

Underground Injection Control Flow Configuration Document

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Environmental Information
exchange
Network

APPROVALS

This document has been reviewed and approved for use in the project development process. Minor changes and corrections may be made to this document without re-approval.

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Document Change History

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TABLE OF CONTENTS

1.0 ACKNOWLEDGEMENTS	4
2.0 INTRODUCTION	4
2.1 Background.....	4
2.2 How to Use This FCD	5
3.0 COMPONENT ALIGNMENT AND CHANGE HISTORY	6
3.1 Flow Component Version History	6
3.2 Flow Component Versions Currently Supported	6
3.3 Business Rule Change History	6
4.0 FLOW SUMMARY INFORMATION	7
4.1 Flow Identification	7
4.2 Data Flow Overview.....	7
4.3 Flow Access and Security.....	9
4.3.1 User Access and Security	9
4.3.2 Data Flow Security	9
4.4 Flow-Level Business Rules.....	10
4.5 Additional Flow Tools and Resources	10
5.0 UIC XML SCHEMA INFORMATION.....	11
5.1 Schema Structure	11
5.2 Schema Components	11
6.0 DATA SERVICE INFORMATION	13
6.1 Submit.....	13
6.2 Authenticate	14
6.3 GetStatus	14
6.4 Download.....	15
6.5 NodePing	15
7.0 EXCHANGE NETWORK HEADER INFORMATION.....	17
7.1 Header Elements, Description, and Examples	17
7.1.1 Elements, Description and Examples:	17
7.1.2 Submission File Structure	18
7.1.3 Payload	18
7.2 Custom Header Elements, Description, and Examples	18
8.0 APPENDICES	19
APPENDIX A: EXAMPLE OF THE SUBMISSION SUMMARY REPORT	19
APPENDIX B: EXAMPLE OF THE SUBMISSION HEADER	21
APPENDIX C: ACRONYMS AND DEFINITIONS	22

1.0 ACKNOWLEDGEMENTS

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- Sherry Chen
- John Wallwork.

2.0 INTRODUCTION

2.1 Background

The UIC Program works with State and local governments to oversee the underground injection of fluids and prevent contamination of Underground Sources of Drinking Water (USDW). Facilities across the United States and in Indian Country discharge a variety of hazardous and non-hazardous fluids into more than 800,000 injection wells. Some of the ground water injection practices that the UIC program regulates include:

- Over nine billion gallons of hazardous waste every year
- Over two billion gallons of brine from oil and gas operations everyday
- Automotive, industrial, sanitary, and other wastes that are injected into shallow aquifers
- Other fluids injected into, or above, underground sources of drinking water, including geothermal heat pumps, ground water remediation, and storm water drainage.

While treatment technologies exist, it would be very costly to treat and release to surface waters the billions of gallons of wastes that industries produce each year. When wells are properly sited, constructed, and operated in accordance with applicable State and Federal UIC regulations, underground injection has proven to be an effective and an environmentally safe method to dispose of wastes.

In 1974, Congress enacted the Safe Drinking Water Act (SDWA) to prevent the contamination of USDW. In 1980, the United States Environmental Protection Agency (EPA) promulgated regulations under the SDWA to establish the UIC Program. The most accessible fresh water is stored in shallow geological formations called aquifers and is the most vulnerable to contamination. These aquifers feed our lakes; provide recharge to our streams and rivers, particularly during dry periods; and serve as resources for 92 percent of public water systems in the United States. Additionally, over 15 percent of the total populations in the United States were served by private drinking water wells. The UIC program is meant to provide safeguards. Therefore, injection wells do not endanger current and future public and private drinking water wells, or any other USDWs that will provide vital drinking water supplies in the future.

The EPA management of the UIC data received from the delegated State programs has proven a challenge from the beginning because of the split responsibility between the EPA Regions and the States (e.g., where the State may have primacy for Class II wells only and the EPA Region has responsibility for all other well classes). A disparity exists in the type of UIC information collected across the program, and how that information is described and stored. Many primacy States and Regional Direct Implementation (DI) programs are currently capturing basic UIC data in multiple formats. The UIC program has assembled several workgroups to streamline reporting needs to the EPA Headquarters (HQ), yet none of these activities have been successful in developing a uniform data set with well inventory, location, and enforcement information similar to other Agency programs. The development of Agency-wide data systems like the Facility Registration System (FRS) and the Integrated Compliance Information System (ICIS) are pushing all Agency programs to report basic inventory, location, and enforcement data. The UIC program is somewhat unique in that State/DI programs need to track compliance not only by facility, but also by well. This has made direct entry of data to the Office of Enforcement and Compliance Assurance's (OECA) ICIS cumbersome. As a result, UIC program data is not currently included in the FRS or ICIS systems.

A national, well-specific UIC database will provide a single UIC data flow from the State/DI programs to support national environmental programs requiring UIC data. This data flow is meant to assist the EPA in

Underground Injection Control – Flow Configuration Document

the oversight and management of the Underground Injection Well program. The EPA data collection and dissemination is essential for the Operation and Management (O&M) of the UIC program. Program data is meant to provide managers with measures of performance and effectiveness, identify program needs, and provide linkages with other Agency programs to support their business processes.

2.2 How to Use This FCD

This FCD is intended to define the supported data services, and the approaches and processes that are used to exchange information over the Exchange Network via Web Services technology. In addition, the FCD serves as a guide for trading partners in understanding the details and challenges associated with a data flow.

The purpose of this FCD is to describe the operation of the UIC Network Exchange using Extensible Markup Language (XML)-based data submissions through Node-to-Node or Client-to-Node transfers.

This FCD provides guidance to implement an XML/Web service-based model for data submission from States/EPA Regional DI to UIC centralized Operational Data Store (ODS) database.

Prior to using this document, submitters should be familiar with the Exchange Network (www.exchangenetwork.net) and the EPA UIC Program (www.epa.gov/safewater/uic/index.html). Furthermore, data partners should be familiar with the UIC XML Schema and the process they need to follow to extract the State/DI data and map it into the XML format (See separate *Mapping Instructions* document provided by EPA). An UIC data mapping tool has been developed to help State/DI users to extract UIC data into XML format from any databases with views that confirm to the UIC database schema in Microsoft (MS) Access format.

This FCD expands upon the usage of the UIC Schema/Schematron and introduces the implementation of the Document Header.

This document includes the following main sections:

- Flow Summary Information – This section is a description of the UIC data flow after it has been submitted by the State/DI, access and security, flow-level Business Rules, and any additional flow tools and resources.

Note: Pre-submission data preparation by the state/DI is described in the *Mapping Instructions* document.

- UIC XML Schema Information – This section is a description and schematic of the major components of the UIC XML Schema structure and dependencies.
- Data Service Information - This section is a description of the data services used in the UIC data submission and processing flows through the EPA Central Data Exchange (CDX) to the UIC ODS database.
- Exchange Network Header Information – This section describes how the UIC Network Exchange makes use of the Exchange Network Header Document to describe the Payload content of a Network message. This submission structure is used for all Node-to-Node and Client-to-Node submissions.

3.0 COMPONENT ALIGNMENT AND CHANGE HISTORY

3.1 Flow Component Version History

Table 1

Component	Version	Date	Changed By	Description of Change
UIC Flow	1.0	03/01/2007	Sherry Chen	Initiation
FCD	1.1	05/04/2007	Sherry Chen	Update

3.2 Flow Component Versions Currently Supported

Table 2

Component	Version(s) Supported	Explanation (optional)
FCD	1.1	
Schema	1.0	
Data Exchange Template (DET)	1.0	
Submit		
Authenticate		
GetStatus		
Download		
NodePing		

3.3 Business Rule Change History

Table 3

Business Rule Change	Date of Change	Explanation (optional)
UIC Business Rule V8.0	01/25/2007	

4.0 FLOW SUMMARY INFORMATION

4.1 Flow Identification

Flow Name: UIC

Flow Description: UIC is the acronym for Underground Injection Control

Flow Steward: Carl B. Reeverts

Flow Steward Contact Information:

Telephone: 202 564 4632

E-mail: reeverts.carl@epa.gov

4.2 Data Flow Overview

The UIC flow is designed to receive the UIC data submitted from the States and DI Programs to the EPA UIC National database. The data will be validated through the use of the UIC Schema and Schematron validation tool on the CDX QA server and passed to the UIC Node at the National Computer Center (NCC) to the UIC ODS database.

The UIC flow diagram (Figure 1) describes the network layout of the flow after the State/DI Node submits its XML schema document, as well as, the relationship between all the systems involved.

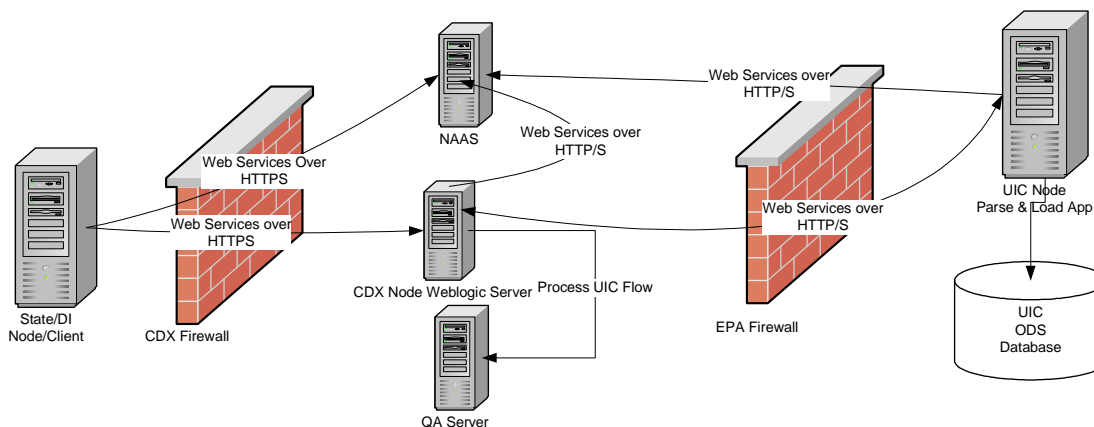


Figure 1.—UIC Data Flow Diagram.

The following describes the process steps of a successful submission:

1. The State/DI Node calls the *Authenticate* method against Network Authentication and Authorization Services (NAAS) to initiate a security token.
2. The *Submit* method is used to submit a UIC data file for processing.
3. The CDX Node *Validates* the security token.
4. The CDX Node receives the submission. A transaction Identification (ID) is returned, indicating that the file transfer was successful. The submission file is archived at the CDX Node and the status is set to "Received."
5. The XML submission data is validated at the CDX QA Server (1st Pass).

Underground Injection Control – Flow Configuration Document

The 1st Pass validates through the EPA Exchange Network Header Schema and the UIC XML Schema to confirm that it complies with the required structure and the Schematron Business Rules validation. The word ERROR is used to represent any Required 1 and Required 1 & Conditional business rule violations and the WARNING is used to represent the Required 2 and Required 2 & Conditional business rule violations. The process sequence is described below:

- If any ERRORS are found, the submission status is set to “FAILED” and a downloadable error report will be generated for the user. The process is stopped.
 - If only WARNINGS are found, the status will be set to “PENDING” and the 2nd Pass will be triggered.
 - If no ERRORS and no WARNINGS are found, the status will be set to “PENDING” and the process will skip the 2nd Pass transformation to step 11.
6. The XML submission data is transformed at the CDX QA Server (2nd Pass).
The data transformation occurs when this pass is triggered. During the transformation process, any invalid value in a field will be stripped based on the UIC Business Rules V8.0. A phrase “Value Removed” is replaced in the data file to indicate that this field has been updated by 2nd Pass and it will be removed in steps 11 and 12.
 7. The CDX Node archives the transformed submission data file.
 8. The CDX Node *Authenticates* against NAAS to obtain a security token to access the UIC Node at the EPA NCC.
 9. The CDX Node *Submits* the transformed submission data file to the UIC Node, along with the submitter information XML format file.
 10. The UIC Node Web Service *Validates* the security token against NAAS.
 11. The UIC Node Parse and Load (P&L) application processes the data file and converts the XML format data into Relational Database Management System (RDBMS) acceptable format data.
 12. The UIC Node P&L stores the data into the UIC ODS database (Oracle 10G) at the NCC.
 13. The UIC Node *Authenticates* against NAAS to obtain a security token to access CDX.
 14. The UIC Node *Notifies* the CDX Node for the submission processing status and *Submits* the Submission Processing Summary Report (see sample report in Appendix A).
 - If the data was loaded into the database without any system errors, the status is set to “COMPLETED”.
 - If there is any system error that causes the failure of storing the data into the database, the status is set to “FAILED”.
 15. The CDX Node sends an e-mail to the submitter, as well as all the affiliated users for that primacy agency, notifying the final status of the submission as (“COMPLETED” or “FAILED”).
 16. The States/DI Node calls the *getStatus* method to retrieve the process status.
 17. Once the status is either “COMPLETED” or “FAILED” the State/DI Node then calls the *Download* method to retrieve the processing reports from CDX.

Figure 2 illustrates a detailed submission process flow with the Web Services involved.

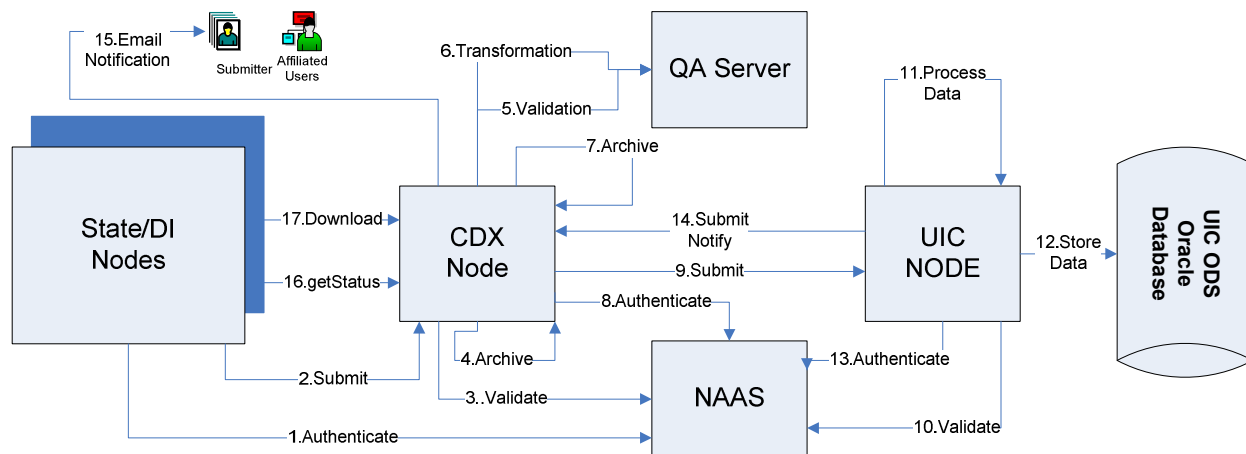


Figure 2.—UIC Data Flow Web Services Process Flow.

4.3 Flow Access and Security

4.3.1 User Access and Security

The State/DI Node users are required to register with the NAAS and obtain a user account before a UIC data submission can be made to the CDX. Furthermore, a NAAS policy is established that allows the account to invoke specific methods on the CDX Node for the UIC exchange.

Authentication through NAAS will be first initiated and a security token will be generated after a successful authentication. The CDX Node will verify the token against NAAS and will accept the submission request if verification is successful or will reject the submission request if verification fails.

CDX Node will perform authentication against NAAS to obtain a security token in order to submit the UIC payload to the backend UIC Node. The UIC Node verifies the security token through NAAS and processes the UIC payload to UIC ODS database upon a success verification of the request.

4.3.2 Data Flow Security

The content of the UIC payload submission must be in the UIC XML schema format. The file extension must be .xml. The submission should be in the .zip file format. The naming convention for the payload is UIC_<primary agency code>_Q<number of quarter>_yyyy.xml, for example, UIC_WQGY_Q1_2007.xml.

The submission will be rejected if the content is not in the xml format as the UIC XML Schema defined, and/or the file extension is not .xml.

Security Socket Layer (SSL) is enabled to secure the UIC data while the submission is transferring through Internet.

4.4 Flow-Level Business Rules

The detailed UIC flow-level Business Rules can be found in the UIC DET spreadsheet and the Mapping Instruction document. The DET describes the database fields and their XML element mapping names. This document is posted on the www.exchangenetwork.net Web site. The Mapping instruction has detailed UIC data modeling and data conversion information. Each UIC submission should include a complete set of the UIC data for a primacy agency. This data set represents historical and current UIC data. Each submission will be a complete replacement of the prior submission. Data submitters can submit as many times as needed to the UIC ODS. This replacement process occurs in the UIC pre-production ODS database. By the end of a reporting quarter, the data will be stored to the UIC production ODS database and the Office of Ground Water and Drinking Water (OGWDW) data warehouse will extract UIC data from the UIC production ODS database.

4.5 Additional Flow Tools and Resources

A MS Access UIC data conversion tool has also been developed to assist State/DI users to convert the original UIC data from different platforms (in MS Access, Oracle, or SQL Server) based on the UIC XML Schema UIC_UIC_v1.0.xsd. This version of the UIC XML Schema can be downloaded from the EPA www.exchangenetwork.net Web site.

5.0 UIC XML SCHEMA INFORMATION

5.1 Schema Structure

The UIC Schema is designed using enforced referential integrity instead of a traditional hierarchical structure. This design is used to ensure the UIC Required 1 Business Rules requirements are enforced in the Schema level validation.

The diagram shown in Figure 3 provides an overview of the UIC XML Schema component relationships.

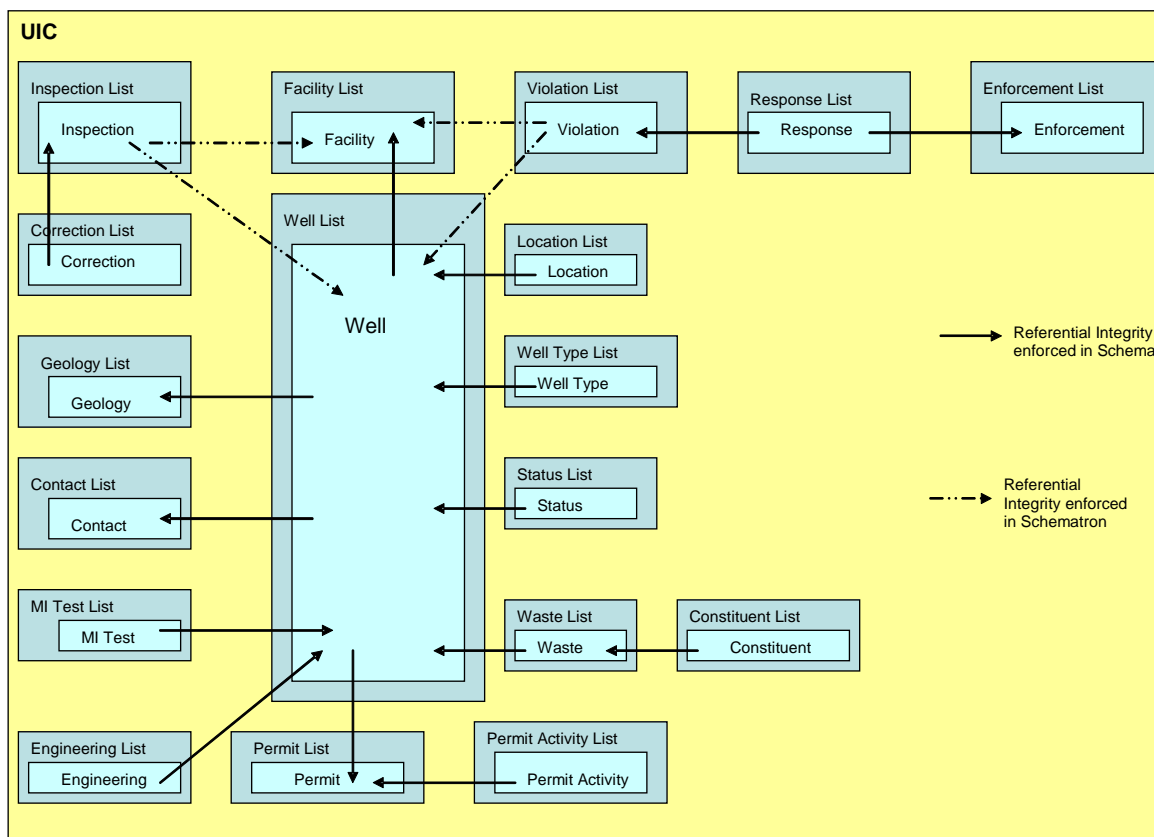


Figure 3.—UIC XML Schema Structure.

5.2 Schema Components

The UIC data model houses four types of information: Inventory, compliance monitoring, violation/enforcement, and Class I and deep well special information.

The UIC XML Schema defines one root component for the entire hierarchy: UIC. This tag represents the start of the UIC Payload data. Each submission file must contain one (and only one) UIC tag. The UIC tag encompasses 18 elements that comprise the data load for the submission. Table 4 below shows the relationship between the XML elements and the database tables.

Underground Injection Control – Flow Configuration Document

Table 4

XML Schema Element	Database Table
FacilityList	Facility
ContactList	Contact
PermitList	Permit
PermitActivityList	Permit Activity
WellList	Well
WellStatusList	Well Status
WellTypeList	Well Type
LocationList	Location
ViolationList	Violation
ResponseList	Response
EnforcementList	Enforcement
InspectionList	Inspection
CorrectionList	Correction
MITestList	Mechanical Integrity Test
EngineeringList	Engineering
GeologyList	Geology
WasteList	Waste
ConstituentList	Constituent

The FacilityList is the only table element in the UIC XML Schema defined with a minimum occurrence requirement of one (1). There must be well information included in a submission. The maximum allowable occurrence for each table tag (table list) is one (1). The table records are encompassed in the table tags, with each record being delineated by the appropriate detail tag. Each table does have a minimum occurrence requirement of one detail record within its table submission. The maximum number of records is unbounded for all tables.

When a submission is processed, all details from a list will be uploaded into the corresponding table in the UIC ODS database. If there is a prior submission in the database for the submitting primacy agency, the data will be removed completely before the new submission data gets loaded. The upload will consist of a complete replacement of the records submitted previously.

6.0 DATA SERVICE INFORMATION

Table 5 lists all Web services used by the State/DI users to submit UIC data:

Table 5

Service Name or Description	Service Type
Submit UIC payload: a full replacement	Submit()
Authentication	Authenticate()
Check the status of a submission transaction	GetStatus()
Download a UIC process report	Download()
NodePing	NodePing()

6.1 Submit

Data Service Type:

Submit

Payload Requirements:

1. A UIC payload must contain a single primacy agency (code) data that includes all historical and current well information for that primacy agency.
2. The Payload must be wrapped in a specified Header Document.
3. Data must conform to the UIC XML v1.0 format requirements.
4. The XML file should be zipped (it will be sent as a Direct Internet Message Encapsulation (DIME) attachment to the Exchange Network message)
5. State/DI agencies are responsible for checking the process reports, making corrections, and resending a full UIC data until the ODS has accepted and the data submitter is satisfied with the UIC process summary report.

Data Service Parameters, Order, and Format:

Parameters	<ol style="list-style-type: none"> 1. SecurityToken: The authentication ticket obtained from Authenticate service through NAAS, which enables the data provider to invoke the Submit service. 2. TransactionID: N/A. 3. Dataflow: UIC 4. Documents: Single Node document structure attached to message containing Document Header and the UIC Payload. 5. DocumentType: ZIP
Return on Success	TransactionID
Return on Fail	Simple Object Access Protocol (SOAP) Fault

Return Method: Return a transactionID.

Payload Format: The naming Convention used for UIC flow is UIC_<4 digits primacy agency code>_Qn(number of the quarter)_<4 digits of the year>.xml, for example, UIC_WYEQ_Q1_2007.xml. Each UIC submission has only one single payload XML file that contains UIC data for one primacy agency. There should not be more than one primacy agency UIC data included in one payload.

Data Service-level Business Rules: This method will be used after a successful authentication and a security token has been issued.

Underground Injection Control – Flow Configuration Document

Error Conditions and Fault Follow-up Actions: SOAP fault will be returned on failure. Resubmission is required in any failure. GetStatus should be used to check the process status after a submission and receiving a transactionID.

XML Header Usage: The Header information will be saved in the submission_info table in the ODS database for any tracking purpose along with the transactionID and submitter's information.

6.2 Authenticate

Data Service Type:

Authenticate

Data Service Parameters, Order, and Format:

The Authenticate method is used to obtain a security token from the EPA NAAS. This token will be passed in all subsequent methods called in the exchange between the two Nodes involved in the processing. Please note that security tokens will expire ten minutes after the token is issued.

Parameters	1. UserID – the registered NAAS user account 2. Credential 3. AuthenticationMethod – “password” is the only acceptable value
Return on Success	A security token
Return on Fail	SOAP Fault

A valid UIC user account must follow the following criteria:

- Submitter NAAS account must have authority to Submit UIC data to CDX.
- Submitter NAAS account must be associated with a corresponding Web CDX account.
- Submitter NAAS account must have a policy for the State code used in the submitted file name.

The following end point Uniform Resource Locators (URLs) will be used for NAAS:

- Test NAAS: <https://naas.epacdxnode.net/xml/auth.wsdl>
- Production NAAS: <https://cdxnodenaas.epa.gov/xml/auth.wsdl>

6.3 GetStatus

Data Service Type:

getStatus

Data Service Parameters, Order, and Format:

The GetStatus method is used to check the process status of a submission. Generally, this is used to follow-up on a previous call to the Submit method.

Underground Injection Control – Flow Configuration Document

Parameters	1. Securitytoken – Obtained from Authenticate. 2. TransactionID – submission transactionID.
Return on Success	Received: A submission was received by the service, but has not been processed. Pending: One or more documents are to be downloaded and processed by the service. Processed: The submission has been processed by the Node, but is waiting to be delivered to the target Node (the ultimate destination). Completed: The submission is complete and accepted by the target Node. Failed: The submission has failed. The requester should resubmit.
Return on Fail	SOAP Fault

6.4 Download

Data Service Type:

Download

Data Service Parameters, Order, and Format:

The Download method is used to obtain error reports and/or submission summary reports from the CDX Node relating to a specific transactionID. Generally, this method is used after the GetStatus returns either "Completed" or "Failed."

Parameters	1. Securitytoken – Obtained from Authenticate. 2. TransactionID – A transactionID for the submission. It should be the same transactionID issued by the Node (See the Notify method.) The parameter may be empty for a pre-established, or ad hoc, download. 3. Documents – An array of Node Document structures. It should contain the same set of documents given by the Notify method. It can be empty.
Return on Success	A message contains a data flow identifier and a set of documents. Documents transmitted will be separate attachments.
Return on Fail	SOAP Fault

6.5 NodePing

Data Service Type:

NodePing

Underground Injection Control – Flow Configuration Document

Data Service Parameters, Order, and Format:

NodePing is a utility method to determine whether a Node is accessible or not. A positive response (typically a string like "Ready") from the Node indicates that it is listening for requests.

Parameters	The NodePing method has a one string argument that may contain arbitrary text (preferably a short word, like "hello," or even an empty string).
Return on Success	Ready – the service is up and ready. Busy – the service is heavily loaded, please call back later. Unavailable – the service is currently unavailable.
Return on Fail	Time out

7.0 EXCHANGE NETWORK HEADER INFORMATION

The Exchange Network Header Document provides additional information about the contents of a Payload. It is developed to further automate the data exchange process so that data can be more readily identified during transport and managed at its processing destination. The Header Document can describe what a data Payload contains, who submitted it, when it was submitted, and instructions on processing the Payload contents.

Essentially, the Header Document is an XML Wrapper, placed around an XML Payload before transmission to CDX. A Header Document toolkit is available in the Tool Box section of the Exchange Network Web site (<http://www.exchangenetwork.net>), containing additional background about the Header Document, as well as Java and .NET implementation tools.

7.1 Header Elements, Description, and Examples

Any network exchange for the UIC must use the Header Document structure in order to meet the UIC processing requirements and prior Exchange Network agreements (see Appendix B).

The Header Document contains Header and Payload sections. The Header section contains information about the submission. The Payload contains the UIC data. Although, some data flows allow for multiple Payloads in one document, the UIC data flow contains only a single Payload.

The following table describes the Header Document elements and how they are utilized for the purpose of a UIC submission. All information in the header document will be stored in the UIC ODS database table submission_info along with the transactionID and the submitter's info for tracking purpose.

7.1.1 Elements, Description and Examples:

Table 6

Header Section				
Element	Description	Example Value	Required	Notes
Author	First and Last Name of the individual generating the XML document.	Joe Smith	Yes	Reference only
Organization	First four digits are primacy agency code, followed by the Name of the organization.	WYEQ – Wyoming Department of Environmental Quality	Yes	Reference only
Title	Type of Submission.	UIC	Yes	Reference to the flow
Creation Time	Date/Time when the document was generated.	2007-01-01T12:12:12 (where date is a valid XML date format string)	Yes	Reference
Comment	Use this field to describe the date range for which period the data being submitted represents	The submission represents the UIC data through 2007-03-31.	Yes	Reference
Data Service	Unused.	N/A	No	Unused
Contact Info	Name, mailing address, city, State, ZIP Code, telephone number, and e-mail address of person who may be contacted with questions concerning the submission.	Joe Smith 123 Main St. Portland, WY 97226 503 123 4567 Joe@deq.statex.gov	Yes	Reference
Notification	Unused.	N/A	No	Unused
Sensitivity	Level of Document Sensitivity.	Other	No	Unused
Property	Name Value pairings used to describe specific properties of the document.	N/A	No	Unused

Underground Injection Control – Flow Configuration Document

Payload Section				
Element	Description	Example Value	Required	Notes
Operation (attribute)	This describes the operation to be performed on the Payload. Multiple values are not allowed.	"Delete-Insert"	Yes	
Schema Reference	UIC approved Schema for submission.	"UIC_UIC_v1.0.xsd"	Yes	

7.1.2 Submission File Structure

Each UIC submission is provided to the CDX in a single compressed file in '.zip' format. This also improves transmission efficiency due to the significantly smaller size of compressed files. Additionally, the Header Document within the submission is the only file allowed to have a '.xml' extension. This allows CDX to differentiate between the Header Document and any other binary object files included in the submission.

The following diagram describes the structure of a Submission File (.zip) for UIC:

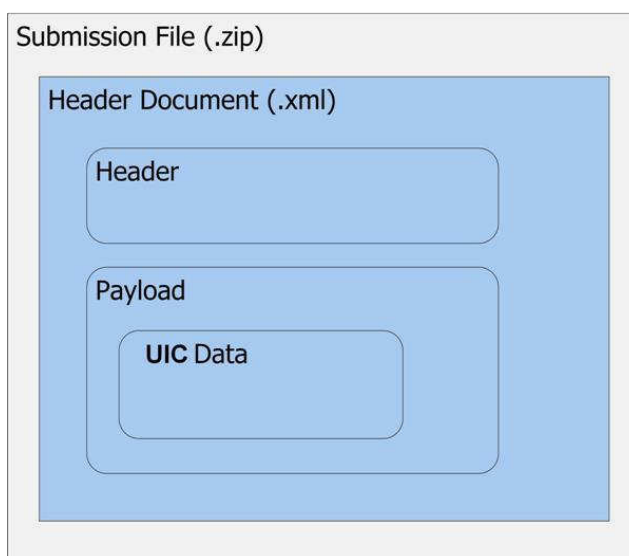


Figure 4.—UIC Submission File Structure.

7.1.3 Payload

The Payload Section of the Header Document contains an attribute named "Operation." This section is used to denote the type of processing for a submission. The value is set to "Delete-Insert." The Payload section of the document contains the UIC data, which must conform to the UIC standard Schema for data submissions ("UIC_UIC_v1.0.xsd").

7.2 Custom Header Elements, Description, and Examples

N/A

8.0 APPENDICES

APPENDIX A: EXAMPLE OF THE SUBMISSION SUMMARY REPORT

UIC Submission Processing Summary Report

=====

Data Extract Date: 2007-01-04T09:56:47.6545128-08:00
 Data Submitted Date: 2007-04-27T17:28:08.1100000-05:00
 Data Loaded Date: 2007-04-27T5:28:13
 Author: Joe Smith
 Submitter:
 Organization: NDOH - NDOH

SUMMARY OF DATA

Table Name	Number of Submitted Records in the Current Quarter	Number of Submitted Records in the Last Quarter	Percent Changes over the last Quarter ***
FACILITY:	9	0	N/A
WELL:	10	0	N/A
CONTACT:	4	0	N/A
PERMIT:	9	0	N/A
PERMIT_ACTIVITY:	12	0	N/A
WELL_STATUS:	11	0	N/A
WELL_TYPE:	15	0	N/A
LOCATION:	10	0	N/A
VIOLATION:	12	0	N/A
ENFORCEMENT:	10	0	N/A
INSPECTION:	11	0	N/A
CORRECTION:	10	0	N/A
MI_TEST:	4	0	N/A
ENGINEERING:	11	0	N/A
GEOLOGY:	7	0	N/A
WASTE:	9	0	N/A
CONSTITUENT:	10	0	N/A

RECORDS IN LAST QUARTER BUT NOT IN CURRENT SUBMISSION (Please Correct and Resubmit!)

Table Name	Primary Key of Lost Records
------------	-----------------------------

RECORDS FAILED COMPOSITE UNIQUE KEY CHECK (Please Correct and Resubmit!)

Underground Injection Control – Flow Configuration Document

Table Name	Primary Key of Record Loaded into the database	Primary Key of Discarded Record(s)
WASTE	NDOHOGWDW1000WAST101	NDOHOGWDW1000WAST102

RECORDS WITH PAIRED FIELDS (PRIMARY KEYS AND STATE IDS)
INCONSISTENT FROM LAST QUARTER SUBMISSION
(Please Correct and Resubmit!)

Table Name	Primary Key	Previous State ID	Current State ID
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ERROR LOG

No Error Reported. Submission Loaded into UIC Database.

*** Percent Changes over the last Quarter: (Current quarter - Last quarter)/Last quarter

APPENDIX B: EXAMPLE OF THE SUBMISSION HEADER

```
<?xml version="1.0" encoding="UTF-8"?>
<Document Id="00000000-0000-0000-0000-000000000000"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xmlns="http://www.exchangenetwork.net/schema/v1.0/ExchangeNetworkDocument.xsd">
  <Header
xmlns="http://www.exchangenetwork.net/schema/v1.0/ExchangeNetworkDocument.xsd">
    <Author>Joe Smith</Author>
      <Organization>NDOH - NDOH</Organization>
      <Title>Underground Injection Control</Title>
      <CreationTime>2007-01-04T09:56:47.6545128-08:00</CreationTime>
    <Comment>This is a test</Comment>
    <DataService>UIC</DataService>
    <ContactInfo>Joe Smith, 123 Main St.,Portland, WY 97226, (503) 123-4567</ContactInfo>
    <Notification>Joe@deq.statex.gov</Notification>
    <Sensitivity>Other</Sensitivity>
  </Header>
  <Payload Operation="Delete-Insert" xmlns="">
    <!--UIC XML Payload will be here -->
  </Payload>
</Document>
```

APPENDIX C: ACRONYMS AND DEFINITIONS

Acronym	Definition
CDX	Central Data Exchange
CTM	Contract Task Manager
DET	Data Exchange Template
DI	Direct Implementation
DIME	Direct Internet Message Encapsulation
EPA	United States Environmental Protection Agency
FCD	Flow Configuration Document
FRS	Facility Registration System
HQ	Headquarters
ICIS	Integrated Compliance Information System
ID	Identification
ITS-ESE	Information Technology Solutions-Environmental Systems Engineering
MS	Microsoft
NAAS	Network Authentication Authorization Service
NCC	National Computer Center
O&M	Operations and Maintenance
ODS	Operational Data Store
OECA	Office of Enforcement and Compliance Assurance's
OGWDW	Office of Ground Water and Drinking Water
P&L	Parse and Load
QA	Quality Assurance
RDBMS	Relational Database Management System
SDWA	Safe Drinking Water Act
SEC	Systems Engineering Center
SOAP	Simple Object Access Protocol
SSL	Security Socket Layer
UIC	Underground Injection Control
URL	Uniform Resource Locator
USDW	Underground Sources of Drinking Water
XML	Extensible Markup Language