Compliance Monitoring Data Portal (CMDP)

Nevada Department of Environmental Protection

Bureau of Safe Drinking Water (BSDW)

CMDP Lab Training

Agenda

- Overview
- CMDP Roles
- SCS Registration
- CMDP Application and Submission Workflow
- CMDP Pre-Production Testing
- Next Steps

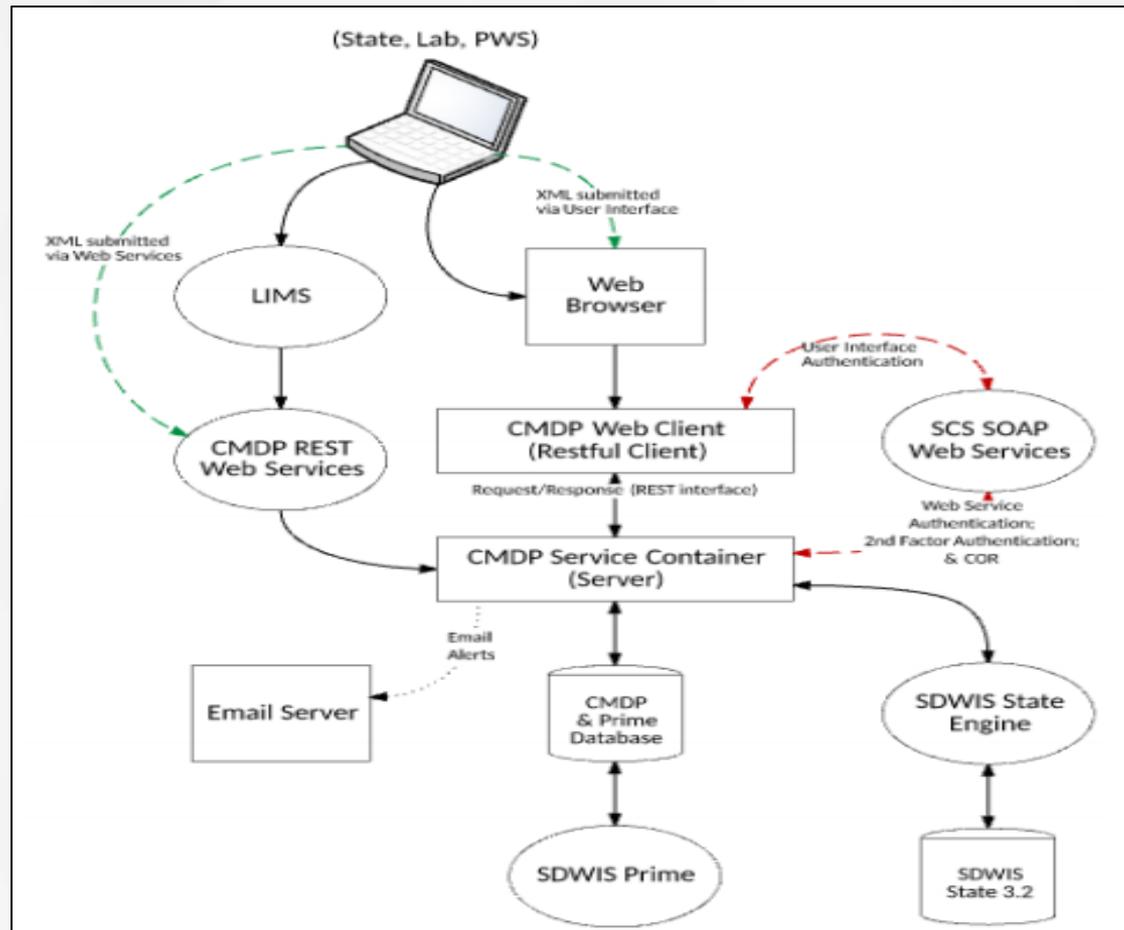Compliance Monitoring Data Portal (CMDP)

Overview

What is CMDP?

- CMDP provides a web-based, CROMERR-compliant, online reporting system that allows certified laboratories and PWS to electronically report drinking water compliance monitoring data directly to Nevada's Bureau of Safe Drinking Water (BSDW)

- CMDP objectives include enabling more efficient electronic reporting from PWS and labs to State agencies, increased data accuracy and completeness, and once fully implemented, can potentially decrease the overall reporting burden by State agencies

- PWS and laboratories will continue to report data to EPA based on the content and schedule outlined in the current regulations

- The CMDP is maintained by the Environmental Protection Agency (EPA) and includes a pre-production (i.e., testing) and production environment

What is CMDP?

- The primary components of the CMDP system are a web-based software application and web services, and associated relational database
- There are several other components supporting the CMDP system, including:
  - Shared CROMERR (Cross-Media Electronic Reporting Rule) Services (SCS), web application for user registration, identify proofing, and end-user management
  - MS Excel Templates that support reporting sample results in an XML file that is uploaded manually
  - Web Services that support reporting sample results using a Laboratory Information Management System (LIMS)
- Laboratories will transition from the pre-production to the production environment of CMDP on an individual basis
- BSDW intends to replace current compliance reporting methods with CMDP by the end of 2019

What is CMDP?

Compliance Monitoring Data Portal (CMDP)

CMDP Roles

CMDP Roles

- Functionality in CMDP is based on the specific roles acquired at registration, and include:

Role	Description
Lab System Administrator	Manage user access requests (sponsor other users, approve/reject registration, revoke roles). Can also electronically sign and submit drinking water samples.
Certifier	Upload data submissions into CMDP, review submissions for validation errors, and electronically sign and submit data to the State. Can also search and view copies of record generated for their lab.
Reviewer	Reviewers can upload data submissions into CMDP and review submissions for validation errors
Preparer	Preparers can upload data submissions into CMDP

CMDP Roles

- Roles are hierarchical; user has the access rights of their own role, and all access rights available to roles lower in the hierarchy

Compliance Monitoring Data Portal (CMDP)

SCS Registration

SCS Registration

- Before using CMDP, each user must first register with EPA's SCS to receive a user name and password (credentials) and CMDP role(s)

- After registration, user can access CMDP using the credentials received from SCS

- Each lab should try to register at least two Lab Administrators, large labs in particular

- CMDP Lab Administrators must be established before Preparers, Reviewers and Certifiers can complete registration (each of these roles requires "sponsorship" by a Lab Administrator)

- When selecting a role, choose the highest role level you will need when working in CMDP

- Large labs reporting a high volume of sample results should consider utilizing the CMDP's Preparer and Reviewer roles to help manage work load

SCS Registration

- Users requesting the Lab Administrator or Certifier roles must provide proof of identity because they are requesting authorization to electronically sign submissions to CMDP
  - The default identity proofing method is through LexisNexis
  - A paper agreement can also be used in place of LexisNexis, and mailed to the State
- Users can have access to multiple labs, with differing roles
  - Repeat registration process, skipping account creation, for each lab (see *Services →Add Program Service* from SCS Home page after logging in)
- Passwords expire every 90 days!
  - Password must be changed through SCS
  - Automated "Forgot Password" process exists that can be utilized for expired passwords

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# CMDP Application

CMDP Application Overview

The CMDP application is composed of five primary system modules, presented as a "tabbed" user-interface, with subtabs providing additional functionality for a module

- Home
  - Landing page and Dashboard for each CMDP user type
  - Quick access to view draft (WIP) and final submittals, links to lab profiles associated with the user, and any Change Requests.
- PWS Profiles and Laboratory Profiles
  - Read-only view of a subset of inventory and legal entity data elements for each water system and laboratory associated with user
  - Lab Admin can request changes to Basic Information, Laboratory Contacts, and Laboratory Certifications through CMDP, or directly contacting NDEP-BSDW
- Drinking Water Sample Jobs
  - Core functionality of CMDP, supporting the preparation, workflow, and submittal of sample results to State
- Search Samples
  - Supports searching for any submitted Sample Jobs by one or more criteria (e.g., Job ID, Job Status, Water System, Facility, Collection Date Range, Sample ID, etc...)

CMDP Submission Workflow

- A Sample Job comprises one or more samples containing one or more sample results for one or more analytes.

- A Sample Job can be in only one of the following status categories at a time:

Status	Description
Draft with Preparer	Job maintained by Preparer (Reviewer and Certifier roles also have edit rights). Can be edited/deleted.
Draft with Reviewer	Job under review (only Reviewer and Certifier roles have edit rights). Can be edited/deleted.
Draft with Certifier	Job awaiting certification (only Certifier role has edit rights). Cab be edited/deleted.
Submitted	Job has been submitted by reporting organization to primacy agency. No modifications are possible.
Accepted by State	Job data has been migrated to primacy agency compliance system. No modifications are possible.
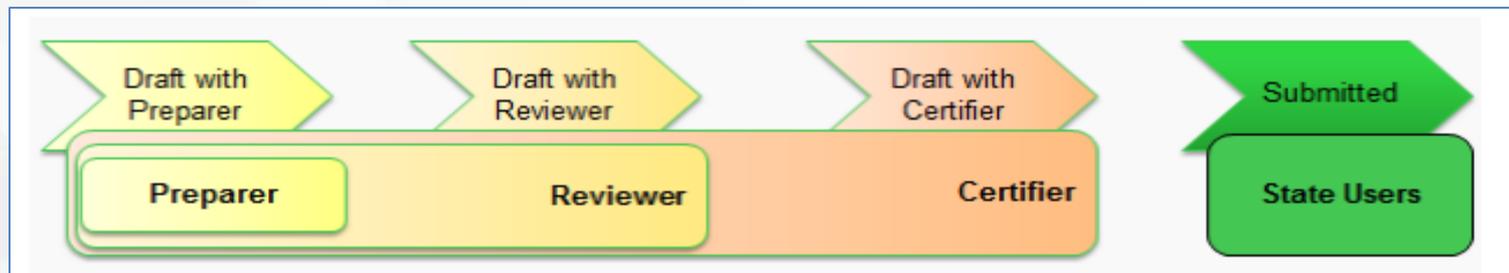
CMDP Submission Workflow

1. Prepare Submission File
   - Prepare Sample Job using CMDP Template
   - Generate XML file from CMDP Template
   - Alternatively, generate the XML file directly from a lab's LIMS
2. Upload Sample Job Information
   - Create new Sample Job
   - Upload XML file and confirm samples uploaded
3. Review Validation Results
   - Review Federal Reporting Validation Results
   - Review XML Submittal Validation Results
   - Make corrections and re-upload XML file
4. Submit Sample Job
   - Send to Reviewer
   - Send to Certifier
   - Certify and Submit to State
5. Validation Errors from State
   - Review validation errors from State
   - Make corrections and create new Sample Job (steps 1-4)

CMDP Submission Workflow

1. **Prepare Submission File**
   - Prepare Sample Job using CMDP Template and generate XML file from CMDP Template
   - Alternatively, generate the XML file directly from a lab's LIMS

- Refer to *Sample Validation and Submission Guide* for guidance on submission file preparation
- Use appropriate *Data Submission Guide* to prepare the data
- Various ways to look up required reference data values (WS ID, Facility and Sampling Point ID)
   - Sample information spreadsheet provided by State
   - PWS Profile in CMDP

Sample Result Category – Sample Types

1. Microbiological
2. Chemicals/Radionuclides
3. Cryptosporidium
4. *Composites*

Operational Data Category – Sample Types

1. CFE Turbidity
2. IFE Turbidity
3. Chlorine Chloramine Entering DS (Distribution System)
4. Chlorine Chloramine in DS (Distribution System)
5. *Chlorine Dioxide and Chlorite*
6. *LCR WQP (Water Quality Parameters)*
7. *TOC (Total Organic Carbon)*
8. *Ozone Treatment (Bromate)*
9. *THM and HAA5*

CMDP Submission Workflow

1. **Prepare Submission File (other options)**
   - As an alternative to the MS Excel Template approach, the CMDP XML files can be generated directly from a lab's LIMS
   - CMDP can also be integrated with a lab's LIMS for direct submission of CMDP XML files

- EPA provides detailed documentation regarding the CMDP XML Schema (file format of the CMDP XML file) and the CMDP web services required for LIMS integration with CMDP
- Refer to: https://cmdp.zendesk.com/hc/en-us/categories/204562347-For-Laboratories-and-Water-Systems on the EPA Zendesk web site

Technical Documentation

- Sample Result XSD
- EXCEL Templates (download here)
- CMDP Web Services Sampling XML Schema Definitions
- CMDP Web Services Inventory and Lab Data Dictionary
- CMDP Inventory and Laboratory JSON Structure

Using CMDP with Your Laboratory Information Management System

- CMDP - LIMS Interface Control Document

CMDP Submission Workflow

2. **Upload Sample Job Information**
   - Create new Sample Job
   - Upload XML file and confirm samples uploaded

- Refer to *Sample Validation and Submission Guide* for guidance on file upload process

CMDP Submission Workflow

3. Review Validation Results
- – Review Federal Reporting Validation Results
- – Review XML Submittal Validation Results
- – Make corrections and re-upload XML file

- Refer to *Sample Validation and Submission Guide* for guidance on file validation
- Refer to the appropriate *Data Submission Guide* for guidance on business rules

| Data Validation Error Results for XML File, by Validation Type				
Schema (Field Names or Data Types)	**Software Required Field (Missing Value)**	**Business Rule**	**Reference Data**	**Federally Required**
Entire file is rejected, and no Sample Job ID number is created	Sample Job ID number is created, but no records are saved	Sample Job ID number is created, records with errors are rejected, records without errors are saved	Sample Job ID number is created, records with errors are rejected, records without errors are saved	Sample Job ID number is created and records are accepted with null value errors

CMDP Submission Workflow

- Schema Validation
  - Performed on the XML file during upload. XML data must be valid for the upload to be successful.
- Software Required Field Validation
  - Checks required fields from relevant sections of Sample Job data (i.e., Sample Information section of Excel Template file)
- Business Rule Validation
  - Checks for valid numeric ranges, valid date/time, field lengths, etc…
- Reference Data Validation
  - Checks for valid reference data such as Water System ID, Facility ID, or Sampling Point ID
- Federally Required Validation
  - Checks federally required, or federally conditionally required, fields. Note that these fields *are not required* to certify/submit to State

CMDP Submission Workflow

4. **Submit Sample Job**
   - Send to Reviewer
   - Send to Certifier
   - Certify and Submit to State

- Refer to *Sample Validation and Submission Guide* for guidance
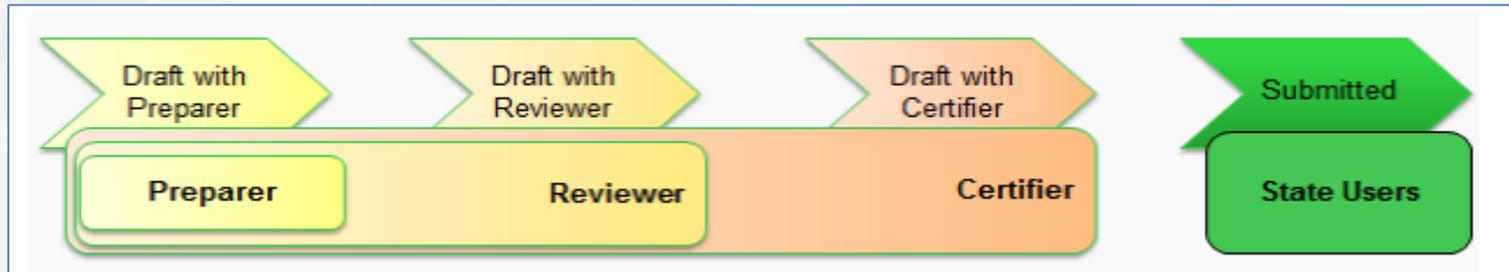
CMDP Submission Workflow

5. **Validation Errors from State**
   - Review validation errors from State
   - Make corrections and create new Sample Job

- State specific business rules enforced by NDEP-BSDW <u>are not</u> enforced by CMDP validation or submission processes
- NDEP-BSDW will review submitted data and make determination to reject sample data, or not, and notify the submitting lab of any validation issues
- If a lab receives a sample rejection notification from NDEP-BSDW, the lab will have to resubmit the sample(s) with the corrected information (repeat steps 1-4)
  - Note that Sample IDs for rejected samples cannot be reused
  - NDEP-BSDW recommends adding an "X" as prefix to resubmitted Samples (e.g., TRN20190812-1 would be **X**TRN20190812-1 when resubmitted)
- Refer to ***Sample Validation and Submission Guide*** for guidance

CMDP Submission Workflow

State specific validation includes checks for:

- Method Code not reported
- Lab not certified for Method Code reported
- Sample Location field left blank
- Sample submitted without results
- Lab Sample Id is longer than 20 characters
- Non-Detected sample without Reporting Limit (Chem/Rads)
- Sample collected outside of Monitoring Period in SDWIS
- TC/EC samples analyzed outside of hold time
- Collection or Analysis Dates/Times left blank
- Original TC+ not associated to repeats
- Distribution chlorine measure reported incorrectly

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CMDP Pre-production Testing

CMDP Pre-Production Testing

1. **Identify Testers**
   - Identify staff within your organization who will be involved in CMDP data submissions (Reviewer, Preparer, Certifier, etc.)
   - Make sure all appropriate staff register through SCS to gain access to the CMDP Pre-Production environment

CMDP Pre-Production Testing

2. **Develop Testing Checklist**

   Compile a list of items you will need to complete during the testing phase including (but not limited to) the following:

   - List out the contaminants your lab is certified for and needs to test

   - Consider how frequently you submit each contaminant and structure your testing schedule to match

   - Make sure you focus on samples your lab submits most frequently, as you may want to submit these types of samples multiple times

   - Submit every contaminant your lab is certified for at least once so you know how the submittal process works

   - Submit a test sample you know will be rejected (or should be) in order to experience the data error notification, correction, and re-submittal process

CMDP Pre-Production Testing

3. **Perform Testing**

    - Using your testing checklist, and relevant training materials/guides, perform testing against the CMDP Pre-Production environment.

CMDP Pre-Production Testing

4. **Provide Feedback**

    – After your testing has been completed, or if questions/issues arise during the course of testing, please send feedback/questions to the NDEP-BSDW CMDP Helpdesk at: E-Data_BSDW@ndep.nv.gov

    – Please include any confusing or problem areas, and what additional guidance would be helpful

CMDP Pre-Production Testing

5. **Register for CMDP Production**

   - Upon successfully testing and demonstrating that accurate compliance monitoring data can be reported using the CMDP Pre-Production environment, Lab and PWS Administrators will be invited to request access to CMDP Production

   - All reporters will follow the same process to register for CMDP Production by creating a new set of credentials and requesting access to the production application

   - The Lab or PWS Administrator will then coordinate with NDEP-BSDW to establish a final date to switch from existing reporting method to reporting through CMDP Production.

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Next Steps

Next Steps

- Lab users register in SCS Test
- Complete testing/evaluation
  - Labs are required to complete successful submissions in test environment before moving to production
  - Review training materials/resources provided by NDEP-BSDW and EPA, with emphasis on:
    - SCS Registration Guide
    - Sample Validation and Submission Guide
    - Data Submission Guides
- When testing is completed, labs are ready for transition to SCS/CMDP Production environments
  - Test SCS/CMDP credentials will be deactivated
- Important sites and content
  - [BSDW CMDP Helpdesk](#)
  - [EPA CMDP Help Center](#)

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Questions

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