



# **EQuIS Data Processor Reference Manual**

**Version 1.2**

***Updated December 2015***

## **EPA Region 4 Superfund**

**Updated by:**



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## **Status of Document**

As of December 2015, this document and all contents contained herein are subject to revision and subsequent republication.

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## Acronyms

CAS RN – Chemical Abstracts Service Registry Number  
DART – Data Archival and ReTrieval  
EQuIS – Environmental Quality Information System  
EDD – Electronic Data Deliverable  
EDP – EQuIS Data Processor  
EPA – Environmental Protection Agency  
O&M – Operation and Maintenance  
SESD – Science and Ecosystem Support Division  
SRS – Substance Registry System  
CLP – Contract Laboratory Program  
PRP – Potentially Responsible Party  
QC – Quality Control

## Definitions

**Data Provider** – “Data Provider” and “Sampling Company” are defined to be interchangeable with regard to EDD submittals. The data provider may be defined as the person or agency that organized, formatted and submitted the electronic data from a sampling event. This may or may not be the sampling company, particularly when working with historic data. Unless otherwise noted by your RPM, the prime contractor or grantee is always entered as the Sampling Company for the Samples and the Data Provider for the Geology EDDs.

**Electronic Data Deliverable (EDD)** – An Electronic Data Deliverable, or EDD for short is a flat file format, such as text, Excel, or other tabular file that follows a consistent design meant to organize information in a useful format. EDD files use a row of headers (typically 1 or two rows) that describe what information should be completed in each column the header precedes, and in what format that data should be entered.

	Column 1	Column 2	Column 3	Column 4
Header Row 1	<b>sys_loc_code</b>	<b>x_coord</b>	<b>y_coord</b>	<b>coord_type_code</b>
Header Row 2	<i>Text(20)</i>	<i>Numeric</i>	<i>Numeric</i>	<i>Text(20)</i>
Data Row 1	EPA-IS	-82.317493	28.057509	LAT LONG
Data Row 2	EPA-2I	-82.317659	28.057151	LAT LONG

**Scribe** - Scribe is a software tool developed by EPA to assist in the process of managing environmental data. Scribe captures soil, water, air, and biota sampling, observational, and monitoring field data. Scribe can import electronic data deliverables (EDD) from analytical laboratories, location data from a global positioning system (GPS), and from exported EQuIS™ EDDs.

**Sampling Company** – “Data Provider” and “Sampling Company” are defined to be interchangeable with regard to EDD submittals. The data provider may be defined as the person or agency that

organized, formatted and submitted the electronic data from a sampling event. This may or may not be the sampling company, particularly when working with historic data. Unless otherwise noted by your RPM, the prime contractor or grantee is always entered as the Sampling Company for the Samples and the Data Provider for the Geology EDDs.”

**.rvf** – The “.rvf” file (reference value file) is associated with the EQuIS Data Processor (EDP) from EarthSoft. This file contains the valid values reference tables used by EDP to populate the drop down menus used when a specific type of value is required in an EDD, such as the units “mg/kg” (milligrams per kilogram) or a media code such as “GW” (groundwater). These fields limit the type of data permitted in certain columns of the EDD, and all the most recent valid values are in the “.rvf” file. Therefore, it is extremely important to insure you are using the most current file. You should check the EarthSoft website to see if your version is current before working on your data.

**.zip archive** - The ZIP file format is a data compression and archival format that contains one or more files that have been compressed, to reduce their file size, or stored as-is. Many software utilities are available to create, modify, or open (unzip, decompress) ZIP files.

ZIP files typically use the file extensions “.zip” or “.ZIP” and the MIME media type application/zip. However, due to security features at EPA, compressed files with the extension .zip should be renamed to the extension “.edd.”

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## **1.0 Introduction**

### **1.1 Purpose**

The sole purpose of this document is to assist EPA Region 4 data providers in the installation and use of the EQuIS Data Processor (EDP) in conjunction with submitting EDD files to Region 4. Therefore, this document only provides information pertaining to the specific requirements to validate the Region 4 EDD and is not intended to be a comprehensive EDP Manual. For a more detailed discussion of the functionality and technical specifications of EDP, please refer to EarthSoft's website at [www.earthsoft.com](http://www.earthsoft.com). For a more detailed discussion of the Region 4 EDD specifications, please refer to the Region 4 Format Guide found on EPA Region 4 Superfund's website at:

<http://www2.epa.gov/superfund/region-4-superfund-electronic-data-submission>

### **1.2 Scope and Application**

The methods described in this document are to be used by all data providers when preparing and submitting environmental data electronically to Region 4, regardless of the originating program.

Following these procedures will help to reduce errors in data submitted to EPA and will enforce consistency, maintaining the strength and integrity of the EPA Region 4 EQuIS database. The strength of this data allows for more informed and cost-effective decision-making.

## 2.0 Getting Started

The Environmental Quality Information System (EQuIS) Data Processor (EDP) has been made available to data providers in order to check their Electronic Data Deliverable (EDD) files prior to submittal to EPA Region 4. The EDP is used to ensure EDD files are formatted as described in the Region 4 Format Guide. If the EDP detects errors, the errors can be viewed directly within the EDP or via an error log. After the errors are corrected by the data provider, the EDP should be re-run to assure that no errors remain. The EDD files can then be “signed and submitted”, saved with the appropriate file name and emailed to the Region 4 DART Coordinator at [R4DART@epa.gov](mailto:R4DART@epa.gov).

The EDP is a product of EarthSoft, Inc. and replaces all previous methods of EDD checking, whether electronic or manual. The EDP is a single application that checks all EDD files currently used by Region 4 and provides much easier use with a straight-forward interface for identifying and correcting errors.

Getting started with EDP involves three steps:

- 1) Downloading the EDP application
- 2) Installing the EDP
- 3) Registering the EDP

**Note:** You must be an administrator or user with “Power User” privileges on your computer to install EDP. Check with your IT support before downloading and installing any software and only download EDP directly from EarthSoft or EPA Region 4.

### 2.1 Downloading the EDP

The EDP installation application can be downloaded directly from EarthSoft for no cost at <http://www.earthsoft.com/products/edp/edp-format-for-epar4/>.



## EDP Format for EPA Region 4

EQuIS Data Processor (EDP) developed for EPA Region 4			
Name	Size	Type	Modified
EDP Version 6.3 32 bit (x86)   64 bit (x64)	35.2 MB	.zip	January 30, 2015
EDP Version 5.6.2 32 bit (x86)   64 bit (x64)	15.1 MB	.exe	December 18, 2012
EDP v6 Format File Only	760.5 KB	.zip	May 4, 2015
EDP v5.6 Format File Only	582 KB	.zip	January 19, 2015
EPA Region 4 Reference Values	212.2 KB	.zip	April 16, 2015
EPAR4 guidance page: <a href="http://www2.epa.gov/superfund/region-4-superfund-electronic-data-submission">http://www2.epa.gov/superfund/region-4-superfund-electronic-data-submission</a>			
.NET Framework 3.5 Required (see below)			

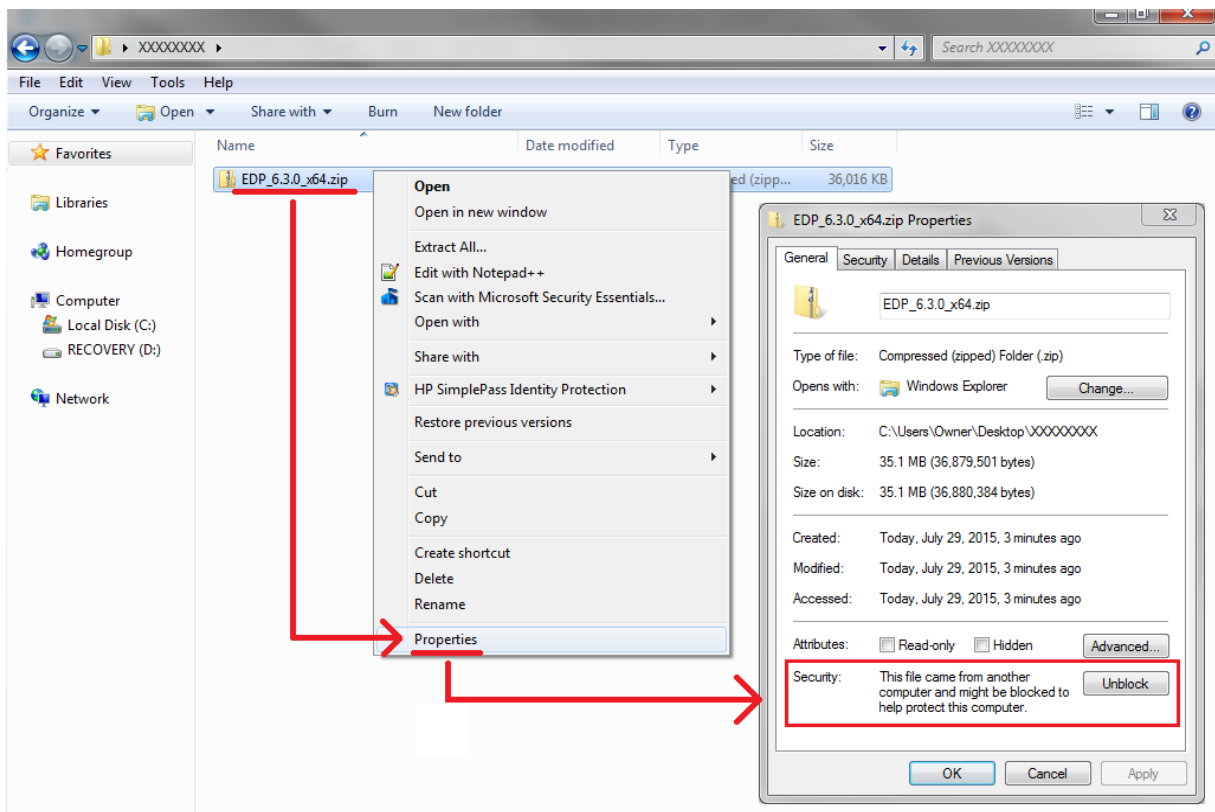
We recommend downloading the most recent version of EQuIS Data Processor (EDP Version 6.4, as of August 2015). An older version is maintained for users who cannot update their computer system due to their company's policies and software versions. The format file for EPA Region 4 (EPAR4) is also available here as well and may be downloaded after EDP is installed. Note the requirements for the Microsoft .NET Framework version and ensure you have the correct version installed before installing EDP. Information on checking your .NET version and obtaining the correct version can be found on the Microsoft website at <http://www.microsoft.com/.NET/> and additional information regarding Microsoft can be found below the installation instructions on the EarthSoft website.

Please note that the EPA Region 4 'EDP v6 Format File' requires the 'EDP Version 6.x' application.

### 2.2 Installing the EDP

Open the directory where the EDP installation application was downloaded and unblock the file via the steps below:

**Note:** When downloading files from the Internet or other location, Windows may set an attribute on the file to "Blocked". When this happens, the file may not load properly. This behavior is the default for .NET 4, which is used in EQuIS Professional 6, and is designed to help protect your computer from executing malicious files. Whenever you download a file, it is recommended that you check for the blocked attribute, and then "Unblock" the file so it will load properly. It is easier to unblock a .zip file rather than unblocking each of the individual files that are extracted from it.

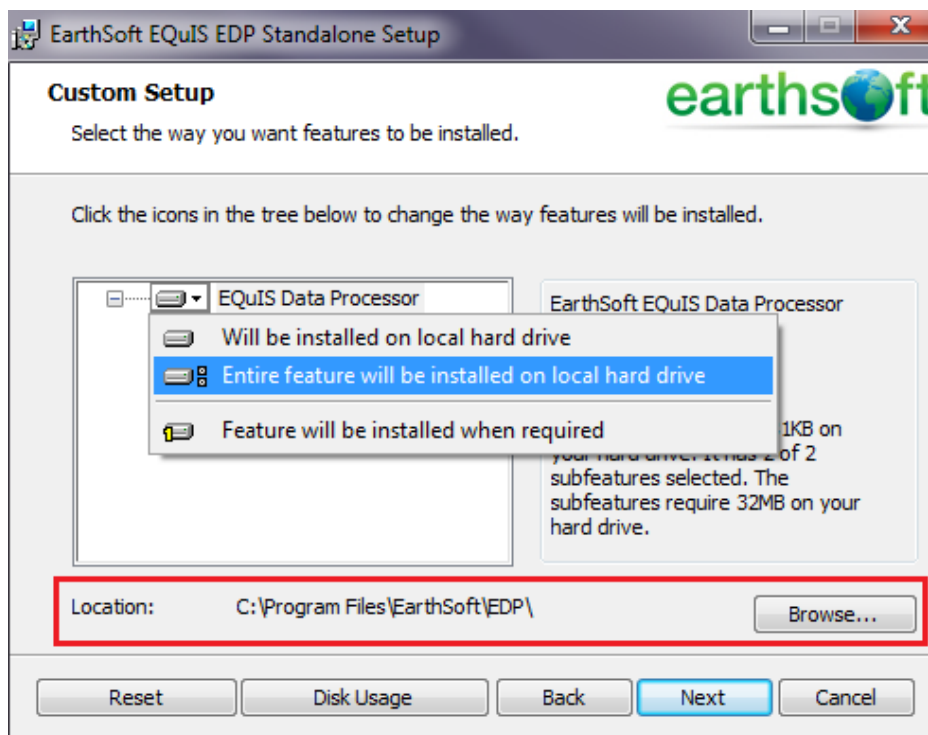


1. When you download a file, save it to a known folder where you have update permissions - e.g. the "Downloads" folder.
2. After downloading the file, check to see if it has been blocked by Windows - i.e. right-click on the downloaded file, then select properties. A file properties dialog will be displayed, and if the file has been blocked, you will see the "Unblock" button on the "General" tab. Clicking the "Unblock" button will remove this restriction on the file.

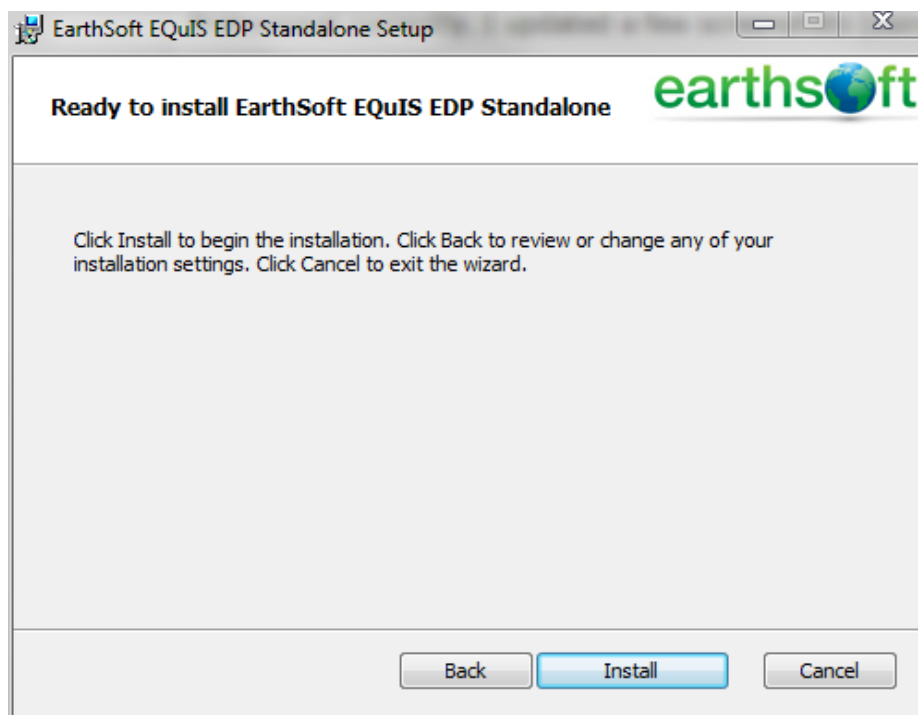
After the file has been un-blocked, unzip the EDP installation folder. Then, double-click the EDP application installer to open the Installation Wizard. The install wizard will guide you step-by-step through the installation procedure. It is important to note that during installation you should have no other programs running.



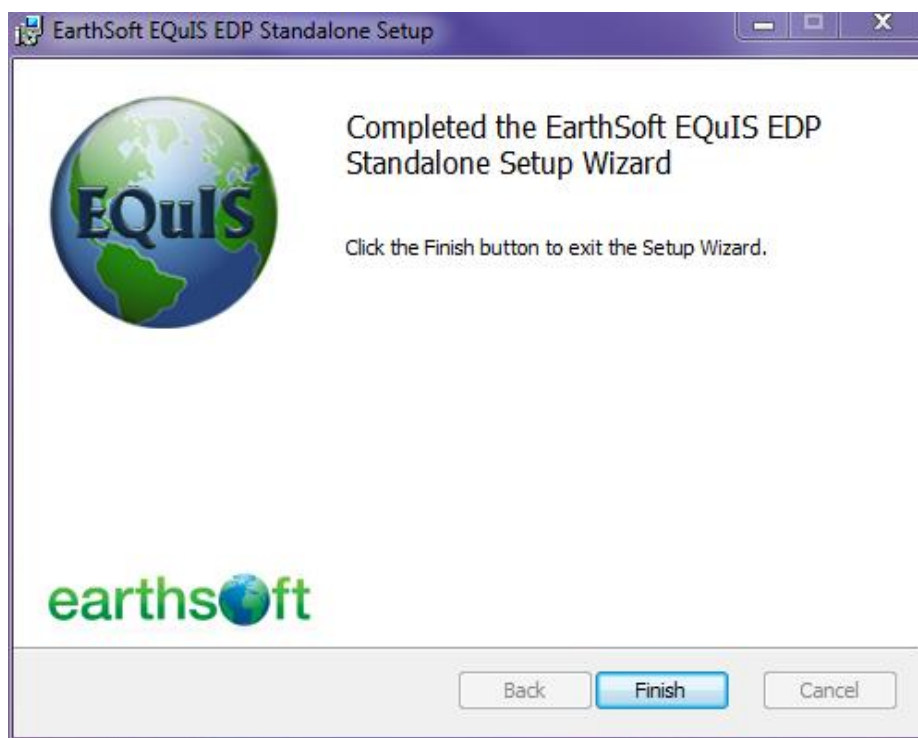
Click the Next button. The License Agreement screen will appear. Select “I accept the license agreement” radio button and click the “Next” button.



Click the icon next to ‘EQuIS Data Processor’ and select ‘Entire feature will be installed on local hard drive’. At the bottom of the window, select the destination folder for the application files. Click the “Next” button and you will reach the “Ready to install” screen.



Click the “Install” button to begin the installation. When the installation is done, you will be presented with a window that verifies that the EDP has been successfully installed. Click the ‘Finish’ button to exit the installation.



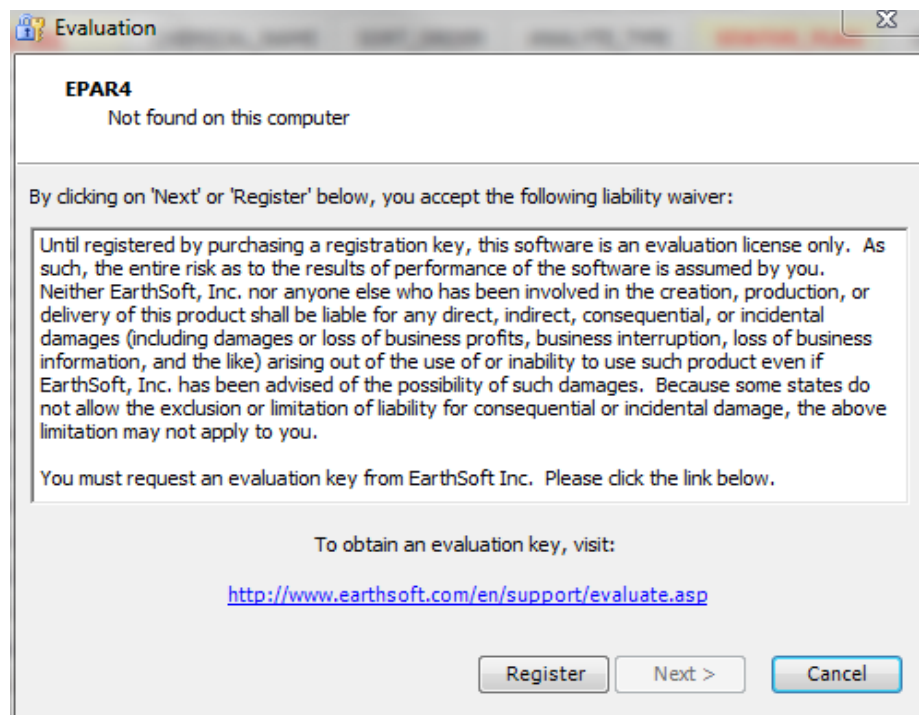
Next, download the ‘EDP v6 Format File Only’ and unblock the zipped folder according to the instructions above. There is no need to unzip this folder, move the zipped format folder into the C:\Program Files\EarthSoft\EDP\Formats folder. If you were required to install the 32-bit version of the software, this path will be C:\Program Files (x86)\EarthSoft\EDP\Formats. The remaining reference within this document will assume the 64-bit version.

## 2.3 Registering the EDP

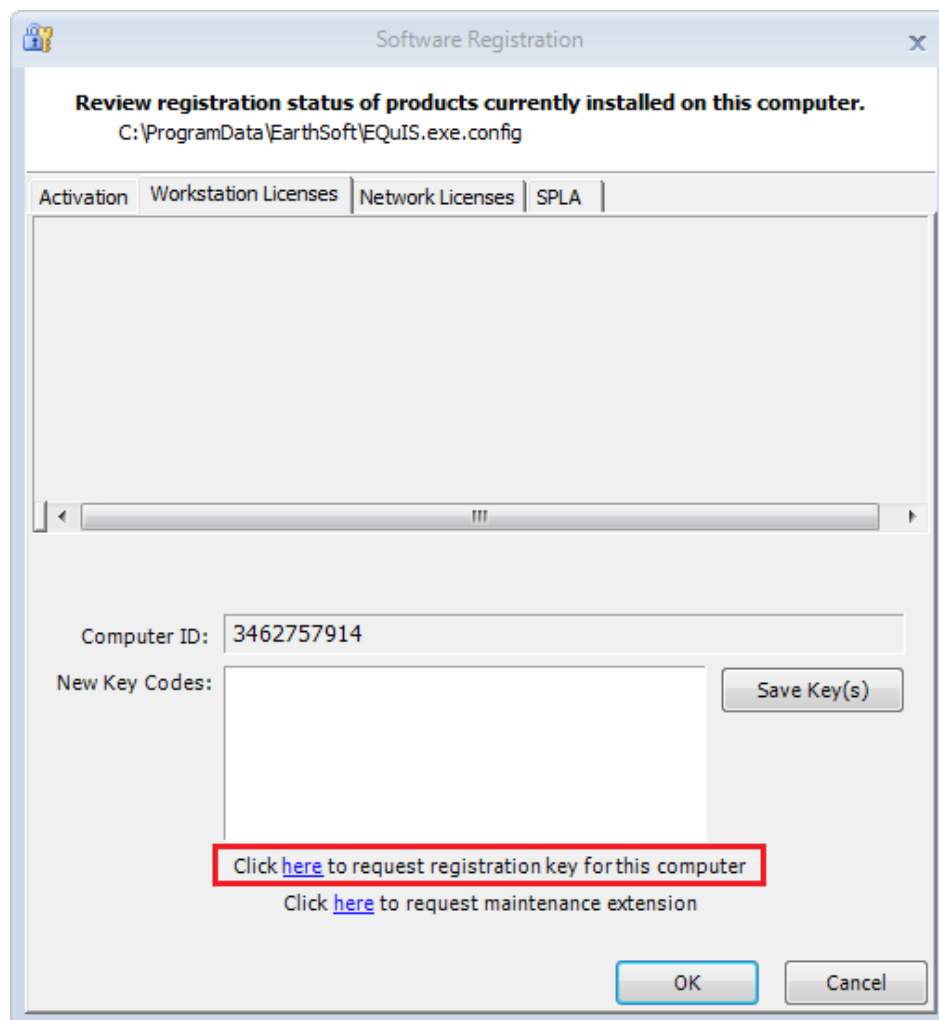
Once installed, the EDP must be registered. Start the EDP application by selecting Start > All Programs > EarthSoft > EQUS EDP Standalone.

The EDP application will start and a blank screen appears. Select ‘Format’ from the upper-left menu.

Browse to select the zipped EPAR4 format file. If you moved it to the suggested folder, the path you select will be to the C:\Program Files\EarthSoft\EDP\Formats folder. Select the file, and then click the ‘Open’ button. The “Evaluation” screen will appear. Click the ‘Register’ button.



The ‘Software Registration’ screen will appear. Go to the ‘Workstation Licenses’ tab. Click the first link to open the registration request page in your web browser.



Enter the requested information in the 'EDP Format for EPA Region 4 – Registration' form. Your Computer ID should be automatically populated. If you are working with several RPMs, enter the primary RPM or the RPM who provided your Approval Code in the appropriate field of the registration form. You will need to request the Approval Code from either your RPM or email the [R4DART@epa.gov](mailto:R4DART@epa.gov). When all information has been entered, click 'Submit'. With the proper approval code, the key codes will be automatically emailed to the email address entered in the registration form.

Once the new key codes have been received, register the EDP by copying the registration key codes into the "New Key Codes" box on the 'Workstation Licenses' tab of the Software Registration window. Click the 'Save Key(s)' button. A screen stating that the "Registration succeeded" should appear. Click OK. The EDP is now registered and ready for use. Registration is unique to a computer. You will need to go through this process again to use EDP on a different computer.

## 3.0 Using the EDP

EDP is a powerful tool that can check for data completion and referential integrity, identify errors and create compressed files containing multiple related EDDs in a single useable format for upload and storage in a relational data base system, such as Oracle or SQL. Sections below detail starting, loading, identifying, and correcting errors and saving your data for submission to EPA Region 4.

### 3.1 Starting EDP

EDP is available in two versions: “Standalone” which is available via the download and registration process outlined in Section 2.0 above and “Professional” which is only available to users who have purchased and licensed EQuIS Professional. Most users following these guidelines will be using the “Standalone” version.

#### 3.1.1 EQuIS EDP Professional

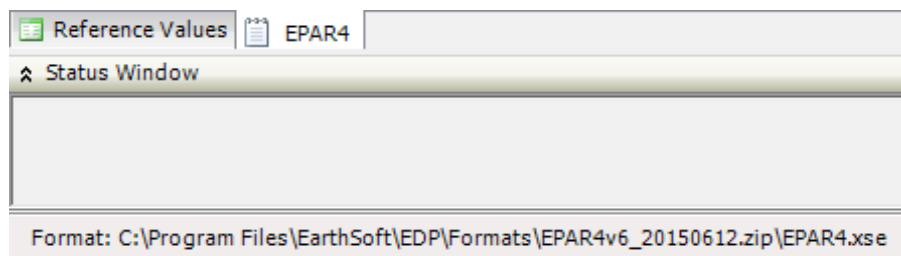
Start the application by selecting Start > All Programs > EarthSoft > EQuIS Professional from the Windows ‘Start’ menu. Select the site you wish to process data for and allow EQuIS to open. Once open, select EDP from the upper left-hand corner. Once open, follow the directions for the “Standalone” version in Section 3.1.2 below.

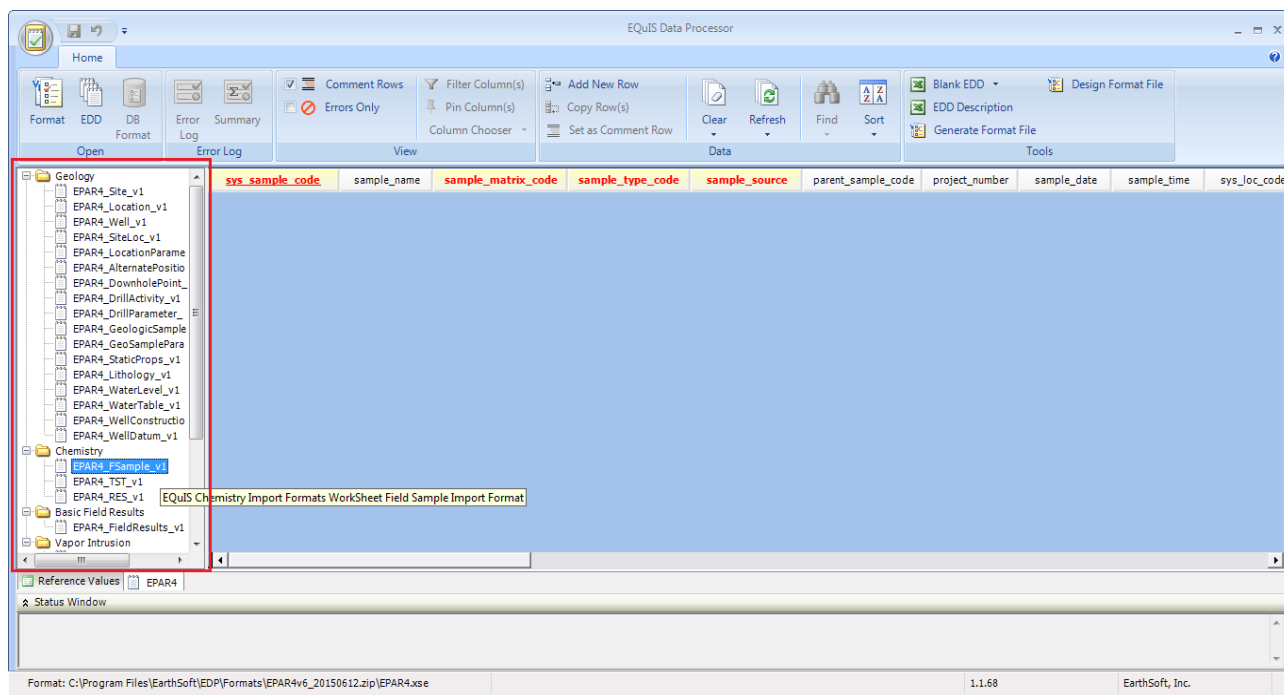
#### 3.1.2 EQuIS EDP Standalone

Start the application by selecting Start > All Programs > EarthSoft > EQuIS EDP Standalone from the Windows ‘Start’ menu.

The EDP will open. If the Region 4 format file does not load automatically, you will need to select it manually. Select ‘Format’ from the upper-left menu. Select the zipped EPAR4 format folder that you copied into the C:\Program Files\EarthSoft\EDP\Formats folder and click the ‘Open’ button. The lower-left displays the elapsed time while the software is loading the format and respective reference values.

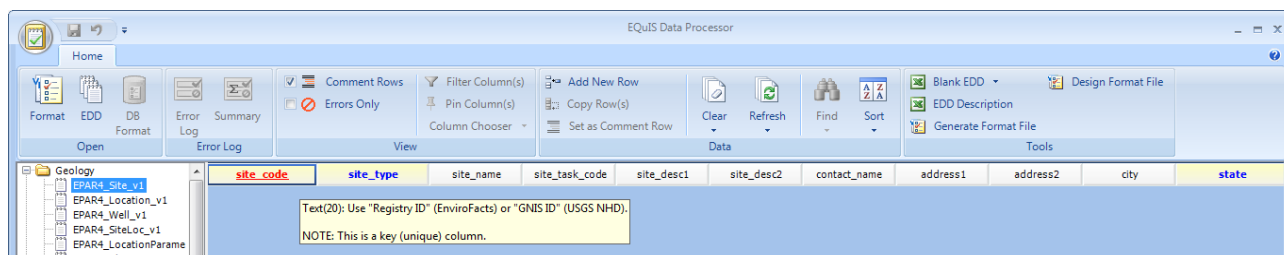
Two tabs are displayed (three tabs are displayed in EQuIS Professional) at the bottom of the screen (as shown below). Select the “Reference Values” tab to view the current valid values that are acceptable in EPA Region 4. Select the “EPAR4” tab to view the current EPA Region 4 EDD format specifications you will use to load and check your data.





The Region 4 EDD sections are displayed along the left side of the window. An empty table with the field names associated with the highlighted section type is displayed along the top.

Each of the EDD sections listed in the EDP corresponds to the EDD files described in the Region 4 Format Guide. In the screen above, the 'EPAR4\_FSsample\_v1' section has been selected and its associated fields are displayed across the top.



Information about each field is provided when the cursor is placed over the column header or field name (as indicated in the above example).

### 3.2 Loading EDD Files

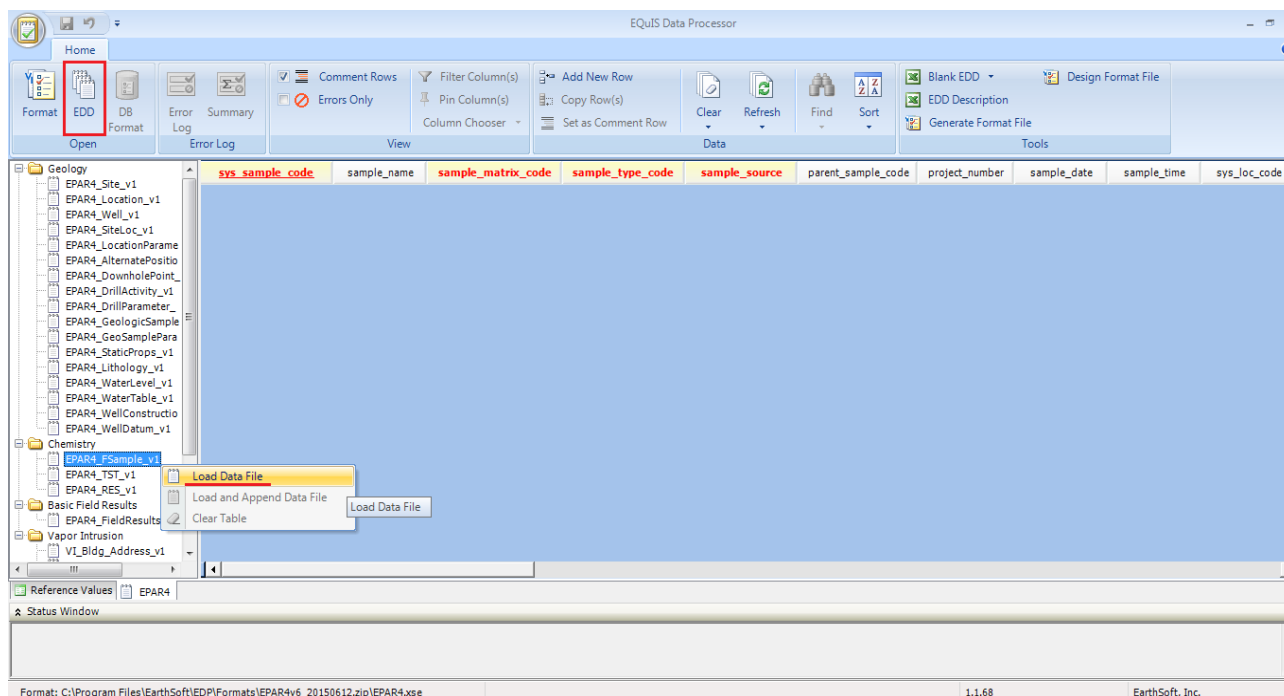
Files are checked either by loading individually created EDD files into EDP, by loading a single Access database created with individual tables named according to the naming conventions, by loading an Excel spreadsheet with tabs named according to the naming conventions, by loading a zip package of individual EDD files or by loading individual related EDDs one at a time into their corresponding positions in EDP.



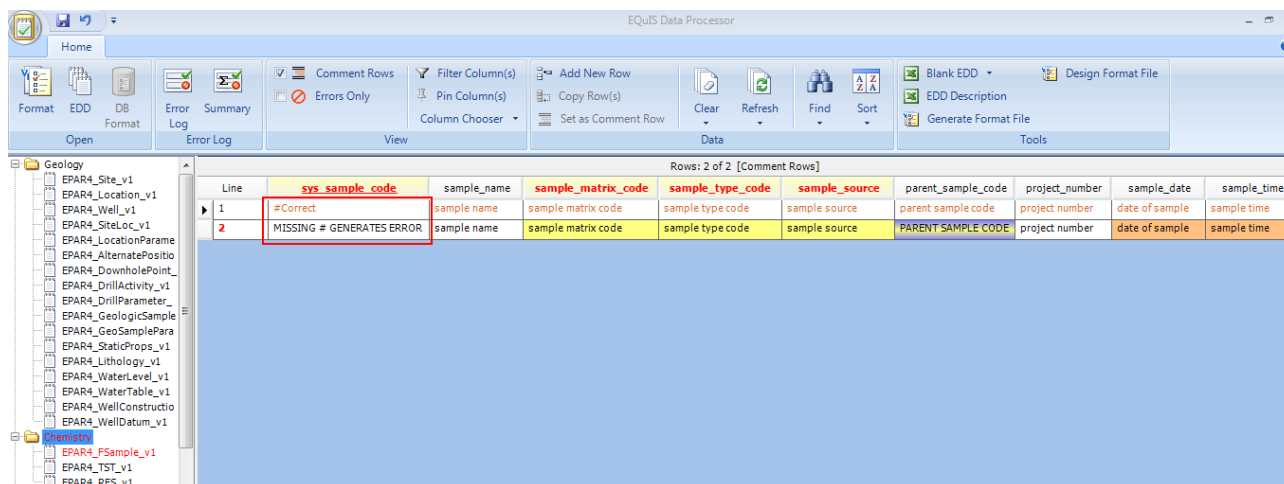
### 3.2.1 Loading a Single EDD File

To load a single EDD file (or multiple separate, but related EDD files one at a time):

First select the format table of the EDD file to be checked from the format list on the left. In the example below, an EPAR4\_FSsample\_v1 file is going to be checked, therefore, the EPAR4\_FSsample\_v1 format has been selected. Next, load the EDD data file by clicking the EDD icon located in the top menu bar or right-click on the format table and select 'Load Data File'.



Use the Browse window to locate the EDD file and select 'Open'. The data file will load to the EDP and be checked during loading. This may take a few minutes depending on the size of the dataset. Data will be displayed in the table and any detected errors will be shaded. **Note:** If the data file contains header rows, EDP will identify fields in the header rows as errors, unless each header row is preceded by the default pound-sign character (#) in the first column.



### 3.2.2 Loading Multiple Tables within a Single EDD

To load a single EDD file containing multiple format tables:

Click the EDD button from the menu bar, use the browsing window to locate the EDD file, and select ‘Open’. The EDP will then load the constituent parts of the EDD into the appropriate tables and display any errors. **Note:** This method may take several minutes.

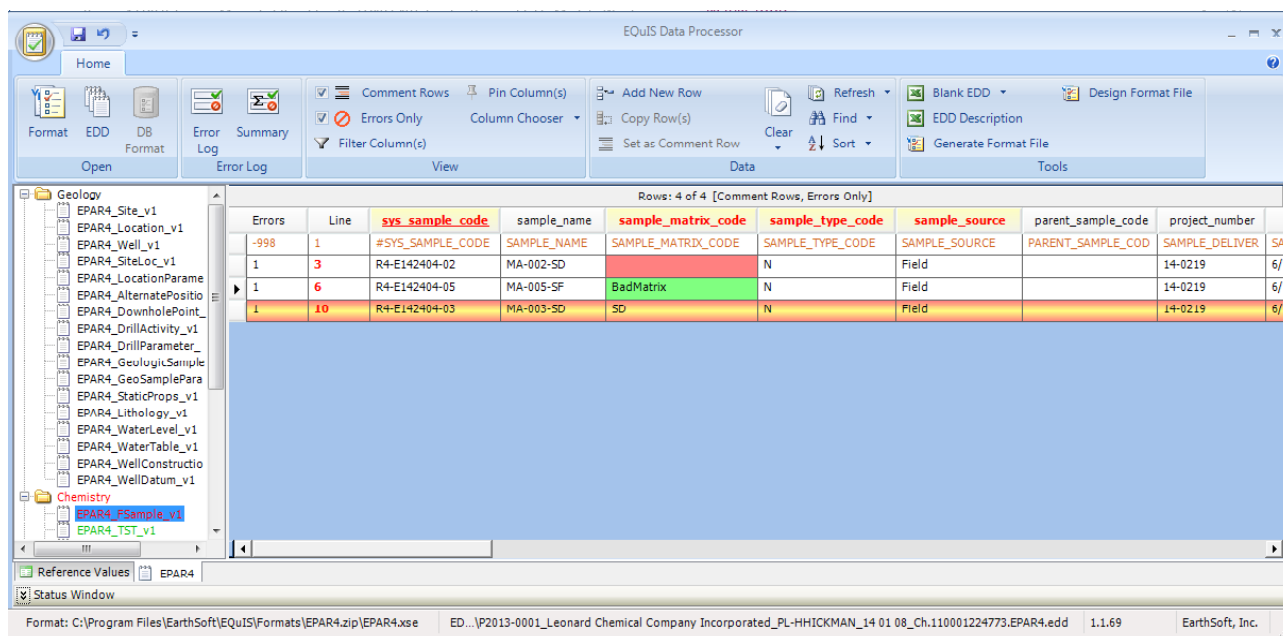
### 3.2.3 Managing Error Display

In the screen below, rows 3, 6, and 10 have errors. Each type of error is shaded differently. Place the cursor over an error to show a description for the type of error. To update the header rows if they appear with errors, highlight the header rows by clicking to the left of the row, and then select the “Set as Comment Row” button from the top menu.

The screenshot shows the EQuIS Data Processor software interface. The top menu bar includes options like Home, Format, EDD, DB, Error Log, Summary, View, Data, and Tools. The main window displays a table with 10 rows. The first row is a header row. The second row is a comment row. The third row is highlighted in red, indicating an error. The fourth row is highlighted in green, indicating an error. The fifth row is highlighted in yellow, indicating an error. The sixth row is highlighted in blue, indicating an error. The seventh row is highlighted in green, indicating an error. The eighth row is highlighted in yellow, indicating an error. The ninth row is highlighted in yellow, indicating an error. The tenth row is highlighted in yellow, indicating an error. The status bar at the bottom shows the file path and version information.

Errors	Line	sys_sample_code	sample_name	sample_matrix_code	sample_type_code	sample_source	parent_sample_code	project_number
-999	1	#SYS_SAMPLE_CODE	SAMPLE_NAME	SAMPLE_MATRIX_CODE	SAMPLE_TYPE_CODE	SAMPLE_SOURCE	PARENT_SAMPLE_COD	SAMPLE_DELIVER
0	2	R4-E142404-01	MA-001-SD	SD	N	Field		14-0219
1	3	R4-E142404-02	MA-002-SD		N	Field		14-0219
0	4	R4-E142404-03	MA-003-SD	SD	N	Field		14-0219
0	5	R4-E142404-04	MA-004-SD	SD	N	Field		14-0219
1	6	R4-E142404-05	MA-005-SF	BadMatrix	N	Field		14-0219
0	7	R4-E142404-06	MA-006-SF	SF	N	Field		14-0219
0	8	R4-E142404-07	MA-007-SF	SF	N	Field		14-0219
0	9	R4-E142404-08	MA-008-SF	SF	N	Field		14-0219
1	10	R4-E142404-03	MA-003-SD	SD	N	Field		14-0219

To view only the rows with errors, check the box next to ‘Errors Only’ located in the top menu bar (as indicated in the example below). To restore all the rows, uncheck the ‘Errors Only’ box. **Note:** it may take a few minutes to restore all the rows.



Be aware that EDDs may contain thousands of records and that large EDDs that contain an exorbitant number of errors may cause EDP to appear as not responding when switching from “Errors Only” to viewing all data.

To clear the data from EDP, select the ‘Clear’ drop-down button from the top menu, then select “Clear EDD”. The EDD file will be cleared from the EDP viewer. **Note:** Clearing the data from the EDP will not delete the EDP file; it only removes the file from the viewer.

### 3.3 EDD Data File Checks

EDP has the ability to check for errors both within a single EDD and between related EDD files.

Along with EPA Region 4 business rule verifications, the EDP checks data for the following potential issues:

- Reference Values
- Field Lengths
- Required Fields
- Data Types
- Valid Dates
- Duplicate Rows
- Parent-Child Relationships

These errors are outlined in detail below.

### 3.3.1 Reference Value Not Found

code	activity_code	collection_quarter
e	task_desc	collection_quarter
	BV-HIST	
	BV-HIST	
	BV-HIST	
	BV-HIST	Reference value not found

The value in the field does not match the values listed in the reference file downloaded from EPA. If the value is correct and after careful consideration and research of the value to ensure it does not exist in a different format (many analytical methods may be written in similar ways but reference the same method, etc., and analytes may potentially have many

synonyms), follow the guidelines in Section 2.6 of the Region 4 Format Guide to request that the value be added to the EPA Region 4 valid value tables. Send that request along with the necessary accompanying information to R4DART@epa.gov. The DART Coordinator will review the request and forward it, if appropriate, to the correct administrator for review and inclusion in the system.

Do NOT submit your data until the request has been approved and you are notified that the values were added. Doing so may cause your data to be rejected for failing to pass EDP. If a new EPAR4.rvf file is not provided, check the website for and download the new one when available. Replace the old EPAR4.rvf with the updated file and recheck your EDD before submitting to R4DART.

### 3.3.2 Value Exceeds Field Length

sys_sample_code	sample_name	sample_matrix_code
TOP_OF_WELL_48 ON THEBACK OF THE BARN ON THE SOUTH SIDE		
EFF 4Q01	EFF	GW
FD_1Q01	FD	GW

The number of characters of the value entered in the field exceeds the maximum allowed number of characters. Place your cursor over the column header to view the description of the field that will

include the field length. For further detail of each field, see Section 3 of the Region 4 Format Guide.

### 3.3.3 Missing Required Field

sample_matrix_code	sample_
GW	N
	N
GW	N
GW	N
GW	N

The field *must* be populated with a value. The field cannot be left null (i.e., blank). See Section 3 of the Region 4 Format Guide for information on required fields.

Note that the field name at the top of the column is written in red. This indicates that the field is required and that the EDD will not pass EDP unless all values in this column are populated correctly.

Placing your cursor over the column header will also bring up the description that includes the line: "NOTE: This is a required field."

A common problem arises with the CAS RN field during the conversion process from one type of file, such as Comma Separated to another, such as Excel. In this process, any CAS RN that may appear as a date may be converted to a date. An example is the CAS RN for Potassium: 7440-09-7 will be converted to 9/7/7440.

### 3.3.4 Invalid Data Type

5/29/2009	19:47:00
27005	18:56:00
5/29/2009	18:25:00
2/13/200	Invalid data type 00
2/13/2007	15:00:00

The value is not the appropriate data type. Each field has a specific data type that must be used, such as text, date/time, or numeric. If the appropriate data type for a field is Date/Time, then the value must be a valid date format such as the MM/DD/YYYY HH:MM format. See the Data Type description in Section 3 Region 4 Format Guide for the appropriate data type.

Another common problem arises with Date/Time fields during the conversion process from one type of file. In this process, Date/Time fields may be incorrectly converted to an integer Julian date. Be sure to check your Date fields to make sure they are appropriately classified to avoid errors.

### 3.3.5 Duplicate Row

data_provider	sys_loc_code	x_coord
PL-CONT_BV	001	-85.404687
PL-CONT_BV	006	-85.403886
PL-CONT_BV	006	-85.404687
PL-CONT_BV	008	-85.404527
PL-CONT_BV	013	-85.403727

Two or more records have the same values in the primary key fields. The primary key fields are the fields that make each record in the file unique. No two records can have the same values in the primary keys. For example, the EPAR4\_Location\_v1 file has the sys\_loc\_code field as the primary keys. Two records that both have 006 in the sys\_loc\_code fields would be

considered duplicate records. To make each record unique, one record would have to be changed so that the sys\_loc\_code was something other than 006.

Laboratories frequently report data from the same event in multiple packages, sometimes creating duplications of sample records. In these cases, if all data is processed through EDP at the same time, duplicate records will appear in the EPAR4\_FSample\_v1 EDD. These duplicate records will need to be deleted prior to submitting the data to EPA Region 4. Data will not pass the EDP checker with duplicate rows.

Refer to Section 2.4 of the Region 4 Format Guide for further discussion of data integrity and duplicate records.



### 3.3.6 Orphan Row

Line	sys_sample_code	lab_a
4	CFDPT-9202_052609	VOA:EP
5	GWSMP-006	VOA:CL
6	CFDPT-202_052609	VOA:EP
7	CFDPT-201_052609	VOA:EP

The record is missing a required parent record. Records that depend on information (i.e., child records) from another record (i.e., parent record) must reference the parent record accurately and the parent record must exist in the corresponding file.

For example, each row in the EPAR4\_TST\_v1 table must include a sys\_sample\_code that corresponds to a sys\_sample\_code reported in the EPAR4\_FSample\_v1 table. If a record in the EPAR4\_TST\_v1 table has a sys\_sample\_code of GWSMP-006 then a record must also be included in the EPAR4\_FSample\_v1 table with a sys\_sample\_code of GWSMP-006. If a record in the EPAR4\_TST\_v1 table has a sys\_sample\_code that is *not* included in the EPAR4\_FSample\_v1 table, an “Orphan Row” error will be identified.

Likewise, each row in the EPAR4\_RES\_v1 table must have a matching “parent” row in the EPAR4\_TST\_v1 table. There are six (6) fields that establish the relationship between the results and test records, and they are: sys\_sample\_code, lab\_anl\_method\_name, analysis\_date, analysis\_time, total\_or\_dissolved, and test\_type. See Table 2-2 and Section 2.4 of the Region 4 Format Guide for further discussion of child/parent records.

### 3.3.7 Result\_value is Required When detect\_flag = Y

reportable_result	detect_flag	lab_qualifiers	validat
Yes	Y	R	R
Yes	Y		X
Yes	N		X
Yes	N		X

Identifies records that have the detect\_flag (EPAR4\_RES\_v1) value of ‘Y’ yet there is no value reported in the result\_value field. This error applies only to records of target analytes (TRG) and tentatively

identified compounds (TIC). If a record has a value of “TRG” or “TIC” in the result\_type\_code (EPAR4\_RES\_v1) and the detect\_flag has a value of ‘Y’, the result\_value field must be populated with the numeric result value (i.e., it cannot be left blank).

### 3.3.8 Quantitation\_limit Cannot be Null when detect\_flag = N

reportable_result	detect_flag	lab_qualifiers	validator_qualifiers
Yes	Y		X
Yes	N		X
Yes	N		X
Yes	N		X

Identifies records with a detect\_flag (EPAR4\_RES\_v1) value of ‘N’ and the quantitation\_limit field is null. All records that have

a value of ‘N’ in the detect\_flag field must have the quantitation\_limit field populated with the appropriate detection limit value (i.e. it cannot be left null).

### 3.3.9 Parent\_sample\_code is Required Where sample\_type\_code = FD

sample_type_code	sample_source	parent_sample_code	project_number	sample_date	sample_
SAMPLE_TYPE_CODE	SAMPLE_SOURCE	PARENT_SAMPLE_COD	SAMPLE_DELIVER	SAMPLE_DATE	SAMPLE_T
FD	Field		14-0219	6/10/2014	12:03:00
N	Field		14-0219	6/10/2014	11:41:00
N	Field		Parent_sample_code is required where sample_type_code= FD		

Identifies records that have a sample\_type\_code (EPAR4\_FSample\_v1) of “FD” but are missing the appropriate parent\_sample\_code. The above sample\_type\_codes signify duplicates, and the sample identifier (i.e., sys\_sample\_code) of the original sample from which the duplicate was derived must be populated in the parent\_sample\_code field. The parent\_sample\_code value must match the sys\_sample\_code of the original sample and the original sample must also be reported as a separate record in the EPAR4\_FSample\_v1 file (i.e., there should be a record for the original sample and a separate record for the duplicate sample).

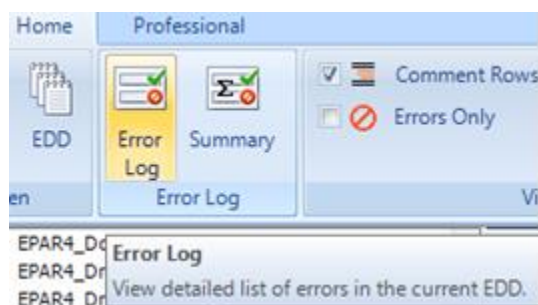
### 3.3.10 Sys\_loc\_code is required when sample\_type\_code = N

sys_loc_code	start_depth	end_depth
MW04		
MW24		
Sys_loc_code is required where sample_type_code=N. (21)		
MW30		

A location identifier (i.e., sys\_loc\_code) must be provided for all samples that are normal environmental samples. Therefore, all records in the EPAR4\_FSample\_v1 file that have a sample\_type\_code of ‘N’ must also have the sys\_loc\_code field populated (i.e., this field cannot be left blank).

A matching sys\_loc\_code with coordinates in the WGS84 (Longitude/Latitude) system must exist in the database or submitted within the EDD package with the corresponding samples. Data Providers using the Scribe software are required to populate #R4DART# for the station name of various field QC type samples. Before submitting the EDD to R4DART you must remove this placeholder from your data.

## 3.4 Error Logs



EDP produces an error log that can be saved as an HTML formatted file. In the top menu, select ‘Error Log’ to view and save the error details or ‘Summary’ to view and save a summary of the errors (as indicated by the example below). Use the Browse window to locate the desired location and select ‘Save’. The error log will then be saved in the selected folder.

Table	# of Rows	Column	Value	Message	Type
EPAR4_FSample_v1	1	sample_matrix_code	[NULL]	Missing required field	ERROR
EPAR4_FSample_v1	1	sys_loc_code	[NULL]	Sys_loc_code is required where sample_type_code='N'.	ERROR
EPAR4_FSample_v1	1	sample_matrix_code	BadMatrix	Reference value not found	ERROR
EPAR4_FSample_v1	1	parent_sample_code	[NULL]	Parent_sample_code is required where sample_type_code= FD	ERROR
EPAR4_FSample_v1	1	~	~	Duplicate row	ERROR
EPAR4_TST_v1	1	sys_sample_code	R4-E142404-01ORPAN	Orphan row	ERROR
EPAR4_RES_v1	1	detect_flag	Y	Result_value is required where detect_flag='Y' and result_type_code='TRG', 'TIC' and CAS_RN <> 'R4-6500'.	ERROR
EPAR4_RES_v1	20	sys_sample_code	R4-E142404-01	Orphan row	ERROR
EPAR4_RES_v1	20	lab_anl_method_name	OCP:EPA 8081	Orphan row	ERROR
EPAR4_RES_v1	20	analysis_date	7/3/2014	Orphan row	ERROR
EPAR4_RES_v1	20	analysis_time	04:10:00	Orphan row	ERROR
EPAR4_RES_v1	20	total_or_dissolved	N	Orphan row	ERROR
EPAR4_RES_v1	20	test_type	NA	Orphan row	ERROR

### 3.5 Correcting Errors

As stated above, the data are being checked for errors by the EDP as the EDD files are loading. The fields with errors will be shaded different colors depending on the type of error and show a description when you place your cursor over the field. Select the detail Error Log to obtain a list of the table, field and row for each error within the EDD. The types of errors being checked for by the EDP are described in section above.

In the example below, the sample\_matrix\_code value in line 12 is not a valid value.

Rows: 648 of 648 [Comment]					
Line	sys_sample_code	sample_name	sample_matrix_code	sample_type_code	
7	RW04_4Q01	RW04	GW	N	
8	RW11_4Q01	RW11	GW	N	
9	CFMW03_3Q02	CFMW03	GW	N	
10	CFMW17_3Q02	CFMW17	GW	N	
11	CFMW20_3Q02	CFMW20	GW	N	
12	CFMW23_3Q02	CFMW23	WG	N	
13	CFMW31_3Q02	CFMW31	GW	N	
14	CFMW33_3Q02	CFMW33	GW	N	
15	CFMW34_3Q02	CFMW34	GW	N	
16	CFEW01_3Q02	CFEW01	IW	N	

Two methods can be used to correct this valid value error:

1. Exit the EDP and then open the EDD file using a text editor or spreadsheet application, correct the error, resave the file, and then re-load the EDD back into the EDP to ensure no further errors.



2. To correct errors directly within EDP, click in the error field and type the correct value. If the field is restricted to a list of valid values, the values will be provided from a drop-down list by clicking on the down arrow located on the left side of the field. Once the error is corrected and the cursor is moved out of the field (i.e., user clicks on another field), the shading signifying an error will disappear. It may be necessary to highlight the row by clicking on the tab at the far right of the row and then selecting Refresh>Selected Rows from the menu at the top center of EDP. This will “reload” the checker for just that row with the new data entered. You may also refresh the entire table. For large data sets, refreshing the entire table may take a long time and may cause EDP to appear as not responding while it processes.

**Note:** If data providers believe that a new reference value is required, they should follow the process described in the Section 3.3.1 of this to request that the value be added.

### 3.6 Using Find and Replace

The “Find and Replace” function allows users to search the file for a specified value and then replace it with another value. This function is useful when there are a number of similar values that need to be changed.

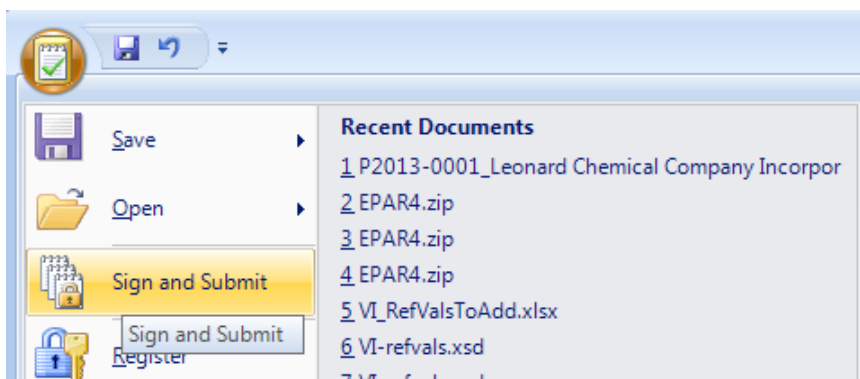
The “Find and Replace” function is activated by highlighting a column (or leaving everything as is to search the entire EDD) then clicking the binoculars icon located in the Data menu. The “Find and Replace” dialog will appear. Type the value to be replaced in the “Find what” field and the new value in the “Replace with” field. Select “Find” to view fields with the value and “Replace” to replace the original value with the new value.

### 3.7 Saving Changes to the EDD File

To save the changes made to the EDD data file, click the main application menu denoted as a checked notepad icon located in the upper-left corner of the EDP and then select Save>EDD. Use the Browse window to locate the folder where the EDD file is to be saved and click ‘Save’. Any changes made to the EDD will now be saved.

**Note:** When saving as an individual file type such as .csv or .txt, only the individual EDD table selected in the left-hand format list will be saved. To save all of the EDD tables to one package, change the “Save as Type” to one of the selections that will allow for multiple tables such as an Excel workbook, Zipped EDD file, or Access database.

### 3.8 Sign and Submit



The “Sign and Submit” function of the EDP allows all files within an EDD to be compiled into the final Data Package which is subsequently

submitted to EPA Region 4. During the “Sign and Submit” process, the EDP will export and name all loaded tables according to EDP’s required file naming conventions before compressing them into a single .zip file. Also included in the .zip file is the Data Provider’s .usr file referred to as the user certificate.

The user certificate is created automatically using the User Name and Password as entered into the Sign and Submit form. Your user name and password *must* match *exactly* the user name and password assigned by the R4DART coordinator for each Data Provider.

You should also have been notified of the Facility code for the site you are preparing the EDD submittal. Enter the Facility code into the Facility window.

If you have not been assigned this information or received the proper facility code, contact the R4DART coordinator before completing this process to submit your data.

Data Providers need to update the File name of the Data Package being created to use the EPA Region 4 required EDD file naming convention. After entering the correct authentication information, click the “Save” button. Select the folder location where you would like the file to be saved. Using the drop-down menu, change the “Save as type:” to “EDD (\*.edd)”. Update the prefix of the file name from the date/time stamp to include the following pieces of information:

- Task Code
- Site Name
- Company Code
- Date Submitting (YY MM DD)
- Type(Loc-Location/Ch-Chemistry/FR-FieldResults/WL-WaterLevel)

And finally click the ‘Save’ button. Please note, the Submit option with the Submit url are not used by EPA Region 4 at this time.

The EPA electronic mail system will reject files with a .zip format due to security concerns. Files must be submitted with the “.edd” extension.

An example:

P2015-0001\_ChemicalCompanyABC\_PL-DataProvider\_15 01 08\_Ch.110001224773.EPAR4.edd

- Task Code is P2015-001 (PRP use PYYYYY-nnnn as provided by R4DART; Fund-lead use YY-nnnn as provided by EPA work order),

- Site Name is Chemical Company ABC,
- Company Code is PL-DataProvider,
- Date Submitting is January 8<sup>th</sup>, 2015 as 150108,
- Type of data submission is Ch for Chemistry,
- Facility Code is 110001224773, and the
- Format used is EPAR4

## 4.0 Submitting and Resubmitting the EDD Data Package

After the EDD files have been checked by the EDP and the “Sign and Submit” process has been completed, the Data Package is ready for submittal to EPA Region 4. Data packages are submitted by attaching the .edd file to the original E-mail requesting the data and forwarding the E-mail to [R4DART@epa.gov](mailto:R4DART@epa.gov). This may either be the Project Log Summary report email or the Request for Data Submittal Summary template email. If the file is named improperly or not attached to the requesting email, it will be returned to the data provider.

Some causes of common data rejections may be resultant when Location EDDs are not submitted prior to submitting environmental chemistry or geology EDDs when the station locations do not already exist in the EPA Region 4 database, or if depths are missing for soil and sediment sample types and the Scribe COC xml file was not sent to R4DART. Another type of request for additional data from your RPM may be due to Water Level EDDs submitted when there is no corresponding Well Datum information to calculate the water level elevations. The Well Datum EDD is required when submitting water levels for the first time as well as any time a well is modified.

Fund lead projects begin with an automated email being sent to the project leads for projects scheduled through R4LIMS. For these type of projects, there will be a list of existing station IDs and their related coordinates sent to you as they exist for the site in the EPA Region 4 EQuIS database.

If you receive an error log with information that your EDD submission was rejected and need to send a corrected EDD, you are to use the initial file name with simply a revision character within the first portion of the file name sections. Acceptable examples of second and third submissions necessary due to errors in the EDD for the same data include:

Initial submitted file:

P2015-0001\_ChemicalCompanyABC\_PL-DataProvider\_150108\_Ch.110001224773.EPAR4.edd

Second submitted file of the corrected initial submission:

P2015-0001\_ChemicalCompanyABC\_PL-DataProvider\_150108\_Ch**A**.110001224773.EPAR4.edd

Third submitted file if the second is also rejected:

P2015-0001\_ChemicalCompanyABC\_PL-DataProvider\_150108\_Ch**B**.110001224773.EPAR4.edd

## 5.0 Updating the Reference Value File

Periodically, EPA Region 4 will post an updated reference value file (.rvf) on the EPA Region 4 website located at:

<http://www2.epa.gov/superfund/region-4-superfund-electronic-data-submission>.

The file will also be mirrored on the EarthSoft website located at:

<http://www.earthsoft.com/products/edp/edp-format-for-epar4/>

Follow the steps below to update the reference values in the EDP application:

1. Download the most recent reference value file from EPA Region 4 or the EarthSoft website.
2. Create a backup of your existing EPAR4 format files.
3. Replace the existing reference value file EPAR4.rvf, with the recent downloaded file.
  - a) If you maintain the format within a .zip, update the .zip file by coping the EPAR4.rvf into the zip replacing the existing file.
  - b) If you extracted the files to a folder, replace the EPAR4.rvf within the folder.
4. The next time EDP is started, the new reference values will be loaded.

## 6.0 Updating the Format File

When EPA Region 4 makes changes to their EDD format, the EDP application will need to be updated with a new format file. Follow the steps below to update the format file in the EDP application:

1. Download the most recent format file from the EPA Region 4 EarthSoft download website:  
<http://www.earthsoft.com/products/edp/edp-format-for-epar4/>
  - a. Be sure to verify the .net version when retrieving a major update.
  - b. An older format file is available for users unable to update their Window's version.
2. Create a backup of your existing EPAR4 format files.
3. Replace the existing EPAR4 format file(s)
  - a. If you maintain the format within a .zip, replace the .zip file.
  - b. If you extracted the files to a folder, extract and replace all of the files into the folder.
4. The next time EDP is started, the new format files will be loaded.

**Note:** EPA Region 4 does not expect to make changes very often; however, if changes are made, R4DART will provide notification of the format changes via E-mail to all data providers at the E-mail address you submitted when beginning EQuIS database work on the site.