDES schema files. It is best to use the examples from the ICIS-NPDES Example XML Instance Document as templates for developing your XML submission files because this document provides mandatory and optional tags for the different transaction types and explanations of how to tweak your XML file.

However, if you need to create sample XML submission files, they can be generated from the ICIS-NPDES schema files using a commercial off-the-shelf (COTS) XML validating software package. To do this:

- 1) load ICIS\_V1.xx.xsd into the COTS XML validating software (where xxx is the version such as "4g"),
- 2) comment out the names of all submission types except the one desired among the PayloadData elements and the OperationType enumerations, then
- 3) select the Document tag to generate the examples from the list of available root elements.

Figure 4-1 shows how to generate an example XML file for Discharge Monitoring Reports only by commenting out elements and enumerations (in gray) and leaving only the lines pertaining to DMRs active (in blue).

```

<xsd:complexType name="PayloadData">
  <xsd:choice>
    <!--xsd:element name="BasicPermitData" type="icis:BasicPermitData"
maxOccurs="unbounded"/>
    <xsd:element name="BiosolidsPermitData" type="icis:BiosolidsPermitData"
maxOccurs="unbounded"/>
    <xsd:element name="BiosolidsProgramReportData"
type="icis:BiosolidsProgramReportData" maxOccurs="unbounded"/>
    <xsd:element name="CAFOAnnualReportData" type="icis:CAFOAnnualReportData"
maxOccurs="unbounded"/>
    <xsd:element name="CAFOInspectionData" type="icis:CAFOInspectionData"
maxOccurs="unbounded"/>
    <xsd:element name="CAFOPermitData" type="icis:CAFOPermitData"
maxOccurs="unbounded"/>
    <xsd:element name="ComplianceMonitoringLinkageData"
type="icis:ComplianceMonitoringLinkageData" maxOccurs="unbounded"/>
    <xsd:element name="ComplianceMonitoringData" type="icis:ComplianceMonitoringData"
maxOccurs="unbounded"/>
    <xsd:element name="ComplianceScheduleData" type="icis:ComplianceScheduleData"
maxOccurs="unbounded"/>
    <xsd:element name="CSOEventReportData" type="icis:CSOEventReportData"
maxOccurs="unbounded"/>
    <xsd:element name="CSOInspectionData" type="icis:CSOInspectionData"
maxOccurs="unbounded"/>
    <xsd:element name="CSOPermitData" type="icis:CSOPermitData" maxOccurs="unbounded"/-
->
    <xsd:element name="DischargeMonitoringReportData"
type="icis:DischargeMonitoringReportData" maxOccurs="unbounded"/>
    <!--xsd:element name="DMRViolationData" type="icis:DMRViolationData"
maxOccurs="unbounded"/>
    <xsd:element name="EffluentTradePartnerData" type="icis:EffluentTradePartnerData"
maxOccurs="unbounded"/>
    <xsd:element name="EnforcementActionViolationKeyData"
type="icis:EnforcementActionViolationKeyData" maxOccurs="unbounded"/>
    <xsd:element name="FacilityData" type="icis:FacilityData" maxOccurs="unbounded"/>
    <xsd:element name="FormalEnforcementActionData"
type="icis:FormalEnforcementActionData" maxOccurs="unbounded"/>
    <xsd:element name="GeneralPermitData" type="icis:GeneralPermitData"
maxOccurs="unbounded"/>
    <xsd:element name="InformalEnforcementActionData"
type="icis:InformalEnforcementActionData" maxOccurs="unbounded"/>
    <xsd:element name="LimitSetData" type="icis:LimitSetData" maxOccurs="unbounded"/>
    <xsd:element name="LimitsData" type="icis:LimitsData" maxOccurs="unbounded"/>
    <xsd:element name="LocalLimitsProgramReportData"
type="icis:LocalLimitsProgramReportData" maxOccurs="unbounded"/>
    <xsd:element name="MasterGeneralPermitData" type="icis:MasterGeneralPermitData"
maxOccurs="unbounded"/>
    <xsd:element name="NarrativeConditionData" type="icis:NarrativeConditionData"
maxOccurs="unbounded"/>
    <xsd:element name="PermitReissuanceData" type="icis:PermitReissuanceData"
maxOccurs="unbounded"/>
    <xsd:element name="PermitsScheduleData" type="icis:PermitsScheduleData"
maxOccurs="unbounded"/>
  
```

```

    <xsd:element name="PermittedFeatureData" type="icis:PermittedFeatureData"
maxOccurs="unbounded" />
    <xsd:element name="PermitTrackingEventData" type="icis:PermitTrackingEventData"
maxOccurs="unbounded" />
    <xsd:element name="PretreatmentInspectionData"
type="icis:PretreatmentInspectionData" maxOccurs="unbounded" />
    <xsd:element name="PretreatmentPermitData" type="icis:PretreatmentPermitData"
maxOccurs="unbounded" />
    <xsd:element name="PretreatmentProgramSummaryData"
type="icis:PretreatmentProgramSummaryData" maxOccurs="unbounded" />
    <xsd:element name="ScheduleEventViolationData"
type="icis:ScheduleEventViolationData" maxOccurs="unbounded" />
    <xsd:element name="SingleEventViolationData" type="icis:SingleEventViolationData"
maxOccurs="unbounded" />
    <xsd:element name="SSOAnnualReportData" type="icis:SSOAnnualReportData"
maxOccurs="unbounded" />
    <xsd:element name="SSOEventReportData" type="icis:SSOEventReportData"
maxOccurs="unbounded" />
    <xsd:element name="SSOInspectionData" type="icis:SSOInspectionData"
maxOccurs="unbounded" />
    <xsd:element name="SSOMonthlyEventReportData" type="icis:SSOMonthlyEventReportData"
maxOccurs="unbounded" />
    <xsd:element name="SSOPermitData" type="icis:SSOPermitData" maxOccurs="unbounded" />
    <xsd:element name="SubActivityData" type="icis:SubActivityData"
maxOccurs="unbounded" />
    <xsd:element name="SWConstructionPermitData" type="icis:SWConstructionPermitData"
maxOccurs="unbounded" />
    <xsd:element name="SWEventReportData" type="icis:SWEventReportData"
maxOccurs="unbounded" />
    <xsd:element name="SWIndustrialPermitData" type="icis:SWIndustrialPermitData"
maxOccurs="unbounded" />
    <xsd:element name="SWInspectionData" type="icis:SWInspectionData"
maxOccurs="unbounded" />
    <xsd:element name="SWMS4LargePermitData" type="icis:SWMS4LargePermitData"
maxOccurs="unbounded" />
    <xsd:element name="SWMS4ProgramReportData" type="icis:SWMS4ProgramReportData"
maxOccurs="unbounded" />
    <xsd:element name="SWMS4SmallPermitData" type="icis:SWMS4SmallPermitData"
maxOccurs="unbounded" /-->
  </xsd:choice>
  <xsd:attribute name="Operation" type="icis:OperationType" use="required" />
</xsd:complexType>
<xsd:simpleType name="OperationType">
  <xsd:restriction base="xsd:string">
    <!--xsd:enumeration value="BasicPermitSubmission" />
    <xsd:enumeration value="BiosolidsPermitSubmission" />
    <xsd:enumeration value="BiosolidsProgramReportSubmission" />
    <xsd:enumeration value="CAFOAnnualReportSubmission" />
    <xsd:enumeration value="CAFOInspectionSubmission" />
    <xsd:enumeration value="CAFOPermitSubmission" />
    <xsd:enumeration value="ComplianceMonitoringLinkageSubmission" />
    <xsd:enumeration value="ComplianceMonitoringSubmission" />
    <xsd:enumeration value="ComplianceScheduleSubmission" />
    <xsd:enumeration value="CSOEventReportSubmission" />
    <xsd:enumeration value="CSOInspectionSubmission" />
    <xsd:enumeration value="CSOPermitSubmission" /-->
    <xsd:enumeration value="DischargeMonitoringReportSubmission" />
    <!--xsd:enumeration value="DMRViolationSubmission" />
    <xsd:enumeration value="EffluentTradePartnerSubmission" />
    <xsd:enumeration value="EnforcementActionViolationKeySubmission" />
    <xsd:enumeration value="FacilitySubmission" />
    <xsd:enumeration value="FormalEnforcementActionSubmission" />
    <xsd:enumeration value="GeneralPermitSubmission" />
    <xsd:enumeration value="InformalEnforcementActionSubmission" />
    <xsd:enumeration value="LimitSetSubmission" />
    <xsd:enumeration value="LimitsSubmission" />
    <xsd:enumeration value="LocalLimitsProgramReportSubmission" />
    <xsd:enumeration value="MasterGeneralPermitSubmission" />
    <xsd:enumeration value="NarrativeConditionSubmission" />
    <xsd:enumeration value="PermitReissuanceSubmission" />
    <xsd:enumeration value="PermitScheduleSubmission" />
  </xsd:restriction>

```

```

<xsd:enumeration value="PermittedFeatureSubmission"/>
<xsd:enumeration value="PermitTrackingEventSubmission"/>
<xsd:enumeration value="PretreatmentInspectionSubmission"/>
<xsd:enumeration value="PretreatmentPermitSubmission"/>
<xsd:enumeration value="PretreatmentProgramSummarySubmission"/>
<xsd:enumeration value="ScheduleEventViolationSubmission"/>
<xsd:enumeration value="SingleEventViolationSubmission"/>
<xsd:enumeration value="SSOAnnualReportSubmission"/>
<xsd:enumeration value="SSOEventReportSubmission"/>
<xsd:enumeration value="SSOInspectionSubmission"/>
<xsd:enumeration value="SSOMonthlyEventReportSubmission"/>
<xsd:enumeration value="SSOPermitSubmission"/>
<xsd:enumeration value="SubActivitySubmission"/>
<xsd:enumeration value="SWConstructionPermitSubmission"/>
<xsd:enumeration value="SWEventReportSubmission"/>
<xsd:enumeration value="SWIndustrialPermitSubmission"/>
<xsd:enumeration value="SWInspectionSubmission"/>
<xsd:enumeration value="SWMS4LargePermitSubmission"/>
<xsd:enumeration value="SWMS4ProgramReportSubmission"/>
<xsd:enumeration value="SWMS4SmallPermitSubmission"/!-->
</xsd:restriction>
</xsd:simpleType>
    
```

**Figure 4-1. Excerpt of ICIS\_v1.4g.xsd with Elements and Enumerations Commented Out to Generate Sample XML Instance Document of Discharge Monitoring Report Only.**



*This is not the recommended approach for generating templates because data provided through this method may not be in the correct format, tags may be missing and mandatory fields are not obvious. Use the example XML templates provided in the ICIS-NPDES Example XML Instance Document instead!*

#### 4.4 VALIDATING XML FILES WITH ICIS-NPDES SCHEMA

State, tribe and EPA region batch generation software must validate the XML files they generate against the ICIS schema before submitting them to ICIS Batch through CDX. This is done using a COTS schema validation software package.

XML submission files must have a root element called “Document” that contains a namespace called “<http://www.exchangenetwork.net/schema/icis/1>” pointing to where the ICIS-NPDES Batch schema files reside. This namespace is used to point CDX to the correct version of ICIS-NPDES Batch schema for validation purposes. Submission XMLs with an incorrect or missing namespace will be rejected by CDX.

Section 4.4.1 lists various COTS schema validation software and instructions for validating the example XML files in this document or any XML file a state generates for ICIS during their DMR batch development using the Stylus Studio schema validation package are presented in section 4.4.2 below. Be sure to follow these steps in the order given.

#### 4.4.1 Schema Validation Software

Web-Based XML Validators:

- **XSV** = <http://www.w3.org/2001/03/webdata/xsv>
- **CDX** = <http://tools.epacdxnode.net/>

Free Standalone XML Validators:

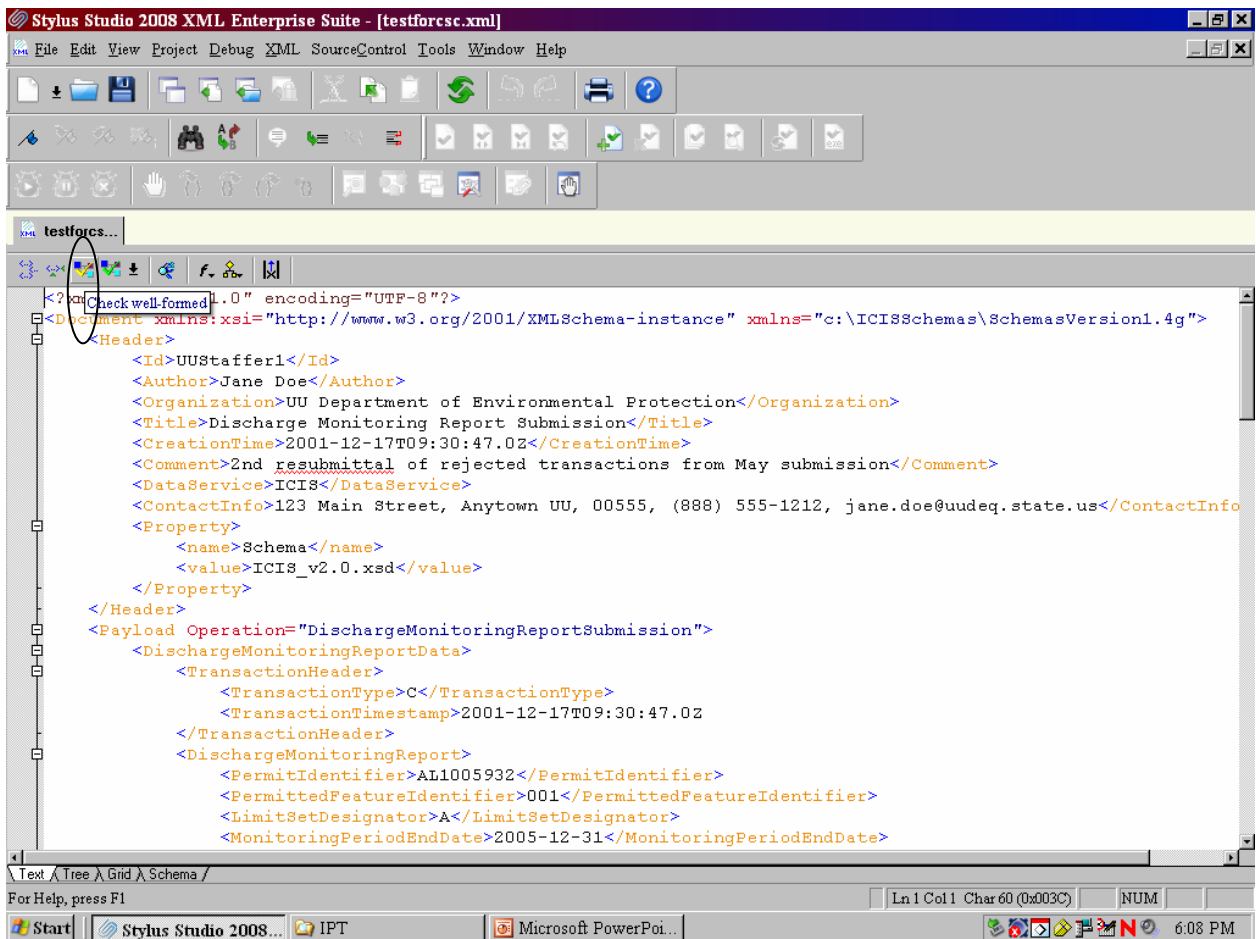
- **XSV** = <http://www.ltg.ed.ac.uk/~ht/xsv-status.html>
- **XML Starlet** = <http://xmlstar.sourceforge.net>
- **Microsoft** = <http://www.softlookup.com/display.asp?id=23260>

Trial XML Validators:

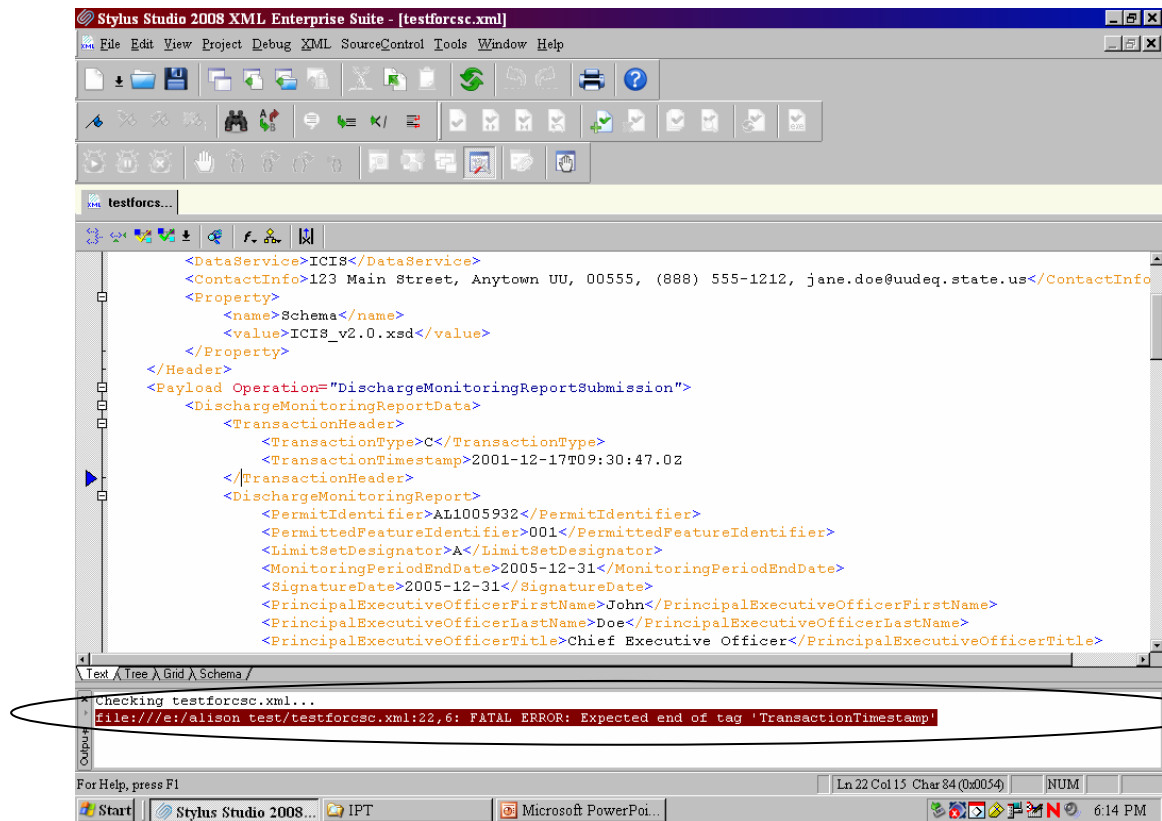
- **XML Spy** = [http://www.altova.com/support\\_freexmlspyhome.asp](http://www.altova.com/support_freexmlspyhome.asp)
- **<oxygen/> XML Editor** = <http://www.oxygenxml.com/>
- **Stylus Studio** = [http://www.stylusstudio.com/xml\\_download.html](http://www.stylusstudio.com/xml_download.html)

## 4.4.2 Schema Validation with Stylus Studio

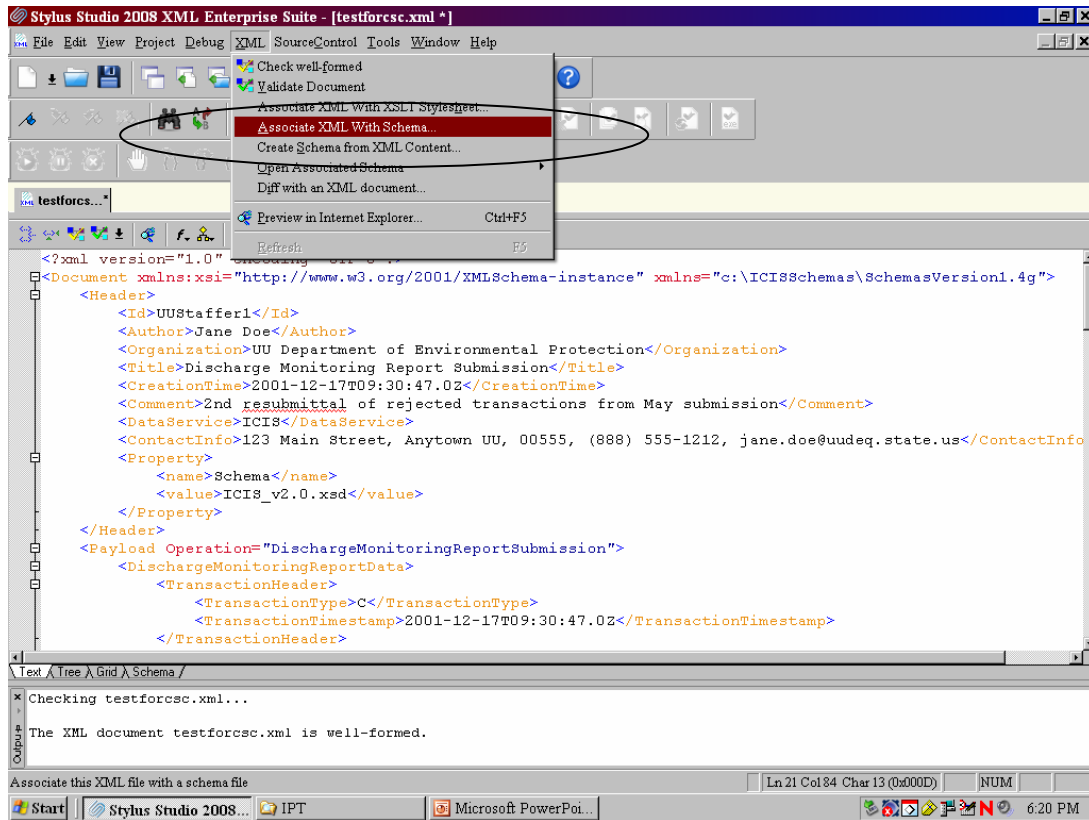
1. Start Stylus Studio.
2. Click on File/Open and double-click on the XML file to be validated.
3. Click on the “Check well-formed” icon in the small toolbar



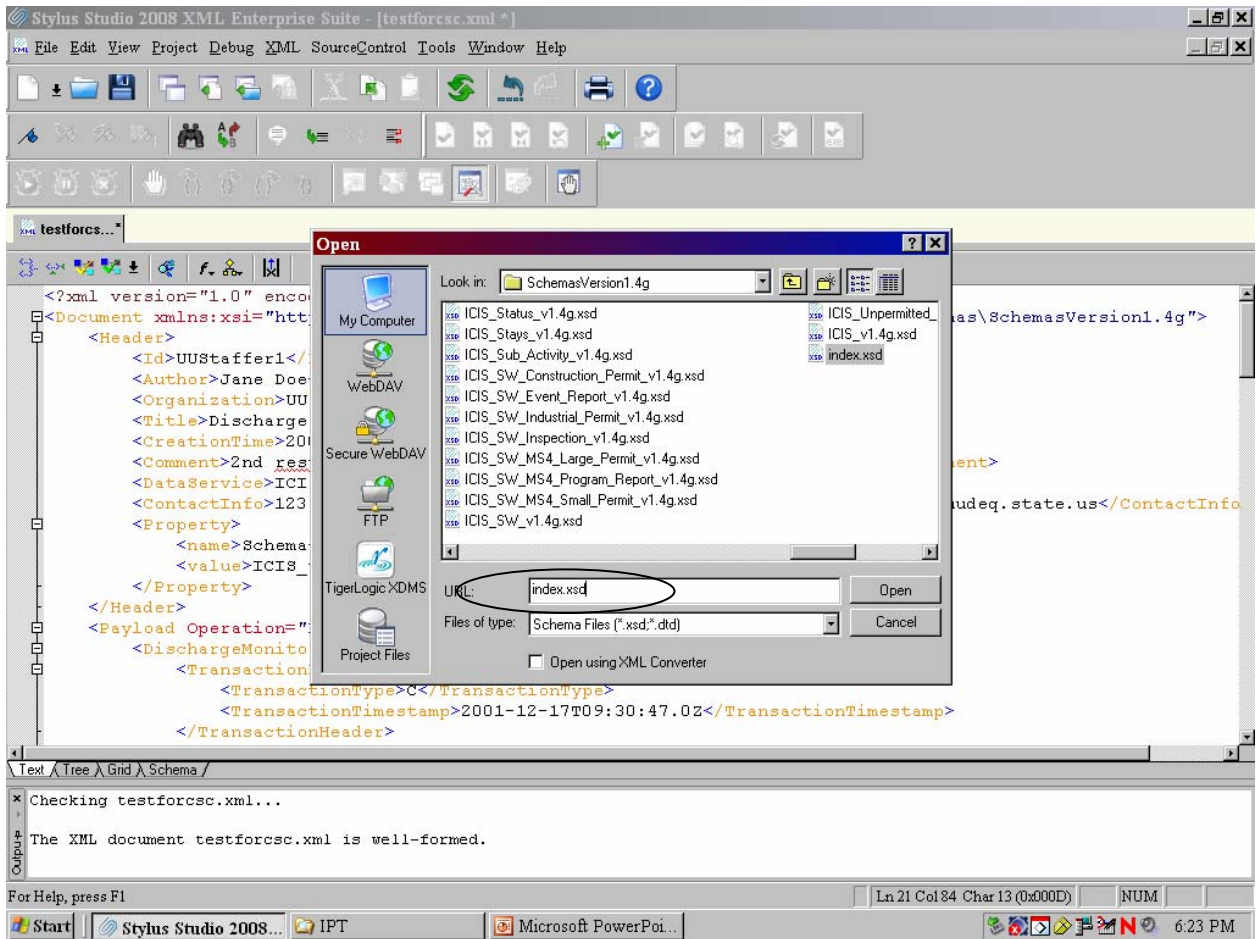
4. Check the results in the window at the bottom of the page.
5. If the window shows the XML document is “well-formed” your XML is ready for its “valid” check starting at Step 7.
6. If the window shows “FATAL ERROR” note the error at or above the cursor and fix it, then perform step 3 again until the window shows the XML is “well-formed”



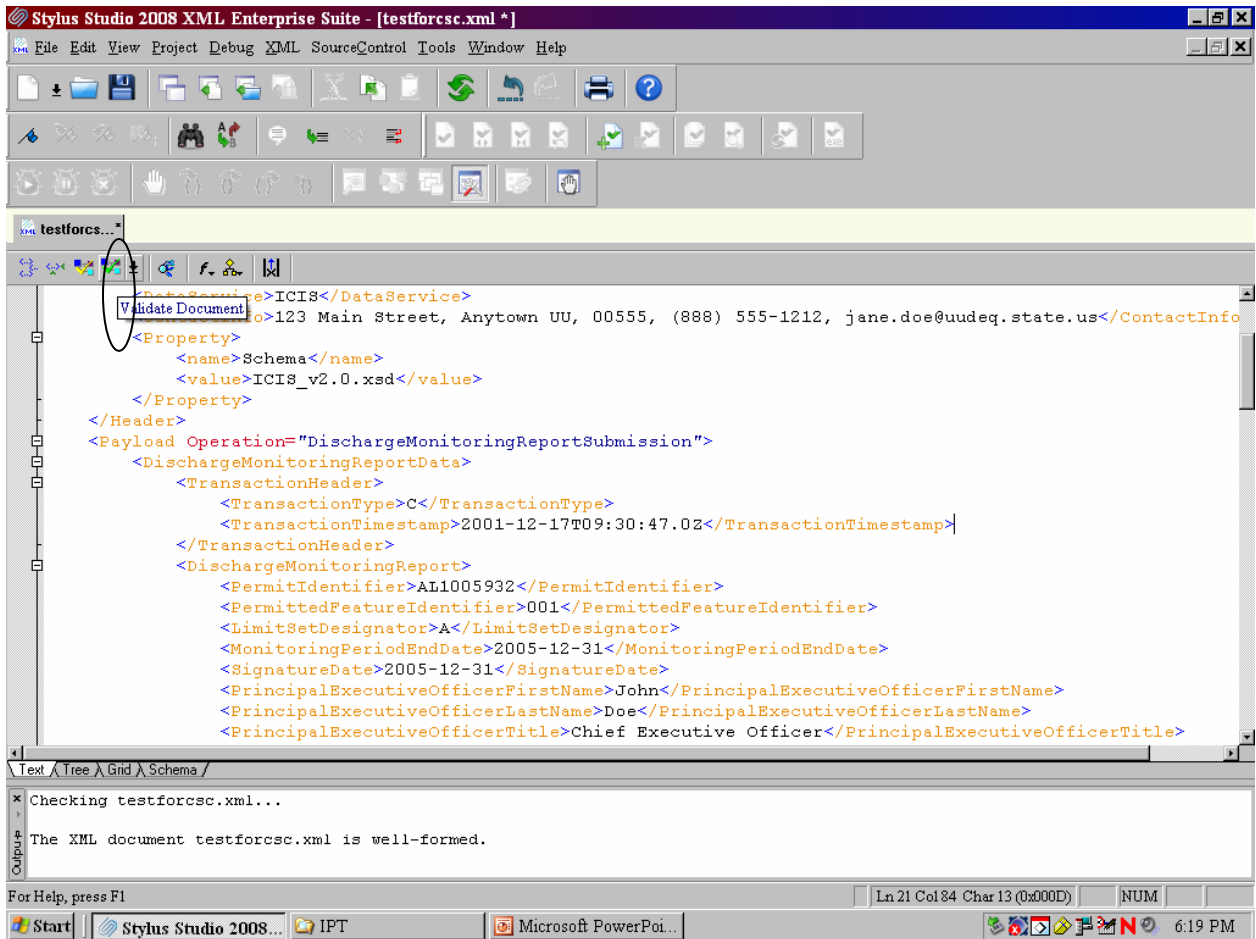
7. Click on “XML” then “Associate XML With Schema” on the main menu.



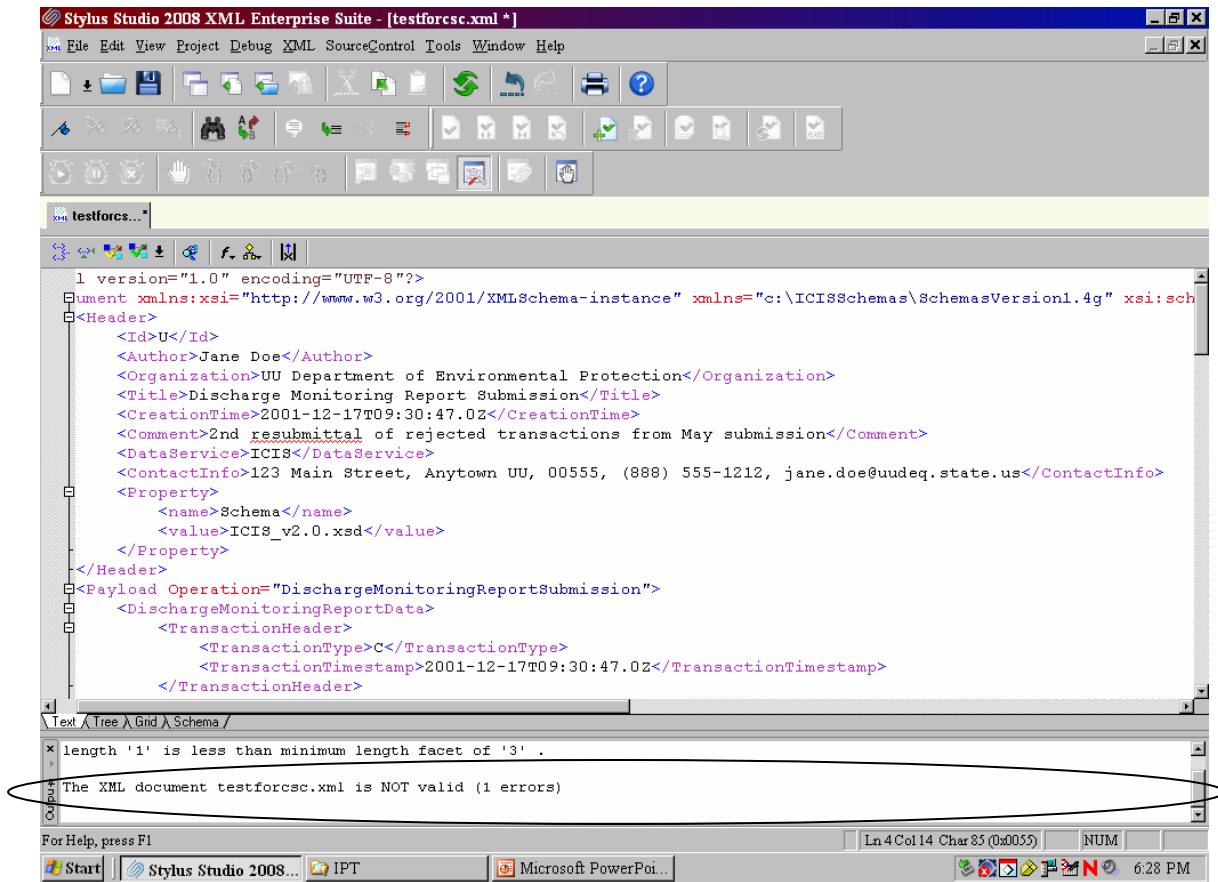
8. Double-click on “index.xsd” from the ICIS schema directory to select it



9. Click on the “Validate Document” icon in the small toolbar



10. Check the results in the window at the bottom of the page.
11. If the window shows the XML document is “valid” your XML is ready to submit to ICIS Batch.
12. If the window shows “NOT valid” double-click the error message and fix the error, then perform step 9 again until the window shows the XML is “valid”



If an error occurs during the “well-formed” check, use the corresponding template in the ICIS-NPDES XML Example Instance Document to find the tag showing up with the error and compare the tag order to find the missing start tag, missing end tag, or misspelled tag. If an error occurs during the “valid” check, refer to Section 9.2 for the listing of common errors, what caused them and how to fix them.

## **5 ESTABLISHING ACCESS TO CDX AND ICIS-NPDES**

States, tribes and EPA regions can either electronically send their XML files to ICIS-NPDES Batch through CDX using a Full Node or upload their XML files using the CDX Web Form for ICIS-NPDES Batch. Each ICIS-NPDES Batch submitter must have one CDX Web ID and one ICIS ID. The Node on the Exchange Network they will be using must also have a CDX Node ID that is mapped into the ICIS-NPDES Batch node.

### **5.1 CDX WEB FORM ACCESS**

Submitters of states and tribes whose data already reside in the ICIS-NPDES Production system have an ICIS ID but need to contact ICIS User Support to fill out the “CDX Lite ICIS Batch Web Pre-Registration Form” and request a new CDX Web ID or map their existing CDX Web ID into the ICIS-NPDES Batch Web Form.

ICIS-NPDES Batch staff will process CDX Web Form IDs and ICIS IDs for submitters before User Acceptance Testing (UAT) and before movement into production ICIS. After the CDX Web Form ID has been assigned, submitters will need to:

1. Receive e-mail Notification from CDX that they are registered such as the example screen below, then call the CDX Help Desk at the number provided in the e-mail and request your Customer Retrieval Key (CRK):


**Your ICIS Test Pre-Registration for an account with the EPA's Central Data Exchange (CDX) - Lotus Notes**

File Edit View Create Actions Help

Address

Welcome Alison Kittle - ICIS Batch Proces... Your ICIS Test Pre-Registration...

Records New Memo Reply Reply To All Forward Delete Follow Up Folder Copy Into New Chat Tools Report SPAM

 **EPA CDX HELPDESK <epacdx@csc.com>**  
 Sent by: Michael T Semeniuk <msemeniuk@csc.com>  
 12/03/2007 11:22 AM

To: undisclosed-recipients;  
 cc:  
 bcc:  
 Subject: Your ICIS Test Pre-Registration for an account with the EPA's Central Data Exchange (CDX)

History: This message has been forwarded.

Hello,

This email is to inform you that you have been pre-registered by the Environmental Protection Agency for a Test account with the Central Data Exchange (CDX ) for the ICIS program. This account will allow you to electronically report environmental data for the listed program to the EPA. In order to complete your registration, please take the following actions:

Call the CDX helpdesk at 888-890-1995 and request your Customer Retrieval Key (CRK). The staff member you talk to will verify your identity and provide you the CRK. (Note: This CRK will expire after 30 days.)

Access the internet web site at this address:  
<https://epacdxtest.csc.com/SSL/CDX/govtpreregistration.asp> .  
 Enter your CRK and follow the on-line instructions.

EPA CDX Technical Support  
 Computer Sciences Corporation  
 Phone: 888.890.1995  
 Fax: 301.429.3905  
 Email: epacdx@csc.com  
 Hours: 8:00 am - 6:00 pm EST

Start USB MEMORY (E:) Microsoft PowerPoi... Your ICIS Test Pr... Disconnected Office 3:25 PM

2. Access CDX Pre-Registration Web Site and input their CRK:

- The CDX test site to access is at <https://epacdxtest.csc.com/ssl/cdx/govtpreregistration.asp> and the CDX production site to access is at For Production: <https://cdx.epa.gov/ssl/cdx/govtpreregistration.asp> .
- Enter the Customer Retrieval Key (CRK) that was provided from EPA or CDX helpdesk when the screen below is displayed, and then click “REGISTER”.



Address <https://epacdxdev.csc.com/ssl/cdx/govtpreregistration.asp>

Back Search Favorites

**U.S. Environmental Protection Agency**

**Government Registration**

[Recent Announcements](#) | [Contact Us](#)

[CDX Home](#) > Government Registration

**Welcome to CDX Government Registration**

Please enter the "Customer Retrieval Key" provided on your invitation letter:

We strongly encourage users of this site to employ the most recent version of Internet Explorer (do not download a beta version of Internet Explorer), because 128-bit encryption support is standard with this release. Users employing an earlier version of Internet Explorer may update their encryption support to enable 128-bit encryption support at <http://www.microsoft.com/windows/ie/ie6/downloads/default.mspx>.



**You are in an encrypted secure session.**

3. Verify Existing Account or Select New by either select from the existing accounts or create a new account to continue with the pre-registration process such as shown in this screen:

**Verify an Existing CDX Account**

**Warning Notice**

EPA's Central Data Exchange Registration procedure is part of a United States Environmental Protection Agency (EPA) computer system, which is for authorized use only. Unauthorized access or use of this computer system may subject violators to criminal, civil, and/or administrative action. All information on this computer system may be monitored, recorded, read, copied, and disclosed by and to authorized personnel for official purposes, including law enforcement. Access or use of this computer system by any person, whether authorized or unauthorized, constitutes consent to these terms.

**Privacy Statement**

EPA will use the personal identifying information which you provide for the expressed purpose of registration to the Central Data Exchange site and for updating and correcting information in internal EPA databases as necessary. The Agency will not make this information available for other purposes unless required by law. EPA does not sell or otherwise transfer personal information to an outside third party. [\[Federal Register, March 18, 2002 \(Volume 67, Number 52\)\]](#)[\[Page 12010-12013\]](#)

**Select Existing CDX Account**

**CDX Account**

ENGINTOWNENDSDWIS

IDEF1234

Password:

Create a new CDX Account

4. Read the Registration Warning Notice on the following screen, and then select “Click here to continue”.

## Registration Warning Notice

[Recent Announcements](#) | [Contact Us](#)

[CDX Home](#) > Registration Warning Notice

### Environmental Protection Agency Central Data Exchange

#### Warning Notice

EPA's Central Data Exchange Registration procedure is part of a United States Environmental Protection Agency (EPA) computer system, which is for authorized use only. Unauthorized access or use of this computer system may subject violators to criminal, civil, and/or administrative action. All information on this computer system may be monitored, recorded, read, copied, and disclosed by and to authorized personnel for official purposes, including law enforcement. Access or use of this computer system by any person, whether authorized or unauthorized, constitutes consent to these terms.

#### Privacy Statement

EPA will use the personal identifying information which you provide for the expressed purpose of registration to the Central Data Exchange site and for updating and correcting information in internal EPA databases as necessary. The Agency will not make this information available for other purposes unless required by law. EPA does not sell or otherwise transfer personal information to an outside third party. [\[Federal Register: March 18, 2002 \(Volume 67, Number 52\)\] \[Page 12010-12013\]](#)

- [Click here to continue](#) -

5. At the Terms & Conditions screen, read the text then Click on the "I Accept" button at the bottom.

## Terms & Conditions

[Recent Announcements](#) | [Contact Us](#)

[CDX Home](#) > Terms & Conditions

The access and use of CDX Registration for the electronic submittal of environmental information require the creation of a user ID and password that I must maintain and keep confidential. I will review the following steps concerning the creation and maintenance of a user ID and password.

### Warning Notice

EPA's Central Data Exchange Registration procedure is part of a United States Environmental Protection Agency (EPA) computer system, which is for authorized use only. Unauthorized access or use of this computer system may subject violators to criminal, civil, and/or administrative action. All information on this computer system may be monitored, recorded, read, copied, and disclosed by and to authorized personnel for official purposes, including law enforcement. Access or use of this computer system by any person, whether authorized or unauthorized, constitutes consent to these terms.

### Privacy Statement

EPA will use the personal identifying information which you provide for the expressed purpose of registration to the Central Data Exchange site and for updating and correcting information in internal EPA databases as necessary. The Agency will not make this information available for other purposes unless required by law. EPA does not sell or otherwise transfer personal information to an outside third party. [\[Federal Register: March 18, 2002 \(Volume 67, Number 52\)\]](#)[\[Page 12010-12013\]](#)

### Choosing a CDX Password

For CDX registration purposes, I agree to select a password which will not be easily guessed (e.g., my name, my children's names, birthdays, etc.).

This password will be at least eight characters long and contain a mix of letters and numbers.

### Protecting my CDX Password

6. Create/activate your account by verifying or entering User name, password, secret question and secret answer, and then click on the "Next" button:

**CDX Registration: User Information**

Please verify the information in your user profile. Use the TAB key to move from field to field. \*  
 = REQUIRED FIELD

First Name: Mrs.  \*

Last Name:  \* Suffix:

Please choose a user name and password--the password must be at least 8 characters long and contain at least one number. Both passwords and user names are restricted to alpha-numeric characters and may not begin with a number or contain spaces or symbols, e.g. \$ # . " or @. Your user name should not be a part of your password. If you enter a user name which is in use, you will be asked to select a new user name.

User Name:  \*  
 (More than 7 characters; Don't use \$ # . " or @)

Password:  \*

Re-enter Password:  \*  
 (More than 7 characters w/1 number; Don't use \$ # . " or @)

The Help Desk will use the Secret Question and Answer to authenticate you if you forget your password. Please enter a secret question which has relevance to you and has an answer which is not easily guessed by others.

Secret Question:  \*

Secret Answer:

7. Create/activate your account by reviewing and revising the pre-populated organization information on this screen, and then click on "Next"

**CDX Registration: Organization Information**

Please verify the information in your organization profile. Use the TAB key to move from field to field. \* = **REQUIRED FIELD**

Organization Name:  \*

Registrant's Work Mailing Address 1:  \*

Registrant's Work Mailing Address 2:

City:  \*

State/Province:  \*

Zip/Postal Code:  \*

Country:  \*

E-mail:  \*

Phone Number:  \* Ext.

U.S., Canada & Caribbean Islands Phone Format:  
### ### ####

International Phone Format:  
011 + Country Code + City Code<sup>1</sup> + Local Number

<sup>1</sup>As necessary.

8. Verify that you are being registered to ICIS-NPDES Web Batch submission (ICIS-NPDES) on this screen, then click “Next” to complete your registration:



**Registration**

[Recent Announcements](#) | [Contact Us](#) Logged in as, ETOWNEND107.

[MyCDX](#) > Registration

**CDX Registration: Verify Program(s)**

ICIS-NPDES Web Batch submission (ICIS-NPDES):

---

**You are in an encrypted secure session.**

Help Desk: (888) 890-1995  
[EPA Home](#) | [Privacy and Security Notice](#) | [Contact Us](#)

9. Verify the accuracy of your Role and ID Type, and then click “Next” to accept the default information provided. If information is incorrect, contact the CDX Help Desk.

## Registration

[Recent Announcements](#) | [Contact Us](#) Logged in as, ETOWNEND107.

[MyCDX](#) > Registration

Program	Role	ID Type	Program ID	Submission Method	Verify
ICIS-NPDES	A SUBMITTER	Submitter	MD	WEBFORM	Yes

Please verify the role information for each program.

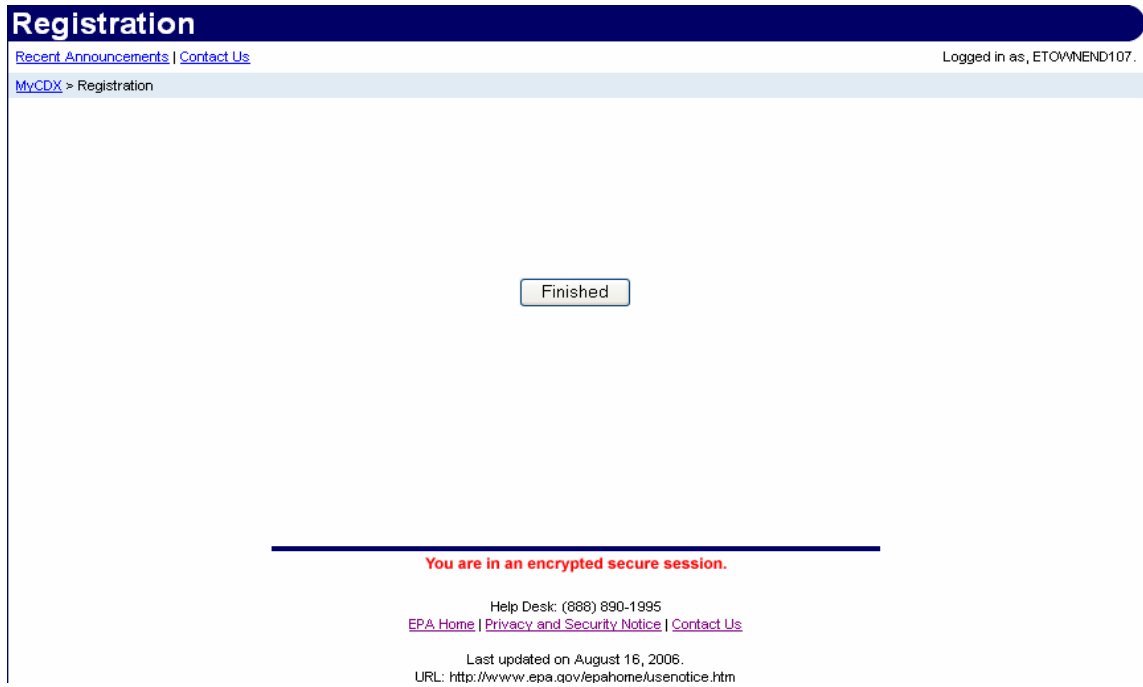
---

You are in an encrypted secure session.

Help Desk: (888) 890-1995  
[EPA Home](#) | [Privacy and Security Notice](#) | [Contact Us](#)

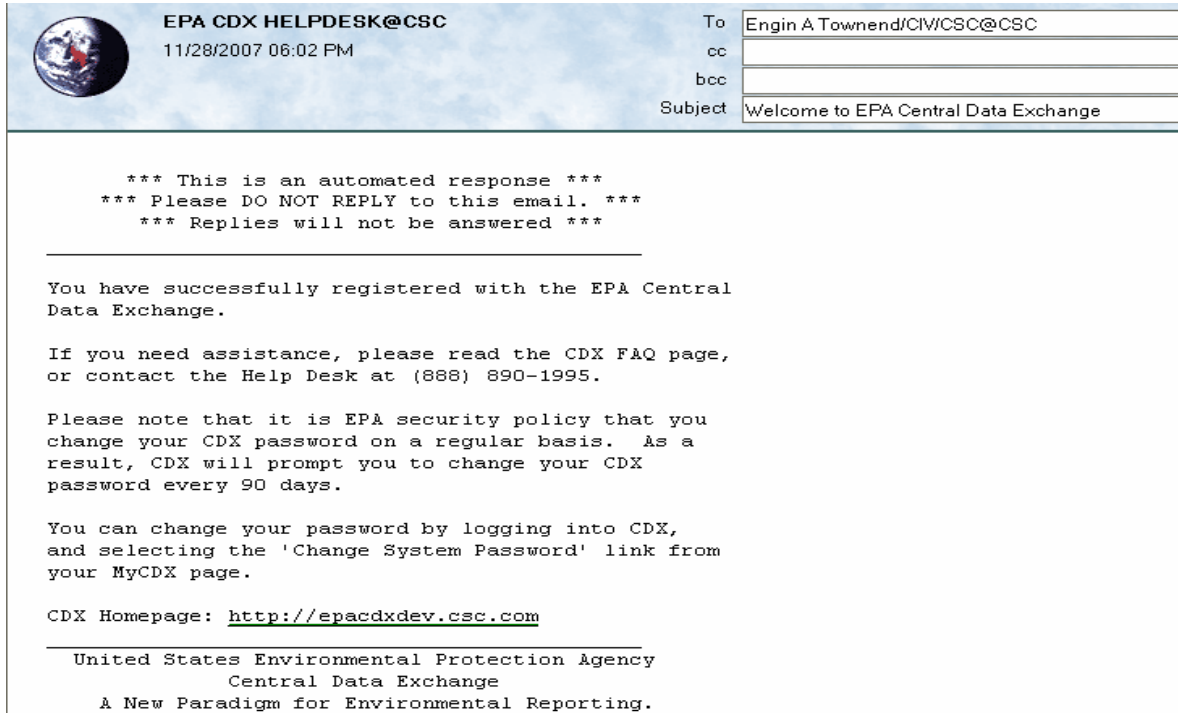
Last updated on November 15, 2006.  
 URL: <http://www.epa.gov/epahome/usenotice.htm>

10. Click on “Finished”.



The screenshot shows a web browser window with a dark blue header bar containing the word "Registration" in white. Below the header, there are two links: "Recent Announcements" and "Contact Us". On the right side of the header, it says "Logged in as, ETOWNEND107". Below the header, there is a light blue bar with the text "MyCDX > Registration". The main content area is white and contains a single button labeled "Finished" in the center. Below the button, there is a horizontal line followed by the text "You are in an encrypted secure session." in red. At the bottom of the page, there is a footer with the following text: "Help Desk: (888) 890-1995", "EPA Home | Privacy and Security Notice | Contact Us", "Last updated on August 16, 2006.", and "URL: http://www.epa.gov/epahome/usenotice.htm".

11. You will receive an e-mail confirmation like the one below that you have successfully registered at EPA/CDX and are can now submit files:



*Contact the CDX Help Desk if you encounter any problems or have questions during the registration process!*

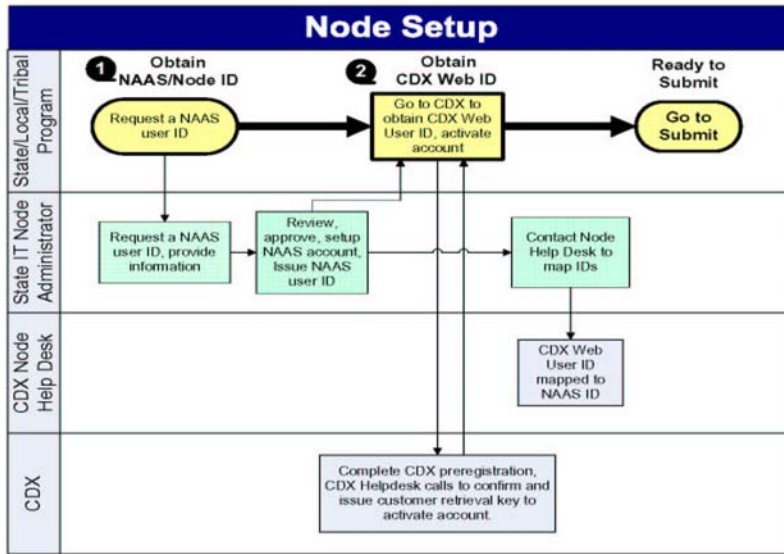
## 5.2 ESTABLISHING AND CONFIGURING A NODE ON THE EXCHANGE NETWORK

If a state, tribe or region's Node is submitting to ICIS-NPDES Batch for the first time, that Node's Administrator must contact the CDX Help Desk for assistance with mapping its existing CDX Node ID into the ICIS Batch Node.



*States, tribes or EPA regions using a Node Client for other data submissions should use the CDX Web Upload form instead of the Node Client for ICIS-NPDES Batch submissions!*

Figure 5-1 illustrates how a State can set up an existing full node on the Exchange Network to flow data to ICIS-NPDES Batch.



**Figure 5-1. Setting up a Full Node on the Exchange Network.**

Any state or tribe that needs help establishing a full node on the Exchange Network should contact the CDX Help Desk for assistance.

## 6 SUBMITTING FILES TO ICIS-NPDES BATCH

After establishing access to the ICIS-NPDES Batch Web upload form on CDX and the Exchange Network node, submitters should use their Node to submit large files and use the Web upload form to submit small files only. Status messages and errors for files submitted through the CDX Web Form are displayed on the screen but if a Node is used the status and error messages are returned to Node Administrators, so submitters must be sure to retrieve their errors from their node administrator.

### 6.1 SUBMITTING ICIS-NPDES BATCH FILES MANUALLY THROUGH THE CDX WEB FORM FOR ICIS

After a submitter has manually uploaded a file using the CDX Web form or electronically submitted the file through its Node, CDX will determine if it is a zip compressed file containing one or more XML instance documents, extract the zipped file, perform virus scans on the extracted file(s), then check them against the ICIS-NPDES schema for well-formedness and validity before routing them to ICIS-NPDES Batch. If one or more XML instance documents within the same zipped file fails the virus scan or schema validation, none of the XML instance documents will not be sent to ICIS-NPDES Batch but will be rejected by CDX with up to 100 errors documented for each failed XML instance document in a downloadable file called "submission-metadata.xml".

The ICIS-NPDES Batch Node retrieves all incoming XML instance documents from CDX during the day. Starting at 8:00 p.m. Eastern, the ICIS-NPDES Batch parser begins to process these files in the order received. The ICIS-NPDES parser logs any errors keeping data from being saved into ICIS that occur during processing. Upon completion, ICIS-NPDES stores the results, then generates a PDF of the results for hybrid batch submitters or an XML file or results for full batch users, before notifying CDX that processing of a submission file has been completed. CDX stores the status and sends the results from ICIS when a submitter issues a status and download request. Processing is halted at 6:00 a.m. the following morning.

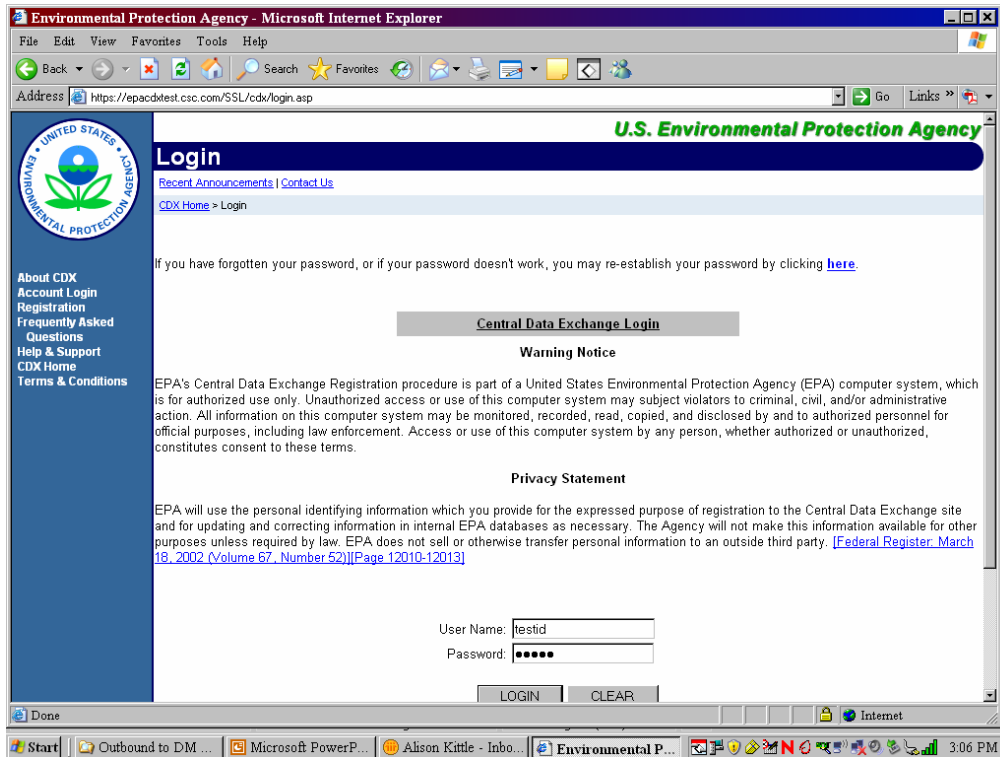
States run the risk of having their files process out of order if more than one file is submitted before 8:00 p.m. on the same day. To avoid having later edits overwrite earlier edits, or have edits get rejected because their adds were rejected, users should wait until receiving notification from CDX that all outstanding batches have been processed and any rejections should be corrected before submitting the next new batch.



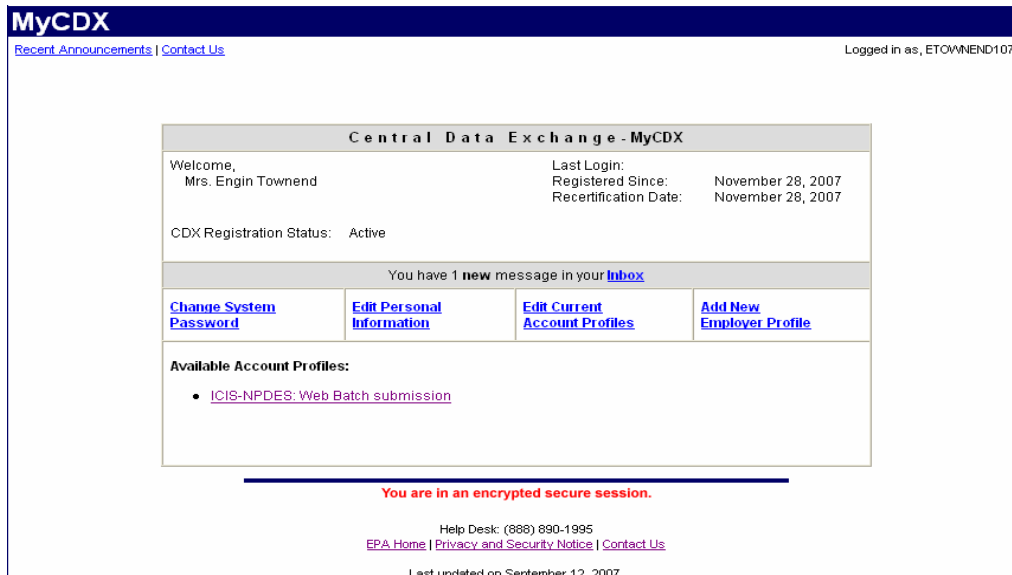
*Submitters should identify and correct any submissions that are rejected by CDX or ICIS-NPDES Batch and resubmit the corrections before submitting any new files to ICIS-NPDES Batch!*

File submission using a Full CDX is a customized electronic process that must be worked out between the Node's Administrator and the CDX Help Desk. The steps for submitting using the CDX Web Form are:

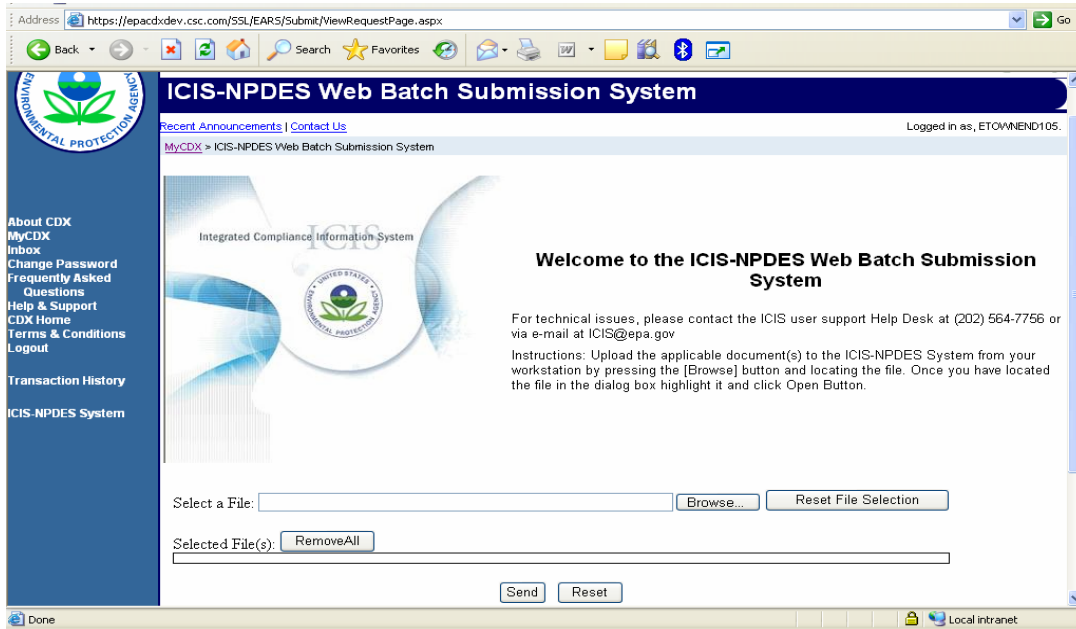
1. Open a web browser and navigate to the CDX Login Screen at <https://cdx.epa.gov/SSL/cdx/login.asp>, then enter your TSSMS ID and CDX password and click on the **Login** button:



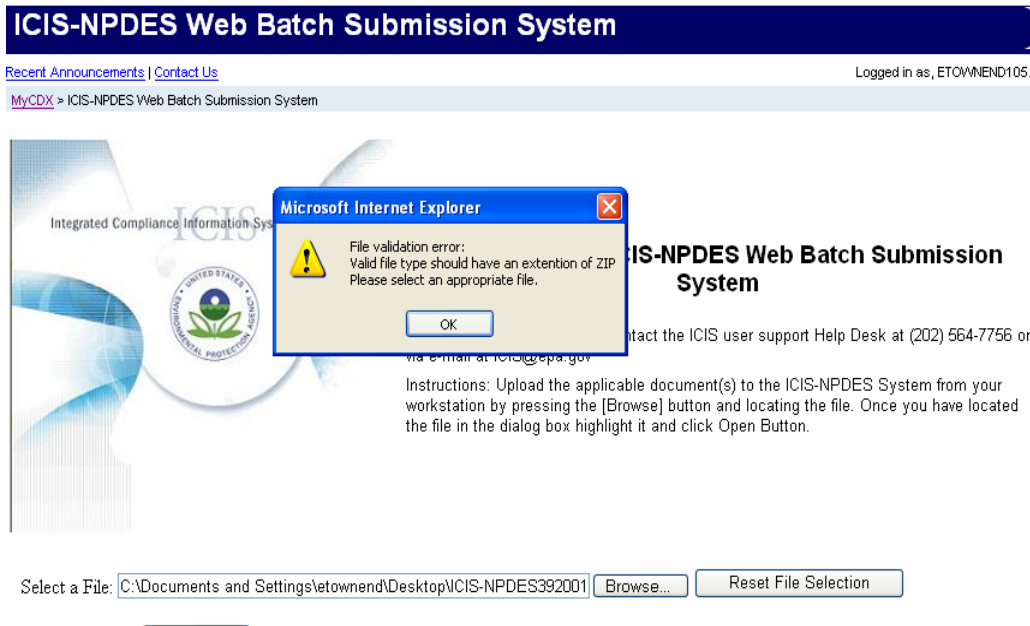
2. If you are able to successfully log in, the MyCDX web page will be displayed. Click on the **ICIS-NPDES Web Batch Submission link**:



- The “Welcome to ICIS-NPDES Web Batch screen will be displayed. Either enter the name of the zipped file(s) to submit or click on the Browse button to search for and select the zipped XML file(s) to submit, then click on the **Send** button:



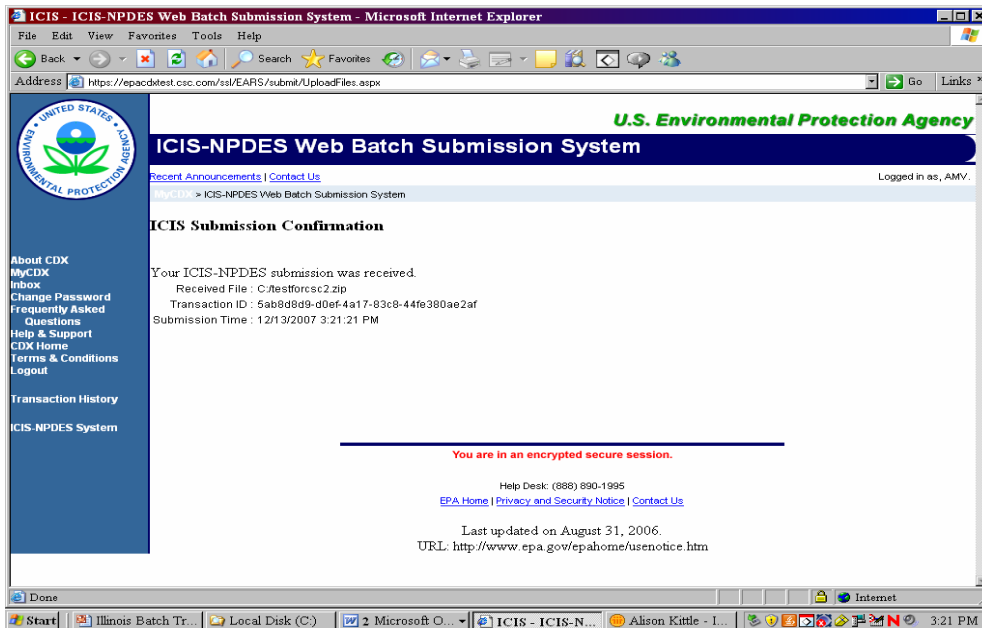
- If a file other than a zipped XML file is uploaded, the CDX Web Form will reject the file with an error message window. Click on the **OK** button and resubmit a zipped XML file(s) again.



- The CDX Web Form will display the ICIS Submission Confirmation when a submission is accepted. **Write down the**

- ✓ **Date**
- ✓ **Time and**
- ✓ **Transaction ID**

**on this screen to use for tracking your submission**, then click on the **Transaction History** link at the bottom of the blue box on the left of the screen:



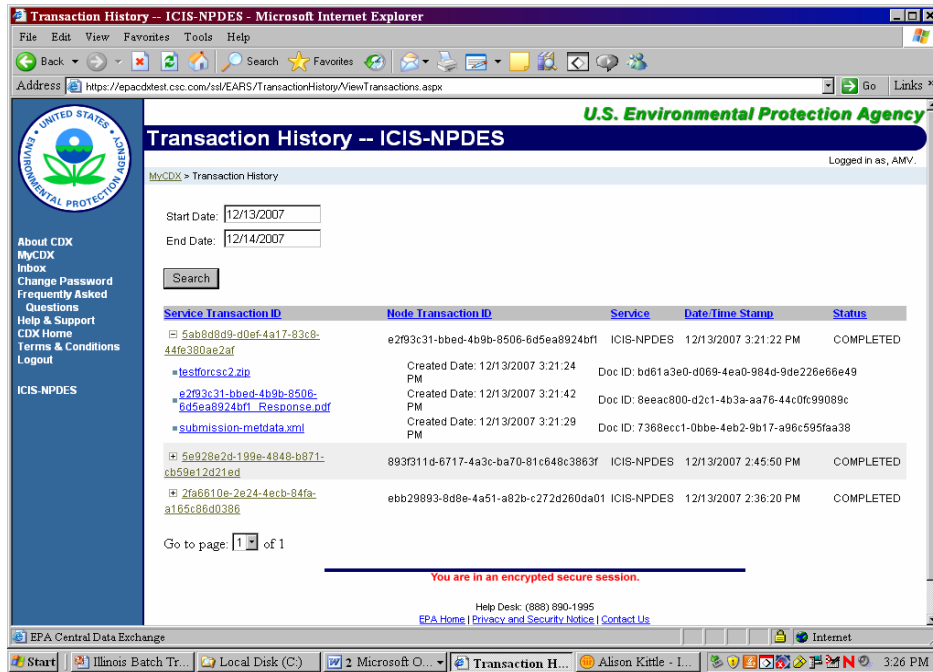
- The Transaction History screen will be displayed and the Transaction ID from the Confirmation Screen will be listed on this screen under the “Service Transaction ID” column.



*Write down the **Node Transaction ID** so you can use it to retrieve your ICIS Batch Audit Reports and give it to ICIS User Support when reporting errors or problems!*



*If your file is not listed on the Transaction History screen, try entering tomorrow's date in the **End Date** field and click on the **Search** button!*

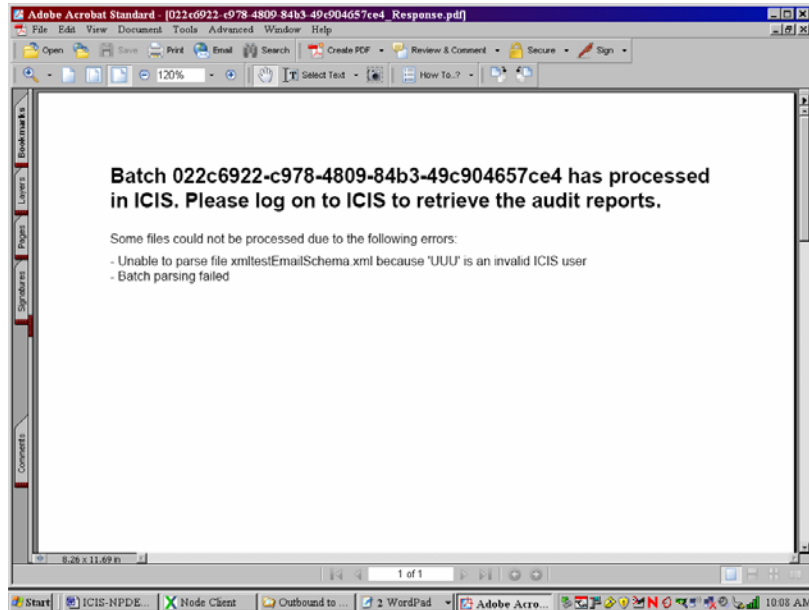


7. Check the **Status** column for the status of your Transaction ID and do the action appropriate for the status:

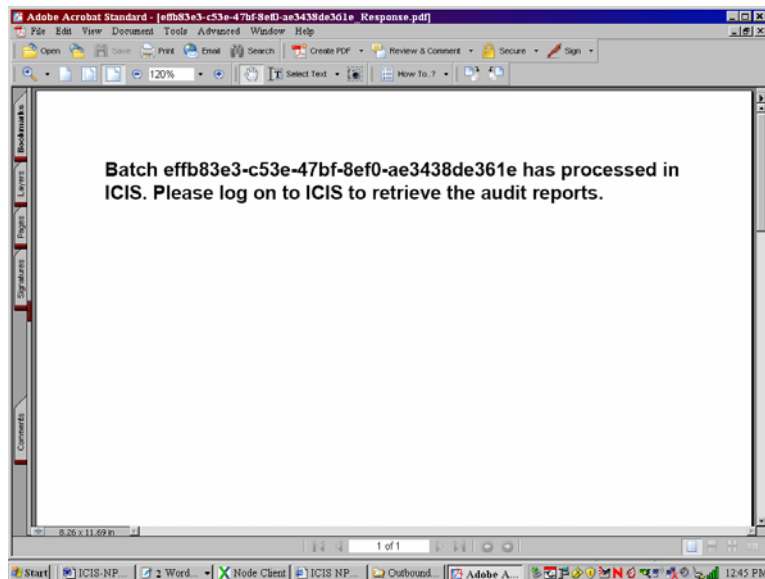
Status	Cause	Action to Perform
<b>Received</b>	CDX received the file and is running it through validation checks.	Click on the Search button periodically until one of the other Statuses is shown.
<b>Pending</b>	CDX ran the file through validation checks successfully and passed the file to ICIS Batch for processing	Log off the CDX Web form and wait until after 6 a.m. the following morning to log back in and check the status for this Transaction ID
<b>Failed</b>	CDX ran the file through validation checks unsuccessfully and errors need to be fixed.	Click on the plus sign next to the Transaction ID to display downloadable files, download “submission-metadata.xml” by double-clicking on it, then use the error messages to fix XML schema validation errors and resubmit.
<b>Completed</b>	ICIS finished processing the file. There may or may not be errors.	Click on the plus sign next to the Transaction ID to display downloadable files and download “<nodetransaction_id_response.pdf” by double-clicking on it, then Hybrid Batch states will need to log into ICIS and run Batch Audit Reports using your Transaction ID and submission date for report criteria.

- If the status of your transaction is “Completed”, click on the **<nodetransactionID\_response.pdf** file to view whether ICIS-NPDES Batch could process the file or not:

- a. If the bottom part of the message says “Some files could not be processed due to the following errors” as shown in the screen below, ICIS could not process the file. Contact ICIS User Support for help.



- b. If the PDF only contains the message below, log into the ICIS-NPDES system to view the results using the Batch Audit Reports.



- If the status of your transaction is “Failed”, click on the **submission-metadata.xml** file to view up to 100 errors that CDX found while trying to send your file to ICIS and do one of the following:

- c. If the `<result>` tag has a message that starts with “**Congratulations ...**” the file passed schema validation but could not be sent to ICIS for an unknown reason. Contact the CDX Help Desk for help.

```
<?xml version="1.0" encoding="UTF-8"?>
<submission>
  <file>
    <name>xmltestschemEmail.xml</name>
    <email>kittle.alison@epa.gov</email>
    <status>Valid</status>
    <result>Congratulations! The document,\\cdxprepneta1\QA_Temp\2668e6db-36f1-4ed4-859c-0f097c3e47ef0.unzipped\tgx330035change.xml, is valid according to the schema.</result>
  </file>
</submission>
```

- d. If the `<result>` tag message is similar to one or more of the schema validation errors listed in Section 9.2, find and fix the error(s) in your XML file and resubmit the file. Contact ICIS User Support if you need help with stubborn schema validation errors.

```
<?xml version="1.0" encoding="UTF-8"?>
<submission>
  <file>
    <name>xmltestschemEmail.xml</name>
    <email>kittle.alison@epa.gov</email>
    <status>Valid</status>
    <result> The document,\\cdxprepneta1\QA_Temp\e1a14bae-fcd8-41d1-87a6-3eec4cee65cf0, contains the following error(s): Error at line 4 column 40 : The 'c:\ICISSchemas\SchemasVersion1.4g:Id' element is invalid - The value 'UStaffer1123456789012345678901' is invalid according to its datatype 'c:\ICISSchemas\SchemasVersion1.4g:StringMin3Max30Type' - The actual length is greater than the MaxLength value.</result>
  </file>
</submission>
```

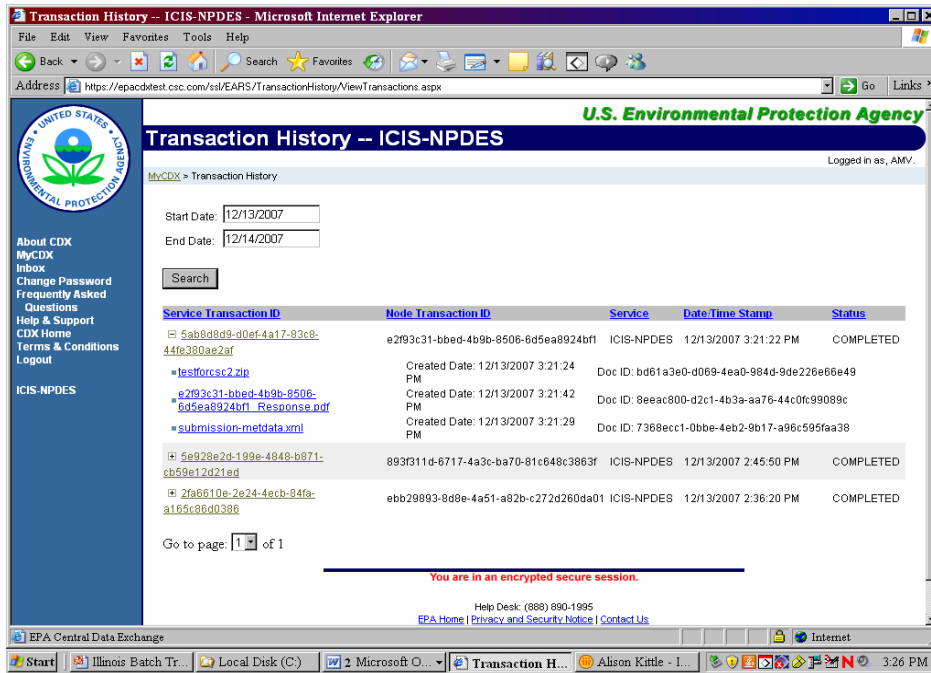
- e. If the `<result>` tag has a message that is similar to one or more of the SOAP validation errors listed in Section 9.4 an error other than schema validation occurred. Contact ICIS User Support for help.

```
<?xml version="1.0" encoding="UTF-8"?>
<submission>
  <file>
    <name>xmltestschemEmail.xml</name>
    <email>kittle.alison@epa.gov</email>
    <status>Valid</status>
    <result description>Unable to authenticate user.</result>
  </file>
</submission>
```



*Refer to Section 9 of this document for a comprehensive list of XML schema validation errors, what caused them and how to fix them. Contact ICIS User Support if you need assistance with interpreting the contents of "submission-metadata.xml"!*

- To exit the CDX Web Form, click on the Logout button link near the bottom of the blue box on the left of the screen:



*Contact the CDX Help Desk if you encounter any problems or have questions logging into the CDX Web Form or navigating the screens. Contact ICIS User Support for assistance with interpreting submission-metadata.xml or the PDF file.*

## 6.2 SUBMITTING ICIS-NPDES BATCH FILES ELECTRONICALLY THROUGH A NODE ON THE EXCHANGE NETWORK



*States, tribes or EPA regions using a Node Client for other data submissions should use the CDX Web Upload form instead of the Node Client for ICIS-NPDES Batch submissions!*

Figure 6-1 illustrates the typical scenario for a state, tribe or EPA region submitting files to ICIS-NPDES Batch through their full node. Program offices should work with their Node

Administrator to decide how to provide submission files to the Node and receive errors from CDX. Section 6.2.1 contains generic SOAP message templates that can be used for node submissions.

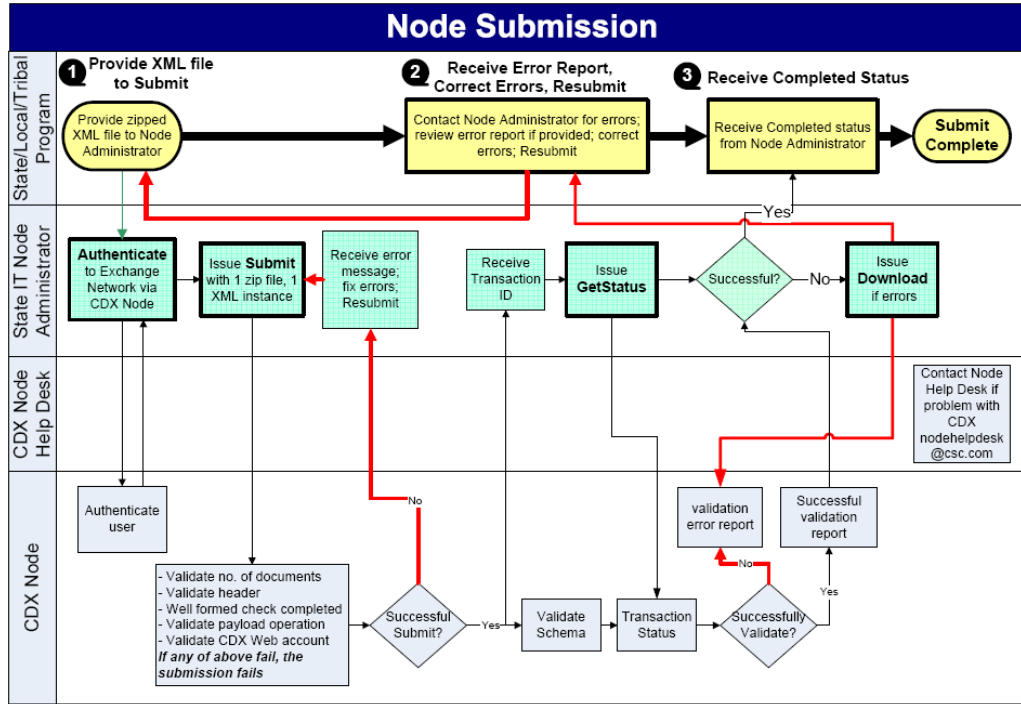


Figure 6-1. The Standard Flow of Data through CDX Using a Full Node.

CDX will immediately reject a submission file infected with virus, in an incorrect format or unzipped and return a SOAP error message to the submitting node. CDX will validate accepted file uploads against the ICIS-NPDES schema before forwarding them to the ICIS-NPDES system. If schema validation errors are found in one or more XML submission files within the same zipped file, all XML submission files for that zipped file will be rejected, and CDX will set the status of the submission to “Failed” then report up to 100 schema validation errors for each XML submission files that failed in a SOAP message back to the submitting node.

If no schema validation errors are found, CDX forwards the submission file to ICIS-NPDES Batch. ICIS-NPDES Batch will extract data from the file and process it, then return a status of “Completed” to CDX when finished and return a PDF file of results to CDX if the submitter was a hybrid batch user.

The submitting node will query CDX for the status of a submission until CDX returns a status of “Completed” or “Failed”. If the status is “Failed”, the submitting node downloads a file called “submission-metadata.xml” from CDX to view the errors. If the status is “Completed” the submitting node either downloads a file containing errors called “<cdxtransactionID>\_Response.zip” or a file reporting on the results called “<cdxtransactionID>\_Response.pdf (where <cdxtransactionID> is the same string as the External Transaction ID assigned to the submission by CDX). Hybrid submitters will view their errors by logging into the ICIS-NPDES system and generating Batch Audit Reports.

Security tokens issued by CDX during authentication are in effect for only 10 minutes. Submitters must re-authenticate each time they request a response or download files from CDX if more than 10 minutes have lapsed between CDX interactions.

### 6.2.1 SOAP Message Templates

A full Node submitting to ICIS-NPDES Batch invokes CDX web methods to authenticate for CDX, upload submission files, check submission file status, and download submission results. This section steps a Node Administrator through invoking these web methods by providing example SOAP messages the Node Administrator with typical responses from CDX including SOAP errors. Items in bold typeface must be changed by the Node Administrator to fit their own submissions. Node Administrators should contact the CDX Help Desk if they experience any problems invoking these web methods or authenticating with CDX.

1. Invoke the CDX Authenticate method:

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" ...>
  <SOAP-ENV:Body>
    <mns:Authenticate xmlns="http://exchangenetwork.net/schema/v2.0/ICIS-NPDES.xsd">
      <userId xsi:type="xsd:string">CDXID</userId>
      <credential xsi:type="xsd:string">ppp</credential>
      <authenticationMethod xsi:type="xsd:string">password</authenticationMethod>
    </mns:Authenticate>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Where **CDXID** = your CDX ID and **ppp** = your CDX password.

2. Wait for a response from CDX and act on it in one of three ways when it arrives:
  - a. If the SOAP message looks like the example below continue to the next step to submit your XML file.

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" ...>
  <SOAP-ENV:Body>
    <mns:AuthResponse xmlns="http://exchangenetwork.net/schema/v2.0/ICIS-NPDES.xsd">
      <return xsi:type="xsd:string">ttt</return>
    </mns:AuthResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Where **ttt** = a unique alphanumeric string containing the CDX security token assigned for this submission session.

- b. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing E\_UnknownUser, the user ID is not a recognized CDX user or is not authorized to submit data to CDX. Contact the CDX Help Desk for assistance in performing Step 1 again.
  - c. If the SOAP message contains a <SOAP-ENV:Fault> element containing any <errorcode> element other than "E\_UnknownUser", Contact the CDX Help Desk for assistance in performing Step 1 again.
3. Invoke the CDX Submit method to submit a file. The example below shows two zipped files being submitted at the same time using [2] for the nodeDocument array and two consecutive <item> blocks, one <item> block per file:

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" ...>
  <SOAP-ENV:Body>
    <mns:Submit xmlns="http://exchangenetwork.net/schema/v2.0/ICIS-NPDES.xsd">
      <securityToken type="xsd:string">ttt</securityToken>
      <transactionId type="xsd:string"/>
      <dataflow type="xsd:string">ICIS-NPDES</dataflow>
      <documents soap-enc:arrayType="mns:nodeDocument[1]">
        <item href="# xxx"/>
      </documents>
    </mns:Submit>
    <multiRef id=" xxx" soapenc:root="0"
soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
xsi:type="ns2:NodeDocument"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:ns2="http://www.ExchangeNetwork.net/schema/v1.0/node.xsd">
      <name xsi:type="xsd:string">firstsubmissionfilename.zip</name>
      <type xsi:type="xsd:string">ZIP</type>
      <content href="30133CC411B6447131C563024648CA08"
xmlns:ns3="http://xml.apache.org/xml-soap"/>
    </multiRef>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```

Where **ttt** = a unique alphanumeric string containing the CDX security token returned in Step 2a, **submissionfilename** = your name of the file to be submitted, and **xxx** = the multiref identifier of the file to be submitted.

4. Wait for a response from CDX and act on it in one of six ways when it arrives:
  - a. If the SOAP message looks like the example below continue to the next step to check the status of your submission.

```

<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" ...>
  <SOAP-ENV:Body>
    <mns:SubmitResponse xmlns="http://exchangenetwork.net/schema/v2.0/ICIS-NPDES.xsd">
      <return xsi:type="xsd:string">transactionID</return>
    </mns:SubmitResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>

```

Where **transactionID** = a unique alphanumeric string containing the CDX transaction ID assigned for this submission session.

- b. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing E\_InvalidToken as an error code, the token for the submission is incorrect. Contact the CDX Help Desk for assistance in performing Step 3 again.
- c. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing E\_TokenExpired as an error code, the security token for the submission has timed out after 10 minutes has lapsed. Repeat Steps 1 through 3 again.
- d. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing E\_AccessDenied as an error code, the user ID is not a recognized CDX user or is not authorized to submit data to CDX. Contact the CDX Help Desk for assistance in performing Steps 1 through 3 again.

- e. If the SOAP message contains a <SOAP-ENV:Fault> element with a <faultcode> element containing SOAP-ENV:Client in it, one or more of your submission files could not be processed. Contact the CDX Help Desk for assistance in performing Step 3 again.
  - f. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing any other codes in it, contact the CDX Help Desk for assistance in performing Step 3 again.
5. At this point, the data has been submitted to CDX and is being processed. The processing time will vary depending upon the submission size and the current load on the CDX system. After a reasonable amount of time, invoke the CDX GetStatus method:

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" ...>
  <SOAP-ENV:Body>
    <mns:GetStatus xmlns="http://exchangenetwork.net/schema/v2.0/ICIS-NPDES.xsd">
      <securityToken xsi:type="xsd:string">ttt</securityToken>
      <transactionId xsi:type="xsd:string">transactionID</transactionId>
    </mns:GetStatus>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Where **ttt** is a unique alphanumeric string containing the CDX security token returned in Step 2a and **transactionID** = a unique alphanumeric string containing the CDX transaction ID returned in Step 4a.

6. Wait for a response from CDX and act on it in one of six ways when it arrives:
  - a. If the SOAP message looks like the example below continue to the next step to download the results of your submission:

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" ...>
  <SOAP-ENV:Body>
    <mns:GetStatusResponse xmlns="http://exchangenetwork.net/schema/v2.0/ICIS-NPDES.xsd">
      <return xsi:type="xsd:string">yyy</return>
    </mns:GetStatusResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Where **yyy** = the word "completed" or "failed".

- b. If the SOAP message looks like the example below repeat Step 5 again.

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" ...>
  <SOAP-ENV:Body>
    <mns:GetStatusResponse xmlns="http://exchangenetwork.net/schema/v2.0/ICIS-NPDES.xsd">
      <return xsi:type="xsd:string">xxx</return>
    </mns:GetStatusResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Where **xxx** = the word "received" or "pending" .

- c. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing E\_InvalidToken as an error code, the token for

the submission is incorrect. Contact the CDX Help Desk for assistance in performing Steps 3 through 5 again.

- d. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing E\_TokenExpired as an error code, the security token for the submission has timed out after 10 minutes has lapsed. Repeat Step 1 to obtain a new token before proceeding with Steps 1 through 5.
- e. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing E\_AccessDenied as an error code, the user ID is not a recognized CDX user or is not authorized to submit data to CDX. Contact the CDX Help Desk for assistance in performing Steps 1 again before proceeding with Steps 3 through 5 again.
- f. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing any other codes in it, contact the CDX Help Desk for assistance in performing Step 5 again.

7. Invoke the CDX Download method:

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" ...>
  <SOAP-ENV:Body>
    <mns:Download xmlns="http://exchangenetwork.net/schema/v2.0/ICIS-NPDES.xsd">
      <securityToken xsi:type="xsd:string">ttt</securityToken>
      <transactionId xsi:type="xsd:string">transactionID</transactionId>
      <dataflow xsi:type="xsd:string">ICIS-NPDES</dataflow>
    </mns:Download>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Where = **ttt** is a unique alphanumeric string containing the CDX security token returned in Step 2a and **transactionID** = a unique alphanumeric string containing the CDX transaction ID returned in Step 4a.

- 8. Wait for a response from CDX and when it arrives with the ICIS-NPDES processing results retrieve it and display the PDF or parse the XML file for viewing.
  - a. If the SOAP message looks like the example below retrieve the document and display the PDF or parse the XML file for viewing.

```
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/" ...>
  <SOAP-ENV:Body>
    <documents soapenc:arrayType="ns1:NodeDocument[1]"
xsi:type="soapenc:Array" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/">
      <documents href="#xxx."/></documents></ns1:DownloadResponse>
      <multiRef id="xxx." soapenc:root="0"
soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
xsi:type="ns2:NodeDocument"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:ns2="http://www.ExchangeNetwork.net/schema/v1.0/node.xsd">
        <name xsi:type="xsd:string">filename</name>
        <type xsi:type="xsd:string">ZIP</type><content
href="8A51659DEC0EB2D2873A097833B7C3BA" xsi:type="ns3:DataHandler"
xmlns:ns3="http://xml.apache.org/xml-soap"/>
      </multiRef>
    </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

Where **filename** = the name of the file to be downloaded and **xxx** = the multiref identifier of the file returned.

- b. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing E\_InvalidToken as an error code, the token for the submission is incorrect. Contact the CDX Help Desk for assistance in performing Step 7 again.
- c. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing E-TokenExpired as an error code, the security token for the submission has timed out after 10 minutes has lapsed. Repeat Steps 1 through 7 again.
- d. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing E\_AccessDenied as an error code, the user ID is not a recognized CDX user or is not authorized to submit data to CDX. Contact the CDX Help Desk for assistance in performing Steps 1 through 7 again.
- e. If the SOAP message contains a <SOAP-ENV:Fault> element with a <faultcode> element containing SOAP-ENV:Client in it, one or more of your submission files could not be processed. Contact the CDX Help Desk for assistance in performing Step 7 again.
- f. If the SOAP message contains a <SOAP-ENV:Fault> element with an <errorcode> element containing any other codes in it, contact the CDX Help Desk for assistance in performing Step 7 again.

### 6.3 E-MAIL SUBMISSION NOTIFICATIONS

Submitters can receive e-mail notifications of submission status by inserting a “name/value” pair into the property tag within the header of their XML submission file containing their e-mail address. Figure 6-2 provides examples of e-mail name/value pairs for one or more multiple e-mail addresses.

```

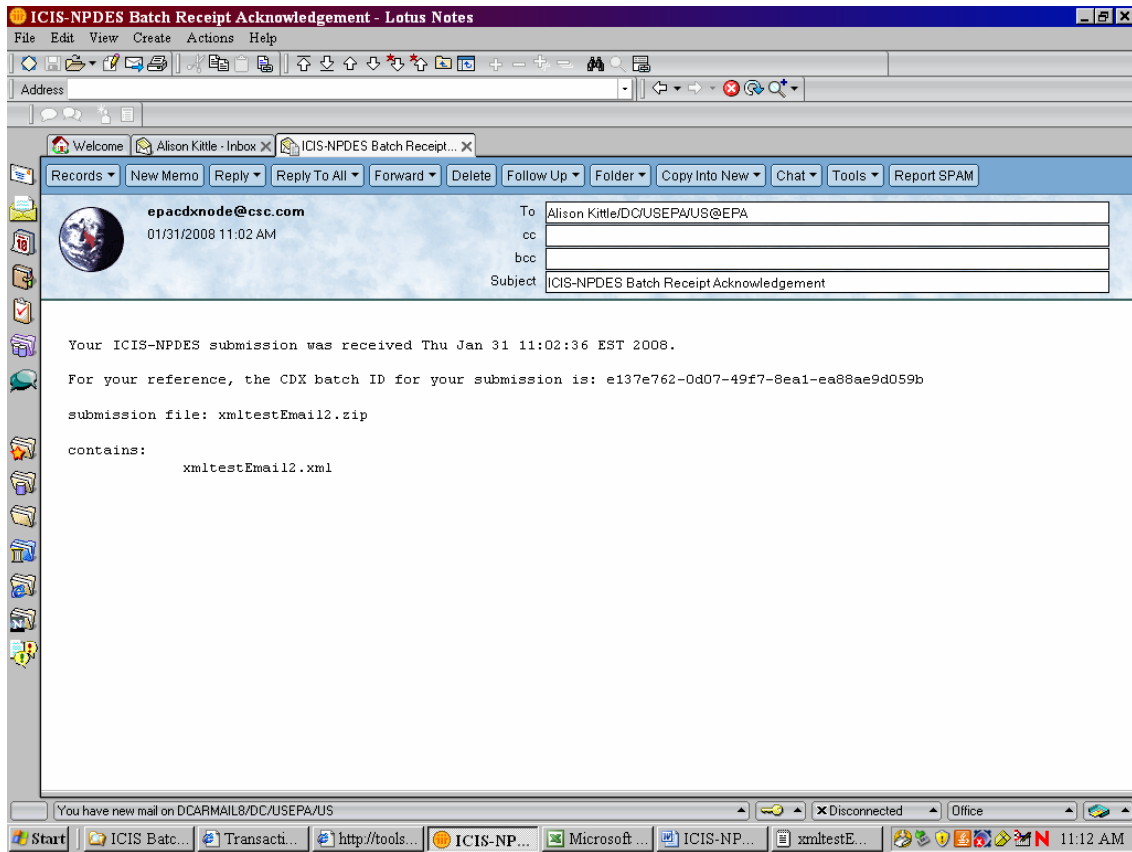
<Header>
...
  <Property>
    <name>e-mail</name>
    <value>john_doe@state.us</value>
  </Property>
</Header>
    
```

```

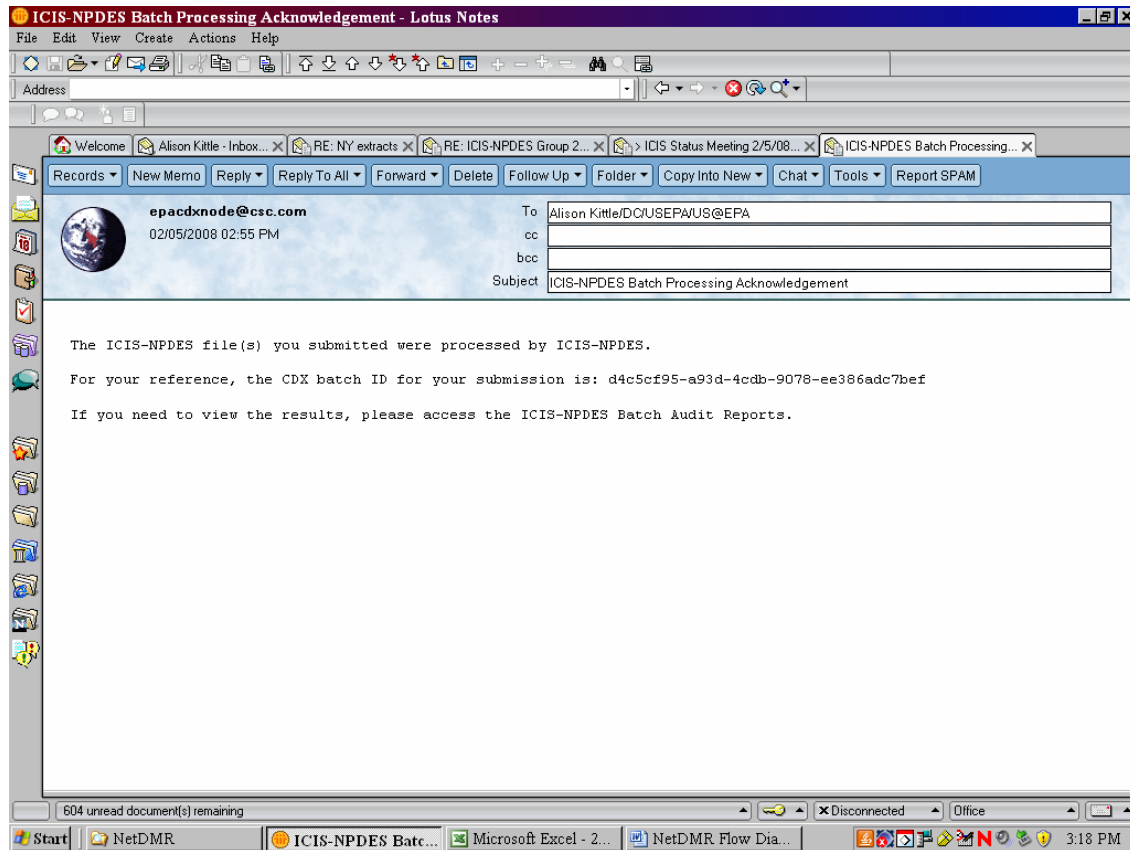
<Header>
...
  <Property>
    <name>e-mail</name>
    <value>john_doe@state.us</value>
  </Property>
  <Property>
    <name>e-mail</name>
    <value>doe.john@state.us</value>
  </Property>
</Header>
    
```

**Figure 6-2. Examples of Single and Multiple e-Mail Name/Value Pairs**

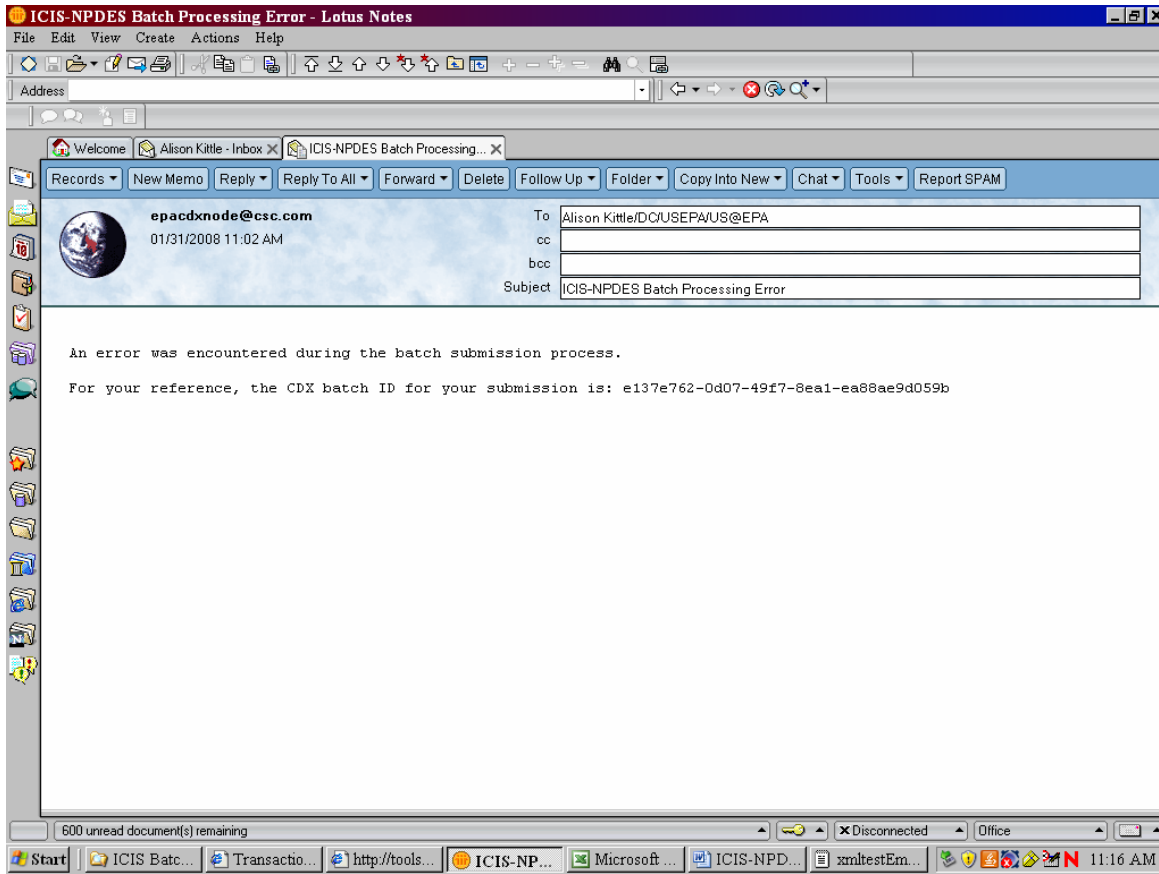
Figures 6-3 through 6-5 are examples of e-mails from CDX acknowledging receipt of a submission, completion of a submission by ICIS and rejection of a submission due to CDX errors.



**Figure 6-3. Example of Submission Receipt Notification e-mail from CDX**



**Figure 6-4. Example of ICIS-NPDES Batch Processing Completion Notification e-mail from CDX**



**Figure 6-5. Example of Submission Failure Notification e-mail from CDX**



*Regions may submit XML files containing data for all their states either within one XML or in a separate XML file for each state!*



*A state can only submit XML files for permits within their state. ICIS-NPDES Batch will check the first two characters of a permit's ID against the ICIS ID contained within the <Id> tag and will reject any transactions with a state code that is not authorized to modify data for that state!*



*States, tribes and EPA regions may have ICIS-NPDES Batch process data and produce Batch Audit results by staff member. To do this, simply place all adds/changes/replaces/deletes/mass deletes for one staff member into their own XML file with their ICIS ID for that submitter in the <Id> tag. Otherwise, data for all staff members is combined into one XML submission file containing one valid ICIS ID in the <Id> tag of that submission file!*

## 7 VIEWING ICIS-NPDES BATCH SUBMISSION RESULTS

When CDX is unable to forward a submission file to ICIS-NPDES Batch because of errors, it sets the status of the submission to “Failed” and stores the errors in a file called “submission-metadata.xml”. Otherwise, the status is set to “Pending” and the submission file is sent to ICIS-NPDES batch. The submitter must wait until the following day when ICIS-NPDES Batch completes processing the submission file, notifies CDX to set the status to “Completed”, then sends a PDF of the results to CDX.

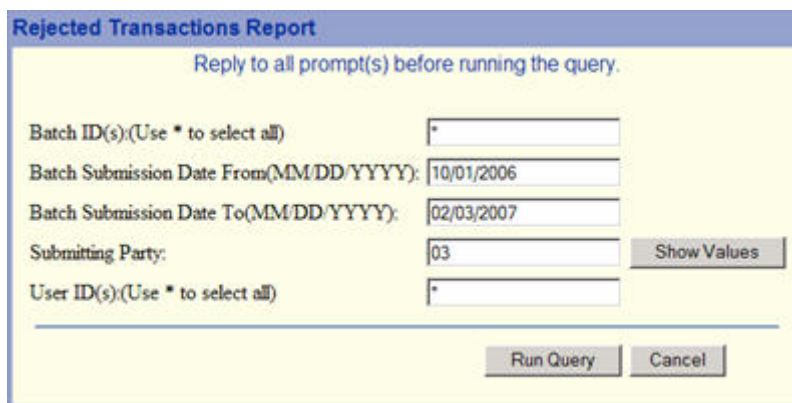
If the batch was submitted using the CDX Web Form, the status of the batch appears on the Transaction History Screen and the submitter can click on a link to download and view “submission-metadata.xml”. If the batch was submitted using their own Full State Node, the submitter can invoke a getStatus web method to check the status, then invoke the Download web method to retrieve “submission-metadata.xml” (if the status is “Failed”) or retrieve “<nodetransaction id>\_response.pdf” (if CDX returns a status of “Completed”).

### 7.1 ICIS-NPDES BATCH AUDIT REPORTS

Hybrid DMR batch submitters are provided audit reports in ICIS-NPDES similar to PCS audit reports that provide information on what happened to their transactions during the parsing and storing of each submittal file. Three Business Objects reports in ICIS-NPDES are designed to provide this information to batch users:

- **Rejected Transactions Report** – list of key fields with messages or errors ICIS encountered while processing transactions
- **Accepted Transactions Report** – list of key fields of transactions ICIS was able to process successfully
- **Batch Transactions Summary Report** – counts of transactions accepted or rejected by transaction type

Hybrid batch submitters will need to log into ICIS-NPDES and click on a link to the Batch Audit Reports module to get to the reports. Each Report has a Selection Criteria Prompt box (Figure 7-1) allowing the submitter to select the specific values for which they would like the report to be run. The values entered are used to gather the data to display on the report.



**Figure 7-1. Example of Batch Audits Report Selection Criteria Prompts for the Rejected Transactions Report**

These prompts are listed in Table 7-1 below with the values and rules associated with them.

Parameter	Required/Optional	Values and Rules
<b>Batch ID(s)</b>	Optional	<p>Values:</p> <ul style="list-style-type: none"> <li>Valid Batch Ids (Node Transaction ID as provided by the CDX Web form, or External Transaction ID as provided by the CDX node)</li> </ul> <p>Rules:</p> <ul style="list-style-type: none"> <li>1 or many values will be accepted</li> <li>Multiple values must be separated by a semicolon</li> <li>An '*' may be entered if the user does not want to select specific Batch ID(s)</li> </ul>
<b>Submission Date From</b>	Required	<p>Values:</p> <ul style="list-style-type: none"> <li>Valid dates are any past dates and the current date in MM/DD/YYYY format</li> </ul> <p>Rules:</p> <ul style="list-style-type: none"> <li>1 value will be accepted</li> <li>The value must be typed in</li> </ul>
<b>Submission Date To</b>	Required	<p>Values:</p> <ul style="list-style-type: none"> <li>Valid dates are any past dates and the current date in MM/DD/YYYY format</li> </ul> <p>Rules:</p> <ul style="list-style-type: none"> <li>1 value will be accepted</li> <li>The value must be typed in</li> </ul>
<b>Submitting Party</b>	Required	<p>Values:</p> <ul style="list-style-type: none"> <li>EPA Region Codes 01 through 10</li> <li>"HQ" for EPA Headquarters</li> <li>Valid 2-character State, Territory and Canadian Province Postal Codes</li> <li>"NN" for Navajo Nation Tribe</li> <li>"SR" for St. Regis Tribe</li> </ul> <p>Rules:</p> <ul style="list-style-type: none"> <li>1 value will be accepted</li> <li>The value can either be typed in or selected from a list of values generated from the ref_region and ref_state tables</li> </ul>
<b>User ID</b>	Optional	<p>Values:</p> <ul style="list-style-type: none"> <li>Valid ICIS User IDs</li> </ul> <p>Rules:</p> <ul style="list-style-type: none"> <li>1 or many values will be accepted</li> <li>Multiple values must be separated by a semicolon</li> <li>An '*' may be entered if the user does not want to select specific User ID(s)</li> </ul>

**Table 7-1. Batch Audit Report Selection Criteria Prompts**



*Data must be entered into all Selection Criteria prompts or the report will not run!*



*When cutting and pasting Batch Ids or other data into the criteria, be sure not to copy any spaces before and after the data!*



*Always specify either a User ID or a Batch ID instead of an asterisk in both ID prompts to speed up the report!*



*The Batch ID is the same as the Node Transaction ID provided by the CDX Web Form or the External Transaction ID provided by the CDX node!*



*Contact ICIS User Support if you encounter any problems or have questions during the ICIS login or Batch Audit report generation process!*

### 7.1.1 Rejected Transactions Report

The Rejected Transactions report displays detailed information about the batch transactions that were rejected. For each rejected transaction, key data are provided to identify the specific record that has an error and a detailed error message provides information to help the submitter correct the errors.

**Environmental Protection Agency**  
**Integrated Compliance Information System**  
**Rejected Transactions Report**

Batch Submission Date From: 10/01/2006 To: 02/03/2007  
 Batch ID(s): \*  
 Submitting Party: 03  
 User ID(s): \*

Created Date: 12/12/2006  
 Refresh Date: 03/21/2007  
 Created By: HQ

Submitting Party: VA ( Region 03 )

Batch ID	User ID	Run Date	Submission Date
va000220	abc	1/1/2007	1/1/2007

Submission Type	Transaction Type	Key Value	Error / Warning Message(s)
DMR	Replace	VA1234222001A01/01/20070426211	For Numeric Report Code C2, Numeric Report Received Date 12/31/2008 entered must be less than or equal to the current date. For Numeric Report Code Q2, Numeric Condition Quantity -55 is negative so the Numeric Condition Qualifier can not be Less Than (<).
DMR	Replace	VA1234222001A01/01/20073223011	A Parameter does not exist that matches the data entered.
DMR	Replace	VA1234222001A01/01/20075118611	A Parameter does not exist that matches the data entered.
DMR	Replace	VA1234222001B12/31/2008	For Numeric Report Code C2, Numeric Report Received Date 12/31/2008 entered must be less than or equal to the current date. For Numeric Report Code Q2, Numeric Condition Quantity -55 is negative so the Numeric Condition Qualifier can not be Less Than (<).
DMR	Replace	VA1234500001A01/01/20073223011	A Parameter does not exist that matches the data entered.

Batch ID	User ID	Run Date	Submission Date
va001001	abc	1/1/2007	1/1/2007

Submission Type	Transaction Type	Key Value	Error / Warning Message(s)
DMR	Replace	VA1234567001A01/01/20070426211	For Numeric Report Code C2, Numeric Report Received Date 12/31/2008 entered must be less than or equal to the current date. For Numeric Report Code Q2, Numeric Condition Quantity -55 is negative so the Numeric Condition Qualifier can not be Less Than (<).
DMR	Replace	VA1234567001A01/01/20073223011	For Numeric Report Code C2, Numeric Report Received Date 12/31/2008 entered must be less than or equal to the current date. For Numeric Report Code Q2, Numeric Condition Quantity -55 is negative so the Numeric Condition Qualifier can not be Less Than (<).

Environmental Protection Agency Page 1 of 2



*Refer to Section 8 of this document for a comprehensive list of error messages, what caused them and how to fix them. Contact the CDX Help Desk if you need help interpreting error message in the Rejected Transactions Report!*

### 7.1.2 Accepted Transactions Report

The Accepted Transactions report displays summary information about the batch transactions that were accepted. For each accepted transaction, key data are provided to identify the specific record that was accepted.

**Environmental Protection Agency  
Integrated Compliance Information System  
Accepted Transactions Report**

Batch Submission Date From: 01/01/2007 To: 02/01/2007

Batch ID(s): \*  
Submitting Party: VA  
User ID(s): \*

Created Date: 12/12/2006  
Refresh Date: 03/20/2007  
Created By: HQ

Submitting Party: VA ( Region 03 )

Batch ID	User ID	Run Date	Submission Date
va001001	abc	01/01/2007	01/01/2007

Submission Type	Transaction Type	Key Value	Error / Warning Message (s)
DMR	Replace	VA1234568001A01/01/20075118611	
DMR	Replace	VA1234569001A01/01/20070426211	For Numeric Report Code Q1, the Numeric Condition Quantity 60 has a Percent of Exceedence Greater than 500%.
DMR	Replace	VA2234567001A12/31/2006	

Environmental Protection Agency

Page 1 of 1

### 7.1.3 Batch Transactions Summary Report

The Batch Transactions Summary report displays summary information about the numbers of accepted and rejected batch transactions presented in a table. The report contains a summary table for each batch as well as a summary table for all batches in the report.

Environmental Protection Agency Integrated Compliance Information System Batch Transactions Summary Report													
Batch Submission Date From: 05/05/2007 To: 05/06/2007 Batch Cspj: *											Created Date: 05/17/2007		
Submitting Party: *											Refresh Date: 05/07/2007		
User(s): *											Created By: HQ		
Submitting Party: DE (Region 02)													
Batch ID: 1463332b-ee1d-4173-9837-d702b6f4310													
Submission Date: 05/06/2007													
Transaction Type	N	N	R	R	C	C	X	X	D	D	Total Transactions	% Transactions Accepted	Total Submissions
Submission Type	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected			
CAIR	0	0	0	0	11	14	0	0	0	0	25	44.00 %	12
Total	0	0	0	0	11	14	0	0	0	0	25	44.00 %	12
Batch ID: 209056e-2ac6-4208-babb-402609c2818													
Submission Date: 05/06/2007													
Transaction Type	N	N	R	R	C	C	X	X	D	D	Total Transactions	% Transactions Accepted	Total Submissions
Submission Type	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected			
CAIR	0	0	0	0	9	13	0	0	0	0	22	40.91 %	11
Total	0	0	0	0	9	13	0	0	0	0	22	40.91 %	11
Batch ID: 7bb2425f-285f-4683-85c0-739328951ef													
Submission Date: 05/06/2007													
Transaction Type	N	N	R	R	C	C	X	X	D	D	Total Transactions	% Transactions Accepted	Total Submissions
Submission Type	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected			
CAIR	0	0	0	0	31	23	0	0	0	0	54	57.41 %	37
Total	0	0	0	0	31	23	0	0	0	0	54	57.41 %	37

## 8 DATA MAPPING AND RULES

This section contains mapping of ICIS data families into corresponding PCS fields and explains special rules ICIS-NPDES Batch will follow when processing data. Each mapping table provides all of the tags possible within an XML file, their PCS counterparts where applicable, the name of the PCS code table, the name of the ICIS code table, and explanations of how ICIS will handle the data when extracting and processing it. XML tag name definitions, characteristics and mandatory designations in the mapping tables can be found in the ICIS-NPDES XML Data Exchange Template.

### 8.1 DISCHARGE MONITORING REPORT MAPPING AND RULES

#### 8.1.1 Discharge Monitoring Report Mapping

XML Tag Name	PCS Counterpart	PCS Code Table	ICIS Code Table	ICIS Column	Comments
PermitIdentifier	Permit Number (NPID)			Icis_permit.external_permit_nmbr	Must have postal code as the first 2 characters. Same postal codes as PCS except for Gulf of Mexico permits: GE is to be used by Region 4 and GM is to be used by Region 6.
PermittedFeatureIdentifier	Discharge Number (VDSC)			Icis_perm_feature.perm_feature_nmbr	Same as PCS but allows 3 to 4 characters instead of just 3 and 3 characters do not require padding of zeroes or spaces on the left or right to make it 4 characters. One physical outfall should only have one PermittedFeatureIdentifier in ICIS with variations of that outfall's limit requirements assigned to their own unique LimitSetDesignators.



LimitSetDesignator	Report Designator (VDRD)			Icis_limit_set.limit_set_designator	Same as PCS but allows to 1 to 2 characters instead of just 1 and 1 character does not require padding of zeroes or spaces on the left or right to make it 2 characters.
MonitoringPeriodEndDate	Monitoring Period End Date (MVDT)			Icis_dmr_event.monitoring_period_end_date	Same as PCS but the format for ICIS is cyy-mm-dd.
SignatureDate	N/A			Icis_dmr.signature_date	
PrincipalExecutiveOfficerFirstName	N/A			Icis_dmr.executive_officer_first_name	
PrincipalExecutiveOfficerLastName	N/A			Icis_dmr.executive_officer_last_name	
PrincipalExecutiveOfficerTitle	N/A			Icis_dmr.executive_officer_title	
PrincipalExecutiveOfficerTelephone	N/A			Icis_dmr.executive_officer_phone	
SignatoryFirstName	N/A			Icis_dmr.signatory_first_name	
SignatoryLastName	N/A			Icis_dmr.signatory_last_name	
SignatoryTelephone	N/A			Icis_dmr.signatory_phone	
ReportCommentText	N/A			Icis_dmr.dmr_comment_text	
DMRNoDischargeIndicator	Pipe No Data Reason Code (NODI)	490	Ref_nodi	Icis_dmr_value.nodi_code	Same as PCS for the entire outfall only except new codes have been added and a flag has been added to each code for whether to generate a violation or not.
DMRNoDischargeReceivedDate	DMR Received Date (DMRR)			Icis_dmr_value.value_received_date	Same as PCS for the entire outfall except but the format for ICIS is cyy-mm-dd and this date is only provided if the DMRNoDischargeIndicator tag is being/has been used.
ParameterCode	Parameter Code (VPRM)	160	Ref_parameter	Icis_limit.parameter_code	Same as PCS but a few duplicate codes have been reassigned to one code and unit + parameter groupings have been revised.
MonitoringSiteDescriptionCode	Monitoring Location Code (VMLO)	80	Ref_monitoring_location	Icis_limit.monitoring_location_code	Same as PCS except special characters (not A-Z or 0-9) in PCS are now 2 character codes in ICIS.
LimitSeasonNumber	Season (SEAN)			Icis_limit.limit_season_id	Same as PCS.
ReportSampleTypeText	Reported Sample Type (RSAM)	150	Ref_sample_type	Icis_dmr_parameter.sample_type_code	Same as PCS.
ReportingFrequencyCode	Reported	50	Ref_frequency_of	Icis_dmr_parameter.frequency_of_analysis	Same as PCS.

	Frequency of Analysis (RFRQ)		_analysis	lysis_code	
ReportNumberOfExcursions	Reported Number of Excursions (REXC)			Icis_dmr_parameter.reported_excursion_nnbr	Same as PCS but must be numeric in ICIS.
NumericReportCode	MQAV, MQMX, MCMN, MCAV, MCMX			Icis_dmr_form_value.value_type_code	ICIS uses the following codes to denote which PCS quantity or concentration is being reported: MQAV = Q1 MQMX = Q2 MCMN = C1 MCAV = C2 MCMX = C3
NumericReportNoDischargeIndicator	Pipe No Data Reason Code (NODI)	490	Ref_nodi	Icis_dmr_value.nodi_code	Same as PCS for the quantity or concentration only except new codes have been added and a flag has been added to each code for whether the NODI is valid (no violations generated) or invalid (violations generated). There is no NODI in ICIS for all quantities and concentrations for a given parameter.
NumericReportReceivedDate	DMR Received Date (DMRR)			Icis_dmr_value.value_received_date	Same as PCS for the quantity or concentration only but the format for ICIS is cyy-mm-dd. There is no DMRR in ICIS Batch for all quantities and concentrations for a given parameter.
NumericConditionQuantity	MQAV, MQMX, MCMN, MCAV, MCMX			Icis_dmr_value.dmr_value_nnbr	Same as PCS but values must be numeric and cannot have an E or T in it nor have an equal, greater than, less than, greater than or equal to, less than or equal to signs with it.
NumericConditionAdjustedQuantity	N/A			Icis_dmr.adjusted_dmr_value_nnbr	Same as PCS but values must be numeric and cannot have an E or T in it nor have an equal, greater than, less than, greater than or equal to, less than or equal to signs with it.
NumericReportUnitMeasureCode	RUNT, RCUN	180	Ref_unit	Icis_dmr_value.unit_code	Same as PCS but many duplicate codes



					have been reassigned to one code, and conversion factors, unit + parameter groupings have been revised. In ICIS, each reported quantity has its own unit of measure but if both quantities are reported with units then each must have the same unit. Also in ICIS, each reported concentration has its own unit of measure but if two or more concentrations are reported with units then all must have the same unit. ICIS will default to a quantity or concentration's limit unit if this tag is missing for an initial report or replace transaction.
NumericConditionQualifier	MQAV, MQMX, MCMN, MCAV, MCMX			Icis_dmr_value.value_qualifier_code	ICIS treats this field as a prefix to or substitution for NumericConditionQuantity and NumericConditionAdjustedQuantity values. The allowable codes are: = (equals – this is the default code value) < (less than) > (greater than) E (estimated) T (too numerous to count) * If you need to change this code in your ICIS data from <, >, E or T to be = (equals) instead, you must provide the = (equals) code in your XML file
PollutantMetForLandApplication	N/A			Icis_dmr_land.pollutant_table_code	
PathogenReductionIndicator	N/A			Icis_dmr_land.pathogen_certified_flag , Icis_dmr_surface.pathogen_certified_flag	
VectorReductionIndicator	N/A			Icis_dmr_land.vector_attraction_flag, Icis_dmr_surface.vector_attraction_flag	

				g	
AgronomicGallonsRateForField	N/A			Icis_dmr_land.agronomic_rate_gallon	
AgronomicDMRRateForField	N/A			Icis_dmr_land.agronomic_rate_dmt	
ClassAAlternativeUsed	N/A			Icis_dmr_land.class_a_alternative_use d_code, Icis_dmr_surface.class_a_alternative_ used_code	
ClassAAlternativesText	N/A			Icis_dmr_land.class_a_alternative_det ail, Icis_dmr_surface.class_a_alternative_ detail	
ClassBAlternativeUsed	N/A			Icis_dmr_land.class_b_alternative_use d_code, Icis_dmr_surface.class_b_alternative_ used_code	
ClassBAlternativesText	N/A			Icis_dmr_land.class_b_alternative_det ail, Icis_dmr_surface.class_b_alternative_ detail	
VARAlternativeUsed	N/A			Icis_dmr_land.var_alternative_used_c ode, Icis_dmr_surface.var_alternative_used code	
VARAlternativesText	N/A			Icis_dmr_land.var_alternative_detail, Icis_dmr_surface.var_alternative_detai l	
CropTypesPlanted	N/A	770	Ref_crop_type	Xref_dmr_land_plant_crop_type.plant crop_type_code	ICIS uses same codes as sludge outfall Crop Type (SLCT)
CropTypesHarvested	N/A	770	Ref_harvest_crop _type	Xref_dmr_land_harvest_crop_type.har vest_crop_type_code	ICIS uses same codes as sludge outfall Crop Type (SLCT)
ManagementPracticesIndicator	N/A			Icis_dmr_surface.met_management_pr actice_flag	
CertificationStatementIndicator	N/A			Icis_dmr_surface.certified_manageme nt_practice	
CertifierFirstName	N/A			Icis_dmr_surface.certifier_first_name	
CertifierLastName	N/A			Icis_dmr_surface.certifier_last_name	

BerylliumComplianceIndicator	N/A			Icis_dmr_incinerator.compliance_beryllium_flag	
MercuryComplianceIndicator	N/A			Icis_dmr_incinerator.compliance_mercury_flag	
Part258ComplianceIndicator	N/A			Icis_dmr_co_disp.compliance_part_258_flag	
PaintFilterTestResults	N/A			Icis_dmr_co_disp.paint_filter_test_flag	
TCLPTestResults	N/A			Icis_dmr_co_disp.tclp_test	

### 8.1.2 Rules for Parsing State Submitted DMR XML Files

A summary of rules for processing DMR data is provided in this section. Detailed explanations of these rules with examples can be found in the ICIS Batch dmr Technical Specification document.

#### OVERALL

- a) ICIS reference tables have codes that are either Active or Inactive. Inactive codes were migrated from legacy data but the code is not being used anymore and cannot be selected when adding a new code or changing an existing code in ICIS. Active codes were both migrated from legacy data and newly created codes for ICIS and can be selected when adding a new code or changing an existing code in ICIS.
- b) Mass Deletes are performed first, Changes are performed next, and Replaces are performed last.
- c) A form level NODI (NODI for all of a permitted feature's parameters) cannot be submitted within the same DMR XML file as data for one or more of these parameters. Instead, submit the form level NODI first then submit another XML file with the parameter data after the form level NODI has been processed by ICIS.
- d) A permitted feature that has parameter data with auxiliary data is counted as having two or more transactions – one for the auxiliary data and one for each parameter.
- e) All DischargeMonitoringReportData parent tags must have PermitIdentifier, PermittedFeatureIdentifier, LimitSetDesignator, and MonitoringPeriodEndDate tags.

#### MASS DELETES

- a) If a Mass Delete transaction has any extra data tags along with the PermitIdentifier, PermittedFeatureIdentifier, LimitSetDesignator, and MonitoringPeriodEndDate tags, those extra tags will be ignored.
- b) Mass Delete of a scheduled DMR will result in a blank DMR record in ICIS. Mass Delete of an unscheduled DMR will result in removal of the record from ICIS.
- c) Mass Deletes cannot be performed on any DMRs associated with a program report in ICIS. The link between the DMR and the program report and the DMR must be removed first.

## CHANGES

- a) Only the tags that are present in a DMR's Change transaction will be saved to their corresponding fields in ICIS. All other fields in ICIS will remain unchanged.
- b) Any change transactions for unscheduled DMRs that do not already exist in ICIS will result in a record being created containing the data provided in the tags with the change transactions.
- c) One asterisk must be used in a tag to blank out a field in ICIS.
- d) Asterisks cannot be used to blank out an entire DMR record if the DMR record is associated with a program report in ICIS. The link between the DMR and the program report and the DMR must be removed first.
- e) Asterisks used to blank out an entire scheduled DMR record that is not associated with a program report in ICIS results in an empty record in ICIS.
- f) Asterisks used to blank out an entire unscheduled DMR record that is not associated with a program report in ICIS results in the record being removed from ICIS.
- g) Auxiliary data for a permitted feature can only be changed if there is a DMR received date for at least one parameter in ICIS or submitted with the auxiliary data. Asterisks cannot be used to blank out all of an outfall's parameters plus change data in one or more auxiliary fields.
- h) Form level NODI codes that exist in ICIS can only be blanked out if its NODI tag and associated date tag are submitted with asterisks and no other parameter and quantity/concentration tags containing data are submitted at the same time. A form level NODI tag and its associated date tag cannot contain asterisks if its ICIS record already has parameter or quantity/concentration value data other than NODI codes in its fields. These fields must be blanked out first.
- i) Quantity or concentration level NODI codes that exist in ICIS can only be blanked out if its NODI tag and associated date tags are submitted with asterisks and no other quantity/concentration tags containing value data are submitted at the same time.
- j) CropTypesPlanted and CropTypesHarvested tags are called "multi-value" tags and can be submitted more than once consecutively. To add or remove codes from the list of CropTypesPlanted or CropTypesHarvested for a DMR in ICIS you

must provide the entire list of CropTypesPlanted or CropTypesHarvested each time. To remove the entire list of codes in ICIS for one of these tags you provide that tag with an asterisk only once.

## REPLACES

- a) For one parameter in an outfall, any tags that are present in a Replace transaction will be saved to their corresponding fields in ICIS and all other of the outfall's fields in ICIS will be blanked out for that parameter only.
- b) To blank out an entire parameter, submit a Replace transaction with only the PermitIdentifier, PermittedFeatureIdentifier, LimitSetDesignator and MonitoringPeriodEndDate along with that parameter's mandatory tags (ParameterCode, MonitoringSiteDescriptionCode, LimitSeasonNumber).
- c) If no auxiliary tags are present in a Replace transaction the auxiliary data will remain in ICIS. If one or more auxiliary tags are present in a Replace transaction then any tags that are present in a Replace transaction will be saved to their corresponding fields in ICIS and all other of the auxiliary data fields in ICIS will be blanked out.
- d) Any replace transactions for unscheduled DMRs that do not already exist in ICIS will result in a record being created containing the data provided in the tags with the change transactions.
- e) One asterisk must be used in a tag to blank out a field in ICIS.
- f) Asterisks cannot be used to blank out an entire DMR record if the DMR record is associated with a program report in ICIS. The link between the DMR and the program report and the DMR must be removed first.
- g) Asterisks used to blank out an entire scheduled DMR record that is not associated with a program report in ICIS results in an empty record in ICIS.
- h) Asterisks used to blank out an entire unscheduled DMR record that is not associated with a program report in ICIS results in the record being removed from ICIS.
- i) Auxiliary data for a permitted feature can only be changed if there is a DMR received date for at least one parameter in ICIS or submitted with the auxiliary data. Asterisks cannot be used to blank out all of a permitted feature's parameters plus change data in one or more auxiliary fields.
- j) Form level NODI codes that exist in ICIS can only be blanked out if its NODI tag and associated date tag are submitted with asterisks and no other parameter and quantity/concentration tags containing value data are submitted at the same time.
- k) Quantity or concentration level NODI codes that exist in ICIS can only be blanked out if its NODI flag and associated date tags are submitted with asterisks and no other quantity/concentration tags containing value data are submitted at the same time.
- l) CropTypesPlanted and CropTypesHarvested tags are called "multi-value" tags and can be submitted more than once consecutively. To add or remove codes from the list of CropTypesPlanted or CropTypesHarvested for a DMR in ICIS you

must provide the entire list of CropTypesPlanted or CropTypesHarvested each time. To remove the entire list of codes in ICIS for one of these tags you provide that tag with an asterisk only once.

## 9 ERROR MESSAGES

### 9.1 ICIS-NPDES BATCH ERROR MESSAGES

This section lists error messages generated by ICIS-NPDES Batch when an error is encountered. The first subsection lists error messages encountered during the processing of DMR submittals. Future subsections will be added for the other ICIS data families when Full Batch development occurs.

#### 9.1.1 DMR Batch Error Messages

The table below lists error messages that are generated when ICIS-NPDES Batch cannot process a DMR transaction, what caused the error, how the error affected the transaction, and the key fields of the transaction that had the error.

Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR010	Transaction Type <value> is not valid for DMRs.	Transaction Type must be valid for DMRs. Valid Transaction Types are R (Replace), C (Change), and X (Mass Delete).	Reject entire DMR transaction	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR020	User <user id> does not have privileges to perform a <transaction type> DMR transaction.	User must have privileges to perform the transaction. Note: ICIS does not have Batch-specific privileges. The privileges for Batch and Web access are the same.	Reject entire DMR transaction	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR030	A DMR Form does not exist and cannot be created for the key data entered.	If Limit Set Type for the submitted DMR equals Scheduled, a DMR Form with values matching Permit Identifier, PF ID, LSD, and MPED must already exist in ICIS.	Reject entire DMR transaction	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate

Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR040	A DMR Form does not exist and cannot be created for the key data entered.	If Limit Set Type for the submitted DMR equals Unscheduled, the combination of Permit Identifier, PF ID, and LSD must exist in the system and MPED must be valid. The system will use this data to generate the DMR Form if it does not already exist.	Reject entire DMR transaction	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR045	The DMR only contains key data and no other data for processing.	If the DMR contains only key data and no other data, ICIS rejects the DMR.	Reject entire DMR transaction	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR047	All parameters cannot be blanked out because the DMR Form is linked to a Program Report or has Auxiliary Data.	All parameters for a DMR Form cannot be blanked out if the DMR Form is linked to a Program Report or has Auxiliary Data.	Reject entire DMR transaction	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR050	Form NODI cannot be entered because at least one DMR Value exists for the DMR Form.	In a Change DMR XML transaction, if Form NODI data (DMR No Discharge Indicator, DMR No Discharge Received Date) are submitted, no received DMR Values may exist for the Form.	Reject each parameter in Form	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
DMR060	DMR No Discharge Indicator <value> does not exist in the ICIS reference table.	Form NODI Code must be a valid (i.e., Active) code in the REF_NODI table.	Reject each parameter in Form	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber



Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR070	DMR No Discharge Received Date <date> entered must be less than or equal to the current date.	Form NODI Received Date must be less than or equal to the current date.	Reject each parameter in Form	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
DMR073	An asterisk (*) cannot be entered for DMR No Discharge Received Date because at least one DMR Value exists for the DMR Form.	All Received Dates on a DMR Form cannot be blanked out if any received values exist for the DMR Form.	Reject each parameter in Form	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
DMR076	1) DMR No Discharge Received Date must be entered because DMR No Discharge Indicator has been entered. 2) DMR No Discharge Indicator must be entered because DMR No Discharge Received Date has been entered.	If Form NODI Code is entered, Form NODI Received Date must also be entered, and vice versa.	Reject each parameter in Form	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber

Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR080	A Parameter does not exist that matches the data entered.	For each Parameter, the DMR Parameter Key (Parameter Code, Monitoring Location Code, Season ID) must exist in ICIS.	Reject parameter	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
DMR090	(Report Sample Type Text: <value>) or (Reporting Frequency Code: <value>) or Report Number of Excursions: <value>) cannot be entered unless valid data has been entered for at least one Numeric Condition Quantity or T has been entered for at least one Numeric Condition Qualifier for this parameter. In the message above, all XML tags that may have this error are listed in parentheses. Only the tags for which this error occurs will be included in the actual error message	If any of the following are entered for a parameter: <ul style="list-style-type: none"> <li>• Sample Type</li> <li>• Frequency of Analysis</li> <li>• Report Number of Excursions</li> </ul> Then at least one DMR Value or T Qualifier (Too numerous to count) must exist.	Reject parameter	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
DMR100	Reporting Frequency Code <value> entered does not exist in the ICIS reference table.	Frequency of Analysis code entered must be a valid (i.e., Active) code in the REF_FREQUENCY_OF_ANALYSIS table.	Reject parameter	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber



Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR110	Report Sample Type Text <value> entered does not exist in the ICIS reference table.	Sample Type code entered must be a valid (i.e., Active) code in the REF_SAMPLE_TYPE table.	Reject parameter	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
DMR120	Numeric Report Code <value> has been entered more than one time for this parameter, and only one of each type of Numeric Report Code can be entered per unique parameter.	For each unique Parameter entered, only one of each Value Type can be entered (i.e., only one Q1, one Q2, one C1, one C2, and one C3)	Reject parameter	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
DMR130	Numeric Report Code <value> entered for this parameter is not defined in the permit as expected data so cannot be entered in this DMR.	For each unique Parameter Code entered, any Value Type (Q1-C3) entered must exist in the DMR Form (i.e., users cannot enter data for a parameter column that is not expected (defined in the permit with a corresponding limit that has a value or is req mon or opt mon))	Reject parameter	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber

Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR140	<p>The following Numeric Report Received Date(s) must be less than or equal to the current date: value (column).</p> <p>For this error message, value and column will be listed for each column that has this error.</p>	<p>DMR Value Received Date must be less than or equal to the current date.</p>	<p>Reject parameter</p>	<p>PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate</p> <p>ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber</p>
DMR150	<p>The following Numeric Report Received Date(s) was entered but no Numeric Condition Quantity or Numeric Report No Discharge Indicator exists: value (column)</p> <p>For this error message, value and column will be listed for each column that has this error.</p>	<p>For every DMR Value Received Date, there must be a corresponding Value/Adjusted Value or NODI unless the Qualifier for the column equals T (Too numerous to count).</p>	<p>Reject parameter</p>	<p>PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate</p> <p>ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber</p>
DMR160	<p>The following was entered but a Numeric Condition Quantity does not exist: &lt;column&gt;: (Numeric Condition Adjusted Quantity: &lt;value&gt;, Numeric Condition Qualifier: &lt;value&gt;).</p> <p>For this error message, "&lt;column&gt;" will be replaced by the column that is causing the problem (e.g., Q1).</p> <p>In the message above, all XML tags that may have this error are listed in parentheses. Only the tags for which this error occurs will be included in the actual error message.</p>	<p>If any of the following are entered for a Value Type:</p> <ul style="list-style-type: none"> <li>• Adjusted Value</li> <li>• Unit Code</li> <li>• Value Qualifier (except T or =)</li> </ul> <p>Then a DMR Value must exist for that Value Type.</p>	<p>Reject parameter</p>	<p>PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate</p> <p>ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber</p>

Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR170	The following Numeric Condition Adjusted Quantity(ies) was entered but a Trade Partner does not exist for the Limit and so the data cannot be entered for this DMR parameter: value (column). For this error message, value and column will be listed for each column that has this error.	Adjusted DMR Value can only be entered if a Trade Partner has been defined for the associated Limit (Parameter) on the Permit.	Reject parameter	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
N/A	N/A	If Value Qualifier is not entered the system will default it to Equals (=) when a DMR Value is entered.	N/A	N/a
DMR180	The following Numeric Condition Quantity(ies) is negative, so the Numeric Condition Qualifier cannot be Less than (<): value (column). For this error message, value and column will be listed for each column that has this error.	If DMR Value is negative the associated Value Qualifier cannot be Less Than (<).	Reject parameter	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber

Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR190	<p>When a Numeric Condition Qualifier T is entered the following cannot be entered: &lt;column&gt; (Numeric Condition Quantity: &lt;value&gt;, Numeric Condition Adjusted Quantity: &lt;value&gt;, Numeric Report No Discharge Indicator: &lt;value&gt;)</p> <p>For this error message, “&lt;column&gt;” will be replaced by the column that is causing the problem (e.g., 1).</p> <p>In the message above, all XML tags that may have this error are listed in parentheses. Only the tags for which this error occurs will be included in the actual error message</p>	<p>If Value Qualifier = T (Too numerous to count), the following fields must be blank for that Value Type: DMR Value Adjusted DMR Value NODI</p>	Reject parameter	<p>PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate</p> <p>ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber</p>
DMR200	<p>For Numeric Report Code(s) &lt;value&gt;, Numeric Condition Qualifier of T has been entered. The associated Limit's Unit Code does not have T listed as a valid qualifier.</p> <p>For this error message, value and column will be listed for each column that has this error.</p>	<p>If T is entered as the Value Qualifier then the Unit Code for the associated Limit for that Value Type must have T (Too numerous to count) listed as a valid qualifier for the Unit Code in the REF_UNIT table.</p>	Reject parameter	<p>PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate</p> <p>ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber</p>



Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR210	1) When T is entered as the Numeric Condition Qualifier, Numeric Report Code must be entered. 2) When T is entered as the Numeric Condition Qualifier, Numeric Report Received Date must be entered.	If Value Qualifier = T (Too numerous to count) the following fields are required: Value Type Value Received Date.	No data saved for this parameter	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
DMR220	Numeric Condition Quantity was entered but no Numeric Report Received Date exists for the following: value (column). For this error message, value and column will be listed for each column that has this error.	If a DMR Value is entered, DMR Value Received Date must exist for the specified Value Type.	Reject parameter	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
DMR240	Numeric Report No Discharge Indicator cannot be entered because no Numeric Report Received Date exists: value (columns). For this error message, value and column will be listed for each column that has this error.	If a Value NODI is entered, DMR Value Received Date must exist for the specified Value Type.	Reject parameter	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber

Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR250	<p>When a Numeric Report No Discharge Indicator is entered the following cannot be entered: &lt;column&gt; (Numeric Condition Quantity: &lt;value&gt;, Numeric Condition Adjusted Quantity: &lt;value&gt;, Numeric Report No Discharge Indicator: &lt;value&gt;)</p> <p>For this error message, “&lt;column&gt;” will be replaced by the column that is causing the problem.</p> <p>In the message above, all XML tags that may have this error are listed in parentheses. Only the tags for which this error occurs will be included in the actual error message.</p>	<p>If Value NODI is entered, the following cannot exist for the specified Value Type:                      DMR Value                      Adjusted DMR Value                      Value Qualifier (except =)</p>	Reject parameter	<p>PermitIdentifier                      PermittedFeatureIdentifier                      LimitSetDesignator                      MonitoringPeriodEndDate</p> <p>ParameterCode                      MonitoringSiteDescriptionCode                      LimitSeasonNumber</p>
DMR260	<p>Numeric Report No Discharge Indicator does not exist in the ICIS reference table for the following: value (column).</p> <p>For this error message, value and column will be listed for each column that has this error.</p>	Value NODI must be a valid (i.e., Active) code in the REF_NODI table.	Reject parameter	<p>PermitIdentifier                      PermittedFeatureIdentifier                      LimitSetDesignator                      MonitoringPeriodEndDate</p> <p>ParameterCode                      MonitoringSiteDescriptionCode                      LimitSeasonNumber</p>
N/A	N/A	If Unit Code is left blank the corresponding Unit Code defined for the associated Limit (Parameter) Value Type (Quantity or Concentration) on the Permit will be used.	N/A	N/A

Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR270	<p>The following Numeric Report Unit Measure(s) must be included in the Unit Group for the parameter: value (column). For this error message, value and column will be listed for each column that has this error.</p>	<p>Unit Code must be included in the Unit Group defined for the Parameter.</p>	<p>Reject parameter</p>	<p>PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber</p>
DMR280	<p>The following Numeric Report Unit Measure Codes entered for the Quantity columns do not match: value (column). For this error message, value and column will be listed for each column that has this error.</p>	<p>If Unit Code is entered for both Quantity Value Types for the same Parameter, the Unit Codes must match.</p>	<p>Reject parameter</p>	<p>PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber</p>
DMR290	<p>The following Numeric Report Unit Measure Codes entered for the Concentration columns do not match value (column). For this error message, value and column will be listed for each column that has this error.</p>	<p>If Unit Code is entered for two or more Concentration Value Types for the same Parameter, the Unit Codes must match.</p>	<p>Reject parameter</p>	<p>PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber</p>

Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR300	Warning: The following Numeric Condition Quantity(ies) has a Percent Exceedence greater than 500%: column. For this error message, value and column will be listed for each column that has this error.	If Percent Exceedence is greater than 500%, present a warning message to the user but save the data.	N/A	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
DMR310	Data cannot exist for the following unless a valid Numeric Report Received Date exists for this DMR: (list all data elements, by section).	Data cannot be entered for General DMR Info, Land Application, Surface Disposal, Co-Disposal, and Incinerator unless one valid DMR Received Date exists.	Reject auxiliary data	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR320	Signature Date <date> entered must be less than or equal to the current date.	DMR Authorized Signatory Date must be less than or equal to the current date.	Reject auxiliary data	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR330	Pollutant Met for Land Application <value> does not exist in the ICIS reference table.	Pollutant Met (Land Application) must be a valid (i.e., Active) code in the REF_POLLUTANT_TABLE table.	Reject auxiliary data	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR340	Crop Types Planted <value> does not exist in the ICIS reference table.	Crop Types Planted (Land Application) must be a valid (i.e., Active) code in the REF_CROP_TYPE table.	Reject auxiliary data	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR350	Crop Types Harvested <value> does not exist in the ICIS reference table.	Crop Types Harvested (Land Application) must be a valid (i.e., Active) code in the REF_CROP_TYPE table.	Reject auxiliary data	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR360	Class A Alternative Used <value> does not exist in the ICIS reference table.	Class A Alternative Used (Land Application and Surface Disposal) must be a valid (i.e., Active, Alternative_Used_Type_Code = A) code in the REF_ALTERNATIVE_USED table.	Reject auxiliary data	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate

Error/Warning Code	Error/Warning Message	Reason for Error	Result of Error or Warning	Key Fields of Record Affected
DMR370	Class B Alternative Used <value> does not exist in the ICIS reference table.	Class B Alternative Used (Land Application and Surface Disposal) must be a valid (i.e., Active, Alternative_Used_Type_Code = B) code in the REF_ALTERNATIVE_USED table.	Reject auxiliary data	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR380	VAR Alternative Used <value> does not exist in the ICIS reference table.	VAR Alternative Used (Land Application and Surface Disposal) must be a valid (i.e., Active, Alternative_Used_Type_Code = V) code in the REF_ALTERNATIVE_USED table.	Reject auxiliary data	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR400	A DMR Form matching the key data provided does not exist in ICIS.	In a delete DMR transaction, the specified DMR form must already exist in ICIS.	Reject transaction (form)	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate
DMR410	The DMR Form cannot be deleted because it is linked to a Program Report.	A DMR Form cannot be deleted if it is linked to a Program Report.	Reject each parameter and auxiliary data	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber
DMR420	Warning: A Background Processing error has occurred. The data for this DMR parameter were saved, but the Submittal Status for the form is Unsubmitted, so the DMR data have not been evaluated for Violations or Administrative Discrepancies. Please log in to ICIS and submit the DMR form.	If Background Processing does not complete successfully, set the Submittal Status of the DMR Form to Unsubmitted and notify the user that the form must be submitted online.	N/A	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate  ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber

## 9.2 SCHEMA VALIDATION ERROR MESSAGES

XML submission files must be validated against the ICIS Batch schema with a Schema validator package such as XMLSpy or Stylus Studio before they are submitted to CDX. If all XML submission files within the same zipped file are well formed and valid according to the ICIS-NPDES schema, the CDX node will return this downloadable SOAP message or the CDX Web form for ICIS will display this message in the <return> tag of the “submission-metadata.xml” file for the batch in the Transaction History screen:

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:tns="http://www.neien.org/schema/v1.0/validator.wsdl" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:typens="http://www.neien.org/schema/v1.0/validator.xsd"
  xmlns:dime="http://schemas.xmlsoap.org/ws/2002/04/dime/wsdl/" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/">
  <SOAP-ENV:Body>
  <mns:SchemaValidateResponse xmlns:mns="http://www.neien.org/schema/v1.0/validator.xsd" SOAP-
    ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
  <return xsi:type="xsd:string">Congratulations! The document, HQ001TEST.xml, is valid according to the schema.</return>
  </mns:SchemaValidateResponse>
  </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

The message immediately below indicates that an XML submission file was able to be sent to ICIS-NPDES Batch for processing. However, if a submission file is not well formed or is invalid according to the ICIS Schema, CDX will capture the first 100 errors and set the status of the submission to “Failed”. If the XML submission file is sent to CDX through its node, CDX will provide the errors in a downloadable SOAP message like the example shown below or the CDX Web form for ICIS will display this message in the “submission-metadata.xml” file for the batch in the Transaction History screen.

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<SOAP-ENV:Envelope xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:tns="http://www.neien.org/schema/v1.0/validator.wsdl" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
```

```

xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:typens="http://www.neien.org/schema/v1.0/validator.xsd"
xmlns:dime="http://schemas.xmlsoap.org/ws/2002/04/dime/wsdl/" xmlns:wSDL="http://schemas.xmlsoap.org/wsdl/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/">
<SOAP-ENV:Body>
<mns:SchemaValidateResponse xmlns:mns="http://www.neien.org/schema/v1.0/validator.xsd" SOAP-
ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
<return xsi:type="xsd:string">The document,\\cdxprepneta1\QA_Template1a14bae-fcd8-41d1-87a6-3eec4cee65cf0, contains the
following error(s): Error at line 4 column 40 : The ' http://www.exchangenetwork.net/schema/icis/1:Id' element is invalid - The value
'1234567890123456789012345678901' is invalid according to its datatype '
http://www.exchangenetwork.net/schema/icis/1:StringMin3Max30Type' - The actual length is greater than the MaxLength value.</return>
</mns:SchemaValidateResponse>
</SOAP-ENV:Body>
</SOAP-ENV:Envelope>
    
```

This table provides the general schema validation error messages that appear in a CDX, Stylus Studio or XMLSpy during XML schema validation, or appear in the PDF returned by ICIS, including an explanation of what caused the error and hints on how to fix the error.

Source of Error Message	Error/Warning Message	Reason for Error	Error Resolution
CDX	Congratulations! The document, <b>xxx.xml</b> , is valid according to the schema	The XML named xxx in the zipped submission file passed CDX schema validation checks and can be processed by ICIS-NPDES Batch.	Check the results of the submission in ICIS-NPDES by viewing the Batch Audit reports.
CDX	Submission Error: An internal error occurred	A file other than a zip compressed file was uploaded or the zip compressed file contained files other than XMLs, a tag is missing its start or end tag, or the Payload tag is missing its Operation attribute.	Check to make sure the submittal file is zipped and contains only XML instance documents, open the XML file with Internet Explorer to find the tag missing its start or end tag then fix the XML file to have the expected start and end tags, or add the correct Operation attribute to the Payload tag.
CDX	The <b>'xxx'</b> element is invalid - The value <b>'y'</b> is invalid according to its datatype	Data for the element <b>xxx</b> is in the wrong length, has an invalid code, does not match the expected format, has an invalid date or time is invalid.	Check the Data Exchange Template to find the characteristics of element <b>xxx</b> and fix the data to have the correct length, code, format, or valid day for the month time to have no more than 60 minutes or seconds.

Source of Error Message	Error/Warning Message	Reason for Error	Error Resolution
CDX	The element ' <b>xxx</b> ' in namespace 'http://www.exchangenetwork.net/schema/icis/1' has invalid child element ' <b>yyy</b> ' in namespace 'http://www.exchangenetwork.net/schema/icis/1'. List of possible elements expected: ' <b>zzz</b> ' in namespace 'http://www.exchangenetwork.net/schema/icis/1'.	The element named <b>zzz</b> is missing below the parent block named <b>xxx</b> from the XML.	Check the Example XML Instance Document example and fix the XML to have the missing element before the element named <b>yyy</b> , or remove the Property parent element if all its child elements are missing and not needed.
CDX	The element ' <b>xxx</b> ' in namespace 'http://www.exchangenetwork.net/schema/icis/1' cannot contain text. List of possible elements expected: ' <b>yyy</b> ', ' <b>zzz</b> '	The parent tag named <b>xxx</b> has data instead of its child tag(s) named <b>yyy</b> , <b>zzz</b> .	Check the Example XML Instance Document example and fix the XML file to have the expected child tags instead of data for parent element <b>xxx</b> .

Source of Error Message	Error/Warning Message	Reason for Error	Error Resolution
CDX	The element ' <b>xxx</b> ' in namespace 'http://www.exchangenetwork.net/schema/icis/1' has incomplete content. List of possible elements expected: ' <b>yyy</b> ', ' <b>zzz</b> '	The parent tag named <b>xxx</b> has data instead of its child tag(s) named <b>yyy</b> , <b>zzz</b> , or is missing one of its mandatory elements.	Check the Example XML Instance Document example and fix the XML file to have the expected child tags instead of data for parent element <b>xxx</b> .
CDX	The element ' <b>xxx</b> ' in namespace 'http://www.exchangenetwork.net/schema/icis/1' has incomplete content. List of possible elements expected: ' <b>yyy</b> ' in namespace 'http://www.exchangenetwork.net/schema/icis/1'	The parent element named xxx is missing all of its child tags.	Check the Example XML Instance Document example and fix the submission file to have its child tags in the order expected.

Source of Error Message	Error/Warning Message	Reason for Error	Error Resolution
CDX	<p>The element '<b>xxx</b>' in namespace 'http://www.exchangenetwork.net/schema/icis/1' has invalid child element '<b>yyy</b>' in namespace 'http://www.exchangenetwork.net/schema/icis/1'. List of possible elements expected: '<b>zzz</b>' in namespace 'http://www.exchangenetwork.net/schema/icis/1'.&lt;br/&gt;&lt;/p&gt; </p>	<p>The parent element named <b>xxx</b> is missing a mandatory child tag named <b>zzz</b> and found a child tag named <b>yyy</b> instead.</p>	<p>Check the Example XML Instance Document example and fix the submission file to have the mandatory child tag <b>zzz</b> under the parent tag <b>xxx</b> in the order expected.</p>
CDX	<p>The 'Operation' attribute is invalid - The value '<b>xxx</b>' is invalid according to its datatype 'http://www.exchangenetwork.net/schema/icis/1':OperationType' - The Enumeration constraint failed.</p>	<p>The Payload tag has an invalid Operation attribute.</p>	<p>Check the Example XML Instance Document example and fix the XML file to have its Payload tag contain the correct attribute for Operation.</p>

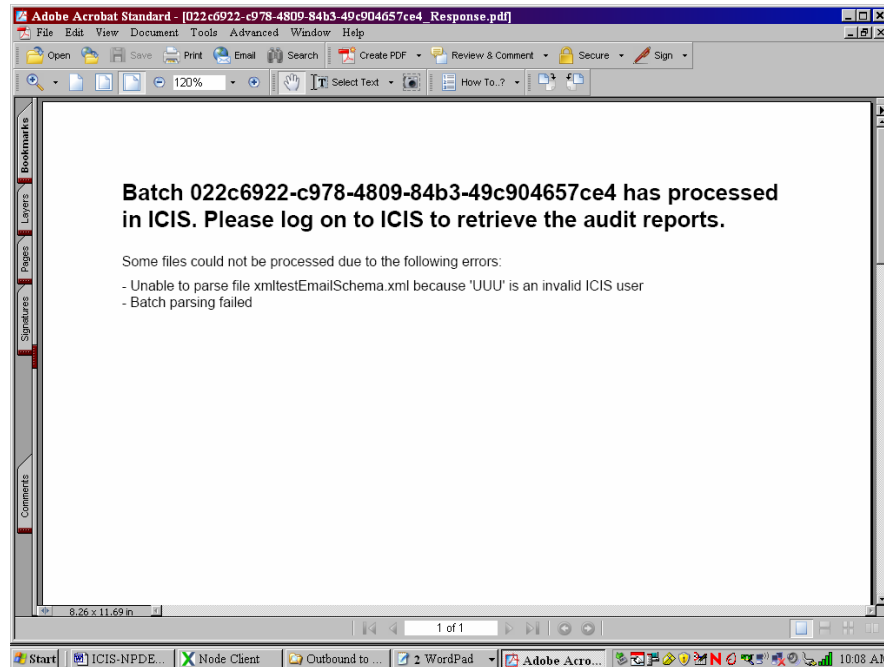
Source of Error Message	Error/Warning Message	Reason for Error	Error Resolution
<b>CDX</b>	Warning: Matching schema not found for at least part of the document, please check the namespace of your XML element - Could not find schema information for the element	The XML document is missing the namespace or has an incorrect namespace causing CDX to not be able to validate the XML against the ICIS schema.	<p>Make sure the &lt;Document&gt; tag of the XML file matches the text in bold below:</p> <pre>&lt;Document xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" <b>xmlns="http://www.exchangenetwork.net/schema/icis/1"</b>&gt;</pre>
<b>ICIS PDF</b>	Unable to parse file <b>xxx</b> because <b>yyy</b> is an invalid user.	ICIS-NPDES Batch received the XML instance document named xxx from CDX but could not process it because either an invalid ICIS user ID was specified in the <Id> tag or the ICIS user ID was valid but did not have the rights to apply the add, change and/or delete transactions in the XML instance document.	Fix the XML file to have a valid ICIS user ID in the <Id> tag with rights to add, change and delete records and resubmit the file.
<b>XMLSpy</b>	Required attribute 'Operation' is missing from element 'Payload'.	The Payload element is missing its Operation attribute.	Check the Example XML Instance Document example and fix the XML to have "DischargeMonitoringReportSubmission" as the Operation attribute of the Payload element.
<b>XMLSpy</b>	Text ' <b>xxx</b> ' is not allowed for element ' <b>yyy</b> '. The element declaration's content type is element-only.	The parent element named <b>xxx</b> can only have child elements instead of data but data was found.	Check the Example XML Instance Document example and fix the XML to have child elements under parent element <b>xxx</b> instead of data.

Source of Error Message	Error/Warning Message	Reason for Error	Error Resolution
<b>XMLSpy</b>	The content for element ' <b>xxx</b> ' is incomplete. Expected: <b>yyy</b>	The element named <b>xxx</b> is missing below the parent block named <b>yyy</b> from the XML.	Check the Example XML Instance Document example and fix the XML to have the missing element, or remove the Property parent element if all its child elements are missing and not needed.
<b>XMLSpy</b>	The content for element ' <b>xxx</b> ' is incomplete. Expected: <b>yyy</b>	The mandatory element named <b>yyy</b> is missing from or in the wrong position of the XML.	Check the Example XML Instance Document example and fix the XML to have the element named <b>yyy</b> in its proper location.
<b>XMLSpy</b>	The content of element ' <b>icis:xxx</b> ' is not valid according to its type definition ' <b>xs:yyy</b> '	Data for the element <b>xxx</b> is in the wrong length, has an invalid code, does not match the expected format, has an invalid date or time is invalid.	Check the Data Exchange Template to find the characteristics of element <b>xxx</b> and fix the data to have the correct length, code, format, valid day for the month time to have no more than 60 minutes or seconds.
<b>XMLSpy</b>	Unexpected element ' <b>xxx</b> ' in element 'SchemasVersion'. Expected: <b>yyy</b>	One or more of the elements under the <b>yyy</b> parent block are in the wrong position of the XML, or the mandatory parent block named <b>xxx</b> is missing from the XML.	Check the Example XML Instance Document example and fix the XML to have all of the elements in their proper location and the mandatory parent block <b>xxx</b> present.
<b>XMLSpy</b>	Value ' <b>xxx</b> ' of attribute 'Operation' is does not match simple type ' <b>icis:OperationType</b> '.	The Operation attribute of the Payload element is not "DischargeMonitoringReportSubmission"	Check the Example XML Instance Document example and fix the XML to have "DischargeMonitoringReportSubmission" as the Operation attribute of the Payload element.
<b>XMLSpy</b>	<b>Xxx</b> closing element name expected.	The parent element named <b>xxx</b> is missing its end tag or one of its child elements is missing its start tag.	Check the Example XML Instance Document example and fix the XML to have start tag for the child elements of the parent block named xxx, or the parent block named <b>xxx</b> to have its end tag.

Source of Error Message	Error/Warning Message	Reason for Error	Error Resolution
XMLSpy	xxx closing element name expected.	A child element of the parent block named xxx is missing its start tag, or the parent block itself is missing its end tag in the XML.	Check the Example XML Instance Document example and fix the XML to have the child element of xxx to have its start tag, or the parent element to have its end tag.

### 9.3 ICIS-NPDES UNEXPECTED ERROR MESSAGES

If an XML submission file encounters an unexpected error when trying to process the submission file that keeps the data from being parsed into the ICIS database, an error will be reported in a PDF file that can be downloaded from CDX. This is an example of a PDF where the <Id> tag contains a User ID that does not exist in ICIS.





### 9.4 CDX NODE SUBMITTAL ERROR MESSAGES

This table lists SOAP error messages that may be encountered by a state or tribe's Full Node while interacting with CDX to submit files to ICIS-NPDES Batch, along with an explanation on why an error occurred and how to fix it.

Type of Error	Error.Warning Message	Reason for Error	Error Resolution
SOAP Error	E_UnknownUser	CDX User authentication failed	Use a valid CDX ID and password.
SOAP Error	E_Query	The supplied database logic failed	Fix the logic of the query.
SOAP Error	E_TransactionId	A transaction ID could not be found	Provide the correct transaction ID or redo the transaction to get a new transaction ID.
SOAP Error	E_UnknownMethod	The requested method is not supported	Use the name of an existing CDX or data flow method to be invoked.
SOAP Error	E_AccessDenied	The operation could not be performed due to lack of privilege	Use a valid CDX ID and password that has rights to the desired data flow.
SOAP Error	E_InvalidToken	The securityToken is invalid	Re-authenticate to get a new security token.
SOAP Error	E_TokenExpired	The securityToken has expired	Re-authenticate to get a new security token.
SOAP Error	E_FileNotFound	A logic error occurred	Contact the CDX Held Desk for assistance.
SOAP Error	E_ValidationFailed	Data Exchange Template or Schema validation error	Validate the XML against its schema to find and correct the errors in the XML.
SOAP Error	E_ServerBusy	The service is too busy to handle the request at this time, please try later	Wait 30 minutes and try again.
SOAP Error	E_InvalidFileName	The name element in the nodeDocument structure is invalid	Fix the name to be a valid file name.
SOAP Error	E_InvalidFileType	The type element in the nodeDocument structure is invalid or not supported	Fix the file to be a valid type (ZIP).
SOAP Error	E_InvalidDataFlow	The dataflow element in a request message is not supported	Fix the name to be a valid data flow (ICIS-NPDES).
SOAP Error	E_InvalidParameter	One of the input parameters is invalid	Fix the invalid input parameter.
SOAP Error	E_InternalError	An unrecoverable error occurred during processing the request	Contact the CDX Held Desk for assistance.
SOAP Error	E_AuthMethod	The authentication method is not supported	Fix the authentication to a valid method of authentication (password, certificate, SAML)

Type of Error	Error.Warning Message	Reason for Error	Error Resolution
SOAP Error	E_AccessRight	User privilege is insufficient for the operation	Use a valid CDX ID and password that has rights to the desired data flow.
SOAP Fault	VersionMismatch	The SOAP envelope namespace is wrong	Fix the SOAP message to contain a valid namespace.