Office of Enforcement and Compliance Assurance

Integrated Compliance Information System

ICIS Batch
DMR –Technical Specification

Version 1.1

For Electronic Reporting of DMRs

April 2011

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Tables and Figures

1. INTRODUCTION

EPA is exploring different electronic reporting options to enable NPDES regulated facilities to electronically submit their compliance monitoring data. As part of this effort, EPA will conduct a Proof of Concept to demonstrate the technical capability for electronic reporting of NPDES compliance monitoring data from regulated facilities via an 'open platform e-file' electronic reporting option. The 'open platform e-file' technical Proof of Concept demonstration will focus the electronic transmission of NPDES Discharge Monitoring reports (DMRs) from third-party commercial software providers to EPA. The objective of the Proof of Concept is to demonstrate that third party software providers can offer an interface to the regulated community that can leverage EPA/Exchange Network services and meet the requirements for electronic reporting to EPA's Integrated Compliance Information System (ICIS)-NPDES system.

Batch files are submitted to the Environmental Protection Agency's (EPA's) Central Data Exchange (CDX) which then passes the files to ICIS. To submit data to CDX, the software provider must have a CDX User ID and password. This ID and password are specific to CDX and are completely unrelated to ICIS. An ICIS User ID must also be provided in the Id tag in the header of each XML file so that when ICIS receives the batch file(s), it can determine if the transactions in the file can be performed by the user submitting the batch. After receiving a batch from the software provider, CDX performs several important functions. They perform a virus scan to ensure that the submission files are free of viruses and assign a unique Transaction ID to the batch. (This Transaction ID maps directly to the Batch ID that ICIS uses internally to manage processing. To communicate information about the batch to CDX and the software provider, ICIS uses this Transaction ID.) CDX then archives the batch and validates that the XML files are valid based on the rules in the XML schema. If problems are detected, CDX notifies the software provider so that the problems can be corrected. Upon completion of these tasks, CDX sends the error-free batches to ICIS.

For purposes of this document:

- "CDX User ID" refers to the ID the user must have to log in to CDX.
- "ICIS User ID" refers to the software provider's ID in the ICIS system.
- "Transaction ID" refers to the identifier CDX provides for each batch.
- "Batch ID" in all communications with users (e.g., audit reports, batch processing confirmation report) refers to the identifier CDX provides for each batch (i.e., the Transaction ID).
- "Batch ID" in the ICIS Batch Operational Database refers to the batch identifier assigned by ICIS to make processing more efficient.

A batch may contain many XML files, and within each XML file there can be up to one Payload for each Submission Type (e.g., DMRs). Each Payload may contain many XML transactions, each of which contains the DMR data and a specific transaction type that identifies how ICIS should process the data. For DMRs there are three valid DMR XML transaction types: Replace, Change, and Mass Delete. These DMR XML transaction types are described in Section 2:

Validation and Processing. After receiving a batch from CDX, ICIS parses it and saves each DMR XML transaction as a Payload so that the individual DMR XML transactions can be ordered and processed.

A DMR may contain parameter data (for which there may be multiple parameters) and other data that do not apply to a specific parameter. In this document, such data are referred to as Auxiliary Data and includes data related to the DMR Signatory and Principal Executive Officer, Land Application, Surface Disposal, Incinerator, and Co-Disposal. A single DMR XML transaction may result in updating data for one or many of the parameters and/or the Auxiliary Data. To accurately record the changes that a DMR XML transaction causes in the ICIS database, ICIS accepts or rejects data for each of these sub-sections and records each of these acceptances and rejections as separate "transactions" in the ICIS Batch logs. For purposes of this document:

- "DMR XML Transaction" refers to the data within the DischargeMonitoringReport Data section of an XML file.
- "Transaction" refers to the accepted or rejected updates to the individual sub-sections of data (i.e., each parameter, Auxiliary Data).

After processing is complete for all files in a batch, ICIS sends a response notification to CDX. CDX then notifies the software provider, which can then download the results from CDX in XML format detailing the accepted and rejected transactions.

1.1 PURPOSE

The purpose of this document is to provide a comprehensive overview of the submission of DMR data through batch XML transactions, through text descriptions, tables, and figures.

A major component of this DMR Technical Specification, Section 2: Validation and Processing, details the three DMR XML transaction types: Mass Delete, Change, and Replace. Provided along with these transactions are the business rules that govern batch DMR transactions and the accompanying error/warning messages, serving to notify users of the data in error and provide them with the information necessary to correct the problems.

This document also contains two sections that apply to all batch submission types, not just DMRs: Audit Reports and ICIS Batch System Administration. Covered in Section 4, the audit reports are an important way to communicate to the users the results of their batch submissions. The ICIS Batch System Administration section (Section 5) provides information about managing batch processing, sending confirmation reports to CDX, and viewing batch status history.

1.2 ASSUMPTIONS AND CONSTRAINTS

The following assumptions and constraints apply to the ICIS Batch DMR Technical Specification:

- ICIS will process batches within an XML submission in the order in which they are received from CDX. CDX will not apply a timestamp to each batch that is submitted by the software

provider. In addition, CDX cannot guarantee that batches will be sent to ICIS in the same order that CDX received them from the software provider. As a result, ICIS cannot guarantee that batches will be processed in the order in which the software provider submitted them.

- Users will submit batch files to CDX in the correct chronological order. A procedure will be put in place to ensure that a software provider sends only one batch at a time for a given DMR, and does not send a new batch until they have received confirmation that the previous batch has been processed.
- CDX will perform a schema validation on every batch. ICIS will not perform another schema validation. If schema errors exist that are not caught by the CDX validation, unexpected results will occur.
- In PCS, there were an average of 25,584 Measurement Violation parameter-level batch transactions each day. This included DMR data and DMR Violation data. It is assumed that there will be a similar level of batch DMR activity in ICIS.
- The business rules for DMRs entered via batch should be the same as DMRs entered via the web application. Any differences will be noted.
- Design decisions will be made to minimize software changes that will be needed to incorporate the batch entry of other data families.
- This technical specification does not address NetDMR. A separate technical specification may have to be created when NetDMR is incorporated into ICIS.
- ICIS will not save a transaction if there are any errors within the transaction. Because DMRs are submitted as forms that may contain many parameters as well as auxiliary data, ICIS will treat each parameter as a transaction and the entered auxiliary data section as one transaction. This means that if there is an error with any data in one parameter, that parameter will not be saved, but other parameters may still be processed. The rules for accepting and rejecting transactions are described in detail in Section 2: Validation and Processing.

1.3 DOCUMENT OVERVIEW

The following sections comprise the remainder of this technical specification:

- **Section 2: Validation and Processing** – This section describes the processing of Mass Delete, Change, and Replace DMR transactions, and the business rules that apply to each transaction type.
- **Section 3: Data Element Mapping** – This section provides a mapping between the PCS Acronym, XML Tag Name, ICIS Screen Name, and ICIS Database Name for DMR data elements.
- **Appendix A: Acronyms** – This section provides a list of all acronyms used in the document.

2. VALIDATION AND PROCESSING

After receiving a batch from CDX, ICIS parses the batch into individual DMR XML transactions, saves each as a Payload, and groups them by type (Replace, Change, and Mass Delete). If any other type of DMR XML transaction is submitted for DMRs, it will be rejected. ICIS must process these groups in the proper order to achieve the desired results. ICIS follows the same processing order used in the Permit Compliance System (PCS): Mass Delete, Change, and then Replace.

The validation and processing of an individual DMR XML transaction is dependent on the type of transaction as well as the types of DMR data submitted within that DMR XML transaction. A DMR Replace or Change XML transaction can contain the following combinations of data (see Attachment A: DMR XML Schema):

- Parameter Data (only data under the XML tag ReportParameter)
- Form NODI (only data under the XML tag FormNODIGroup)
- Auxiliary Data (the data that is not under one of the two previous tags)
- Form NODI and Auxiliary Data
- Parameter Data and Auxiliary Data.

Users may not submit a combination of Form NODI data and Parameter Data within the same DMR XML Replace or Change transaction. The XML tag FormNODIGroup is used to enter a NODI code for all expected parameter values within a specific DMR, and the XML will not allow users to submit both FormNODIGroup data and ReportParameter data within the same DMR Replace or Change XML transaction. To set NODI data for most expected parameters values within a DMR and set a numeric value for the other expected parameter values, the user can submit Form NODI using the FormNODIGroup XML tag in one batch, and then submit specific values within the ReportParameter tag in a separate batch submitted after the first one is processed. If users wish to enter a NODI Code for a specific parameter value, the XML tag NumericReportNoDischargeIndicator under the ReportParameter/NumericReport groups should be used.

A Mass Delete DMR XML transaction only requires the key data to be submitted. However, if any other data besides the key data are included in a Mass Delete DMR XML transaction, they will be ignored and the Mass Delete XML transaction will still be processed.

Since the DMR XML contains data sub-sections (Parameter data/Form NODI and/or Auxiliary data), ICIS processing of the DMR XML actually accepts or rejects each parameter within the DMR and then accepts or rejects the Auxiliary Data as a separate section. The Audit Reports list each parameter as an Accepted or Rejected transaction and the Auxiliary data as one Accepted or Rejected transaction.

Key values are used throughout ICIS Batch to identify data in the ICIS database. The ICIS Batch Schema requires that key values be entered for all transactions. The key values for DMR Form-Level Transactions (i.e., Form NODI, Mass Delete) are:

- Permit Identifier
- Permitted Feature Identifier
- Limit Set Designator
- Monitoring Period End Date

The key values for DMR Parameter-Level Transactions are:

- Permit Identifier
- Permitted Feature Identifier
- Limit Set Designator
- Monitoring Period End Date
- Parameter Code
- Monitoring Site Description Code
- Limit Season Number.

Many state systems do not track a Limit Season Number, which posed a big challenge for implementing batch DMRs. To resolve that problem, there is a subprocess that calculates the Limit Season Number for the user if it is unknown to the submitter. This subprocess is called when -1 is submitted as the Limit Season Number, and it will provide an error message if no matches or multiple matches are found. If a user submits a -1, that is what will display for the key value on the audit reports as well. More details about the Limit Season Number subprocess will be found in the sections below.

The detailed processing of each type of DMR XML transaction is described in the following sections.

2.1 MASS DELETE (X) DMR PROCESSING

The Mass Delete DMR XML transaction allows the user to blank out all data for an existing DMR form. In addition, if the DMR is unscheduled, ICIS will remove the entire DMR form from the system. The processing of a Mass Delete DMR XML transaction is described below.

2.1.1 Mass Delete DMR Processing Flow

Figure 2-1: Mass Delete DMR Processing is a diagram depicting the processing of a Mass Delete DMR XML transaction. Also included in this section are a table detailing each step in the flow and sample Mass Delete DMR Processing scenarios.

Figure 2-1: Mass Delete DMR Processing

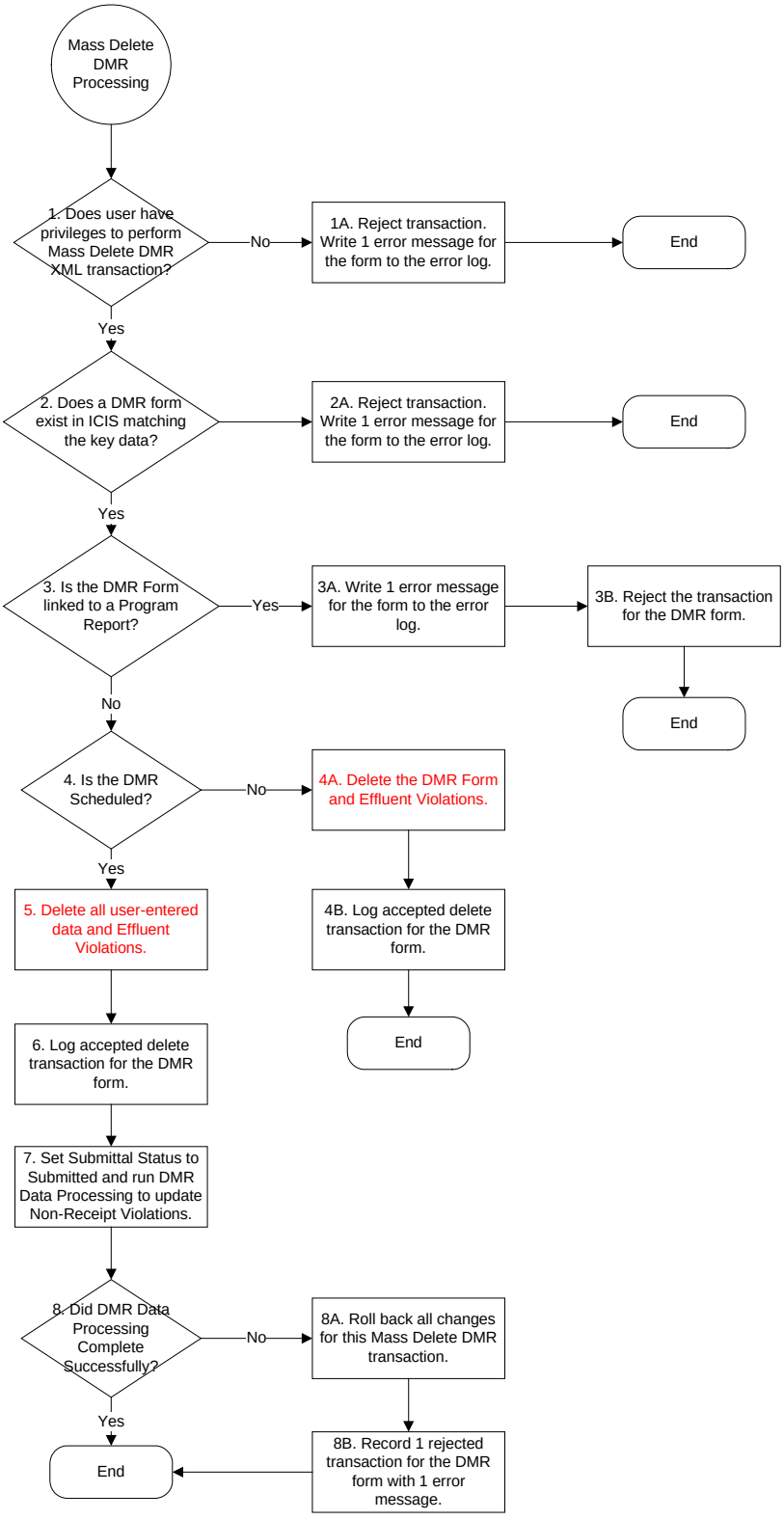

Table 2-1: Mass Delete DMR Processing contains a description of the items in the above Mass Delete DMR Processing flow.

Table 2-1: Mass Delete DMR Processing

Item Number	Item Description	Mapping To Business Rule Table
1	**Does a DMR form exist in ICIS matching the key data?** ICIS determines if a DMR form exists in ICIS that matches the key data submitted. The XML key tags for a DMR are: PermitIdentifier, PermittedFeatureIdentifier, LimitSetDesignator, and MonitoringPeriodEndDate. If a matching DMR form is found in ICIS, processing continues at #2.	Row 45
1A	**Reject transaction. Write 1 error message for the form to the error log.** If the XML key tags for the DMR do not match an existing DMR form in ICIS then ICIS will write an error message to the error log and reject the DMR submission. The entire DMR XML transaction is considered invalid and is rejected. ICIS processing of this Mass Delete DMR XML transaction ends.	Row 45
2	**Does user have privileges to perform Mass Delete DMR XML transaction?** ICIS has determined that this is a Mass Delete DMR XML transaction and identified the DMR to be deleted, and must next determine if the ICIS User ID that has submitted this Mass Delete DMR XML transaction has the correct privileges defined in ICIS. This includes determining if the user can perform a Mass Delete DMR transaction and if the DMR is for a state/region for which the user has authority. ICIS applies the same security rules for batch as it does for the web, and uses the same set of permissions. If the ICIS User ID has the correct privileges, processing continues at #3.	Row 2
2A	**Reject transaction. Write 1 error message for the form to the error log.** If the ICIS User ID does not have the correct privileges defined in ICIS for this Mass Delete transaction, then ICIS will reject the entire DMR XML transaction. ICIS processing of this Mass Delete DMR XML transaction ends.	Row 2
3	**Is the DMR Form linked to a Program Report?** ICIS determines if the DMR identified for deletion is linked to a Program Report. If the DMR is not linked to a Program Report, processing continues at #4.	Row 46
3A	**Write 1 error message for the form to the error log.** ICIS has determined that the DMR is linked to a Program Report; therefore a business rule has been violated and the DMR cannot be deleted. To delete this DMR the Program Report must first be unlinked from the DMR (for this first release of ICIS Batch, this unlinking must be done online). ICIS writes an error message for the form to the error log. Processing continues at #3B.	Row 46
3B	**Reject the transaction for the DMR form.** ICIS rejects the entire Mass Delete DMR transaction (i.e., the entire form will receive a rejection message). ICIS processing of this Mass Delete DMR XML transaction ends.	Row 46

Item Number	Item Description	Mapping To Business Rule Table
4	**Is the DMR Scheduled?** ICIS determines if this is a Scheduled DMR or an Unscheduled DMR. If this is a Scheduled DMR, processing continues at #5.	N/A
4A	**Delete the DMR Form, Effluent Violations.** ICIS has determined that this is an Unscheduled DMR; therefore the form is deleted along with all associated DMR data, Effluent Violations (Unscheduled DMRs do not receive DMR Non-Receipt Violations), and any links between the Effluent Violations and Enforcement Actions. Processing continues at #4B.	N/A
4B	**Log accepted delete transaction for the DMR form.** ICIS logs a successful Mass Delete transaction for the DMR form. Processing of the Mass Delete DMR XML transaction is complete.	N/A
5	**Delete all user-entered data and Effluent Violations.** ICIS determines this is a Scheduled DMR; therefore all associated DMR data and Effluent Violations are deleted, as are any links between those Effluent Violations and Enforcement Actions. DMR Non-Receipt Violations are not deleted, but may be updated when this DMR is submitted to DMR Data Processing for compliance determination (see #7). The DMR form is not deleted. Processing continues at #6.	N/A
6	**Log accepted delete transaction for the DMR form.** ICIS logs an accepted Delete transaction for the DMR form. Processing continues at #7.	N/A
7	**Set Submittal Status to Submitted and run DMR Data Processing to update Non-Receipt Violations.** ICIS sets the status of this Scheduled DMR Form to Submitted. A Submitted Status means that this DMR is ready to be evaluated for compliance (the DMR Data Processing programs that determine if this DMR should receive violations and generates/updates them accordingly can now be run against the data in this DMR). Since this DMR is now blank and all Effluent Violations have been deleted, ICIS will only update DMR Non-Receipt Violations (update RNC or delete violation) according to the business rules. For further information on the violation processing rules refer to the ICIS-NPDES Technical Specification documents for DMR Non-Receipt Violations Update. Processing continues at #8	N/A
8	**Did DMR Data Processing Complete Successfully?** ICIS determines if the DMR Data Processing (Background Processing) completed successfully or if unexpected errors occurred. If DMR Data Processing completed successfully, processing of the Mass Delete DMR transaction is complete.	N/A

Item Number	Item Description	Mapping To Business Rule Table
8A	**Roll back all changes for this Mass Delete DMR transaction.** ICIS has determined that unexpected errors occurred during DMR Data Processing. This means that DMR Non-Receipt Violations may not have been updated properly and ICIS may be unable to commit changes for the XML transaction. ICIS rolls back all changes related to this Mass Delete DMR transaction, including both updates to DMR data and any previously recorded accepted transaction records.	Row 48
8B	**Record 1 rejected transaction for the DMR form with 1 error message.** ICIS records one rejected transaction for the DMR form and writes one error message to the log for that rejected transaction. This will allow the user to see that no data were successfully saved and the XML transaction must be resubmitted. Processing of the Mass Delete DMR transaction is complete.	Row 48

Following are sample Mass Delete DMR Processing scenarios.

A Mass Delete DMR XML transaction should contain only key data. If it contains any other data, ICIS will still process the Mass Delete. However, if the DMR in ICIS is linked to a Program Report, it cannot be deleted. Examples of possible Mass Delete scenarios are described below.

Example 1

A Mass Delete DMR XML transaction is submitted with valid key data that matches an existing ICIS Scheduled DMR that is not linked to a Program Report. ICIS will blank out all data for the ICIS DMR. The DMR Form will remain in ICIS. Table 2-2: Mass Delete DMR Example 1 provides an example.

Table 2-2: Mass Delete DMR Example 1

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original	Mass delete valid for Scheduled DMR	Arsenic (01252), 1, 1 - blank
Benzene (34030), 1, 1 – original		Benzene (34030), 1, 1 – blank
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – blank
Auxiliary Data – original		Auxiliary Data – blank

Example 2

A Mass Delete DMR XML transaction is submitted with valid key data that matches an existing ICIS Unscheduled DMR that is not linked to a Program Report. ICIS will remove the DMR Form and all associated data from ICIS. Table 2-3: Mass Delete DMR Example 2 provides an example.

Table 2-3: Mass Delete DMR Example 2

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original	Mass delete valid for Unscheduled DMR	DMR Form removed from ICIS DB
Benzene (34030), 1, 1 – original		
Cadmium (01253), 1, 1 – original		
Auxiliary Data – original		

Example 3

A Mass Delete DMR XML transaction is submitted with valid key data that matches an existing ICIS Unscheduled DMR, however the ICIS DMR is linked to a Program Report. This violates a business rule and so ICIS will not delete the DMR. Table 2-4: Mass Delete DMR Example 3 provides an example.

Table 2-4: Mass Delete DMR Example 3

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original	Mass delete invalid for Unscheduled DMR (Program Report linked)	Arsenic (01252), 1, 1 - original
Benzene (34030), 1, 1 – original		Benzene (34030), 1, 1 – original
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – original
Auxiliary Data – original		Auxiliary Data – original

2.2 CHANGE (C) DMR PROCESSING

The Change DMR XML transaction allows the user to submit specific changes to the DMR data in ICIS. For the DMR form identified in the transaction, ICIS updates only the fields specified in the XML form.

ICIS contains many fields which can have multiple values at once. Examples within DMRs include Crop Types Planted and Crop Types Harvested. When the tags for these fields are included in a Change DMR XML transaction, ICIS always replaces the existing values for that field with the values submitted in the XML.

The user must have a way to blank out fields that were previously populated in the database. To do this in a Change DMR XML transaction, the user should submit an asterisk (*) in the field(s) they want to blank out.

The processing of a Change DMR XML transaction in ICIS is described below.

2.2.1 Change DMR Processing Flow

Figure 2-2: Change DMR Processing is a diagram depicting the processing of a Change DMR transaction. Also included in this section are a table detailing each step in the flow and sample Change DMR Processing scenarios.

Figure 2-2: Change DMR Processing

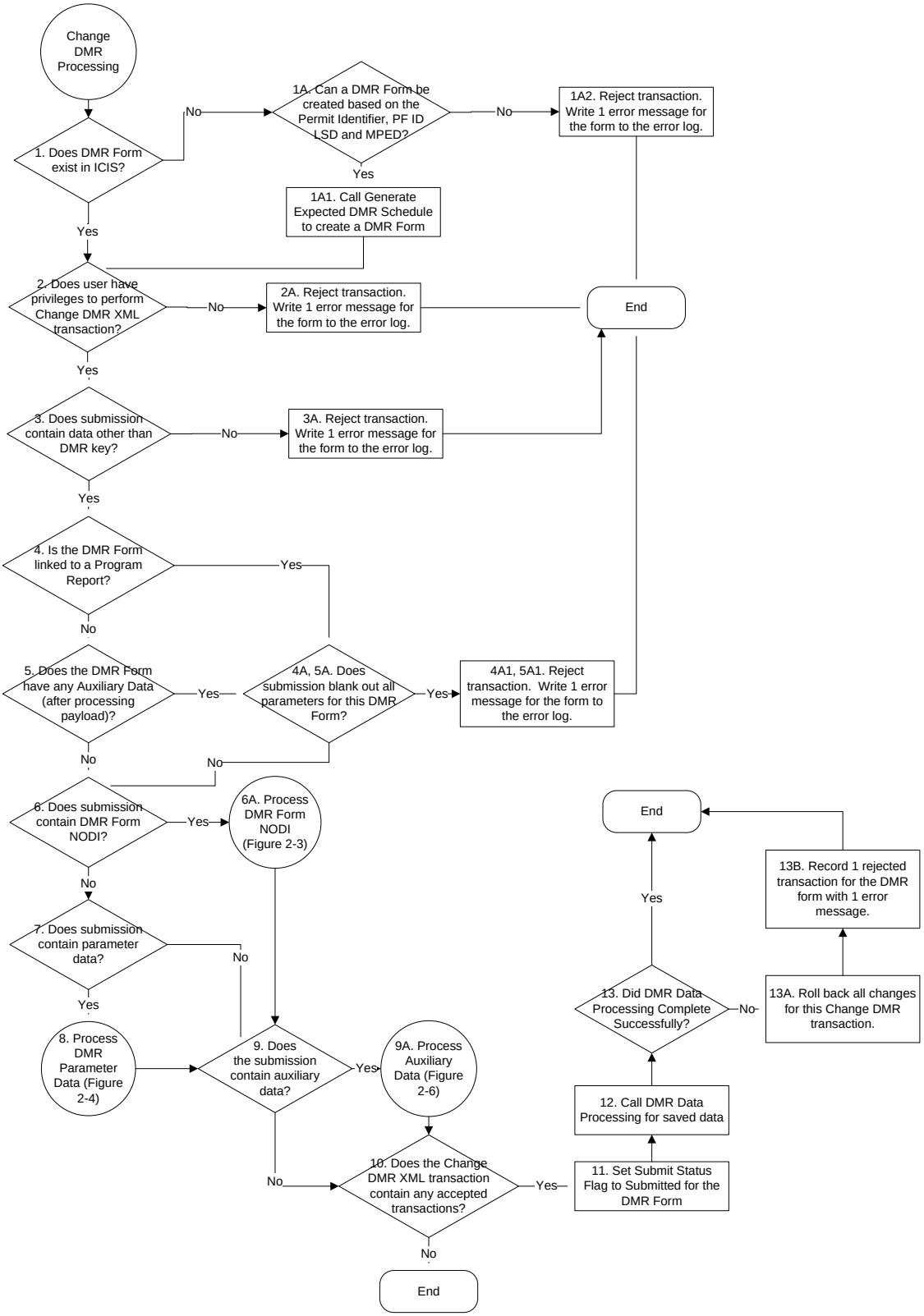

Table 2-5: Change DMR Processing contains a description of the items in the above Change DMR Processing flow.

Table 2-5: Change DMR Processing

Item Number	Item Description	Mapping To Business Rule Table
1	**Does DMR Form exist in ICIS?** ICIS determines if a DMR form exists in ICIS that matches the key data submitted. If the Change DMR XML transaction is for a Scheduled Limit Set, the DMR form has already been created in ICIS and may or may not contain data. If the Change DMR XML transaction is for an Unscheduled Limit Set, and no data has been entered for that DMR, then ICIS will determine if it can call Generate Expected DMR Schedule (see #1A1) to create the DMR form. If some data has already been entered for the Unscheduled DMR, then the form already exists in ICIS. If no form is found, then processing continues at #1A. If a form is found, processing continues at #2.	N/A
1A	**Can a DMR Form be created based on the Permit Identifier, PF ID, LSD and MPED?** ICIS determines if the key fields submitted in the Change DMR XML transaction are valid. The XML key tags for a DMR are: PermitIdentifier, PermittedFeatureIdentifier, LimitSetDesignator, and MonitoringPeriodEndDate. For the DMR key to be valid in ICIS there must be a corresponding NPDES permit in ICIS that has defined a requirement for a DMR to be due for the submitted Permitted Feature/ Limit Set/ Monitoring Period End Date. In this case, the DMR keys would only be valid if the associated Limit Set is Unscheduled and the MPED represents a date for which DMR data can be entered. If the key data are valid processing continues at #1A1. If the key data are invalid processing continues at #1A2.	Rows 3-4
1A1	**Call Generate Expected DMR Schedule to create a DMR Form.** ICIS has determined that the DMR key data submitted is valid for a defined Unscheduled Limit Set (the Limit Set has been defined as Unscheduled in the permit) and no corresponding DMR form exists. ICIS calls Generate Expected DMR Schedule, and a DMR form for the submitted DMR key data is created in ICIS.	Row 4
1A2	**Reject transaction. Write 1 error message for the form to the error log.** If the XML key tags for the DMR are not valid, then ICIS will reject the Change DMR XML transaction. ICIS will write an error message to the error log stating that the entire DMR was rejected. No data for this DMR submission will be processed or saved. ICIS processing of this Change DMR XML transaction ends.	Rows 3-4
2	**Does user have privileges to perform Change DMR XML transaction?** ICIS has determined that this is a Change DMR XML transaction and identified the DMR to be changed, and must next determine if the ICIS User ID that has submitted this Change DMR XML transaction has the correct privileges defined in ICIS. This includes determining if the user can perform a Change DMR transaction and if the DMR is for a state/region for which the user has authority. ICIS applies the same security rules for batch as it does for the web, and uses the same set of permissions. If the ICIS User ID has the correct privileges, processing continues at #3.	Row 2

Item Number	Item Description	Mapping To Business Rule Table
2A	**Reject transaction. Write 1 error message for the form to the error log.** If the ICIS User ID does not have the correct privileges defined in ICIS for this Change DMR XML transaction, then ICIS will reject the DMR XML transaction. ICIS processing of this DMR XML transaction ends.	Row 2
3	**Does submission contain data other than DMR key?** ICIS determines whether or not any data besides the key data has been submitted with the DMR. If any data besides the key data has been submitted, processing continues at #4.	Row 5
3A	**Reject transaction. Write 1 error message for the form to the error log.** If no data besides the key data has been submitted in this Change DMR XML transaction, ICIS will reject the entire Change DMR XML transaction. ICIS will write an error message to the error log stating that the entire DMR was rejected because no data was submitted with the DMR. No data for this DMR submission will be processed or saved. ICIS processing of this DMR XML transaction ends.	Row 5
4	**Is the DMR Form linked to a Program Report?** ICIS determine if the DMR form that is being updated in the Change DMR XML transaction is linked to Program Report in ICIS. ICIS performs this check because if the DMR Form is linked to a Program Report, further checks are necessary to determine if all data on the Form is being blanked out. If the DMR Form is not linked to a Program Report, processing continues at #5.	Row 6
4A	**Does submission blank out all parameters for this DMR Form?** ICIS determines if the XML submission blanks out all parameter data for this DMR Form. A batch user can blank out all parameter data for a DMR Form in a Change DMR XML transaction in the following ways: • For Form NODI, submit an asterisk (*) for the DMRNoDischargeIndicator tag and the DMRNoDischargeReceivedDate tag for a DMR Form that only has NODI codes with received dates. • Submit an asterisk (*) for every non-key Report Parameter or Numeric Report tag that has data entered in ICIS.	N/A
4A1	**Reject transaction. Write 1 error message for the form to the error log.** It is invalid to blank out all parameter data for a DMR Form if the DMR Form is linked to a Program Report because this effectively deletes the DMR Form and a DMR Form cannot be deleted if it has a linked Program Report. ICIS processing of this Change DMR XML transaction ends.	Row 6
5	**Does the DMR Form have any Auxiliary Data (after processing payload)?** ICIS determines if, after the entire payload is processed, the DMR form will contain any Auxiliary Data. ICIS performs this check because if the DMR Form will contain Auxiliary Data, further checks are necessary to determine if all data on the Form is being blanked out. If the DMR Form will not contain any Auxiliary Data, processing continues at #6.	Row 6

Item Number	Item Description	Mapping To Business Rule Table
5A	**Does submission blank out all parameters for this DMR Form?** ICIS determines if the XML submission blanks out all parameter data for this DMR Form. A batch user can blank out all parameter data for a DMR Form in a Change DMR XML transaction in the following ways: • Submit Form NODI an asterisk (*) for the DMRNoDischargeIndicator tag and the DMRNoDischargeReceivedDate tag. • Submit an asterisk (*) for every non-key Report Parameter or Numeric Report tag that has data entered in ICIS.	N/A
5A1	**Reject transaction. Write 1 error message for the form to the error log.** It is invalid to blank out all parameter data for a DMR Form if the DMR Form has Auxiliary Data because Auxiliary Data cannot exist for a DMR Form unless one valid DMR Received Date exists for the Form. ICIS processing of this Change DMR XML transaction ends.	Row 6
6	**Does submission contain DMR Form NODI?** Once ICIS has found or created the DMR form, ICIS determines if the transaction is a Form NODI or not. A DMR Form NODI XML has no report data (parameter data). A Form NODI transaction is used to enter a NODI code and a received date for all the DMR's expected parameters and their associated expected values (e.g., Quantity 1 value, Concentration 1 value etc.). If ICIS determines that this is not a Form NODI transaction, processing continues at #7.	N/A
6A	**Process DMR Form NODI** If this DMR transaction is a DMR Form NODI transaction, the processing continues under *Table 2-6: Process DMR Form NODI*.	N/A
7	**Does submission contain parameter data?** ICIS determines whether or not this DMR transaction contains parameter data (data entered under the XML parent tag ReportParameter). If there is parameter data, processing continues at #8. If there is no parameter data, processing continues at #9.	N/A
8	**Process DMR Parameter Data** ICIS has determined that this transaction does contain parameter data and processing continues under *Table 2-7: Process DMR Parameter Data*.	N/A
9	**Does the submission contain auxiliary data?** Once the DMR Form NODI or parameter data have been processed, ICIS determines if any auxiliary data have been submitted with the Change DMR XML transaction. Auxiliary data are the additional data associated with a DMR such as the DMR signatory information, DMR Principal Executive Officer information, and special program data (e.g., Land Application, Incinerator, etc.). This auxiliary data cannot be entered for a DMR form unless at least one value or NODI code, with one received date has been entered for the DMR form. If the Change DMR XML transaction does not contain Auxiliary Data, processing continues at #10.	N/A

Item Number	Item Description	Mapping To Business Rule Table
9A	**Process Auxiliary Data** ICIS has determined that auxiliary data exists for this Change DMR XML transaction and processing continues under *Table 2-9: Process Auxiliary Data*.	N/A
10	**Does the Change DMR XML transaction contain any accepted transactions?** ICIS has either determined that no auxiliary data exist or has finished processing the auxiliary data and now determines if any of the previous DMR processing resulted in accepted transactions. If none of the transactions were accepted, then the processing of this Change DMR XML transaction ends. If there were accepted transactions, processing continues at #11.	N/A
11	**Set Submit Status Flag to Submitted for the DMR Form.** ICIS has determined that at least one transaction was accepted for this payload, which means that changes to the data have been saved. ICIS will set the status of this DMR Form to Submitted. In ICIS, a Submitted Status means that this DMR is ready to be evaluated for compliance (the DMR Data Processing programs that determine if this DMR should receive violations and generates/updates them accordingly can now be run against the data in this DMR). Processing continues at #12.	N/A
12	**Call DMR Data Processing for saved data.** ICIS calls the DMR Data Processing programs to evaluate this DMR data for compliance. For further information on the violation processing rules refer to the ICIS-NPDES Technical Specification documents for DMR Non-Receipt Violations and Effluent Violations. Note that existing RNC data for Violations will remain as it was before this Change DMR XML transaction unless this transaction has made the existing RNC data inapplicable. This is consistent with ICIS Web functionality. Processing continues at #13.	N/A
13	**Did DMR Data Processing Complete Successfully?** ICIS determines whether DMR Data Processing successfully completed or if there was an unexpected error. If the background processing completed successfully, processing of this Change DMR XML transaction ends.	N/A
13A	**Roll back all changes for this Change DMR transaction.** ICIS has determined that DMR Data Processing did not complete because of an unexpected error. This means that DMR Non-Receipt and Effluent Violations may not have been updated properly and ICIS may be unable to commit changes for the XML transaction. ICIS rolls back all changes related to this Change DMR transaction, including both updates to DMR data and any previously recorded accepted or rejected transaction records.	Row 48

Item Number	Item Description	Mapping To Business Rule Table
13B	**Record 1 rejected transaction for the DMR form with 1 error message.** ICIS records one rejected transaction for the DMR form and writes one error message to the log for that rejected transaction. This will allow the user to see that no data were successfully saved and the XML transaction must be resubmitted. Processing of the Change DMR transaction is complete.	Row 48

2.2.1.1 Process DMR Form NODI Flow

Figure 2-3: Process DMR Form NODI is a diagram depicting the processing of DMR Form NODI. A table detailing each step in the flow is also included in this section.

Figure 2-3: Process DMR Form NODI

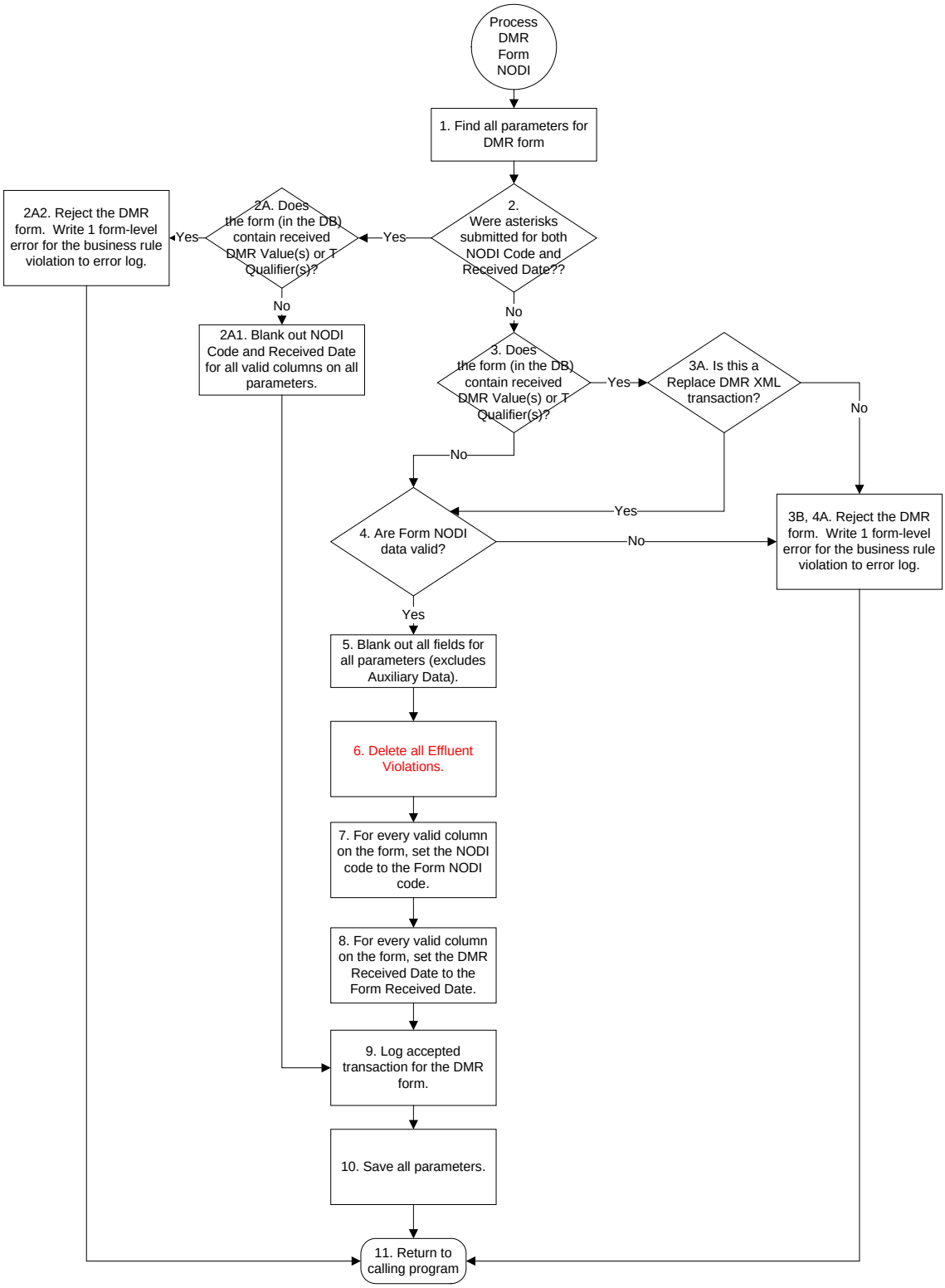

Table 2-6: Process DMR Form NODI contains a description of the items in the above Process DMR Form NODI flow.

Table 2-6: Process DMR Form NODI

Item Number	Item Description	Mapping To Business Rule Table
1	**Find all parameters for DMR form.** ICIS has determined that this DMR submission is a Form NODI so ICIS must find all the parameters defined for this specific DMR.	N/A
2	**Were asterisks submitted for both NODI Code and Received Date?** ICIS determines whether asterisks were submitted for both Form NODI Code and the Form Received Date. If something other than an asterisk was submitted for Form NODI Code or Form Received Date (or both), then processing continues at #3.	N/A
2A	**Does the form (in the DB) contain received DMR Value(s) or T Qualifier(s)?** ICIS determines if any received DMR values or T Qualifiers exist for any of the parameters on the DMR. If the Form does not contain any received values or T Qualifiers, processing continues at #2A1. If it does contain received values or T Qualifiers, processing continues at #2A2.	Row 10
2A1	**Blank out NODI Code and Received Date for all valid columns on all parameters.** ICIS has determined that asterisks were submitted for both Form NODI Code and Form Received Date and that the DMR form (in the database) does not contain any received values. An asterisk indicates that the indicated field should be blanked out, so ICIS blanks out both the NODI Code and the Received Date for all valid columns on all parameters. Processing continues at #9.	
2A2	**Reject the DMR form. Write 1 form level error for the business rule violation.** ICIS has determined that asterisks were submitted for both Form NODI Code and Form Received Date and that the DMR form (in the database) contains at least one received value. An asterisk indicates that the indicated field should be blanked out, but that is invalid in this case because all Received Dates cannot be blanked out while there are received value(s) for the form. ICIS will reject the DMR form and no parameter data will be saved for this DMR XML transaction. An error message for the DMR form will be listed in the error log stating that it was rejected because all Received Dates cannot be blanked out while received values exist. . Processing returns to the main flow of the calling program (*Table 2-5: Change DMR Processing (#9) or Table 2-13: Replace DMR Processing (#9)*).	Row 10
3	**Does the form (in the DB) contain received DMR Value(s) or T Qualifier(s)?** ICIS has determined that something other than an asterisk was submitted for Form NODI Code or Form Received Date (or both). Now it determines if any received DMR values or T Qualifiers exist for any of the parameters on the DMR. If the Form does not contain received values, processing continues at #4. If it does contain received values, processing continues at #3A.	N/A

Item Number	Item Description	Mapping To Business Rule Table
3A	**Is this a Replace DMR XML transaction?** ICIS determines if the DMR XML transaction being processed is a Replace transaction. In a Change transaction, Form NODI cannot be submitted if the DMR Form contains any received values. This rule does not apply to a Replace transaction. If this is a Replace transaction, processing continues at #4.	Row 7
3B	**Reject the DMR form. Write 1 form level error for the business rule violation to error log.** If ICIS has determined that received numeric values exist for the DMR and the DMR XML transaction is a Change transaction, then the Form NODI is considered invalid. ICIS will reject the DMR form and no parameter data will be saved for this DMR XML transaction. An error message for the DMR form will be listed in the error log stating that it was rejected because a received value exists for one or more parameters. Processing returns to the main flow of the calling program (*Table 2-5: Change DMR Processing (#9) or Table 2-13: Replace DMR Processing (#9)*).	Row 7
4	**Are Form NODI data valid?** ICIS determines if the data in the parent tag FormNODIGroup are valid. The two XML tags within this group are DMRNoDischargeIndicator (NODI code) and DMRNoDischargeReceived-Date (Form NODI received date). If these data are valid according to the business rules (see *Section 2.4 Business Rules* for details), processing continues at #5.	Rows 8-9, 11
4A	**Reject the DMR form. Write 1 form level error for the business rule violation to error log.** If the FormNODIGroup data are invalid then the Form NODI is considered invalid. ICIS will reject the DMR form and no parameter data will be saved for this DMR XML transaction. An error message for the DMR form will be listed in the error log stating that it was rejected because of an invalid NODI code or received date. Processing returns to the main flow of the calling program (*Table 2-5: Change DMR Processing (#9) or Table 2-13: Replace DMR Processing (#9)*).	Rows 8-9, 11
5	**Blank out all fields for all parameters (excludes Auxiliary Data).** Before Form NODI can be applied, all existing parameter data must be blanked out because that data cannot exist unless there is at least one received value on the DMR (NODI does not count as a value). Processing continues at #6.	N/A
6	**Delete all Effluent Violations.** Because NODI is being applied to all parameters, any Effluent Violations that were previously generated against DMR values are no longer valid. ICIS also deletes any links between the deleted Effluent Violations and Enforcement Actions. Processing continues at #7.	N/A
7	**For every valid column on the form, set the NODI code to the Form NODI code.** Once the Form NODI data are determined to be valid, ICIS will set the NODI code of every expected column (Quantity/Concentration column defined in the permit for this DMR) for every parameter in the DMR to the value received in the tag DMRNoDischargeIndicator. Processing continues at #8.	N/A

Item Number	Item Description	Mapping To Business Rule Table
8	**For every valid column on the form, set the DMR Received Date to the Form Received Date.** ICIS will set the received date of every expected column (Quantity/Concentration column defined in the permit for this DMR) for every parameter in the DMR to the date received in the tag DMRNoDischargeReceivedDate. Processing continues at #9.	N/A
9	**Log accepted transaction for the DMR form .** ICIS will log a successful transaction message for the DMR form saved. These transaction messages will be displayed on the Accepted Transactions audit report.	N/A
10	**Save all parameters.** ICIS saves all data for all parameters on the DMR Form. It does not matter whether this is a Change or a Replace DMR XML transaction because the goal of Form NODI is to set NODI code and Received Date for all parameters on the DMR Form. Processing continues at #11.	N/A
11	**Return to calling program.** Processing returns to the main flow of the calling program (*Table 2-5: Change DMR Processing (#9) or Table 2-13: Replace DMR Processing (9)*).	N/A

2.2.1.2 Process DMR Parameter Data Flow

Figure 2-4: Process DMR Parameter Data is a diagram depicting the processing of DMR parameter data. A table detailing each step in the flow is included in this section as well.

Figure 2-4: Process DMR Parameter Data

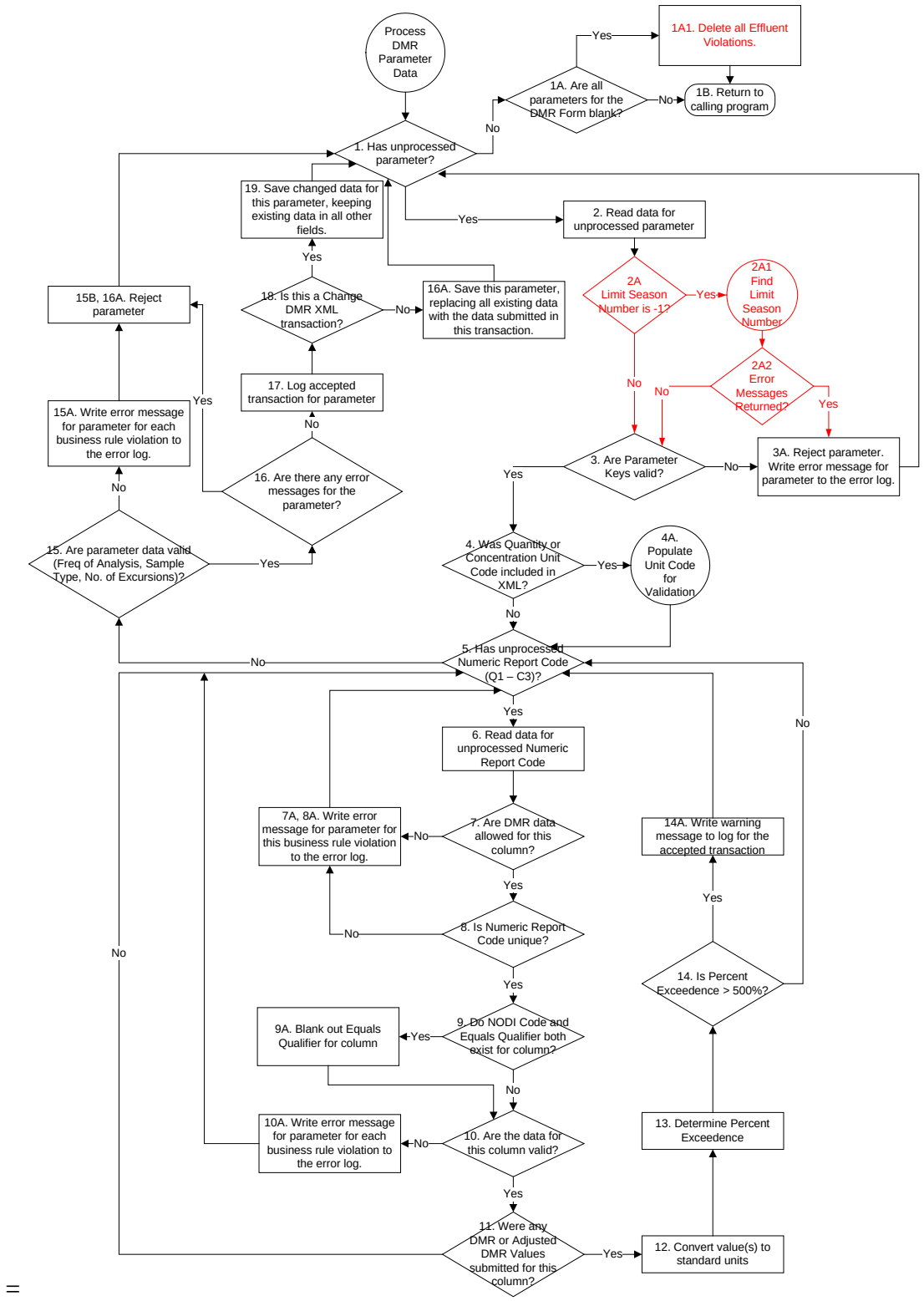

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Table 2-7: Process DMR Parameter Data contains a description of the items in the above Process DMR Parameter Data flow.

Table 2-7: Process DMR Parameter Data

Item Number	Item Description	Mapping To Business Rule Table
1	**Has unprocessed parameter?** ICIS determines if there is a parameter to process. If there is another parameter, processing continues at #2.	N/A
1A	**Are all parameters for the DMR Form blank?** ICIS determines whether all parameters for the DMR Form are blank after all parameters have been processed. If all parameters are blank, processing continues at #1A1. If data exist for at least one parameter, processing continues at #1B.	N/A
1A1	**Delete all Effluent Violations.** ICIS has determined that the DMR Form does not contain any parameter data. This means that any Effluent Violations previously generated are no longer valid. ICIS also deletes any links between Effluent Violations and Enforcement Actions. Processing continues at #1B.	N/A
1B	**Return to calling program.** After all parameters have been processed, ICIS returns to the main flow of the calling program (*Table 2-5: Change DMR Processing (#9) or Table 2-14: Replace DMR Processing (#9)*).	N/A
2	**Read data for unprocessed parameter.** ICIS reads in the data for the parameter.	N/A
2A	**Limit Season Number is -1?** ICIS determines if the submitted transaction has a -1 as the Limit Season Number, indicating that the system must try to find a matching DMR Form Parameter in the database. If the Limit Season Number is -1, processing continues at #2A1. If the Limit Season Number is not -1, processing continues at step #3.	N/A
2A1	**Find Limit Season Number** ICIS has determined that the Limit Season Number is -1. Processing continues under Table 2-8: Find Limit Season Number.	N/A
2A2	**Error Messages Returned?** ICIS determines if any error messages were returned from the Find Limit Season Number Process. If error messages were returned, processing continues at #3A. If no error messages were returned, processing continues at #3.	N/A

Item Number	Item Description	Mapping To Business Rule Table
3	**Are Parameter Keys valid?** ICIS determines if the Parameter key fields submitted in the DMR XML transaction are valid. The XML key tags for a DMR parameter are: ParameterCode, MonitoringSiteDescriptionCode, and LimitSeasonNumber. For the parameter key to be valid in ICIS there must be a corresponding parameter on the DMR form (i.e., the parameter has to be defined in the Permit for this DMR). If the key data are valid, processing continues at #4.	Row 12
3A	**Reject parameter. Writer error message for parameter to the error log.** If the XML key tags for the parameter are not valid (i.e., do not exist in ICIS) then ICIS will reject the parameter data. This means that none of the data for this parameter is processed by ICIS. An error message is written to the error log stating that this parameter for this DMR has been rejected and why. Processing returns to #1 to check if there are any more parameters to process.	Row 12
4	**Was Quantity or Concentration Unit Code included in XML?** ICIS determines if tags for Quantity Unit Code or Concentration Unit Code were included in the XML. If either tag was included, processing continues at #4A. If neither Unit Code tag was included, processing continues at #5.	N/A
4A	**Populate Unit Code for Validation.** ICIS has determined that tags for Quantity or Concentration Unit Code were included in the XML. Processing continues under *Table 2-8: Populate Unit Code for Validation*.	N/A
5	**Has unprocessed Numeric Report Code (Q1 – C3)?** ICIS determines if there are any Quantity or Concentration column data (XML parent tag NumericReport) to be processed. If there is another Quantity or Concentration column of data, processing continues at #6. If there are no more NumericReport data for this parameter, processing continues at #15.	N/A
6	**Read data for unprocessed Numeric Report Code.** ICIS reads in the an unprocessed column of Quantity or Concentration data. The specific Quantity or Concentration column (i.e., Q1, Q2, C1-3) is identified by the XML tag NumericReportCode.	N/A
7	**Are DMR data allowed for this column?** ICIS determines if the NumericReportCode is valid for this parameter. For the NumericReportCode to be valid for the parameter, the column must have a Limit, Optional Monitoring, or Required Monitoring defined in the NPDES permit. As previously stated, ICIS will not accept unexpected DMR data. If the DMR parameter does not have the particular Quantity or Concentration defined, then the NumericReportCode is considered invalid. If the NumericReportCode is defined in the parameter for data entry, then processing continues at #8.	Row 17

Item Number	Item Description	Mapping To Business Rule Table
7A	**Write error message for parameter for this business rule violation to the error log.** If ICIS determines that the NumericReportCode is not defined for this parameter, an error message is written to the error log stating that this NumericReportCode is invalid for this parameter. Processing returns to #5 to check if there is any more Quantity or Concentration column data (NumericReport data) for this parameter to process.	Row 17
8	**Is Numeric Report Code unique?** Once ICIS has determined that the NumericReportCode is valid for this parameter, the system must determine if it is a duplicate NumericReportCode. The code would be considered duplicate if it has already been processed within this DMR parameter transaction. Only one of each type of NumericReportCode is allowed per parameter. ICIS will process the first instance of a NumericReportCode and any subsequent duplicate instances found while processing a parameter are rejected. If this is a unique NumericReportCode, then processing continues at #9.	Row 16
8A	**Write error message for parameter for this business rule violation to the error log.** If ICIS determines that the NumericReportCode is not unique for this parameter, an error message is written to the error log stating that this NumericReportCode is invalid for this parameter. Processing returns to #5 to check if there is any more Quantity or Concentration column data (NumericReport data) for this parameter to process.	Row 16
9	**Do NODI Code and Equals Qualifier both exist for column?** ICIS determines if this column has both a NODI Code and an Equals Qualifier, because if it does, an additional step of processing is needed. If the column does not contain both a NODI Code and an Equals Qualifier, processing continues at #10.	N/A
9A	**Blank out Equals Qualifier for column.** ICIS has determined that this column contains both a NODI Code and an Equals Qualifier. ICIS blanks out the Equals Qualifier before processing continues at #10.	N/A
10	**Are the data for this column valid?** ICIS determines if the data for the Quantity or Concentration column (NumericReport data) are valid. There are several business rules that apply to this data (see *Section 2.4 Business Rules* for details), and an asterisk in any field means that the field should be blanked out. If any of the business rules are violated, the Quantity or Concentration column is considered invalid. If the data are valid, processing continues at #11.	Rows 18-35
10A	**Write error message for parameter for each business rule violation to the error log.** If ICIS determines that any of the data for a Quantity or Concentration column are invalid, an error message is written to the error log stating that this NumericReportCode is invalid for this parameter which business rule was violated. Processing returns to #5 to check if there is any more Quantity or Concentration column data (NumericReport data) for this parameter to process.	Rows 18-35

Item Number	Item Description	Mapping To Business Rule Table
11	**Were any DMR or Adjusted DMR Values submitted for this column?** ICIS determines if any numeric value data (as opposed to NODI codes) were submitted for the Quantity or Concentration column. If they were, then processing continues at #12. If there were no numeric values submitted for this column of data then processing returns to #5 to check if there is any more Quantity or Concentration column data (NumericReport data) for this parameter to process.	N/A
12	**Convert value(s) to standard units.** ICIS has determined that numeric value data was submitted for a particular NumericReport and so those numeric values must be converted to the standard unit of measure defined for this parameter. ICIS determines if the unit of measure entered for the numeric data is the standard unit of measure. If it is then no conversion is needed. If it is not the standard unit of measure, then ICIS converts the numeric values entered to the standard unit of measure for the parameter. All DMR value data is converted to standard units of measure for compliance determination. Processing continues at #13.	N/A
13	**Determine Percent Exceedence.** Once all numeric data is the standard unit of measure, ICIS calculates the Percent Exceedence for values entered and blanks out Percent Exceedence for all values that were blanked out. Processing continues at #14.	N/A
14	**Is Percent Exceedence > 500%?** ICIS determines if the percent exceedence calculated is greater than 500%. If it is then processing continues at #14A. If the percent exceedence is less than or equal to 500% then processing returns to #5 to check if there is any more Quantity or Concentration column data (NumericReport data) for this parameter to process.	Row 36
14A	**Write warning message to log.** ICIS has determined that the percent exceedence is greater than 500% and writes a warning message to the error log. Users are informed that the percent exceedence for the value was greater than 500% so they may determine if this value was entered in error. Processing returns to #5 to check if there is any more Quantity or Concentration column data (NumericReport data) for this parameter to process.	Row 36
15	**Are parameter data valid (Freq of Analysis, Sample Type, No. of Excursions)?** ICIS has determined that there are no more Quantity or Concentration column data for this parameter. Next ICIS determines whether there is any additional parameter data (i.e., Sample Type, Frequency of Analysis, and Number of Excursions) and if yes, is that data valid. The specific business rules that are applied to this data to determine if it is valid can be found under *Section 2.4 Business Rules*, and an asterisk in any field means that the field should be blanked out. If there is no additional parameter data or the additional parameter data is determined to be valid, then processing continues at #16.	Rows 13-15

Item Number	Item Description	Mapping To Business Rule Table
15A	**Write error message for parameter for each business rule violation to error log.** If ICIS has determined that the additional parameter data is invalid, an error message is written to the error log stating that this parameter is invalid and which business rule was violated.	Rows 13-15
15B	**Reject parameter.** ICIS rejects the parameter if an error was found in the additional parameter data. No data for this parameter will be saved. All errors found for this parameter will be listed in the error log along with the status of rejected for this parameter.	Rows 13-15
16	**Are there any error messages for the parameter?** ICIS has determined that the additional parameter data is valid and now must determine if there were any errors detected during the processing of the Quantity or Concentration column data. If no errors were detected, processing returns to #1 to determine if there are any more parameters to be processed for this DMR.	Rows 16-35
16A	**Reject parameter.** ICIS rejects the parameter if any errors were found while processing the Quantity or Concentration column data. No data for this parameter will be saved. All errors found for this parameter will be listed in the error log along with the status of rejected for this parameter.	Rows 16-35
17	**Log accepted transaction for parameter.** ICIS will log a successful transaction message for each error-free parameter. These transaction messages will be displayed on the Accepted Transactions audit report for this DMR.	N/A
18	**Is this a Change DMR XML transaction?** ICIS determines whether the DMR XML transaction being processed is a Change transaction or a Replace transaction. This decision determines how ICIS will save the data. If this is a Change transaction, processing continues at #19.	N/A
18A	**Save this parameter, replacing all existing data with the data submitted in this transaction.** ICIS has determined that this is a Replace DMR XML transaction. For this parameter, any previously entered parameter data will be overwritten with this new data. If an XML tag for a specific field in the parameter has not been included, that field should be blanked out. It is also possible that the user will submit an asterisk in an XML tag for a specific field. An asterisk is another way to indicate that the field should be blanked out. Processing continues at #1 to check if there are any more parameters to process.	N/A
19.	**Save changed data for this parameter, keeping existing data in all other fields.** ICIS has determined that this is a Change DMR XML transaction. For this parameter, only the specific data fields submitted will be changed in the database. An asterisk in any field means that the field should be blanked out. Processing continues at #1 to check if there are any more parameters to process.	N/A

2.2.1.3 Find Limit Season Number Flow

Figure 2-5: Find Limit Season Number is a diagram depicting the identification of the Limit Season Number when the user submits -1 for the parameter. A table detailing each step in the flow is included in this section as well.

Figure 2-5: Find Limit Season Number

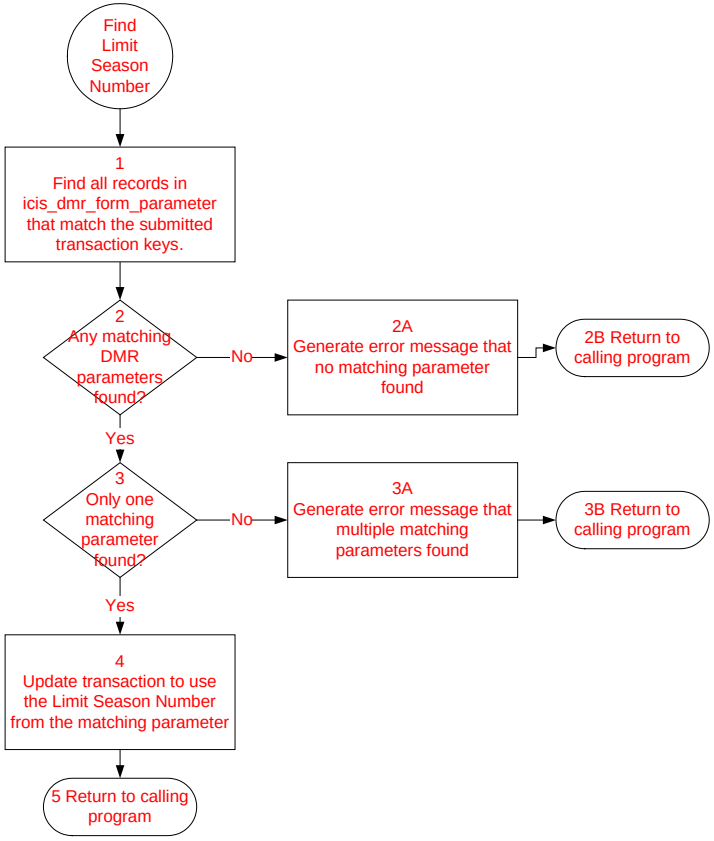

Table 2-8: Find Limit Season Number contains a description of the items in the above Find Limit Season Number flow.

Table 2-8: Find Limit Season Number

Item Number	Item Description	Mapping To Business Rule Table
1	**Find all records in icis_dmr_form_parameter that match the submitted transaction keys.** ICIS identifies all matching DMR Form Parameters in the database which match the submitted keys: Permit Identifier (icis_permit.external_permit_nmbr) Permitted Feature Identifier (icis_perm_feature.perm_feature_nmbr) Limit Set Designator (icis_limit_set.limit_set_designator) Monitoring Period End Date (icis_dmr_event.monitoring_period_end_date) Parameter Code (icis_dmr_form_parameter.parameter_code) Monitoring Site Description Code (icis_dmr_form_parameter.monitoring_location_code) Processing continues at #2.	N/A
2	**Any matching DMR parameters found?** ICIS determines whether there are any matching DMR Form Parameters for the transaction based on the results of #1. If no matching parameters are found, processing continues at #2A. If at least one matching DMR Form parameter is found, processing continues at #3.	N/A
2A	**Generate error message that no matching parameter found.** ICIS has determined that there is no DMR Form Parameter matching the transaction keys. Processing continues at #2B.	Row 12
2B	**Return to calling program.** After the parameter has been processed, ICIS returns to the main flow of the calling program (*Table 2-5: Change DMR Processing (#9) or Table 2-14: Replace DMR Processing (#9)*).	N/A
3	**Only one matching parameter found?** ICIS determines whether there is one or more matching DMR Form Parameters for the transaction based on the results of #1. If multiple matching parameters are found, processing continues at #3A. If only one matching DMR Form parameter is found, processing continues at #4.	N/A
3A	**Generate error message that multiple parameters found.** ICIS has determined that there are multiple DMR Form Parameters matching the transaction keys. Processing continues at #3B.	Row 12A
3B	**Return to calling program.** After the parameter has been processed, ICIS returns to the main flow of the calling program (*Table 2-5: Change DMR Processing (#9) or Table 2-14: Replace DMR Processing (#9)*).	N/A

Item Number	Item Description	Mapping To Business Rule Table
4	**Update transaction to use the Limit Season Number from the matching parameter.** ICIS updates the transaction to use the Limit Season Number from the matching parameter, rather than -1. Processing continues at #5.	N/A
5	**Return to calling program.** After the parameter has been processed, ICIS returns to the main flow of the calling program (*Table 2-5: Change DMR Processing (#9) or Table 2-14: Replace DMR Processing (#9)*).	N/A

2.2.1.3.1 Populate Unit Code for Validation

Figure 2-6: Populate Unit code for Validation is a diagram depicting how ICIS uses Quantity and Concentration Unit Codes to populate value-level Unit Codes. A table detailing each step in the flow is included in this section as well.

Figure 2-6: Populate Unit Code for Validation

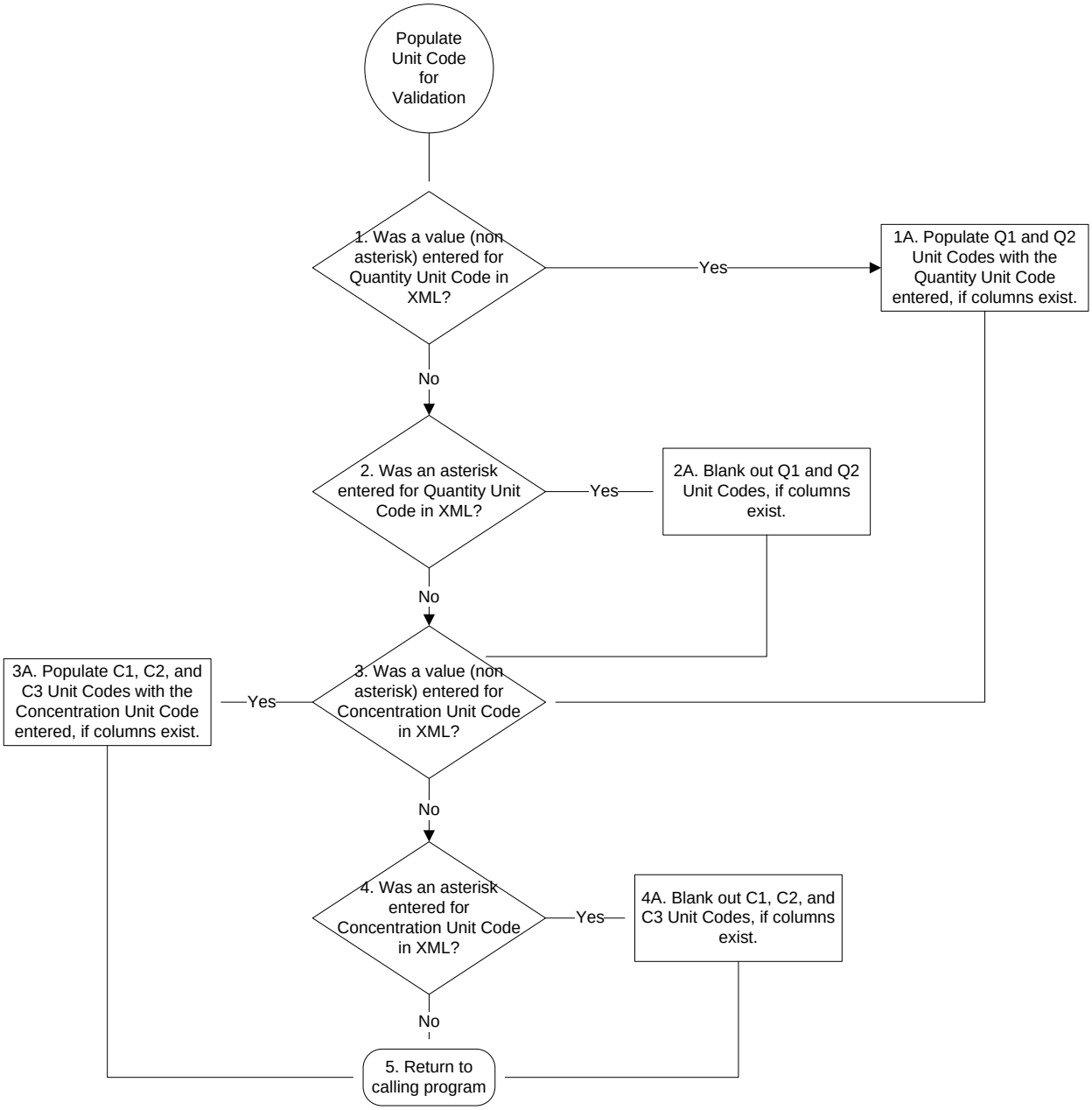

Table 2-9: Populate Unit Code for Validation contains a description of the items in the above Populate Unit Code for Validation flow.

Table 2-9: Populate Unit Code for Validation

Item Number	Item Description	Mapping To Business Rule Table
1	**Was a value (non-asterisk) entered for Quantity Unit Code in XML?** ICIS determines whether the Quantity Numeric Report Unit Measure Code tag was entered in the XML with a value. A value is any entry except an asterisk. If a value was not entered for Quantity Numeric Report Unit Measure Code, then processing continues at Step #2.	N/A
1A	**Populate Q1 and Q2 Unit Codes with the Quantity Unit Code entered, if columns exist.** ICIS has determined a value was entered for Quantity Numeric Report Unit Measure Code. ICIS uses that value to populate the Unit Codes for all Quantity columns (Q1, Q2) that exist. Processing continues at Step #3.	N/A
2	**Was an asterisk entered for Quantity Unit Code in XML?** ICIS determines whether the Quantity Numeric Report Unit Measure Code tag was entered in the XML with an asterisk. If an asterisk was not entered for Quantity Numeric Report Unit Measure Code, then processing continues at Step #3.	N/A
2A	**Blank out Q1 and Q2 Unit Codes, if columns exist.** ICIS has determined that an asterisk was entered for Quantity Numeric Report Unit Measure Code. An asterisk indicates that the user wishes to blank out the Unit Code, so ICIS blanks out the Unit Codes for any Quantity columns (Q1, Q2) that exist. Processing continues at Step #3.	N/A
3	**Was a value (non-asterisk) entered for Concentration Unit Code in XML?** ICIS determines whether the Concentration Numeric Report Unit Measure Code tag was entered in the XML with a value. A value is any entry except an asterisk. If a value was not entered for Concentration Numeric Report Unit Measure Code, then processing continues at Step #4.	N/A
3A	**Populate C1, C2, and C3 Unit Codes with the Concentration Unit Code entered, if columns exist.** ICIS has determined a value was entered for Concentration Numeric Report Unit Measure Code. ICIS uses that value to populate the Unit Codes for all Concentration columns (C1, C2, C3) that exist. Processing continues at Step #5.	N/A
4	**Was an asterisk entered for Concentration Unit Code in XML?** ICIS determines whether the Concentration Numeric Report Unit Measure Code tag was entered in the XML with an asterisk. If an asterisk was not entered for Concentration Numeric Report Unit Measure Code, then processing continues at Step #5.	N/A

Item Number	Item Description	Mapping To Business Rule Table
4A	**Blank out C1, C2, and C3 Unit Codes, if columns exist.** ICIS has determined that an asterisk was entered for Concentration Numeric Report Unit Measure Code. An asterisk indicates that the user wishes to blank out the Unit Code, so ICIS blanks out the Unit Codes for any Concentration columns (C1, C2, C3) that exist. Processing continues at Step #5.	N/A
5	**Return to calling program.** After populating value-level Unit Codes, ICIS returns to the Process DMR Parameter flow (*Table 2-7: Process DMR Parameter Flow (#5)*.	N/A

2.2.1.4 Process Auxiliary Data Flow

Figure 2-7: Process Auxiliary Data is a diagram depicting the processing of DMR auxiliary data. A table detailing each step in the flow is included in this section as well.

Figure 2-7: Process Auxiliary Data

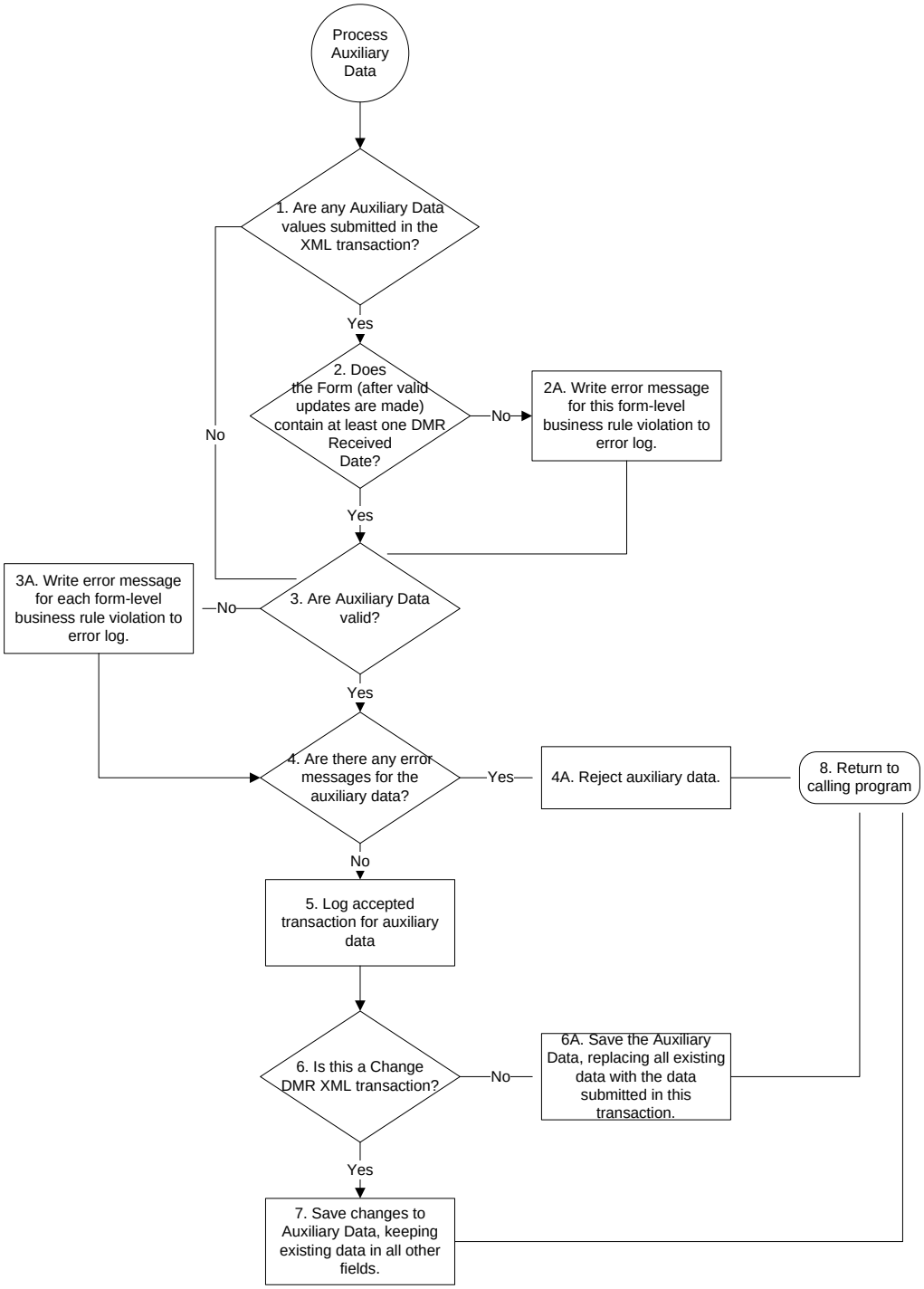

Table 2-10: Process Auxiliary Data contains a description of the items in the above Process Auxiliary Data flow.

Table 2-10: Process Auxiliary Data

Item Number	Item Description	Mapping To Business Rule Table
1	**Are Auxiliary Data values submitted in this XML transaction?** ICIS determines whether the user has submitted values for any Auxiliary Data fields or just blanked out Auxiliary Data fields by placing an asterisk in Auxiliary Data fields. This check is needed because the next check (Does the Form (after valid updates are made) contain at least one DMR Received Date) does not apply if the user is only blanking out, and not entering any, data. If the user is only blanking out data, processing continues at #3.	N/A
2	**Does the Form (after valid updates are made) contain at least one DMR Received Date?** ICIS has determined that this DMR submission contains auxiliary data (e.g., DMR signatory information, DMR Principal Executive Officer information, and special program data such as Land Application or Incinerator data). ICIS must determine if at least one column for one parameter in the DMR contains valid received data (either as part of the current DMR XML transaction or already existing in the ICIS database). That data can be either a valid numeric value or a valid NODI code, with a valid received date. If this data exists, then processing continues at #3.	Row 37
2A	**Write error message for this form-level business rule violation to error log.** If ICIS has determined that received dates do not exist for the DMR, then the submission of the auxiliary data is considered invalid. An error message for the DMR will be written in the error log detailing why all the auxiliary data is in error (e.g., due to a received date not existing for any parameter). Processing continues at #3 so that all errors within the auxiliary data can be identified and listed on the error log.	Row 37
3	**Are Auxiliary Data valid?** ICIS determines if the auxiliary data are valid based on the business rules (see *Section 2.4 Business Rules* for details), and an asterisk in any field means that the field should be blanked out. If this data is valid processing continues at #4.	Rows 38-44
3A	**Write error message for each form-level business rule violation to error log.** If there are errors in the auxiliary data (e.g., Signatory Date is greater than the current data, an invalid code was submitted for Crop Types Planted) then ICIS will write an error message to the log for each error found, detailing why the data is violating a business rule. Processing continues at #4.	Rows 38-44
4	**Are there any error messages for the auxiliary data?** ICIS must determine if any errors were encountered during the processing of the auxiliary data. If no errors were encountered, then processing continues at #5.	Rows 37-44

Item Number	Item Description	Mapping To Business Rule Table
4A	**Reject auxiliary data.** If ICIS encountered errors during the processing of the auxiliary data then all the auxiliary data is rejected. ICIS will not save any of the auxiliary data when any errors are encountered on a replace or change transaction. Processing continues at #8.	Rows 37-44
5	**Log accepted transaction for auxiliary data.** ICIS will log a successful replace or change transaction message for the auxiliary data saved. This transaction message will be displayed on the Accepted Transactions audit report for this DMR. Processing continues at #6.	N/A
6	**Is this a Change DMR XML transaction?** ICIS determines whether the DMR XML transaction being processed is a Change transaction or a Replace transaction. This decision determines how ICIS will save the data. If this is a Change transaction, processing continues at #7.	N/A
6A	**Save the Auxiliary Data, replacing all existing data with the data submitted in this transaction.** ICIS has determined that this is a Replace DMR XML transaction. Any previously entered Auxiliary Data will be overwritten with this new data. If an XML tag for a specific field in the Auxiliary Data has not been included, that field should be blanked out. It is also possible that the user will submit an asterisk in an XML tag for a specific field. An asterisk is another way to indicate that the field should be blanked out. Processing continues at #8.	N/A
7	**Save changes to Auxiliary Data, keeping existing data in all other fields.** ICIS has determined that this is a Change DMR XML transaction. Only the specific Auxiliary Data fields submitted will be changed in the database. An asterisk in any field means that the field should be blanked out. Processing continues at #8.	N/A
8	**Return to calling program.** Processing returns to the main flow of the calling program (*Table 2-5: Change DMR Processing (#10) or Table 2-14: Replace DMR Processing (#10)*).	N/A

2.2.1.5 Change DMR Sample Scenarios

A Change DMR transaction can contain many different combinations of data. It may contain all of the parameters that are expected for a DMR, only some of the parameters, no parameters at all, or Form NODI, but not both parameter and Form NODI. Similarly, it may contain Auxiliary Data, but does not have to. The data submitted for each of these sections may or may not be valid. A few of these submission variations with the associated system results are described below.

Example 1

If the submitted DMR XML includes:

- One parameter with data for specific fields
- No invalid data

ICIS will update the specific data fields entered for that parameter with the data submitted in the Change DMR XML transaction. The other data fields for that parameter, all other parameters, and the Auxiliary Data section will remain unchanged. Table 2-11: Change DMR Example 1 provides an example.

Table 2-11: Change DMR Example 1

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original	Arsenic (01252), 1, 1 – with no errors (updated values for Report Sample Type Text and Q1 Numeric Condition Quantity)	Arsenic (01252), 1, 1 – original plus updated values for Report Sample Type Text and Q1 Numeric Condition Quantity
Benzene (34030), 1, 1 – original		Benzene (34030), 1, 1 – original
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – original
Auxiliary Data – original		Auxiliary Data – original

Example 2

If the submitted DMR XML includes:

- Two parameters with data for specific fields
- Invalid data for one of the parameters

ICIS will update the specific data fields for the parameter that did not have errors with the data in the XML transaction. The rejected parameter, the parameters that were not included in the DMR XML, and the Auxiliary Data section will remain unchanged. Table 2-12: Change DMR Example 2 provides an example.

Table 2-12: Change DMR Example 2

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original	Arsenic (01252), 1, 1 – with no errors (updated values for Report Sample Type Text and Q1 Numeric Condition Quantity)	Arsenic (01252), 1, 1 - original plus updated values for Report Sample Type Text and Q1 Numeric Condition Quantity
Benzene (34030), 1, 1 – original	Benzene (34030), 1, 1 – rejected with errors (updated values for Q2 Numeric Condition Quantity and Numeric Report Received Date)	Benzene (34030), 1, 1 – original
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – original
Auxiliary Data – original		Auxiliary Data – original

Example 3

If the submitted DMR XML includes:

- Form NODI
- No Auxiliary data

In this scenario, one of the parameters on the ICIS DMR form contains received numeric value data which causes the all the DMR XML Form NODI data to be rejected. ICIS will leave all parameter and auxiliary data unchanged. Table 2-13: Change DMR Example 3 provides an example.

Table 2-13: Change DMR Example 3

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original	Form NODI receives an error because the existing ICIS DMR parameter Benzene (34030), 1, 1 contains received numeric value data.	Arsenic (01252), 1, 1 - original
Benzene (34030), 1, 1 – original		Benzene (34030), 1, 1 – original
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – original
Auxiliary Data – original		Auxiliary Data – original

Example 4

If the submitted DMR XML includes:

- One parameter with asterisks submitted for all non-key fields
- No invalid data

ICIS will blank out all fields for the submitted parameter, leaving all other parameters and the auxiliary data unchanged. Table 2-14: Change DMR Example 4 provides an example.

Table 2-14: Change DMR Example 4

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original		Arsenic (01252), 1, 1 - original
Benzene (34030), 1, 1 – original	Benzene (34030), 1, 1 – asterisks entered for all non-key fields	Benzene (34030), 1, 1 – new (blank)
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – original
Auxiliary Data – original		Auxiliary Data – original

Example 5

If the submitted DMR XML includes:

- One parameter with data for specific fields
- Limit Season Number equal to -1 for a parameter that has one matching DMR Form Parameters in ICIS

ICIS will identify the correct DMR Form Parameter and update the correct record in the database. Table 2-15: Change DMR Example 5 provides an example.

Table 2-15: Change DMR Example 5

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original		Arsenic (01252), 1, 1 - original
Benzene (34030), 1, 4 – original	Benzene (34030), 1, **-1** (updated values for Report Sample Type Text and Q1 Numeric Condition Quantity)	Benzene (34030), 1, 4 – original plus updated values for Report Sample Type Text and Q1 Numeric Condition Quantity
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – original
Auxiliary Data – original		Auxiliary Data – original

Example 6

If the submitted DMR XML includes:

- One parameter with data for specific fields
- Limit Season Number equal to -1 for a parameter that has multiple matching DMR Form Parameters in ICIS

ICIS will reject the transaction. Table 2-16: Change DMR Example 6 provides an example.

Table 2-16: Change DMR Example 6

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
Arsenic (01252), 1, 1 - original		Arsenic (01252), 1, 1 - original
Benzene (34030), 1, 1 – original	Benzene (34030), 1, **-1** (updated values for Report Sample Type Text and Q1 Numeric Condition Quantity)	Benzene (34030), 1, 1 – original
Benzene (34030), 1, 2 – original		Benzene (34030), 1, 2 – original
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – original
Auxiliary Data – original		Auxiliary Data – original

2.3 REPLACE (R) DMR PROCESSING

The Replace DMR transaction allows the user to submit DMR data to ICIS without considering the current state of received DMR data. A Replace DMR transaction may contain data for one or more parameters and/or Auxiliary Data. In processing the transaction, ICIS will replace all of the existing data for each of the parameters submitted in the XML. Any parameters that exist for that DMR in ICIS but are not included in the Replace DMR transaction will not be updated or blanked out through the Replace DMR transaction. Similarly, if any Auxiliary Data is submitted in a Replace DMR transaction, all of the Auxiliary Data currently existing for that DMR will be replaced with the Auxiliary Data submitted in the XML.

The user must have a way to blank out fields that were previously populated in the database. To do this in a Replace DMR XML transaction, the user has the following options:

- The user can submit an asterisk (*) in the field(s) they want to blank out.
- The user can choose not to include certain fields when they submit the Replace DMR XML transaction. Because this is a Replace, ICIS will replace all fields for the submitted sections with only the data in the XML, so any fields excluded from the XML (within that section) will be blanked out.
- The user can submit the key tags for a Parameter (ParameterCode, MonitoringSiteDescriptionCode, and LimitSeasonNumber), with no other tags for that Parameter. ICIS will blank out all fields for that Parameter.
- The user can submit the identifying field for a specific column on a Parameter (NumericReportCode) with no other tags for that column. ICIS will blank out all fields for that column.

Form NODI is handled differently than other types of DMR data because Form NODI data causes data to be updated for every parameter that exists for the DMR. When Form NODI is submitted in a Replace DMR transaction, it is evaluated against the business rules. If it is valid, all parameters will be updated with the new NODI data. If asterisks are submitted for the Form NODI Code and Date, NODI Code and Received Date would be blanked out for every column for every Parameter on the Form.

ICIS has two kinds of DMRs, Scheduled and Unscheduled. Scheduled DMRs correspond to Scheduled Limit Sets that are defined in the permit and have the Monitoring Period End Date specifically defined. Unscheduled DMRs correspond to Unscheduled Limit Sets that are defined in the permit and do not have the Monitoring Period End Date defined. Scheduled DMR Forms always exist in ICIS regardless of whether data has been entered for them because they are created by the Expected DMR Schedule process when limits are entered. Unscheduled DMRs are not created by the Expected DMR Schedule process until the user creates them. When the user submits a Replace DMR transaction for an Unscheduled DMR, ICIS will create the DMR Form if it does not already exist and at least one Limit exists for the Unscheduled Limit Set.

The processing of a Replace DMR transaction in ICIS is described below.

2.3.1 Replace DMR Processing Flow

Figure 2-8: Replace DMR Processing is a diagram depicting the processing of a Replace DMR transaction. Also included in this section are a table detailing each step in the flow and sample Replace DMR Processing scenarios.

Figure 2-8: Replace DMR Processing

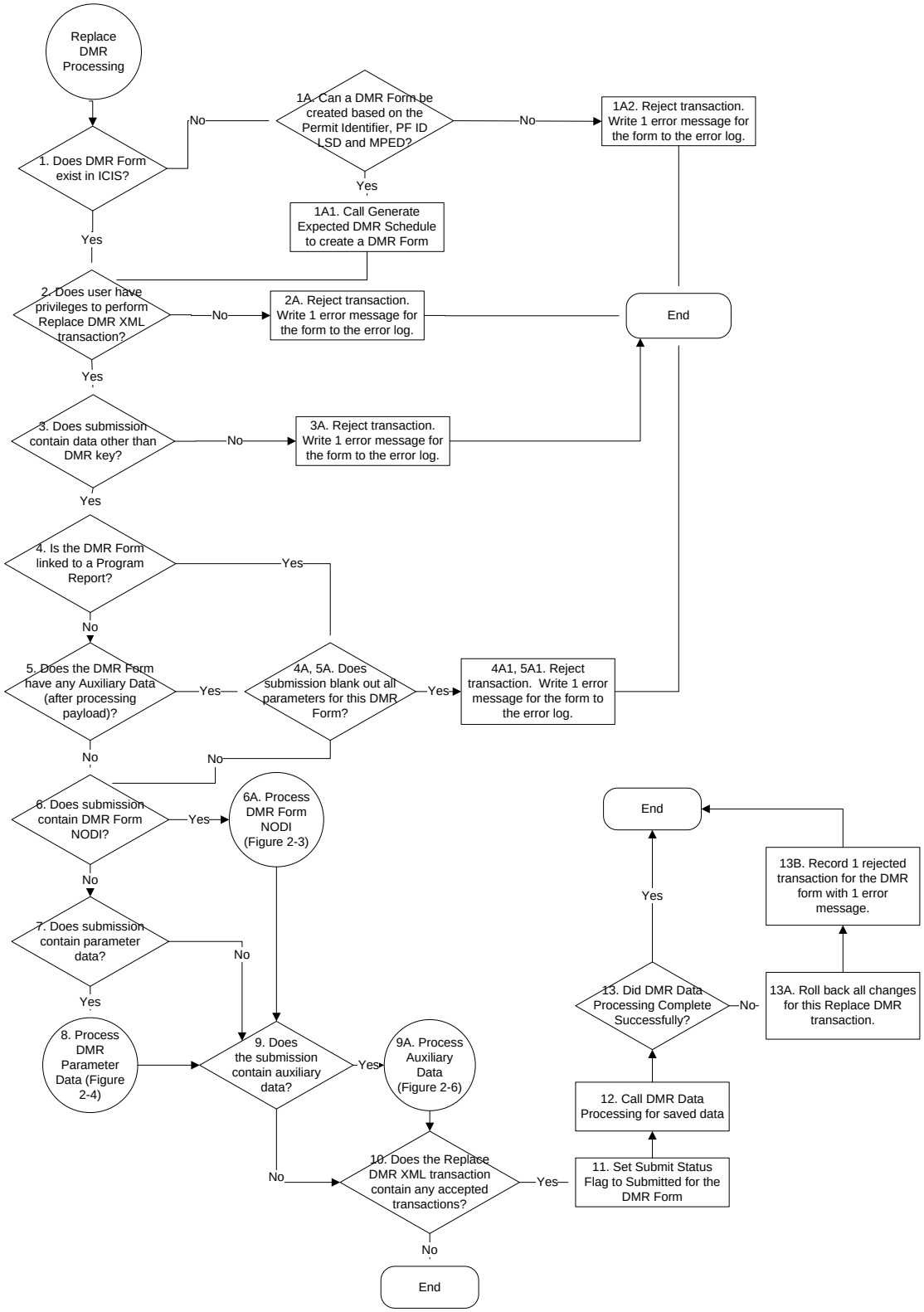

Table 2-17: Replace DMR Processing contains a description of the items in the above Replace DMR Processing flow.

Table 2-17: Replace DMR Processing

Item Number	Item Description	Mapping To Business Rule Table
1	**Does DMR Form exist in ICIS?** ICIS determines if a DMR form exists in ICIS that matches the key data submitted. If the Replace DMR XML transaction is for a Scheduled Limit Set, the DMR form has already been created in ICIS and may or may not contain data. If the Replace DMR XML transaction is for an Unscheduled Limit Set, and no data has been entered for that DMR, then ICIS will determine if it can call Generate Expected DMR Schedule (see #1A1) to create the DMR form. If some data has already been entered for the Unscheduled DMR, then the form already exists in ICIS. If no form is found, then processing continues at #1A. If a form is found, processing continues at #2.	N/A
1A	**Can a DMR Form be created based on the Permit Identifier, PF ID, LSD and MPED?** ICIS determines if the key fields submitted in the Replace DMR XML transaction are valid. The XML key tags for a DMR are: PermitIdentifier, PermittedFeatureIdentifier, LimitSetDesignator, and MonitoringPeriodEndDate. For the DMR key to be valid in ICIS there must be a corresponding NPDES permit in ICIS that has defined a requirement for a DMR to be due for the submitted Permitted Feature/ Limit Set/ Monitoring Period End Date. In this case, the DMR keys would only be valid if the associated Limit Set is Unscheduled and the MPED represents a date for which DMR data can be entered. If the key data is valid processing continues at #1A1. If the key data are invalid processing continues at #1A2.	Rows 3-4
1A1	**Call Generate Expected DMR Schedule to create a DMR Form.** ICIS has determined that the DMR key data submitted is valid for a defined Unscheduled Limit Set (the Limit Set has been defined as Unscheduled in the permit) and no corresponding DMR form exists. ICIS calls Generate Expected DMR Schedule, and a DMR form for the submitted DMR key data is created in ICIS.	Row 4
1A2	**Reject transaction. Write 1 error message for the form to the error log.** If the XML key tags for the DMR are not valid, then ICIS will reject the Replace DMR XML transaction. ICIS will write an error message to the error log stating that the entire DMR was rejected. No data for this DMR submission will be processed or saved. ICIS processing of this Replace DMR XML transaction ends.	Rows 3-4

Item Number	Item Description	Mapping To Business Rule Table
2	**Does user have privileges to perform Replace DMR XML transaction?** ICIS has determined that this is a Replace DMR XML transaction and identified the DMR to be replaced, and must next determine if the ICIS User ID that has submitted this Change DMR XML transaction has the correct privileges defined in ICIS. This includes determining if the user can perform a Change DMR transaction and if the DMR is for a state/region for which the user has authority. ICIS applies the same security rules for batch as it does for the web, and uses the same set of permissions. If the ICIS User ID has the correct privileges, processing continues at #3.	Row 2
2A	**Reject transaction. Write 1 error message for the form to the error log.** If the ICIS User ID does not have the correct privileges defined in ICIS for this Replace DMR XML transaction, then ICIS will reject the DMR XML transaction. ICIS processing of this DMR XML transaction ends.	Row 2
3	**Does submission contain data other than DMR key?** ICIS determines whether or not any data besides the key data has been submitted with the DMR. If any data besides the key data has been submitted, processing continues at #4.	Row 5
3A	**Reject transaction. Write 1 error message for the form to the error log.** If no data besides the key data has been submitted in this Replace DMR XML transaction, ICIS will reject the entire Replace DMR XML transaction. ICIS will write an error message to the error log stating that the entire DMR was rejected because no data was submitted with the DMR. No data for this DMR submission will be processed or saved. ICIS processing of this DMR XML transaction ends.	Row 5
4	**Is the DMR Form linked to a Program Report?** ICIS determine if the DMR form that is being updated in the Replace DMR XML transaction is linked to Program Report in ICIS. ICIS performs this check because if the DMR Form is linked to a Program Report, further checks are necessary to determine if all data on the Form is being blanked out. If the DMR Form is not linked to a Program Report, processing continues at #5.	Row 6
4A	**Does submission blank out all parameters for this DMR Form?** ICIS determines if the XML submission blanks out all parameter data for this DMR Form. A batch user can blank out all parameter data for a DMR Form in a Replace DMR XML transaction in the following ways: • For Form NODI, submit an asterisk (*) for the DMRNoDischargeIndicator tag and the DMRNoDischargeReceivedDate tag for a DMR Form that only has NODI codes with received dates. • Submit an asterisk (*) for every non-key Report Parameter or Numeric Report tag that has data entered in ICIS. • Submit all parameters with only key data. • For each parameter, submit all NumericReportCodes with no data tags other than the NumericReportCode.	N/A

Item Number	Item Description	Mapping To Business Rule Table
4A1	**Reject transaction. Write 1 error message for the form to the error log.** It is invalid to blank out all parameter data for a DMR Form if the DMR Form is linked to a Program Report because this effectively deletes the DMR Form and a DMR Form cannot be deleted if it has a linked Program Report. ICIS processing of this Replace DMR XML transaction ends.	Row 6
5	**Does the DMR Form have any Auxiliary Data (after processing payload)?** ICIS determines if, after the entire payload is processed, the DMR form will contain any Auxiliary Data. ICIS performs this check because if the DMR Form will contain Auxiliary Data, further checks are necessary to determine if all data on the Form is being blanked out. If the DMR Form will not contain any Auxiliary Data, processing continues at #6.	Row 6
5A	**Does submission blank out all parameters for this DMR Form?** ICIS determines if the XML submission blanks out all parameter data for this DMR Form. A batch user can blank out all parameter data for a DMR Form in a Replace DMR XML transaction in the following ways: • For Form NODI, submit an asterisk (*) for the DMRNoDischargeIndicator tag and the DMRNoDischargeReceivedDate tag for a DMR Form that only has NODI codes with received dates. • Submit an asterisk (*) for every non-key Report Parameter or Numeric Report tag that has data entered in ICIS. • Submit all parameters with only key data. • For each parameter, submit all NumericReportCodes with no data tags other than the NumericReportCode.	N/A
5A1	**Reject transaction. Write 1 error message for the form to the error log.** It is invalid to blank out all parameter data for a DMR Form if the DMR Form has Auxiliary Data because Auxiliary Data cannot exist for a DMR Form unless one valid DMR Received Date exists for the Form. ICIS processing of this Replace DMR XML transaction ends.	Row 6
6	**Does submission contain DMR Form NODI?** Once ICIS has found or created the DMR form, ICIS determines if the transaction is a Form NODI or not. A DMR Form NODI XML has no report data (parameter data). A Form NODI transaction is used to enter a NODI code and a received date for all the DMR's expected parameters and their associated expected values (e.g., Quantity 1 value, Concentration 1 value etc.). If ICIS determines that this is not a Form NODI transaction, processing continues at #7.	N/A
6A	**Process DMR Form NODI** If this DMR transaction is a DMR Form NODI transaction, the processing continues under *Table 2-6: Process DMR Form NODI*.	N/A

Item Number	Item Description	Mapping To Business Rule Table
7	**Does submission contain parameter data?** ICIS determines whether or not this DMR transaction contains parameter data (data entered under the XML parent tag ReportParameter). If there is parameter data, processing continues at #8. If there is no parameter data, processing continues at #9.	N/A
8	**Process DMR Parameter Data** ICIS has determined that this transaction does contain parameter data and processing continues under *Table 2-7: Process DMR Parameter Data*.	N/A
9	**Does the submission contain auxiliary data?** Once the DMR Form NODI or parameter data have been processed, ICIS determines if any auxiliary data have been submitted with the Replace DMR XML transaction. Auxiliary data are the additional data associated with a DMR such as the DMR signatory information, DMR Principal Executive Officer information, and special program data (e.g., Land Application, Incinerator, etc.). This auxiliary data cannot be entered for a DMR form unless at least one value or NODI code, with one received date has been entered for the DMR form. If the Replace DMR XML transaction does not contain Auxiliary Data, processing continues at #10.	N/A
9A	**Process Auxiliary Data** ICIS has determined that auxiliary data exists for this Replace DMR XML transaction and processing continues under *Table 2-9: Process Auxiliary Data*.	N/A
10	**Does the Replace DMR XML transaction contain any accepted transactions?** ICIS has either determined that no auxiliary data exist or has finished processing the auxiliary data and now determines if any of the previous DMR processing resulted in accepted transactions. If none of the transactions were accepted, then the processing of this Replace DMR XML transaction ends. If there were accepted transactions, processing continues at #11.	N/A
11	**Set Submit Status Flag to Submitted for the DMR Form.** ICIS has determined that at least one transaction was accepted for this payload, which means that changes to the data have been saved. ICIS will set the status of this DMR Form to Submitted. In ICIS, a Submitted Status means that this DMR is ready to be evaluated for compliance (the DMR Data Processing programs that determine if this DMR should receive violations and generates/updates them accordingly can now be run against the data in this DMR). Processing continues at #12.	N/A

Item Number	Item Description	Mapping To Business Rule Table
12	**Call DMR Data Processing for saved data.** ICIS calls the DMR Data Processing programs to evaluate this DMR data for compliance. For further information on the violation processing rules refer to the ICIS-NPDES Technical Specification documents for DMR Non-Receipt Violations and Effluent Violations. Note that existing RNC data for Violations will remain as it was before this Replace DMR XML transaction unless this transaction has made the existing RNC data inapplicable. This is consistent with ICIS Web functionality. Processing continues at #13.	N/A
13	**Did DMR Data Processing Complete Successfully?** ICIS determines whether DMR Data Processing successfully completed or if there was an unexpected error. If the background processing completed successfully, processing of this Replace DMR XML transaction ends.	N/A
13A	**Roll back all changes for this Replace DMR transaction.** ICIS has determined that DMR Data Processing did not complete because of an unexpected error. This means that DMR Non-Receipt and Effluent Violations may not have been updated properly and ICIS may be unable to commit changes for the XML transaction. ICIS rolls back all changes related to this Replace DMR transaction, including both updates to DMR data and any previously recorded accepted or rejected transaction records.	Row 47
13B	**Record 1 rejected transaction for the DMR form with 1 error message.** ICIS records one rejected transaction for the DMR form and writes one error message to the log for that rejected transaction. This will allow the user to see that no data were successfully saved and the XML transaction must be resubmitted. Processing of the Change DMR transaction is complete.	Row 47

The following are sample Replace DMR Processing scenarios.

A Replace DMR transaction can contain many different combinations of data. It may contain all of the parameters that are expected for a DMR, only some of the parameters, no parameters at all, or Form NODI. Similarly, it may contain Auxiliary Data, but does not have to. The data submitted for each of these sections may or may not be valid. Many of these submission variations with the associated system results are described below.

Example 1

If the submitted DMR XML includes:

- All expected DMR parameters
- Auxiliary data
- No invalid data

ICIS will replace all existing data for that DMR form with the parameter and auxiliary data submitted in the XML transaction. Table 2-18: Replace DMR Example 1 provides an example.

Table 2-18: Replace DMR Example 1

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original	Arsenic (01252), 1, 1 - new	Arsenic (01252), 1, 1 - new
Benzene (34030), 1, 1 – original	Benzene (34030), 1, 1 – new	Benzene (34030), 1, 1 – new
Cadmium (01253), 1, 1 – original	Cadmium (01253), 1, 1 – new	Cadmium (01253), 1, 1 – new
Auxiliary Data – original	Auxiliary Data – new	Auxiliary Data – new

Example 2

If the submitted DMR XML includes:

- All expected DMR parameters
- No Auxiliary data
- No invalid data

ICIS will replace all the data for all parameters with the data submitted in the XML transaction. Data for the Auxiliary Data section will remain unchanged. Table 2-19: Replace DMR Example 2 provides an example.

Table 2-19: Replace DMR Example 2

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original	Arsenic (01252), 1, 1 - new	Arsenic (01252), 1, 1 - new
Benzene (34030), 1, 1 – original	Benzene (34030), 1, 1 – new	Benzene (34030), 1, 1 – new

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
Cadmium (01253), 1, 1 – original	Cadmium (01253), 1, 1 – new	Cadmium (01253), 1, 1 – new
Auxiliary Data – original		Auxiliary Data – original

Example 3

If the submitted DMR XML includes:

- Only some of the expected DMR parameters
- Auxiliary data
- Invalid data in some parameters

ICIS will replace all data for the parameters that were submitted and accepted as well as the Auxiliary Data. The parameters that were not submitted and the parameters that were rejected will remain unchanged. Table 2-20: Replace DMR Example 3 provides an example.

Table 2-20: Replace DMR Example 3

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original	Arsenic (01252), 1, 1 – new, invalid	Arsenic (01252), 1, 1 - original
Benzene (34030), 1, 1 – original	Benzene (34030), 1, 1 – new	Benzene (34030), 1, 1 – new
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – original
Auxiliary Data – original	Auxiliary Data – new	Auxiliary Data – new

Example 4

If the submitted DMR XML includes:

- All expected DMR parameters
- Auxiliary data
- Invalid data among the Auxiliary data

ICIS will replace parameter data with the accepted parameter data and will leave the Auxiliary Data unchanged. Table 2-21: Replace DMR Example 4 provides an example.

Table 2-21: Replace DMR Example 4

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original	Arsenic (01252), 1, 1 - new	Arsenic (01252), 1, 1 - new
Benzene (34030), 1, 1 – original	Benzene (34030), 1, 1 – new	Benzene (34030), 1, 1 – new
Cadmium (01253), 1, 1 – original	Cadmium (01253), 1, 1 – new	Cadmium (01253), 1, 1 – new
Auxiliary Data – original	Auxiliary Data – new, invalid	Auxiliary Data – original

Example 5

If the submitted DMR XML includes:

- Form NODI
- Auxiliary data
- No invalid data

ICIS will update all parameters and the Auxiliary Data section with the data submitted in the XML.

In this situation, the original parameters in ICIS may be blank, have received values, or have NODI codes with received dates. Table 2-22: Replace DMR Example 5 provides an example.

Table 2-22: Replace DMR Example 5

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original	Form NODI	Arsenic (01252), 1, 1 - new
Benzene (34030), 1, 1 – original		Benzene (34030), 1, 1 – new
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – new
Auxiliary Data – original	Auxiliary Data– new	Auxiliary Data – new

Example 6

If the submitted DMR XML includes:

- One of the expected DMR parameters, with only key data
- No Auxiliary Data

ICIS will blank out all data for the parameter that was submitted. All other parameters and the Auxiliary Data section will remain unchanged. Table 2-23: Replace DMR Example 6 provides an example.

Table 2-23: Replace DMR Example 6

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original		Arsenic (01252), 1, 1 - original
Benzene (34030), 1, 1 – original	Benzene (34030), 1, 1 – only key data	Benzene (34030), 1, 1 – new (blank)
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – original
Auxiliary Data – original		Auxiliary Data – original

Example 7

If the submitted DMR XML includes:

- One parameter with data for specific fields
- Limit Season Number equal to -1 for a parameter that has no matching DMR Form Parameters in ICIS

ICIS will reject the transaction. Table 2-24: Change DMR Example 7 provides an example.

Table 2-24: Change DMR Example 7

DMR Form in ICIS DB	DMR XML Submission	Result saved to ICIS DB
NPDES ID VA1234567; PF ID: 001; Limit Set Designator: A; MPED 01/31/2007		
Arsenic (01252), 1, 1 - original		Arsenic (01252), 1, 1 - original
Benzene (34030), 0, 4 – original	Benzene (34030), 1, **-1** (updated values for Report Sample Type Text and Q1 Numeric Condition Quantity)	Benzene (34030), 0, 4
Cadmium (01253), 1, 1 – original		Cadmium (01253), 1, 1 – original
Auxiliary Data – original		Auxiliary Data – original

2.4 BUSINESS RULES

Table 2-25: Batch DMR Business Rules lists the business rules that apply to batch DMR transactions. Each row has a unique Row ID which identifies the business rule mappings for the processing tables in Section 2 Process and Validation. The Business Rules column describes the specific business rule that is being applied to the DMR transaction. These rules are the same business rules (unless otherwise indicated as new for Batch functionality) that are currently implemented in the production system. The naming of the data fields is therefore consistent with the existing production system terminology and not the batch XML schema terminology. The two Where Enforced columns identify the code tier that is responsible for enforcing the business rule. The Rejection Tolerance column identifies the level of rejection (i.e.; entire DMR, parameter, auxiliary data) that violating the business rule causes. The last three columns, Error/Warning Code, Transaction Keys, and Error/Warning Message identify the code for error/warning messages, the keys that identify the specific record, and the specific message (including data) that will be displayed on the audit report along with code. The error/warning messages use the XML schema terminology for data so that users can easily identify the specific data tags that are in error. On the audit reports, the key values for each transaction will be concatenated. The keys that will be displayed for DMR transactions are listed below in the Transaction Keys column.

Table 2-25: Batch DMR Business Rules

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
1	Transaction Type must be valid for DMRs. Valid Transaction Types are R (Replace), C (Change), and X (Mass Delete).	N/A	Business rule layer (new)	Reject entire DMR transaction	DMR010	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	Transaction Type <value> is not valid for DMRs.
2	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.	GUI	Business rule layer	Reject entire DMR transaction	DMR020	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	User <user id> does not have privileges to perform a <transaction type> DMR transaction.
Replace/Change Transactions							

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
3	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.	Business rule layer	Business rule layer	Reject entire DMR transaction	DMR030	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	A DMR Form does not exist and cannot be created for the key data entered.
4	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.	Business rule layer	Business rule layer	Reject entire DMR transaction			
5	If the DMR contains only key data and no other data, ICIS rejects the DMR.	N/A	Business rule layer (new)	Reject entire DMR transaction	DMR045	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	The DMR only contains key data and no other data for processing.
6	All parameters for a DMR Form cannot be blanked out if the DMR Form is linked to a Program Report or has Auxiliary Data.	Business rule layer	Business rule layer	Reject entire DMR transaction	DMR047	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	All parameters cannot be blanked out because the DMR Form is linked to a Program Report or has Auxiliary Data.
Form NODI							

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
7	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.	Business rule layer	Business rule layer	Reject entire Form	DMR050	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	Form NODI cannot be entered because at least one DMR Value exists for the DMR Form.
8	Form NODI Code must be a valid (i.e., Active) code in the REF_NODI table.	Web Tier	Business rule layer (new)	Reject entire Form	DMR060	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	DMR No Discharge Indicator <value> does not exist in the ICIS reference table.
9	Form NODI Received Date must be less than or equal to the current date.	Business rule layer	Business rule layer	Reject entire Form	DMR070	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	DMR No Discharge Received Date <date> entered must be less than or equal to the current date.
10	All Received Dates on a DMR Form cannot be blanked out if any received values exist for the DMR Form.	Business rule layer	Business rule layer	Reject entire Form	DMR073	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	An asterisk (*) cannot be entered for DMR No Discharge Received Date because at least one DMR Value exists for the DMR Form.
11	If Form NODI Code is entered, Form NODI Received Date must also be entered, and vice versa.	Business rule layer	Business rule layer	Reject entire Form	DMR076	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	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.
Parameter Data							

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
12	For each Parameter, the DMR Parameter Key (Parameter Code, Monitoring Location Code, Season ID) must exist in ICIS. Note: the Limit Season Number will display as -1 if that was what was submitted.	GUI	Business rule layer (new)	Reject parameter	DMR080	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	A Parameter does not exist that matches the data entered.
12A	For a Parameter, the DMR Parameter Key must be unique to one record. Note: the Limit Season Number will display as -1 if that is what was submitted.	N/A	Business rule layer (new)	Reject parameter	DMR085	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	Multiple matching Parameters exist that match the data entered.

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
13	If any of the following are entered for a parameter: • Sample Type • Frequency of Analysis • Report Number of Excursions Then at least one DMR Value or T Qualifier must exist.	Business rule layer	Business rule layer	Reject parameter	DMR090	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	(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.
14	Frequency of Analysis code entered must be a valid (i.e., Active) code in the REF_FREQUENCY_OF_ANALYSIS table.	Web Tier	Business rule layer (new)	Reject parameter	DMR100	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	Reporting Frequency Code <value> entered does not exist in the ICIS reference table.

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
15	Sample Type code entered must be a valid (i.e., Active) code in the REF_SAMPLE_TYPE table.	Web Tier	Business rule layer (new)	Reject parameter	DMR110	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	Report Sample Type Text <value> entered does not exist in the ICIS reference table.
Column Data							
16	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)	GUI	Business rule layer (new)	Reject parameter	DMR120	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	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.
17	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))	GUI for Parameter view and Business rule layer for Form view	Business rule layer	Reject parameter	DMR130	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	Numeric Report Code <value> entered for this parameter is not defined in the permit as expected data so cannot be entered in this DMR.

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
18	DMR Value Received Date must be less than or equal to the current date.	Business rule layer	Business rule layer	Reject parameter	DMR140	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	The following Numeric Report Received Date(s) must be less than or equal to the current date: value (column). For this error message, value and column will be listed for each column that has this error.
19	For every DMR Value Received Date, there must be a corresponding Value/Adjusted Value or NODI unless the Qualifier for the column equals T.	Business rule layer	Business rule layer	Reject parameter	DMR150	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	The following Numeric Report Received Date(s) was entered but no Numeric Condition Quantity or Numeric Report No Discharge Indicator exists: value (column) For this error message, value and column will be listed for each column that has this error.

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
20	If any of the following are entered for a Value Type: • Adjusted Value • Unit Code • Value Qualifier (except T or =) Then a DMR Value must exist for that Value Type.	Business rule layer	Business rule layer	Reject parameter	DMR160	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	The following was entered but a Numeric Condition Quantity does not exist: <column>: (Numeric Condition Adjusted Quantity: <value>, Numeric Condition Qualifier: <value>). For this error message, "<column>" will be replaced by the column that is causing the problem (e.g., Q1). 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.

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
20A	A. If any Quantity Unit Code exists (i.e., Q1 Unit Code, Q2 Unit Code), at least one DMR Value must exist for Q1 or Q2. B. If any Concentration Unit Code exists (i.e., C1 Unit Code, C2 Unit Code, C3 Unit Code), at least one DMR Value must exist for C1, C2, or C3.	Business rule layer	Business rule layer	Reject parameter	DMR105 DMR106 DMR107	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	DMR105: Quantity Numeric Report Unit Measure Code <value> exists, but no Quantity Numeric Report Quantity exists for the parameter. DMR106: Concentration Numeric Report Unit Measure Code <value> exists, but no Concentration Numeric Report Quantity exists for the parameter. DMR107: Quantity Numeric Report Unit Measure Code <value> exists, but no Quantity Numeric Report Quantity exists for the parameter. Concentration Numeric Report Unit Measure Code <value> exists, but no Concentration Numeric Report Quantity exists for the parameter.

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
21	Adjusted DMR Value can only be entered if a Trade Partner has been defined for the associated Limit (Parameter) on the Permit.	Business rule layer	Business rule layer	Reject parameter	DMR170	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	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.
22	If Value Qualifier is not entered the system will default it to Equals (=) when a DMR Value is entered.	GUI	Business rule layer (new)	N/A	N/A	N/a	N/A
23	If DMR Value is negative the associated Value Qualifier cannot be Less Than (<).	Business rule layer	Business rule layer	Reject parameter	DMR180	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	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.

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
24	If Value Qualifier = T, the following fields must be blank for that Value Type: DMR Value Adjusted DMR Value NODI	Business rule layer	Business rule layer	Reject parameter	DMR190	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	When a Numeric Condition Qualifier T is entered the following cannot be entered: <column> (Numeric Condition Quantity: <value>, Numeric Condition Adjusted Quantity: <value>, Numeric Report No Discharge Indicator: <value>) For this error message, "<column>" will be replaced by the column that is causing the problem (e.g., 1). 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.
25	If T is entered as the Value Qualifier then the Unit Code for the associated Limit for that Value Type must have T listed as a valid qualifier for the Unit Code in the REF_UNIT table.	Business rule layer	Business rule layer	Reject parameter	DMR200	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	For Numeric Report Code(s) <value>, Numeric Condition Qualifier of T has been entered. The associated Limit's Unit Code does not have T listed as a valid qualifier. For this error message, value and column will be listed for each column that has this error.

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
26	If Value Qualifier = T the following fields are required: Value Type Value Received Date.	Business rule layer	Business rule layer	Reject parameter	DMR210	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	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.
27	If a DMR Value is entered, DMR Value Received Date must exist for the specified Value Type.	Business rule layer	Business rule layer	Reject parameter	DMR220	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	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.
29	If a Value NODI is entered, DMR Value Received Date must exist for the specified Value Type.	Business rule layer	Business rule layer	Reject parameter	DMR240	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	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.

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
30	If Value NODI is entered, the following cannot exist for the specified Value Type: DMR Value Adjusted DMR Value Value Qualifier (except =)	Business rule layer	Business rule layer	Reject parameter	DMR250	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	When a Numeric Report No Discharge Indicator is entered the following cannot be entered: <column> (Numeric Condition Quantity: <value>, Numeric Condition Adjusted Quantity: <value>, Numeric Report No Discharge Indicator: <value>) For this error message, "<column>" will be replaced by the column that is causing the problem. 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.
31	Value NODI must be a valid (i.e., Active) code in the REF_NODI table.	Web Tier	Business rule layer (new)	Reject parameter	DMR260	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	Numeric Report No Discharge Indicator does not exist in the ICIS reference table for the following: value (column). For this error message, value and column will be listed for each column that has this error.

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
32	If Unit Code is not associated with a value, the corresponding Unit Code defined for the associated Limit (Parameter) Value Type (Quantity or Concentration) on the Permit will be used.	Business rule layer	Business rule layer	N/A	N/A	N/A	N/A
33	Unit Code must be included in the Unit Group defined for the Parameter.	Business rule layer	Business rule layer	Reject parameter	DMR270	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	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.
36	If Percent Exceedence is greater than 500%, present a warning message to the user but save the data.	Business rule layer	Business rule layer	N/A	DMR300	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate ParameterCode MonitoringSiteDescriptionCode LimitSeasonNumber	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.
Auxiliary Data							

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
37	Data cannot be entered for General DMR Info, Land Application, Surface Disposal, Co-Disposal, and Incinerator unless one valid DMR Received Date exists.	GUI	Business rule layer (new)	Reject auxiliary data	DMR310	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	Data cannot exist for the following unless a valid Numeric Report Received Date exists for this DMR: (list all data elements, by section).
38	DMR Authorized Signatory Date must be less than or equal to the current date.	Business rule layer	Business rule layer	Reject auxiliary data	DMR320	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	Signature Date <date> entered must be less than or equal to the current date.
39	Pollutant Met (Land Application) must be a valid (i.e., Active) code in the REF_POLLUTANT_TABLE table.	GUI	Business rule layer (new)	Reject auxiliary data	DMR330	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	Pollutant Met for Land Application <value> does not exist in the ICIS reference table.
40	Crop Types Planted (Land Application) must be a valid (i.e., Active) code in the REF_CROP_TYPE table.	GUI	Business rule layer (new)	Reject auxiliary data	DMR340	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	Crop Types Planted <value> does not exist in the ICIS reference table.
41	Crop Types Harvested (Land Application) must be a valid (i.e., Active) code in the REF_CROP_TYPE table.	GUI	Business rule layer (new)	Reject auxiliary data	DMR350	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	Crop Types Harvested <value> does not exist in the ICIS reference table.
42	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.	GUI	Business rule layer (new)	Reject auxiliary data	DMR360	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	Class A Alternative Used <value> does not exist in the ICIS reference table.

Row ID	Business Rules	Where Enforced (Web)	Where Enforced (Batch)	Rejection Tolerance	Error/Warning Code	Transaction Keys	Error/Warning Message
43	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.	GUI	Business rule layer (new)	Reject auxiliary data	DMR370	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	Class B Alternative Used <value> does not exist in the ICIS reference table.
44	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.	GUI	Business rule layer (new)	Reject auxiliary data	DMR380	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	VAR Alternative Used <value> does not exist in the ICIS reference table.
Delete Transactions							
45	In a delete DMR transaction, the specified DMR form must already exist in ICIS.	GUI	Business rule layer (new)	Reject entire Form	DMR400	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	A DMR Form matching the key data provided does not exist in ICIS.
46	A DMR Form cannot be deleted if it is linked to a Program Report.	Business rule layer	Business rule layer	Reject entire Form	DMR410	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	The DMR Form cannot be deleted because it is linked to a Program Report.
Background Processing							
48	If Background Processing does not complete successfully, roll back all changes for the XML transaction.	N/A	Business rule layer (new)	Reject entire Form.	DMR450	PermitIdentifier PermittedFeatureIdentifier LimitSetDesignator MonitoringPeriodEndDate	An error has occurred while processing the data for this DMR Form. No data were saved for this form, and the XML transaction must be resubmitted.

APPENDIX A: ACRONYMS

Table A-6-1: Acronym List

Acronym	Definition
CDX	Central Data Exchange
DMR	Discharge Monitoring Report
EPA	Environmental Protection Agency
ERD	Entity Relationship Diagram
ICIS	Integrated Compliance Information System
LSD	Limit Set Designator
MPED	Monitoring Period End Date
NODI	No Discharge Indicator
NPDES	National Pollutant Discharge Elimination System
PCS	Permit Compliance System
PF ID	Permitted Feature Identifier
XML	Extensible Markup Language