

EnDAR (Environmental Database for Acquisition and Reporting)

Quick-Start Guide

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Overview of Data Sets

EnDAR can store many data sets. Below is a list of the tables used to store each of the data sets currently supported by EnDAR. If the database does not currently accommodate your data, let us know and we can easily create the necessary tables (all our software will support it after restart/refresh).

Data Set	Table(s)
Analytical chemistry	CHM_SAMPLE CHM_TEST CHM_RESULT CHM_SAMPLE_DELIVERY_GROUP CHM_QC_RESULT

	CHM_TEST_BATCH
Field parameters	CHM_FIELD_PARAMETER
Water levels	GEO_GROUNDWATER_ELEVATION
Sampling data – sampling plans	SMPLN_EQ_BLANK_ANALYTE SMPLN_FIELD_PARAMETER SMPLN_LAB_METHOD_REQ SMPLN_PLAN_ANALYSIS_PLAN SMPLN_PLAN_ANALYTE_SET SMPLN_PLAN_LAB_ANALYSIS_REQ_DEF SMPLN_PLAN_LOCATION SMPLN_PLAN_SPECIAL_INSTRUCTIONS SMPLN_RESAMPLE SMPLN_SAMPLE SMPLN_SAMPLE_ANALYTE_MATCH SMPLN_SAMPLE_CONTAINER SMPLN_SAMPLE_UNPLANNED SMPLN_SAMPLING_PLAN
Sampling data – field collection	DATCOL_ACTION_STAMP_RECORD DATCOL_SAMPLE DATCOL_SAMPLING_EVENT DATCOL_SAMPLING_LOCATION DATCOL_SAMPLING_WEATHER
Instrument & logger data	PROC_DCP PROC_DCP_OPERATION PROC_DCP_POSITION PROC_READING PROC_READING_MAXES
Geological data	GEO_GEOFIELD_TESTS GEO_GEOLROCK GEO_GEOLSOIL GEO_POINT GEO_STRATIFICATION GEO_WELL_CONSTRUCTION
Basic biological data	BIO_RESULTS BIO_RESULTS_FULL
Data formats specific to CEDEN (California Environmental Data Exchange Network): Chemistry, field data, habitat, toxicity	CEDEN_CHEM CEDEN_FIELD CEDEN_HABITAT_RESULTS CEDEN_TOX_BATCH CEDEN_TOX_REPLICATE_RESULTS CEDEN_TOX_SUMMARY_RESULTS

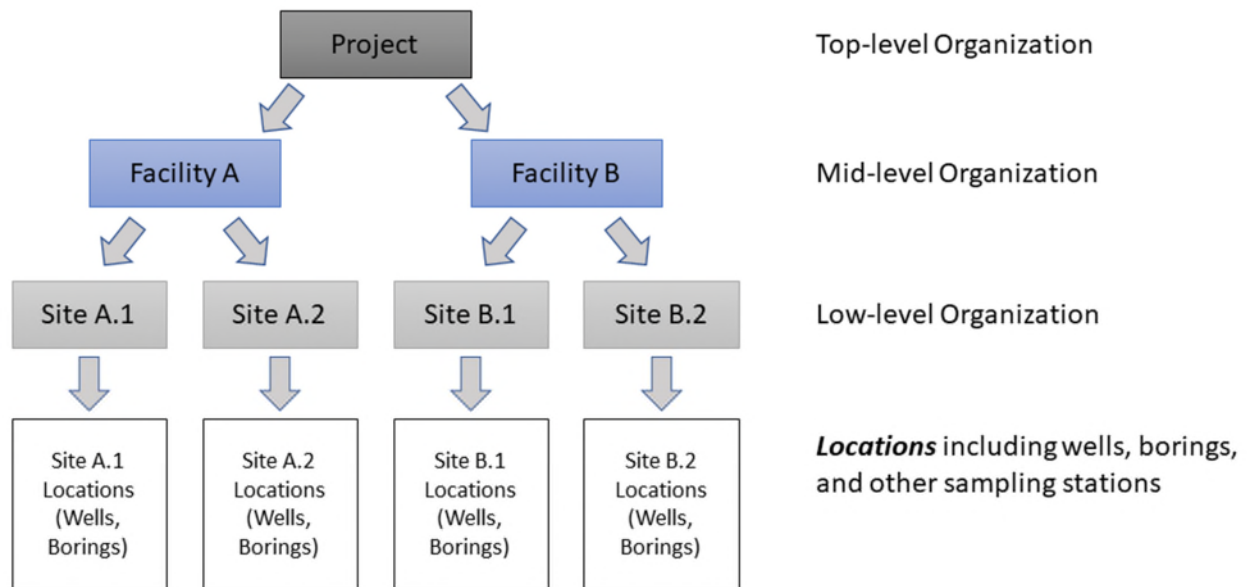
The instrument & logger data sets associate readings with data collection points (where a given sampling location can have multiple data collection points). All other data sets associate results with sampling locations.

Initial Project Setup

This covers the initial setup of your project in the database to store your environmental data.

Set up Site and Locations

EnDAR has three layers of organization, which we call Projects (top), Facilities (middle), and Sites (bottom). Each facility belonging to a single project, and each site belongs to a single facility. Sampling locations (e.g., wells, watershed outfalls, etc.) belong to a single site.



To add your information to the database, first create a Project:

1. Login to the web application; Go to “Data Management”, then click “Download Templates”
2. Select “LOC_PROJECT” from the drop-down, and click “Download”
3. Save the CSV file and then populate with one or more projects.
4. Click “Upload” from the top navigation
5. On the Upload page, do the following:
 - a. Set EDD Type: Standard
 - b. Do NOT check the box “File is specific to a site”
 - c. Select Import rule: skip existing records, upload new data
 - d. Enter your e-mail address in the first email field (it will automatically get added to the second email field)
 - e. In the second email field, add any additional emails of people you want to receive notifications separated with a semi-colon (;)
 - f. Browse to the CSV file and click “Upload”. Only CSV file formats are supported. If you were previously using Excel to edit the file, be sure to close the file before upload.
6. You will receive an email when the file has been processed. Note that it may take several minutes for the file to process. The status will be shown in the Recent Upload section at the bottom of the page. The file will initially show as “QUEUED” until it is processed. After processing, it will show “SUCCESSFUL” or “NOT PROCESSED/ERROR” (you may need to refresh

the page to see the updated status). If the file contains an error, more information about the error is provided in the email.

DATA MANAGEMENT - UPLOAD DATA

Select a file to upload, and upload parameters:

(note: select parameters first; pick file just before clicking "upload")

EDD Type:	Standard ▾
<input type="checkbox"/> File is specific to a site:	Project: -- None -- ▾ Facility: -- None -- ▾ Site: -- None -- ▾ <input type="button" value="Refresh"/>
Import Rules, where the Action column is missing or empty:	Skip any existing records; just insert new data ▾
E-mail Address, for upload results:	<input type="text"/>
E-mail Addresses (CC), separate with ';':	<input type="text"/>
<input type="button" value="Browse..."/>	
<input type="button" value="Upload"/>	

Next, create your facilities, sites, and locations:

1. Repeat the process described above for LOC_FACILITY, downloading the template, entering the data, and uploading the EDD. Enter the PROJECT_ID you created previously into the PROJECT_OWNER_ID field in the EDD for the new facilities.
2. Before adding sites and locations, you may want to populate some reference tables for site types and location types (e.g., monitoring well).
 - a. First check if the site types exist. Select Data Management, then Browse Reference Tables. Press Select next to the table REF_SITE_TYPE. This will show you all of the existing site types in the database.
 - b. If the one you want is not there, follow the process of downloading the REF_SITE_TYPE EDD template, populating it, and uploading it to add your site types.
 - c. This same process can be followed for location types (table REF_LOCATION_TYPE) before adding your locations.
 - d. Note that the types are not required fields in the EDD, so the site and location types can be added later (or not used).
3. Repeat the process described above for LOC_SITE, downloading the template, entering the data, and uploading the EDD. Enter the appropriate FACILITY_ID(s) you created previously into the FACILITY_ID fields in the EDD for the new sites.
4. Repeat the process described above for LOC_LOCATIONS, downloading the template, entering the data, and uploading the EDD. Enter the appropriate SITE_ID(s) you created previously into the SITE_ID fields in the EDD for the new sites.

Setting up Reference Tables

1. Upload your reference data using the same procedure as described above (download the EDD template, populate, and upload).
 - a. First check to be sure that your reference values are not already in the database by selecting Data Management and then Browse Reference Tables.
 - b. The table below shows typical reference value types that you may need to upload

Reference Values	Table Name
Analytes	REF_ANALYTE
Analytical Methods	REF_ANALYTICAL_METHOD
Laboratory	REF_LABORATORY
Matrix	REF_MATRIX
Container Type	REF_CONTAINER_TYPE
Preservative	REF_PRESERVATIVE
Units	REF_UNIT

Using the Data Manager for Uploads

The Data Manager may be used instead of the website to perform these uploads to the database. There are two ways to do this:

1. In the Data Manager, select EDD Files, Create EDD Template. Select the table of interest and save to a local directory. Fill in the necessary data and then upload the EDD to the database using the Upload EDD item on the EDD Files menu.
2. In the Data Manager, select Data Editor from the Data Management menu. Then select the table of interest and then Insert. This method is most useful if you want to select reference information from lists of what is already in the database. However, if you have many records to add, this method could be cumbersome.

Setting up a Site for Sampling

Uploading Analysis Requirements

Sampling using EnDAR's mobile app will require creating a sampling plan using the Data Manager. Before a sample plan can be created, information must be added to the database regarding the analyte sets, analysis plans, and analysis requirement definitions. To add records to the database, follow the method described previously to download the EDD template, populate it, and then upload it to the database, either using the website or Data Manager. This should be done in the order described below.

1. Create your Analyte Set information – these are pre-defined lists of analytes, used for quickly populating a Sampling Plan.
 - a. Create a new record in the table ANLYS_ANALYTE_DEFAULT_SET for each desired analyte set
 - i. In the EDD, the SET_ID should be the name of your analysis plan. The additional information is optional.

- b. Add analytes to the analysis plans using the EDD for table ANLYS_ANALYTE_DEFAULT_SET_MEMBER
 - i. In the EDD, enter the SET_ID of the analysis plan you created in the previous step. Enter all analytes (by CAS number) for each analysis plan.
2. Create Analysis Plan(s) – an analysis plan defines what lab method is used for each analyte.
 - a. Create a new analysis plan in the table ANLYS_PLAN
 - i. In the EDD, the PLAN_ID should be the desired name of your analysis plan and the other information is optional.
 - b. Define the analytes and corresponding analytic methods in the analysis plan using the EDD for table ANLYS_PLAN_MATCH
 - i. In the EDD, complete as many rows as needed for this plan, selecting the correct plan ID defined in the previous step for the PLAN_ID column and entering the CAS number and corresponding analytic method to be used.
3. Create Analysis Method Requirement Definition(s) – these define the container(s) (container type, preservative) required for each method.
 - a. First check that the preservatives, container types, and container definitions are in the database. Use the Browse Reference Tables link on the Data Management page to check the following tables:
 - i. REF_SAMPLE_PRESERVATIVE – make sure all preservatives you need are in this table. Add any needed by downloading the EDD template, populating it, and uploading it to the database.
 - ii. REF_SAMPLE_CONTAINER_TYPE – make sure all types of containers (e.g., 600mL Plastic) are listed. Add any needed by downloading the EDD template, populating it, and uploading it to the database.
 - iii. REF_SAMPLE_CONTAINER_DEF – make sure all sampling container definitions (e.g., 600mL Plastic, Unpreserved) are listed. Add any needed by downloading the EDD template, populating it, and uploading it to the database. Make sure to fill in the Description column with a brief description – this will appear in the Sampling Planner.
 - b. Create the requirements definition set in the table ANLYS_LAB_ANALYSIS_REQ_DEF
 - i. In the EDD, fill in the DEF_ID as the name for this set. The other information is optional.
 - c. Add the requirements using the EDD for table ANLYS_LAB_ANALYSIS_REQ_MEMBER
 - i. In the EDD, complete as many new rows as needed. The MEMBER_ID needs to be a unique identifier for the record. Enter the Analysis Requirement Def ID defined in the previous step for the DEF_ID column. Enter the container count, container definition, and analysis method for each row.

Creating a Sample Plan

The Field Data Collection Application required sample plans to be defined. To create a Sampling Plan, use the Data Manager's Sample Planner.

1. Choose Manage Sampling Plans from the button bar, select the correct project, facility, and site, and choose Add. Then follow the instructions to create the sampling plan.
2. Tips for creating sampling plans

- a. If you just uploaded your reference and/or site data and it is not available in the Sampling Plan, you may need to refresh the reference data by choosing Refresh Reference Values from the Data Management menu.
- b. The default analyte set and analysis plan selected must be consistent or you will get an error.
- c. On the last screen, you need to check the box if field parameters are to be collected.
- d. On the last screen, you must set the status to Finalized in order for the plan to show up in the Field App.

Using the Field Data Collection App

A mobile Field Data Collection App that runs in a browser is available for data collection and is described below. An additional Data Collection App using the iForms App is also available; see more information about this App on the EnDAR website under Tools.

1. You must have created a sampling plan (see section above)
2. On your mobile device, browse to <http://endar.tetrattech.com/SamplingApp/>, login using your EnDAR account, and then select Sampling App. Then login again. (Note Chrome and Safari are the supported browsers; the App will not work correctly in Internet Explorer).
3. After logging in, you will be prompted to select a site for which to download available sampling plans.
 - a. If labels are needed, press the cloud icon next to the correct plan and then select to print labels.
 - b. Once the plans have been downloaded, you can go offline if necessary.
4. Select the plan and begin collection.
5. When collection at all locations is complete, press the back button to return to the main screen.
6. To sync data, select Control and then Sync.
7. To print the COC, click the Cloud icon next to the plan and select Download COC.
8. See the Help Guide (under Controls) for more detailed information on using the Mobile Sampling App.

Storing Chemistry Data

Prior to storing chemistry data, your project, facility, site, and location data must be uploaded to the database (see previous section). Certain reference data must also be uploaded. The table below shows typical reference value types that you need to upload. Upload reference data needed as described previously.

Reference Values	Table Name
Analytes	REF_ANALYTE
Analytical Methods	REF_ANALYTICAL_METHOD
Laboratory	REF_LABORATORY
Matrix	REF_MATRIX
Units	REF_UNIT

Now, upload your chemistry data using the Data Manager as follows:

1. From the Data Management menu, select “Upload Chemistry File”.
2. Browse to your chemistry file to be uploaded and select the site that it applies to. Click OK.
3. You will be prompted to “Translate Fields”. Match the fields in your file to the fields in the EnDAR database.
4. After you map the fields correctly, press OK and the data will be uploaded to the database. You will receive immediate confirmation of the success of your upload and any warning messages.
5. If you will be uploading chemistry files repeatedly in the same format, you can set up a default translations file so that each time you upload, you can just select the correct translation file. See the Edit Field Translations section later in this document for more information.

Advanced Features

Edit Field Translations

This feature allows the user to map data from laboratory EDDs to the proper tables and fields in the database. This allows you to have multiple translations to handle laboratories that are delivering EDDs in slightly different formats.

Each translation is referred to as a “template”. When you upload a laboratory EDD, you select which template to use for translating the columns. The templates work by matching column names using patterns (specifically, regular expressions defined by the .NET regular expression engine tutorial: [https://msdn.microsoft.com/en-us/library/az24scfc\(v=vs.100\).aspx](https://msdn.microsoft.com/en-us/library/az24scfc(v=vs.100).aspx)).

The target fields represent an EDD configured to upload to the database directly, so the fields are always the same for every template. The patterns will vary from one template to another. During upload, each target field gets its data from the first column in a laboratory EDD which matches the respective pattern.

Target fields with no pattern (or where the pattern does not match any column) are left empty. The SITE_ID target field will be filled in from a selection you make when uploading a laboratory EDD – it does not need a pattern.

1. Select Edit Field Translations from the EDD Files menu.
2. Existing templates are displayed on the left side. Select a template to view the translations on the right side.
3. Change a pattern by double-clicking on the pattern cell. This will allow you to edit the text (similar to a Microsoft Excel spreadsheet). Press ENTER to finish editing, or ESC to cancel the change.
4. Change whether to ignore case (upper vs lower) by checking/unchecking the Ignore Case cell.
5. Use the Add button to create a new template. Any new template will use pre-programmed default patterns, which are designed to handle most cases known during the initial development of this application.
6. Use the Delete button to delete the selected template.
7. Use the Rename button to rename the template.