California Laboratory Intake Portal

Technical Documentation

California State Water Resources Control Board

Division of Drinking Water

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Background

The California State Water Resources Control Board (CASWRCB) Division of Drinking Water (DDW) regulates approximately 7,200 public water systems throughout the State of California. Part of this regulatory oversight ensures that required water quality sampling has been conducted and that follow-up actions are taken when the concentration of certain analytes exceed set limits. DDW has implemented a change to the electronic submission of water quality analyses to streamline regulatory oversight. This change ensures that data from laboratories flow to DDW's database of record, the Safe Drinking Water Information System (SDWIS). This process will not only allow for faster compliance determinations but also provide for improved data quality by ensuring that minimum business rules and data validations have been met.

To enable this change, DDW has employed the use of EQuIS™ software from vendor EarthSoft to intake water quality data from laboratories through an online portal called the California Laboratory Intake Portal (CLIP). All analytical data must be submitted in the form of electronic data deliverables (EDD) using the CA_SDWIS_Lab_Analytical_Data format as described in this document. Microbial analyses are not included in the current EDD format. The EQuIS Data Processor (EDP) Standalone application can be used by data submitters to check data quality prior to data submittal. Accredited drinking water laboratories electronically submit EDDs exclusively through the online portal.

California Laboratory Intake Portal

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List of Abbreviations

CASWRCB	California State Water Resources Control Board
CLIP	California Laboratory Intake Portal
CO	Confirmation
CRF	Change Request Form
CWS	Community Water System
DBP	Disinfection Byproduct
DDW	Division of Drinking Water
DLR	Detection Level for Purposes of Reporting
DST	Distribution
EDD	Electronic Data Deliverable
EDP	EQuIS Data Processor
ELAP	Environmental Laboratory Accreditation Program
EPA	Environmental Protection Agency
FB	Field Blank
FD	Field Duplicate
FRB	Field Reagent Blank
HAA5	Haloacetic Acids Five
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
LCR	Lead and Copper Rule
LIMS	Laboratory Information Management System
MCL	Maximum Contaminant Level
MDA_{95}	Minimum Detectable Activity at 95% confidence level
NELAC	National Environmental Laboratory Accreditation Conference
PFAS	Per- and Poly-Fluoroalkyl Substances
QAS	Quality Assurance Section
RL	Reporting Level
RT	Routine
RVF	Reference Value File
SDWIS	Safe Drinking Water Information System
SM	Standard Method
SP	Special
TCDD	Tetrachlorodibenzo-p-dioxin
TNI	The NELAC Institute
TOC	Total Organic Carbon
TTHM	Total Trihalomethanes
WQP	Water Quality Parameter

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1 EQuIS Data Processor Installation

Laboratories that submit drinking water data to DDW can download the EQuIS Data Processor (EDP) software from the CLIP Resource Page:

1. Download and save the installation file to your machine.
2. Hardware and System requirements for EDP:
    - Operating System Requirements: Windows 10+
    - Recommended Hardware: Minimum 1 GHz processor (at least 2 GHz), 135 MB free hard disk space, Minimum 1 GB RAM (at least 2 GB recommended)
    - Other Software Requirements: Microsoft .NET Framework 4.7.2+
3. Follow the instructions in **Section 1.1** "Unblocking Downloaded Files".
4. Unzip the file by right clicking on the .zip and selecting "Extract All...".
5. Within the unzipped folder, run the .exe Application installer by double-clicking on the .exe file or by right clicking on the file and selecting "Run".
6. An installation wizard will open. Follow the prompts to install EDP.

1.1 Unblocking Downloaded Files

When downloading files from the Internet or other location, Windows may set an attribute on the file to "Blocked". When this happens, it may not be loaded properly into your application. Please unblock the downloaded EDP package and format file prior to unzipping the files or running the installers.

1. When you download a file, save it to a known folder where you have update permissions (e.g., the "Downloads" folder).
2. After downloading the file, check to see if it has been blocked by Windows by right clicking on the downloaded file, then select "Properties". A file properties dialog will open, and if the file has been blocked, you will see the "Unblock" button in the lower right of the "General" tab.
3. Click the "Unblock" button and then select "OK".

2 Format Registration

This only needs to be done once for each laptop/workstation.

1. You will be able to obtain the most current CA_SDWIS_Lab_Analytical_Data format file and Reference Values File (RVF) on the CLIP Resource Page.
2. Download the "CA_SDWIS_Lab_Analytical_Data" format and "CASWRCB Reference Values File (RVF)" and save the files a folder location on your machine.
3. Open the EDP application from the Start menu by selecting All Programs, scroll to the EarthSoft folder and select "EQuIS EDP Standalone".
4. When the application opens, click the "Format" button in the top left of the EDP "Open" ribbon.
5. In the popup window, open the CA_SDWIS_Lab_Analytical_Data.zip file.
6. You will immediately be prompted to register. Click the Register button in the popup window. A "Software Registration" window will appear.
7. Select the "Workstation Licenses" tab.
8. Take note of your "Computer ID".
9. Visit the EDP Format Registration Form.
10. Fill out required fields and submit.
11. Within a few minutes, you will receive two auto-generated emails from registration@earthsoft.com: An email informing you that the request has been received and is being processed. An email with your registration keys.
12. Copy and paste the registration keys from the email into the "New Key Codes" box under the "Workstation Licenses" tab.
13. Click "Save Keys".
14. Click "OK".
15. Close and re-open the EDP application.
16. When the application opens, click the "Format" button in the top left of EDP ribbon.
17. Navigate and open the CA_SDWIS_Lab_Analytical_Data.zip file.
18. If the registration was successful, the format will open, and no software registration window will appear.

3 Creating a CLIP Account

To log in and upload an EDD to CLIP, you must have an active CLIP account.

1. Fill out the CLIP Electronic Subscriber Agreement Form and mail it to the address indicated on the form. The form is available to download on the CLIP Resource Page.
2. Create your user account by clicking “Create New Account”.
3. Create your username and enter your email address on the account registration form. A confirmation code will be emailed to the email address provided.
4. Copy and paste the confirmation code from the email into the pop-up window.
5. Fill out the rest of the account registration form and click “Register”.
6. You will not have access to the portal until your mailed-in Electronic Subscriber Agreement Form has been received and reviewed by DDW to ensure a legally responsible official is on file with CLIP.
7. You will be notified by email if approved or denied.
8. If approved, you now have access to CLIP.

4 Creating an Electronic Data Deliverable

There are three ways to create the CLIP electronic data deliverable (EDD):

1. **Laboratory Information Management System (LIMS)**
    1) Input the analytical results into your LIMS.
    2) From your LIMS, generate a CA_SDWIS_Lab_Analytical_Data format EDD.
    3) Save and name the file following guidelines under **Section 4.10**
    4) Validate your EDD in EDP prior to submission - optional but highly recommended.
2. **Microsoft Excel Spreadsheet**
    1) Input the analytical results into a Microsoft Excel spreadsheet.
    2) Open a Blank EDD template file in Microsoft Excel.
    3) Save and name the file following guidelines under **Section 4.10**
    4) Validate your results in EDP prior to submission - optional but highly recommended.
3. **EDP Standalone Software**
    1) Open the EDP application from the Start menu by selecting All Programs, scroll to the EarthSoft folder, and select “EQuIS EDP Standalone”.
    2) Click the “Format” button at the top left of the ribbon.
    3) In the popup window, navigate to the CA_SDWIS_Lab_Analytical_Data.zip file.
    4) Click on the Chems_Rads format section on the left-hand pane to begin data entry.
    5) To add a new record line, click the “Add New Row” button located on the top ribbon.
    6) Data can be entered directly into each cell by typing or by selecting valid values from the drop-down lists.
    7) Save the EDD at any time by clicking File > Save button. If saving for the first time, by default, the EDD will be saved as a .zip that contains a .txt file of the EDD.
    8) As you enter data into fields, EDP will automatically highlight errors or issues with the data entry. Correct any errors that are highlighted prior to saving a final EDD.
    9) When you have finished entering/correcting your data, save and name the final EDD following guidelines under **Section 4.10**.

4.1 Valid PS Codes

Sampling locations are known as Primary Station Codes (PS Code). The PS Code consists of three parts, each separated by an underscore:

- CA + Water System ID
- Facility ID
- Sampling Point ID

A list of PS Codes is available in CLIP and is automatically refreshed when updates occur. If a PS Code is flagged with the DDW Source Class Code = "XCLD", this means the PS Code is not intended to receive drinking water quality sampling and analytical results. CLIP will reject EDDs submitted to "XCLD" PS Codes.

PS Codes are also available to view on Drinking Water Watch by searching the water system ID, then click the "PS Code Transition" link on the left-hand side. You can also view water system IDs under the "PWS by County" tab located at the top of Drinking Water Watch.

4.2 Sample Types

RT - Routine: to be used for most water quality results.
SP - Special: to be used when DDW staff have collected water quality samples. The Chain-of-Custody provided by DDW staff will have a notation that type code "SP" should be used when reporting the data to CLIP.
FB - Field Blanks: to be used when reporting field reagent blanks for per- and poly-fluoroalkyl substances analyses. More information under **Section 5.2**.

4.3 Missing Reference Value

EDDs are checked for validation in the EDP software and upon submission to CLIP. Valid values such as PS Codes, analyte codes, analytical method codes, units of measurement, etc., are denoted as reference values. If you determine that CLIP is missing a reference value for data reporting, email a Reference Value Request Form to DDW-CLIP@waterboards.ca.gov. DDW will review the request and email you if approved or rejected. If approved, DDW will add the new reference(s) to CLIP and inform you when available.

4.4 Analyte - Method - Unit of Measurement Association

Each analyte code selected must be paired with a valid method code and unit of measure, otherwise, an error will display. Using EDP will help you determine correct pairings when using the latest RVF file. Please note that only one unit of measure is specified for each analyte-method pair. You must report data in the unit of measure specified. A list of valid analyte-method pairs and units are available in CLIP and CLIP Resource Page.

4.5 Date-Time Fields

Dates must be formatted as MM/DD/YYYY. Time fields must be formatted as HH:MM. CLIP does not accept seconds in the time field. If using Microsoft Excel, your spreadsheet may display seconds within date-time fields. If the seconds are valued as zero, no error should appear. If the seconds are non-zero, an error will appear and CLIP will reject the EDD.

4.6 Analysis Date and Time

Analysis Start Date: the day the analyst starts the sample preparation for the analysis.
Analysis Start Time: the time the analyst starts the sample preparation for the analysis.
Analysis Complete Date[1]: optional
Analysis Complete Time[2]: optional

4.7 Qualifiers

Data qualifiers are codes applied to the data by a data validator to indicate a verifiable or potential data deficiency or bias[3]. While CLIP accepts qualified data, keep in mind that CLIP data are used for compliance decisions. If the data may be unreliable or questionable, it's best to consult with the water system and/or DDW to determine whether a new sample should be collected and analyzed. The current EDD format does not have a designated qualifier field. If you choose to report the qualifier, enter it in the [Analysis_Comments] field. Analysis comments are not publicly displayed on Drinking Water Watch.

[1] The analysis complete date does not include QC review. Regulatory requirements for reporting begin when the analysis ends.
[2] The analysis complete time does not include QC review. Regulatory requirements for reporting begin when the analysis ends.
[3] USEPA-QA/G8, "Guidance on Environmental Data Verification and Data Validation"

4.8 ELAP Certification Number

The Environmental Laboratory Accreditation Program (ELAP) ensures laboratories generate environmental and public health data of known, consistent, and documented quality to meet stakeholder needs. ELAP certificate number = Lab ELAP Cert. ID. The CLIP Team does not know when a lab's ELAP certificate number changes. If the lab uses a new number in submitting data, CLIP will reject the EDDs. Operating under a new ELAP certification number requires a new CLIP Electronic Subscriber Agreement form to be completed and mailed in to DDW.

4.9 Field Specifications / Comment Row

When you hover over a field name/column header in EDP, or refer to Row 2 in the Excel file, the maximum field length (e.g., 40 characters) and field data type (e.g., Text, Numeric, Date-Time) are displayed. Please maintain these field lengths and data types when populating the EDD. Data that exceeds the field length size or that does not match the field data type will be rejected by CLIP.

4.10 File Saving & File Naming Requirements

Once all errors have been corrected and the EDD is ready for submission, you can save the EDD by clicking on the "Save" button (floppy disk icon) in the top left toolbar of EDP. You do not need to change the "Save as type" from the default "All Files (*.*)". By default, the EDD will be saved as a .zip that contains a .txt file of your EDD. You may "Save As Type" to one of the alternate file types listed below.

1. **Microsoft Excel (.xlsx or .xls)**
    - Worksheet tab containing CLIP data must be named "Chems_Rads".
    - Filename can be anything appropriate for your lab records.
    - Filename must not contain a period.
2. **Comma Separated Value (.csv)**
    - Filename must contain the suffix "_Chems_Rads".
    - Filename must not contain a period.
3. **Tab Separated (.txt)**
    - Filename must contain the suffix "_Chems_Rads".
    - Filename must not contain a period.

4. **ZIP (.zip)**
    - Filename can be anything appropriate for your lab records.
    - Microsoft Excel file, comma separated file, or tab separated file within the zip file must follow their specific filename requirements.

5 Data Submission Business Rules

The following sections describe guidelines or requirements that dictate how EDDs must be formatted, structured, and submitted to a CLIP. These rules ensure that incoming data are accurate, complete, and consistent with the format, validation checks, and DDW regulatory requirements.

5.1 Composite Data

Some of the monitoring requirements in drinking water regulations permit public water system owners to reduce the total number of samples that must be analyzed by allowing compositing. These samples can be collected from one or, in some cases, several locations within the water system and are combined at the laboratory to form a composite sample.

One common use of composite sampling is to satisfy the initial monitoring requirements for radionuclides. The radionuclide regulations require four quarterly samples for any new drinking water source. These samples are taken from one sampling location, in different quarters, and then are composited together for a single analysis. The individual samples will have different collection dates than the final composite sample, but all records will have the same results.

Table 1. Example Composite Sampling Reporting

Sample	Collected	Lab Received	Analysis Start	Analysis End	Result
Sample #1	1/12/2020	1/13/2020	n/a	n/a	n/a
Sample #2	4/12/2020	4/13/2020	n/a	n/a	n/a
Sample #3	7/12/2020	7/13/2020	n/a	n/a	n/a
Sample #4	10/12/2020	10/13/2020	n/a	n/a	n/a
Composite	n/a	n/a	11/5/2020 10:30AM		1 pCi/L

Composite data must be configured with child samples and a parent sample. In **Table 1**, Samples #1 through #4 are the child samples and the "Composite" sample is the parent sample.

When populating the EDD fields for the child samples, all analytical related fields must be copied over from the parent sample. Practically, the child samples do not have any analytical results as they are only collected and stored, but for the EDD to be processed and accepted (with some analytical fields being required and conditionally required) those fields cannot be left blank or null. CLIP will process the child/parent records with a single analytical result that was associated with the parent sample (composite result).

For further guidance on composite reporting, please see the example file available on the CLIP Resource Page.

Important: The current format will only accept composite samples where the samples were taken within a single water system consisting of one or more locations. The format will not be accepting samples taken from multiple water systems.

Table 2. Acceptable Reporting of Composite Sampling Locations (PS Codes)

Sample	**PS Code** (single water system and one location)	**PS Code** (single water system and multiple locations)
Sample #1	CA1000000_001_001	CA1000000_001_001
Sample #2	CA1000000_001_001	CA1000000_001_002
Sample #3	CA1000000_001_001	CA1000000_001_003
Sample #4	CA1000000_001_001	CA1000000_004_004
Composite data goes to:	PS Codes listed above	PS Codes listed above

5.2 Perfluoroalkyl and Polyfluoroalkyl Substances Data

In "*Drinking Water Sample Collection Guidance for Per- and Poly-Fluoroalkyl Substances (PFAS)*" document, DDW specifies the use of a field reagent blank sample and recommends the collection of a field duplicate sample from the source, at the same time that the field sample (source sample) is collected.

1. **Field Sample** - The field sample is the sample collected from the source at a location prior to any treatment, to qualify as a "source sample". Samples may be collected after treatment to confirm PFAS concentration in the water delivered to customers.
2. **Field Duplicate** - The field duplicate (FD) is a sample collected from the source at the same time and place under identical circumstances as the field sample and treated the same throughout field and laboratory procedures. (It is recommended that field duplicate samples be collected.)
3. **Field Reagent Blank** - A field reagent blank (FRB) is analyzed to assess the potential for PFAS cross contamination being introduced during the sampling process. The FRB consists of a pre-preserved sample bottle filled by the laboratory with PFAS-free water and shipped to the site with the other sample bottles. For each FRB, an empty sample bottle (with no preservative) must also be included. At the sample site, the sampler will open the FRB and pour it into the empty sample bottle. An FRB must be collected at each sample site (i.e., each source being sampled) and placed

in the ice chest used to store and transport samples. It is required that field reagent blank samples be collected.

When FDs and FRBs are analyzed, two special considerations must be considered to successfully report the data:

1. To report results for FRB and/or FD analyses, it is required to change the "Lab_Sample_ID" to differentiate it from the "Lab_Sample_ID" of the field sample. As an example, for the data in **Table 3**, if the "Lab Sample ID" was the same for all rows, the EDD would be rejected since CLIP would recognize the last two rows as duplicates; add "FB" and "FD" to the end of the "Lab_Sample_ID" to achieve sample record uniqueness.
2. When reporting FRB analyses, choose FB-Field Blank as the "Sample_Type".
3. When reporting FD analyses, choose RT-Routine as the "Sample_Type".

Important: Currently, DDW is accepting data for FRBs and FDs for PFAS analyses only. Do not submit FRBs or FDs for any other analytes.

Table 3. Example PFAS Reporting

Sample ID	Sample Type	Analyte Code	Analysis Method Code	Less Than Indicator	Reporting Level	Reporting Level Units	Result	Result Units
LabSampID-02087	RT	2801	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2802	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2803	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2804	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2805	EPA 537.1	N	2	NG/L	6.2	NG/L
LabSampID-02087	RT	2806	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2807	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2808	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2809	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2810	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2811	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2812	EPA 537.1	Y	2	NG/L		

Sample ID	Sample Type	Analyte Code	Analysis Method Code	Less Than Indicator	Reporting Level	Reporting Level Units	Result	Result Units
LabSampID-02087	RT	2813	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2814	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2815	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2816	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2817	EPA 537.1	Y	2	NG/L		
LabSampID-02087	RT	2818	EPA 537.1	Y	2	NG/L		
LabSampID-02087_**FB**	**FB**	2805	EPA 537.1	Y	2	NG/L		
LabSampID-02087_**FD**	**RT**	2805	EPA 537.1	N	2	NG/L	6.5	NG/L

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5.3 Reporting Chlorine Residual Data

In the EDD, there are two fields to capture chlorine residual data, “Free_Chlorine_Residual” and “Total_Chlorine_Residual”. The unit of measure for these chlorine residual fields is expressed as mg/L (ppm). Chlorine residual data noted on the Chain of Custody should be transferred to the EDD. This is particularly important for Total Trihalomethane (Analyte Code 2950 - TTHM) and Total Haloacetic Acids (Analyte Code 2456 - Total Haloacetic Acids (HAA5)) data reporting.

The chlorine residual data can be entered in one of two ways as shown in **Table 4** and **Table 5**. Chlorine data can be reported only in the first row for a specific Lab_Sample_ID in the EDD. Chlorine data can be reported in every row for a Lab_Sample_ID in the EDD.

Table 4. Example Chlorine Residual Reporting – Only First Row Valued

Sample ID	PS Code	Free Chlorine Residual	Total Chlorine Residual	Sample Comments	Analyte Code
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2450
LabSampleID-02077	CA1234567_DST_800			DBP	2451
LabSampleID-02077	CA1234567_DST_800			DBP	2452
LabSampleID-02077	CA1234567_DST_800			DBP	2453
LabSampleID-02077	CA1234567_DST_800			DBP	2454
LabSampleID-02077	CA1234567_DST_800			DBP	2456

Sample ID	PS Code	Free Chlorine Residual	Total Chlorine Residual	Sample Comments	Analyte Code
LabSampleID-02077	CA1234567_DST_800			DBP	2941
LabSampleID-02077	CA1234567_DST_800			DBP	2942
LabSampleID-02077	CA1234567_DST_800			DBP	2943
LabSampleID-02077	CA1234567_DST_800			DBP	2944
LabSampleID-02077	CA1234567_DST_800			DBP	2950

Table continued from previous page

Table 5. Example of Chlorine Residual Reporting – Each Row Valued

Sample ID	PS Code	Free Chlorine Residual	Total Chlorine Residual	Sample Comments	Analyte Code
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2450
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2451
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2452
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2453
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2454
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2456
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2941
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2942
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2943
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2944
LabSampleID-02077	CA1234567_DST_800	0.2	2.1	DBP	2950

5.4 Radionuclide Data

When reporting results for radionuclide analytes, it is required to also report the MDA_{95} (Minimum Detectable Activity at the 95% confidence level) and the counting error. The MDA_{95} value is to be reported in the "Reporting Level" field, and the counting error is required to be reported in the "Counting Error" field.

Table 6 shows the radionuclide analytes that must have MDA_{95} values and counting errors reported. **Table 6** also lists the exceptions for uranium analyses. When an analytical method is used for uranium that yields results in mass (µg/L) instead of particle activity (pCi/L), the MDA_{95} value and counting error are not required. The permissible representations of uranium are expressed in units of mass or activity, dependent upon the analytical method. EPA 200.8 reports uranium in mass (employing ICP-MS). To obtain

activity under EPA 200.8, EPA requires a conversion factor of 0.67. EPA 908.0 or EPA 908.1 reports uranium as activity.

Table 6. MDA_{95} and Counting Error Reporting Rules

CAS RN	Analyte Code	Analyte Name	MDA_{95}* and Counting Error Required	Method Code
10043-92-2	4004	RADON	Yes	All
RA-226/228	4010	COMBINED RADIUM (-226 & -228)	No**	All
13982-63-3	4020	RADIUM-226	Yes	All
15262-20-1	4030	RADIUM-228	Yes	All
12587-47-2	4100	GROSS BETA PARTICLE ACTIVITY	Yes	All
10028-17-8	4102	TRITIUM	Yes	All
12587-46-1	4109	GROSS ALPHA PARTICLE ACTIVITY	Yes	All
10098-97-2	4174	38-STRONTIUM-90	Yes	All
7440-14-4T	C080	TOTAL RADIUM FOR NTNC PER §64442(b)(3)	Yes	All
7440-61-1	4006	COMBINED URANIUM	Yes	DHS U-02
7440-61-1	4006	COMBINED URANIUM	Yes	EPA 00-07
7440-61-1	4006	COMBINED URANIUM	Yes	EPA 908.0
7440-61-1	4006	COMBINED URANIUM	Yes	SM 7500-U B
7440-61-1	4006	COMBINED URANIUM	Yes	SM 7500-U C
7440-61-1	4006	COMBINED URANIUM	No	EPA 908.1***
7440-61-1	4006	COMBINED URANIUM	No	EPA 200.8***
7440-61-1	4006	COMBINED URANIUM	No	DHS U-04***
7440-61-1	4006	COMBINED URANIUM	No	SM 3125***
7440-61-1	4006	COMBINED URANIUM	No	ASTM D2907-97***
7440-61-1	4006	COMBINED URANIUM	No	ASTM D3972-97***
7440-61-1	4006	COMBINED URANIUM	No	ASTM D5673-03***
7440-61-1	4006	COMBINED URANIUM	No	ASTM D5174-97***
7440-61-1	4006	COMBINED URANIUM	No	USGS R-1180-76***
7440-61-1	4006	COMBINED URANIUM	No	USGS R-1181-76***

* MDA95 to be reported as the Reporting Level (RL)

** Counting Error required

*** Results must be reported in pCi/L

Table 7. Example of Radionuclide Reporting

PS Code	Analyte Code	Method Code	Reporting Level	Reporting Level Units	Counting Error	Comments
CA1234567_001_001	4109	EPA 900.0	3	pCi/L	0.24	GROSS ALPHA PARTICLE ACTIVITY
CA1234567_001_001	4006	EPA 908.0	1	pCi/L	0.11	COMBINED URANIUM (Analytical method yields pCi/L; MDA95 and count error required)
CA1234567_001_001	4020	EPA 903.1	1	pCi/L	0.13	RADIUM-226
CA1234567_001_001	4030	EPA 904.0	1	pCi/L	0.15	RADIUM-228
CA1234567_001_001	4010	SM 7500-RA	2	pCi/L	0.14	COMBINED RADIUM (-226 / -228)
CA1234567_002_002	4006	EPA 908.1	1	pCi/L		COMBINED URANIUM (Analytical method yields ug/L; MDA95 and count error not required; must be reported in pCi/L)

5.5 Combined Radium -226/-228 Data

The calculated Combined Radium (-226 & -228) must be based on component analyses of Radium-226 and Radium-228 from the same sample or samples collected at the same time and location to ensure accuracy and consistency.

When reporting the Combined Radium (-226 & -228) into CLIP, the result must be paired with the “CALC” method. The calculated Combined Radium (-226 & -228) and all component radionuclide analytes must be reported to CLIP under the same sample ID and within the same submission (i.e., within the same EDD).

Community Water Systems (CWS) must comply with the maximum contaminant level (MCL) established for Combined Radium (-226 & -228) as set forth in California Code of

Regulations, Title 22, Section 64442. Combined Radium (-226 & -228) must be sampled at least once every nine years. The frequency of monitoring depends on the analytical results, which may require monitoring sooner than once every nine years. The result must be based on component analyses of Radium-226 and Radium-228 from the same sample or samples collected at the same time and location to ensure accuracy and consistency.

Instead of sampling for Radium-226, a CWS may direct the laboratory to perform an analysis for Gross Alpha Particle Activity (hereinafter, Gross Alpha) to avoid having Radium-226 analyzed. Depending on the results, Gross Alpha may be substituted for Radium-226 pursuant to 64442(f). For situations where the CWS finds that the Gross Alpha results may be substituted for Radium-226, the reporting of the Combined Radium (-226 & -228) should proceed as follows:

Where a Gross Alpha result is less than the "Detection Limit for Purposes of Reporting" (DLR) of 3 pCi/L, a value of ½ of the DLR (1.5 pCi/L) can be used in place of a Radium-226 result when calculating the Combined Radium (-226 & -228) result.

Where a Gross Alpha result is greater than or equal to the DLR of 3 pCi/L, but less than 5 pCi/L, the entire Gross Alpha value can be used in place of a Radium-226 result when calculating the Combined Radium (-226 & -228) result.

Table 8. Direct Addition

Analyte Code	Analyte	Method	Result
4020	Radium-226	EPA 903.1	Analyzed result
4030	Radium-228	EPA 904.0	Analyzed result
4010	Combined Radium (-226 & -228)	Calc (calculated)	(Radium-226 result) + (Radium-228 result)

Table 9. Gross Alpha Substitution Addition (Gross Alpha < DLR)

Analyte Code	Analyte	Method	Result
4109	Gross Alpha Particle Activity	EPA 900.0	< 3 pCi/L
4030	Radium-228	EPA 904.0	Analyzed result
4010	Combined Radium (-226 & -228)	Calc (calculated)	[1.5 pCi/L] + (Radium-228 result)

Table 10. Gross Alpha Substitution Addition (Gross Alpha ≥ DLR and < 5 pCi/L)

Analyte Code	Analyte	Method	Result
4109	Gross Alpha Particle Activity	EPA 900.0	Analyzed result
4030	Radium-228	EPA 904.0	Analyzed result
4010	Combined Radium (-226 & -228)	Calc (calculated)	[Gross Alpha result] + (Radium-228 result)

Important: For a laboratory performing all analyses under **Table 8**, the calculated Combined Radium (-226 & -228) and all component radionuclide analytes must be reported to CLIP under the same sample ID and within the same submission (i.e., within the same EDD). If not, and the analytes are split between multiple CLIP submittals, subsequent submittals may be rejected. This will lead to delays in having the data electronically reported as well as the need to resubmit data to CLIP.

For a primary laboratory performing Gross Alpha analysis that subcontracts with another laboratory to perform a Radium-228 analysis under **Table 9** or **Table 10**, the primary laboratory should report the Combined Radium (-226 & 228) result in keeping with ELAP requirements and TNI standard.

5.6 Lead and Copper Rule Data

When reporting Lead & Copper Rule (LCR) data for community and non-transient non-community water system under the LCR tap sampling requirements, the sample's collection address is required. The PS Code must be designated to be the distribution system. CLIP will flag your file if the collection address is not entered.

- **PS Code**
  - The PS Code will contain "DST_LCR", i.e. CA#######_DST_LCR
- **Collection Address**
  - For community water systems: the collection address of the sample must be the residential address. Collection addresses are not publicly displayed once uploaded to CLIP.
  - For non-transient, non-community water systems: the collection address of the sample may be location descriptions. The location descriptions are not publicly displayed once uploaded to CLIP.
- **Comment Field**
  - Sample comments are allowed for entry.

- Analysis comments are optional. SDWIS does not have an analysis comment as an available field for LCR results. CLIP will not flag your file if you provide analysis comments. If populated, the data will not be recorded in SDWIS.

- **Less than the DLR**
  - Analytical values of lead and copper that are less than the DLR should be reported following scenario three under **Section 5.14**.
- **Water Quality Parameters**
  - When reporting lead and/or copper results that are not for compliance under the LCR tap sampling requirements, i.e., water quality parameters (WQP), the data must be uploaded to a PS Code that does not contain "DST_LCR" (i.e., CA1234567_WQP_001). WQP lead and/or copper results submitted to a "DST_LCR" PS code will be included in existing 90th percentile calculations if certain criteria are met. This will unintentionally cause discrepancies determined by the water system or regulating office. It is suggested to consult with the water system for clarification when reporting WQP results.

5.7 Nitrate, Nitrite, and Nitrate + Nitrite Data

When reporting a calculated nitrate-nitrite value, the value must be based on component analyses of nitrate and nitrite from the same sample or samples collected at the same time and location to ensure accuracy and consistency. When reporting a calculated nitrate value, the value must be based on component analyses of nitrate-nitrite and nitrite from the same sample or samples collected at the same time and location to ensure accuracy and consistency. When reporting a calculated value into CLIP, the result must be paired with the "CALC" method.

Important: When reporting a calculated value, the calculated value and all component analysis results used in the calculation must be reported to CLIP under the same sample ID and within the same submission (i.e., within the same EDD-Electronic Data Deliverable). If the trio of analytes are split between multiple CLIP submittals, all subsequent submittals will be rejected. This will lead to delays in having the data electronically reported as well as the need to resubmit data to CLIP.

All public water systems must comply with the MCL established for nitrate-nitrite (sum as nitrogen) as set forth in California Code of Regulations, title 22, section 64431. To accurately calculate values to achieve regulatory compliance, nitrate-nitrite, nitrate, and nitrite must be sampled concurrently at least once every three years. The frequency of monitoring for each individual analyte depends on the analytical results, which may require

monitoring more frequently than once every three years. When calculated values are reported for nitrate-nitrite or nitrate, the result must be based on relevant component analysis results from the same sample or samples collected at the same time and location (i.e. a single sample event).

Table 11. Calculated Nitrate-Nitrite with Addition

Analyte Code	Analyte	Method	Result
1040	Nitrate (as nitrogen)	EPA 300.0	Analyzed result
1041	Nitrite (as nitrogen)	EPA 300.0	Analyzed result
1038	Nitrate-Nitrite	Calc (calculated)	(Nitrate result) + (Nitrite result)

Table 12. Calculated Nitrate with Subtraction

Analyte Code	Analyte	Method	Result
1040	Nitrate (as nitrogen)	Calc (calculated)	(Nitrate-Nitrite result) – (Nitrite result)
1041	Nitrite (as nitrogen)	EPA 353.2	Analyzed result
1038	Nitrate-Nitrite	EPA 353.2	Analyzed result

Important: When reporting a calculated value, the calculated value and all component analysis results used in the calculation must be reported to CLIP under the same sample ID and within the same submission (i.e., within the same EDD-Electronic Data Deliverable). If the trio of analytes are split between multiple CLIP submittals, all subsequent submittals will be rejected. This will lead to delays in having the data electronically reported as well as the need to resubmit data to CLIP.

There are currently no EPA approved methods for nitrite that allow calculation to be used (i.e., currently approved methods do not permit a calculation for nitrite of [nitrate + nitrite result] minus nitrate analyzed result); therefore, nitrite must be directly analyzed, while the results for either nitrate or nitrate + nitrite may be a calculated value. Nitrate, nitrite, and nitrate + nitrite results must be reported in CLIP using their respective analyte codes. Since results of one of the three analytes will be a calculated value, the analytical results are to be based on the same sample or samples collected at the same time and location to ensure accuracy and consistency. All three analytes, nitrate, nitrite, and nitrate + nitrite, all must be reported.

5.8 Total Hardness Data

Standard Method 2340B is a calculation-based method used to determine total hardness in water, expressed as calcium carbonate ($CaCO_3$). The calculation is based on measured concentrations of calcium and magnesium, using the following formula:

Total Hardness (as $CaCO_3$) = 2.497 × [Ca, mg/L] + 4.118 × [Mg, mg/L]

The method does not specify a RL for total hardness. Instead, the reportable level depends on the reporting limits of the individual calcium and magnesium measurements used in the calculation.

While California regulations do not prescribe DLRs for calcium or magnesium, it is common practice for laboratories to adopt internally established reporting limits based on method validation. Often, these are approximately:

- Calcium: 1 mg/L
- Magnesium: 2 mg/L

Based on these commonly used values, the practical minimum total hardness that can be reliably reported is:

- Calcium at 1 mg/L → 2.5 mg/L as $CaCO_3$
- Magnesium at 2 mg/L → 8.2 mg/L as $CaCO_3$
- Total minimum = 10.7 mg/L as $CaCO_3$

Unless a laboratory has validated lower reporting limits for calcium and magnesium, total hardness should not be reported below approximately 10.7 mg/L as $CaCO_3$. Laboratories should report total hardness at levels consistent with their validated reporting limits for calcium and magnesium. Since SM 2340B is a derived method, the accuracy of the total hardness result depends entirely on the precision and reliability of the individual analyte measurements.

5.9 Total Haloacetic Acids Data

Total haloacetic acids (HAA5) refer to the sum of the five regulated disinfection byproducts, such as monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid. Each of these analytes must be reported individually in micrograms per liter (µg/L), along with the total HAA5 result. Laboratories are responsible for performing the analysis, reporting each of the five compounds individually; summing the concentrations of the five analytes to calculate the total HAA5; and uploading

both the individual analyte results and the calculated total HAA5 into CLIP. If an analyte is not detected, it must be reported as less than the laboratory-specific RL, which must be less than or equal to the state-defined DLR under Title 22, Section 64533. In addition, the laboratories must use EPA approved methods and be ELAP accredited.

5.10 Total Trihalomethanes Data

Total trihalomethanes (TTHM) refer to the sum of the concentrations of the trihalomethane compounds; bromodichloromethane, bromoform, chloroform, and dibromochloromethane. Each of these analytes must be reported individually in micrograms per liter (µg/L), along with the total TTHM result into CLIP. If an analyte is not detected, it must be reported as less than the laboratory-specific RL, which must be less than or equal to the state-defined DLR under Title 22, Section 64533. In addition, the laboratories must use EPA approved methods and be ELAP accredited.

5.11 Harmful Algal Bloom Data

As of January 2, 2025, harmful algal bloom analyses may be uploaded to CLIP. The CLIP Analyte-Method Pairs and Levels file, available on the CLIP Resources Page, contains the list of harmful algal bloom analyte codes and analytical method codes.

5.12 pH Field

pH field measurements must be submitted to CLIP under analyte code C253 - pH, Field. Under DDW's regulations, pH is defined as a field test. EPA 150.1 states that the samples be analyzed as soon as possible after collection, preferably in the field. Standard Method 4500-H+B states that the samples are to be analyzed within 15 minutes.

5.13 Field Test Dates

Field tests are where analysis at a laboratory is impractical due to the short holding times. The transit of the sample to the laboratory could introduce inaccuracies in the sample conditions, leading to inaccurate results.

The current CLIP EDD format will flag records as an error where the analysis start date and/or the collection date is prior to the lab receipt date. For field tests where the sample's

collection date and analysis date are both prior to the laboratory's receival date, follow the data entry workaround below:

- Set the [Collection_Date] = [Analysis_Start_Date]
- Set the [Lab_Receipt_Date] = [Collection_Date] or [Analysis_Start_Date]
- Add a note in the [Sample_Comments] field explaining the data entry workaround. Sample comments are not publicly displayed on Drinking Water Watch.

5.14 Evaluation of Reporting Levels

The lab reporting level (RL) is the lowest concentration at which an analyte can be detected in a sample, and the concentration can be reported with a reasonable degree of accuracy and precision. It is recognized that many water systems request laboratories to use an RL that is equivalent to the analyte's DLR. In some cases, a water system may request that an RL lower than an analyte's DLR be reported.

A DLR is set by regulation for each reportable analyte. DLRs are the designated minimum levels at or above which any analytical finding of an analyte in drinking water resulting from monitoring must be reported to the State Water Board. The DLR represents the level at which the State Water Board are confident about the accuracy of the quantity of analyte being reported by laboratories. The DLR is typically set equal to or below an MCL but is often above the analyte's public health goal. The DLR is not laboratory specific, and it is independent of the analytical method used (in cases where several methods are approved). The DLR cannot be changed by the laboratory.

It is expected that a laboratory can achieve an RL that is lower than or equal to the DLR set by the State Water Board. Regardless of how data are to be reported, the information provided in the RL field does not change existing data reporting practices.

DDW will be evaluating the RLs provided in electronic submittals. The expectation is that an RL will be equal to or less than the DLR of the analyte being reported. It is understood that there may be circumstances where the RL is greater than the DLR (e.g., dilution). In these situations, the data will be accepted but follow-up inquiries may come from the Quality Assurance Section (QAS).

For situations in which the RL is not only greater than the DLR, but also greater than the analyte's MCL, the data will be accepted in CLIP but flagged as invalid in SDWIS. Laboratories may submit a Level 2 data package to DDW's Quality Assurance Section (QAS) requesting a review. If QAS determines the data should be accepted, the results will be changed from invalid to valid. Invalid results are not publicly displayed in Drinking Water

Watch. Below are scenarios for reporting the RL in CLIP. **Table 14** lists analytes that do not require a reporting level in the EDD.

1. If using a RL equal to the DLR and there is a detect:
    a. Use ”N” as the Less_Than_Indicator.
    b. Enter the DLR as the Reporting_Level.
    c. Enter the Result.
2. If using a RL that is equal to the DLR and there is a non-detect:
    a. Use ”Y” as the Less_Than_Indicator.
    b. Enter the DLR as the Reporting_Level.
    c. Leave the Result blank.
3. If using a RL that is less than the DLR and there is a detect:
    a. Use ”N” as the Less_Than_Indicator.
    b. Enter the Reporting_Level.
    c. Enter the Result.
4. If using a RL that is less than the DLR and there is a non-detect:
    a. Use ”Y” as the Less_Than_Indicator.
    b. Enter the Reporting_Level.
    c. Leave the Result blank.

Table 13. Reporting Level Scenarios

Sample ID	Analyte Code	Method Code	Less Than Indicator	Reporting Level	RL Units	Result	Result Units
SampleID-02096	1039	EPA 314.0	N	4	UG/L	5.2	UG/L
SampleID-02097	1039	EPA 314.0	Y	4	UG/L		
SampleID-02098	1039	EPA 314.0	N	2	UG/L	5.2	UG/L
SampleID-02099	1039	EPA 314.0	Y	2	UG/L		

Table 14. Reporting Level Optional

CAS RN	Analyte Code	Analyte Name
AGG-INDEX	1994	AGGRESSIVE INDEX
COLOR	1905	COLOR
RA-226/228	4010	COMBINED RADIUM (-226 & -228)
CONDUCT@25	1064	CONDUCTIVITY @ 25 C UMHOS/CM
LANG-INDEX	1997	LANGELIER INDEX (PH(S))
LANG-INDEX@ST	C164	LANGELIER INDEX AT SOURCE TEMP.
ODOR	1920	ODOR
PH	1925	PH
PH-FIELD	C253	PH, FIELD

CAS RN	Analyte Code	Analyte Name
TEMP	1996	TEMPERATURE (CENTIGRADE)
HAA5	2456	TOTAL HALOACETIC ACIDS (HAA5)
TTHM	2950	TTHM

Table continued from previous page

5.15 Clarifications

Table 15. Analyte Reporting Rules and Clarifications

Analyte Name	Analyte Code	Clarification
2,3,7,8-TCDD (Dioxin)	2063	Historically, dioxin data was reported to DDW in the unit of measurement of picograms per liter (pg/L). SDWIS does not have pg/L available. DDW changed the reporting unit of measure for dioxin from pg/L to ng/L. As of September 1, 2021, all dioxin analytical results must be reported in nanograms per liter (ng/L).
Alkalinity, Bicarbonate	1928	Results to be reported as calcium carbonate, CaCO3
Alkalinity, Carbonate	1929	Results to be reported as calcium carbonate, CaCO3
Alkalinity, Total	1927	Alkalinity of water is its acid-neutralizing capacity. The alkalinity of most natural waters is a function of the concentrations of carbonate, bicarbonate, and hydroxyl ions. Alkalinity of a sample is a measure of its quantitative capacity to neutralize an acid to a specific ph. At this pH, all alkaline compounds in the sample are consumed. The alkalinity can be defined in terms of molar quantities as: Alkalinity = 2 [CO3-2] + [HCO3-] + [OH-] - [H+]. The unit of concentration is mg/L of calcium carbonate, CaCO3.
Carbon, Total (TOC)	2920	This is synonymous to Total Organic Carbon as noted by “TOC” in the analyte name
Hydroxide As Calcium Carbonate	1021	Results to be reported as calcium carbonate, CaCO3
Nitrate	1040	Nitrate is to be reported as nitrogen, Nitrate (as N).
Nitrate-Nitrite	1038	This represents the sum of nitrate + nitrite (sum as nitrogen). Since nitrates can be partially converted into nitrite in the body, this standard ensures the total nitrogen exposure does not exceed safe levels.
Nitrite	1041	Nitrite is to be reported as nitrogen, Nitrite (as N).
Orthophosphate	1044	Results to be expressed as P (phosphorus), not PO4 (phosphate).
Perchlorate	1039	The perchlorate DLR changed from 0.004 mg/L to 0.002 mg/L on July 1, 2021
Phosphate, Total	1043	Results to be expressed as P (phosphorus), not PO4 (phosphate).
Xylenes, Total	2955	Results to be reported as the sum of xylene isomers: o-xylene, m-xylene, and p-xylene.

6 Error Checking

To ensure accurate data are provided to DDW in the correct format required by the database, it is strongly recommended that data providers check their data using EDP prior to submittal via the CLIP Laboratory Dashboard. EDP is used to check the EDD against the business rules and reference values set by DDW. Once you have finished populating your EDD, follow the steps below to verify that your EDD is error free.

1. Open EDP from the Start menu by selecting All Programs, scroll to the EarthSoft folder and select EQuIS EDP Standalone.
2. Click on the "EDD" button located in the EDP "Open" ribbon.
3. Open the EDD file you would like to check.
4. Upon loading, EDP automatically checks for errors.
5. If the Chems_Rads section name in the left-hand pane has a green font color, then no errors were found.
6. If the Chems_Rads section name in the left-hand pane has a red font color, then errors were found.
    a. To view the exact error message, hover your mouse cursor over the colored cell or row until the tooltip appears.
    b. Regardless of whether the EDD was loaded from a file or created in EDP, errors can be corrected directly in EDP.
    c. After correcting an error, the color that was associated with that cell or row will disappear as soon as you click away from the cell or row.
    d. Warnings (blue shaded cells) are not errors. The section's name will remain red if warnings exist. If the EDD is error-free, you may disregard the red font color of Chems_Rads section name and proceed to the upload portal.

Optional: You can toggle on the Errors Only checkbox on the Home ribbon to filter your view so that only the records with errors are shown. As you correct errors, the records will disappear from this point of view one-by-one until all errors have been corrected.

To view everything in your EDD, including the non-errored records, simply uncheck the box. You can click the Error Log or Summary button in the menu ribbon to view a complete list and description of all the errors found in the EDD.

7 Alternate Method to Populate an EDD

You can enter sample information on a single record, with corresponding analytical result information following that record. If your EDD follows this structure, your EDD filename must contain ".sdwis" before the file extension [ex. filename.sdwis.xlsx].

For further reference, see the "Alternate Method Water System Example EDD" available on the CLIP Resource Page.

8 EDD Submission

Follow the steps outlined below to upload an EDD to CLIP.

1. Log in to CLIP entering your username and password.
2. You will be directed to the CLIP Dashboard.
3. Prior to uploading a file through the File Upload box, the Disclaimer Certification must be read and accepted by checking the checkbox.
4. Click the Format file drop-down and select the CA_SDWIS_Lab_Analytical_Data format.
5. Click the Browse button.
6. Locate the EDD file on your machine and click Open. Multiple EDD files can be selected.
7. Click the upload button to submit the EDD(s).
8. You will receive a confirmation email when the EDD has been processed and successfully loaded into CLIP.
9. If any errors were found and the EDD was rejected, you will receive an email with an error log.
10. The File Status will display a list of your EDD submissions within the past 31 days. The colored icon indicates the upload status:
    - Blue - In progress
    - Green - Success (no errors)
    - Red - Rejected (errors)
    - Yellow - Stuck (e-mail DDW-CLIP@waterboards.ca.gov for assistance)

9 Data Correction

In the event an EDD with an error(s) was submitted, accepted, and loaded to CLIP, laboratories will need to resubmit the corrected data to DDW as outlined below. All requests will go through an internal review process by DDW, and if needed, consultation with the water system.

1. Laboratories are required to complete a Change Request Form (CRF) for all EDD data corrections. The CRF can be downloaded from the CLIP Resource Page.
2. The CRF contains three worksheets that are required to be filled out and completed:
    - Info: general information, explanation of change
    - Current: provide all sample/result data that was originally reported to CLIP
    - Request: provide the requested data changes
3. E-mail the completed CRF to DDW-CLIP@waterboards.ca.gov
4. If a CRF is approved, data submitters will be notified by e-mail from DDW on the next steps to resubmit.
5. In CLIP, select the "Data_Correction" dropdown.
6. If a CRF is rejected, data submitters will be notified by e-mail from DDW of the rejected change request.

9.1 Common Data Corrections

PS Code: Samples submitted to the incorrect PS code (water system or sampling site location). Submit an EDD containing only data for the revised PS Code. Do not include previously submitted data that does not need correction.

Analytical Result: Incorrect analytical result. Submit an EDD containing only data for the revised analytical result. Do not include previously submitted data that does not need correction.

Sample Invalidation: Sample was determined as invalid (i.e., incorrect collection method, incorrect sampling location, mishandling, holding time exceedance, incorrect volume, etc.). The sample will be marked as "Not for Compliance" in the database. The sample will be flagged with the appropriate invalidation code, if provided. Invalidated samples are not displayed in Drinking Water Watch.

10 Data Append

If analytical results were omitted from an upload, you may add them in CLIP using the "Data_Append" dropdown. Create an EDD that includes only the missing analytical results. Do not include any new or previously submitted data. The sample ID(s) in the data append submission must exactly match those in the original upload.

Table 17 shows one analyte will be appended to sample ID "XYZ" and three analytes will be appended to sample ID "ABC" for a total of four appended analytical results.

Table 16. Data Append - Initial Upload

PS Code	Sample ID	Analyte
CA1234567_001_001	XYZ	1005 – Arsenic
CA1234567_001_001	ABC	1025 – Fluoride

Table 17. Data Append - Upload of Omitted Analytes

PS Code	Sample ID	Analyte
CA1234567_001_001	XYZ	1049 – Silica
CA1234567_001_001	ABC	1919 – Calcium
CA1234567_001_001	ABC	1920 – Odor
CA1234567_001_001	ABC	1927 – Total Alkalinity