



EQuIS Data Processor Reference Manual

Version 1.0

EPA Region 4

Prepared By:



BLACK & VEATCH
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ENERGY WATER INFORMATION GOVERNMENT

**for
Region 4 Superfund Division
Environmental Protection Agency**

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Acronyms

CAS RN – Chemical Abstracts Service Registry Number
DART – Data Archival and ReTrieval
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

Definitions

Darter - Darter is a set of software utilities written by EPA that assist in moving data from other platforms such as FORMS, Niton, YSI and Scribe to the Region 4 EDD format.

Data Provider – It is important to distinguish between “Data Provider” and “Sample Provider” with regard to EDD submittals. The data provider is 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 sample provider, particularly when working with historic data. In the EPA Region 4 EDD, this information is provided under “data_provider.”

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 one to 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 | #sys_loc_code | x_coord | y_coord | coord_type_code |
| Header Row 2 | <i>text (20)</i> | <i>numeric</i> | <i>numeric</i> | <i>text (20)</i> |
| Data Row 1 | MW14 | -81.26551 | 38.80360 | LAT LONG |
| Data Row 2 | MW15 | -81.60310 | 38.12871 | LAT LONG |

Scribe - Scribe is a software tool developed by EPA to assist in the process of managing environmental data. Scribe captures sampling, observational, and monitoring field data. Scribe can import electronic data deliverables (EDD) from analytical laboratories, location data from a global positioning system (GPS), or data generated using real-time analytical methods. An associated program called “Scriblets” is used to capture and import sampling and monitoring data collected on handheld portable data assistants (PDA).

Sample Provider – The Sample Provider refers to the agency or company actually responsible for the data received from a sampling event. In the case where subcontracting companies are hired by a

contractor under an EPA contract, the agency that has the contract with EPA, i.e., “the contractor” is the Sample Provider. This field is populated in the EPA Region 4 EDD under “sample_provider.”

.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 web site 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, such as WinZip, BOMArchiveHelper, KGB Archiver, PicoZip, Info-ZIP, WinRAR, IZArc, 7-Zip, ALZip, TUGZip, PeaZip, Universal Extractor, and Zip Genius. Microsoft has included built-in ZIP support (under the name "compressed folders") in later versions of its Windows operating system. Apple has included built-in ZIP support in Mac OS X 10.3 and later via the BOMArchiveHelper utility. The zip, zipcloak, zipnote, and zipsplit tools are used widely in unix-like systems.

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 “.zpp” or in the case of signed and sealed compressed EDD files “.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 of the Region 4 EDD specifications 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 web site at www.earthsoft.com.

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 data base. 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 EDD Reference 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” and E-mailed to the Region 4 DART Coordinator at r4dartcoordinator@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.

2.1 Downloading the EDP

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

| EDP Format for EPAR4 | | | | |
|--|----------|--------|------|------------|
| EQuIS Data Processor (EDP) developed for EPA Region 4. | | | | |
| Name | Version | Size | Type | Modified |
| EQuIS Data Processor (EDP) | 5.3.2 | 15 MB | .exe | 2008.03.13 |
| EDP Format File Only | 20080313 | 384 KB | .exe | 2008.03.13 |
| .NET Framework 2.0 Required | | | | |

Download the EQuIS Data Processor. The format file for Region 4 (EPAR4) is also available if you are replacing your current format version but you do not need to download it for initial installation as

it is included in the install package. 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 web site at <http://www.microsoft.com/.NET/> and additional information regarding Microsoft can be found below the installation instructions on the EarthSoft web site.

2.2 Installing the EDP

Open the directory where the EDP installation application was downloaded and double-click the file. 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.

Enter full name and organization and select the desired setting. Click the “Next” button.

Select the destination folder for the application files. Click the “Next” button.

Click the icon next to EPA Region 4 Format Files and select ‘Entire feature will be installed on local hard drive’ and then click the “Next” button.

Click the “Next” button and you will be presented with the Editing and Auditing screen.

Selecting “Yes” will allow you to make edits directly to the data in the EDD file via the EDP. Selecting “No” will not permit any editing to the EDD file via the EDP and all edits to the file must be done directly to the EDD text file after exiting the EDP.

You also have the option of auditing all changes that are made to the data files. A log is created that includes the date and time, the user, the original value, and the new value. If Audit is selected, you will also have to select a directory to which the auditing files will be stored. Once the selection is made, click the “Next” button. It is recommended that you select “Yes” edit EDD files directly in EDP.

Click the “Next” 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.

2.3 Registering the EDP

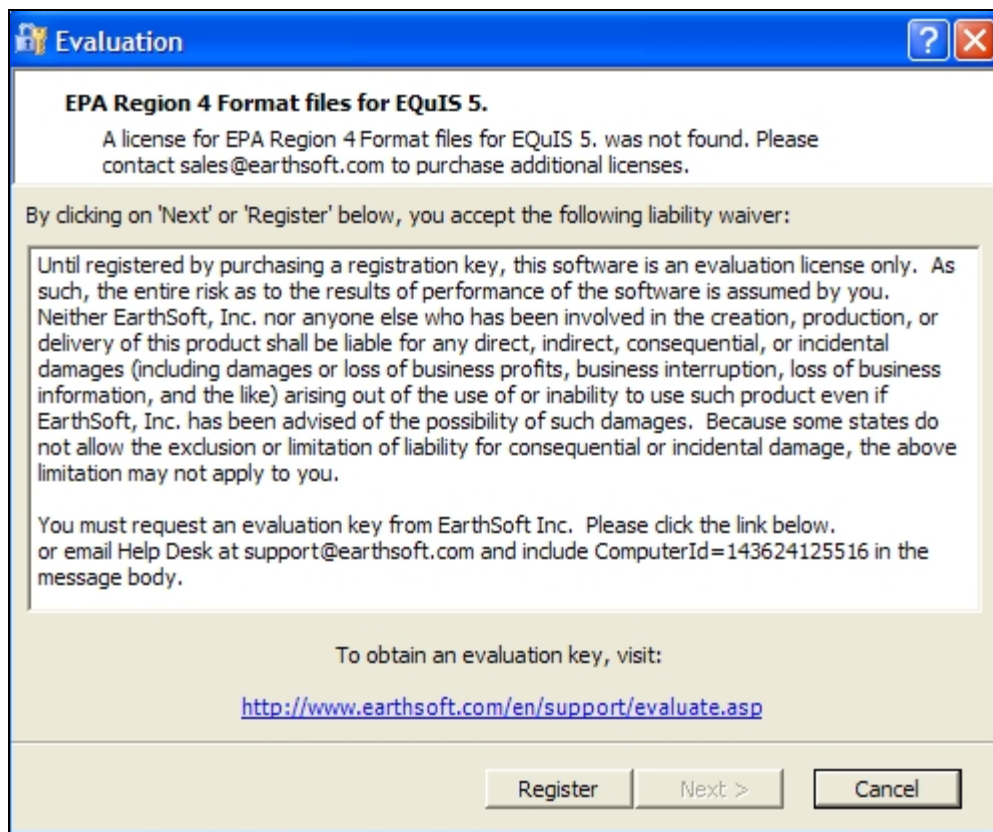
Once installed, the EDP must be registered. You will need to obtain an approval code from the R4 DART Coordinator prior to registering. Please contact the coordinator at r4dartcoordinator@epa.gov to obtain your approval code.

Once you have obtained an approval code, start the EDP application by selecting Start>All Programs>EarthSoft>EQuIS Data Processor.

The EDP application will start and a blank screen appears. Select 'Format' from the upper menu.

Select the 'EPAR4.xse' file from:

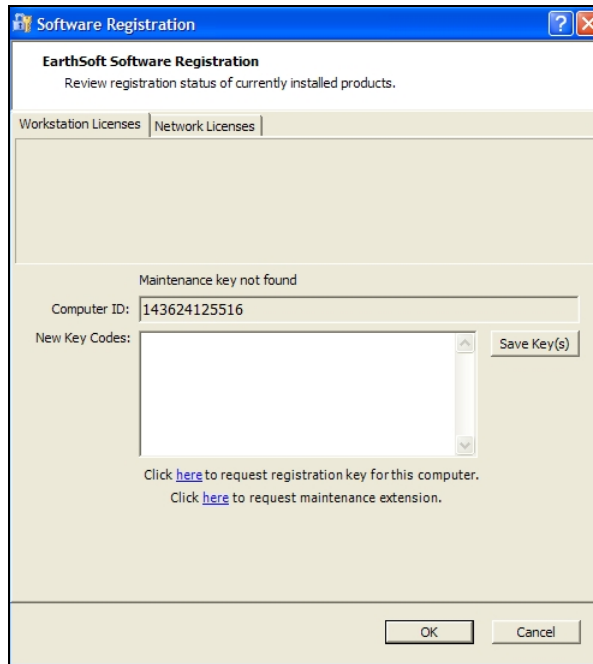
C:\Program Files\EarthSoft\EQuIS\Formats\EPAR4 and click the 'Open' button. The "Evaluation" screen will appear. Click the 'Register' button.



The 'Software Registration' screen will appear. Click the first link to the registration request page.

Enter the requested information in the 'Key Request' form. When all information has been entered, including the required approval code you received from the R4 DART Coordinator, click 'Submit'. After the registration form has been evaluated by Region 4, a registration key will be sent to the e-mail address provided in the registration form. This process may take up to a few days.

Once the registration key has been received, register the EDP by starting the application, Start>All Programs>EarthSoft>EQuIS Data Processor. The screen above appears. Click 'Register' button.



Enter the registration key sent via e-mail in the “New Key Codes” field and click the ‘Save Key(s)’ button. A screen stating that the registration succeeded should appear. The EDP is now registered and ready for use.

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: “Stand-alone” which is available via the download and registration process outlined above and “Professional” which is only available to users who have purchased and licensed EQuIS 5 Professional. Most users following these guidelines will be using the “stand-alone” version.

3.1.1 EQuIS 5 Professional

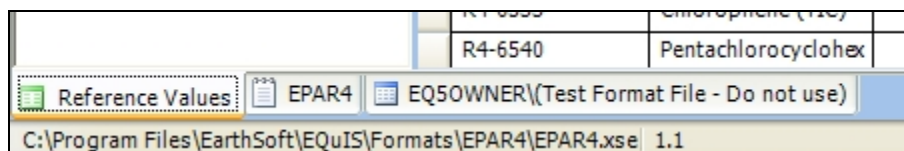
Start the application by selecting Start>All Programs>EarthSoft>EQuIS 5 from the Windows ‘Start’ menu. Select the site you wish to process data for and allow EQuIS 5 to open. Once open, select EDP from the upper left-hand corner. Once open, follow the directions for the “Stand-alone” version.

3.1.2 Stand-alone

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

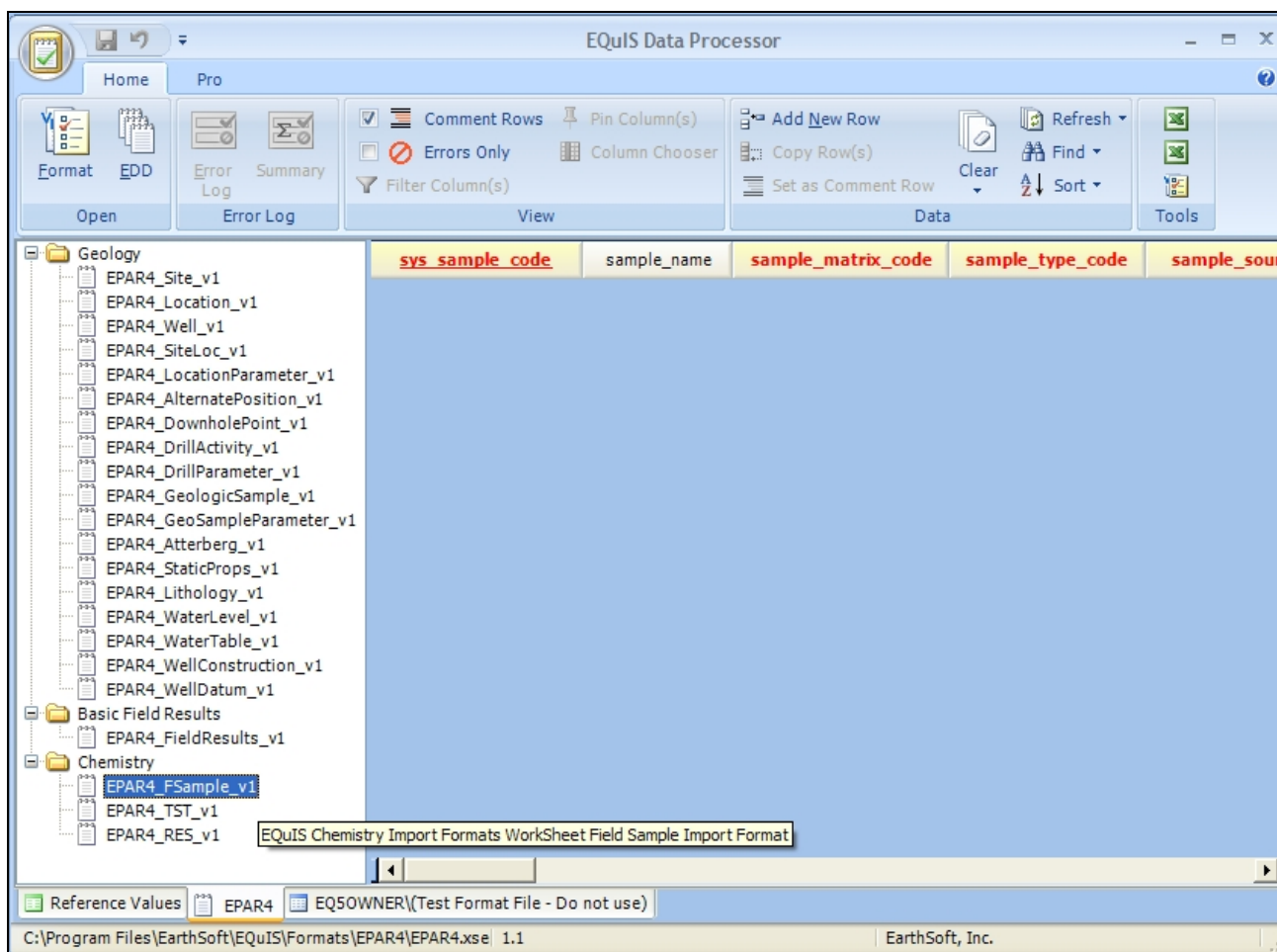
The EDP will open. If the Region 4 format files do not load automatically, you will need to select them as before. Select ‘Format’ from the upper menu. Navigate to the ‘EPAR4.xse’ file found at: C:\Program Files\EarthSoft\EQuIS\Formats\EPAR4 and allow the formats to load.

Two tabs are displayed (three tabs are displayed in EQuIS 5 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 Region 4. Select “EPAR4” to view the current Region 4 EDD formats which may be used to load data. The Region 4 file formats are displayed along the left side of the window.



Select an EDD by clicking on the name along the right side panel. An empty table with the field names associated with the highlighted file type is displayed along the top.

Each of the EDD file types listed in the EDP corresponds to the EDD files described in the Region 4 EDD Reference Guide. In the screen below, the ‘EPAR4_FSAMPLE_v1’ format has been selected and its associated fields are displayed across the top.

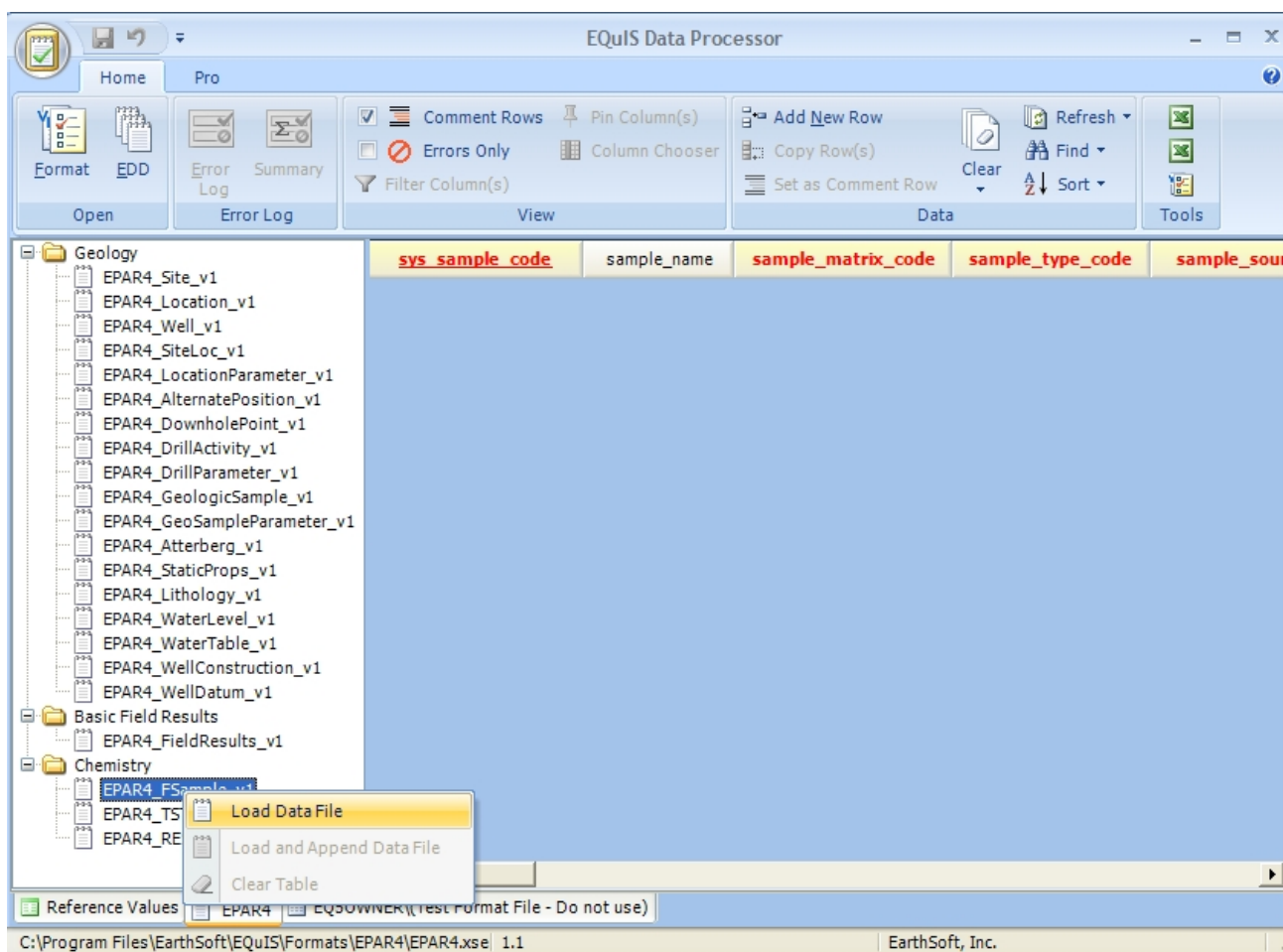


Fields with red text are ‘Required’ fields and cannot be left blank; they **must** be populated with data. Information about each field is provided when the cursor is placed over the field name (As indicated in the above example).

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, or by loading individual related EDDs one at a time into their corresponding positions in EDP.

To load a single EDD file (or multiple separate but related EDD files one at a time), first select the format type of the EDD file to be checked from the format list at the left. In the example below, an EPAR4_FSAMPLE_v1 file is going to be checked, therefore, the EPAR4_FSAMPLE_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 type and select ‘Load Data File’ (as indicated in the example below).



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. 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 a pound-sign character (#).

To load a single EDD file containing multiple format sections, 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 locations and display any errors. Note: This method may take several minutes.

In the screen below, rows 4, 7, and 11 have errors. Each type of error is shaded differently. Place the cursor over the error to show the type of error. To hide header rows which appear as errors, highlight the header rows, select “Set as Comment Row” from the top menu, and then uncheck “Comment Rows” also located in the top menu (Arrow 3). To unhide the header row, re-check the “Comment Rows” box. It is helpful to have the comment rows visible to ensure columns from your EDD are in the right position. Incorrect column position is a common cause of EDD failure.

EquiS Data Processor

Home Pro

Format EDD Error Log Summary

Open Error Log

Comment Rows Pin Column(s) Add New Row

Errors Only Column Chooser Copy Row(s)

Filter Column(s) Set as Comment Row Clear Find Sort

View Data Tools

Geology

- EPAR4_Site_v1
- EPAR4_Location_v1
- EPAR4_Well_v1
- EPAR4_SiteLoc_v1
- EPAR4_LocationParameter_v1
- EPAR4_AlternatePosition_v1
- EPAR4_DownholePoint_v1
- EPAR4_DrillActivity_v1
- EPAR4_DrillParameter_v1
- EPAR4_GeologicSample_v1
- EPAR4_GeoSampleParameter_v1
- EPAR4_Atterberg_v1
- EPAR4_StaticProps_v1
- EPAR4_Lithology_v1
- EPAR4_WaterLevel_v1
- EPAR4_WaterTable_v1
- EPAR4_WellConstruction_v1
- EPAR4_WellDatum_v1

Basic Field Results

- EPAR4_FieldResults_v1

Chemistry

- EPAR4_FSAMPLE_v1
- EPAR4_TST_v1
- EPAR4_RES_v1

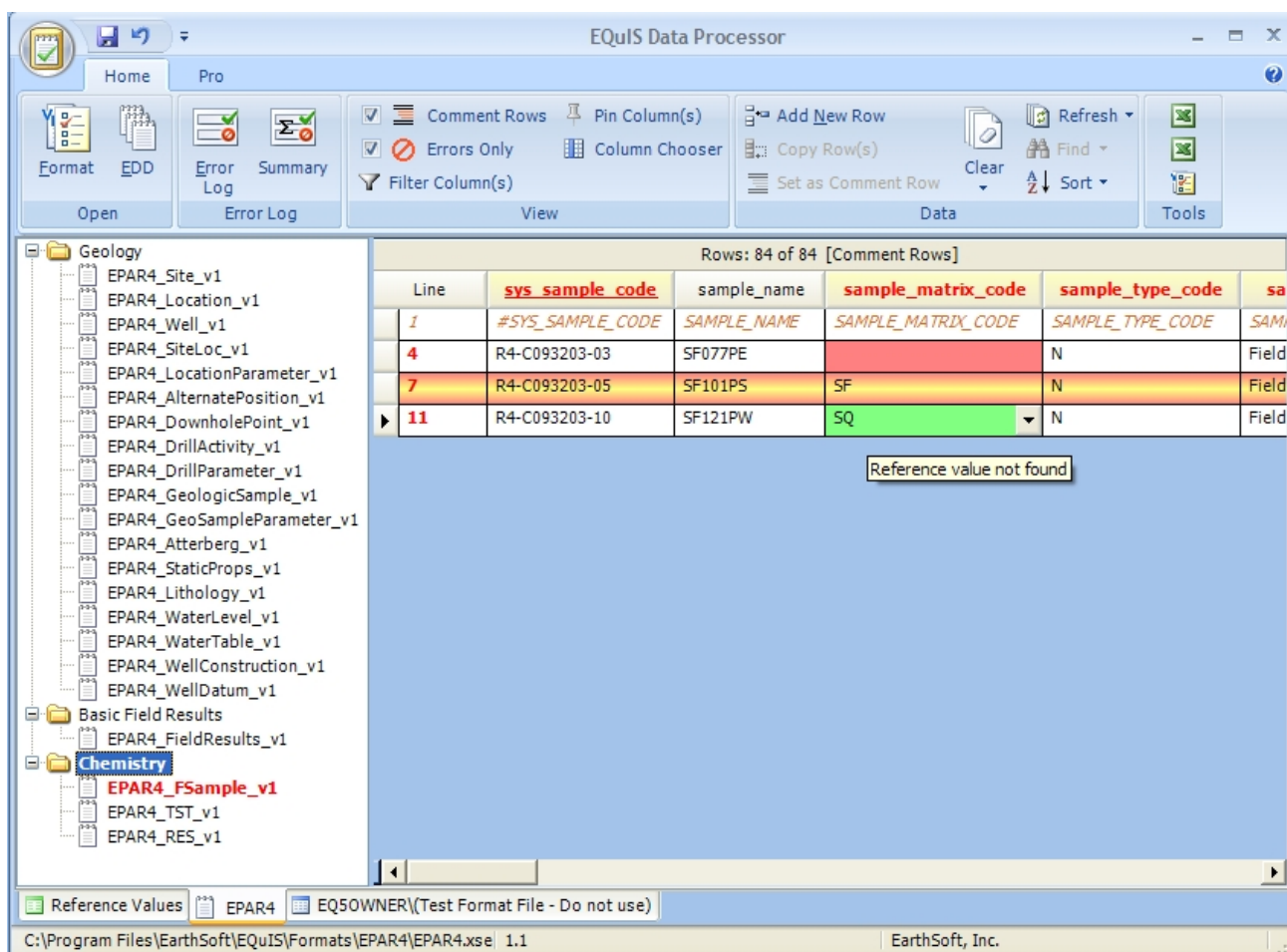
Rows: 84 of 84 [Comment Rows]

| Line | sys_sample_code | sample_name | sample_matrix_code | sample_type_code | |
|------|------------------|-------------|--------------------|------------------|----|
| 1 | #SYS_SAMPLE_CODE | SAMPLE_NAME | SAMPLE_MATRIX_CODE | SAMPLE_TYPE_CODE | S |
| 2 | R4-C093203-01 | SF051PN | SF | N | Fi |
| 3 | R4-C093203-02 | SF064PW | SF | N | Fi |
| 4 | R4-C093203-03 | SF077PE | | N | Fi |
| 5 | R4-C093203-04 | SF077PW | SF | N | Fi |
| 6 | R4-C093203-05 | SF094PE | SF | N | Fi |
| 7 | R4-C093203-05 | SF101PS | SF | N | Fi |
| 8 | R4-C093203-07 | SF115PE | SB | N | Fi |
| 9 | R4-C093203-08 | SF115PN | SF | N | Fi |
| 10 | R4-C093203-09 | SF120PF | SB | N | Fi |
| 11 | R4-C093203-10 | SF121PW | SQ | N | Fi |
| 12 | R4-C093203-11 | SF126PW | SF | N | Fi |
| 13 | R4-C093203-12 | SF134PF | SB | N | Fi |
| 14 | R4-C093203-13 | SF138PN | SF | N | Fi |
| 15 | R4-C093203-14 | SF147PE | SF | N | Fi |
| 16 | R4-C093203-15 | SF151PF | SB | N | Fi |
| 17 | R4-C093203-16 | SF153PE | SF | N | Fi |

Reference Values EPAR4 EQ5OWNER\ (Test Format File - Do not use)

C:\Program Files\EarthSoft\EquiS\Formats\EPAR4\EPAR4.xse 1.1 EarthSoft, Inc.

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.



Be aware that EDDs may contain thousands of records and that large EDDs that contain an exorbitant number of errors may cause EDP to hang when switching from “Errors Only” to viewing all data. It is therefore important to make the best effort to have EDDs be as complete and accurate as possible prior to loading into EDP for checking. The most common large-scale error is with Date/Time fields. This issue is outlined in the section below.

To clear the data from EDP, select ‘Clear’ 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.

The EDP checks data for the following potential issues:

- Required Fields
- Field Lengths
- Data Types
- Valid Dates

- Reference Values
- Duplicate Rows
- Range Checking
- Record 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 | |

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 EDD Reference 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 r4dartcoordinator@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.

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_1201 | FD | GW |

The number of characters of the value entered in the field exceeds the maximum allowed number of characters. See Section 3 of the Region 4 EDD Reference Guide for the maximum field lengths.

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 EDD Reference 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.

3.3.4 Invalid Data Type

| | |
|-----------|----------------------|
| 5/29/2009 | 19:47:00 |
| 27005 | 18:56:00 |
| 5/29/2009 | 18:25:00 |
| 2/13/2007 | 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 date* in MM/DD/YYYY HH:MM format. See the Data Type description in Section 3 Region 4 EDD Reference Guide for the appropriate data type.

* A common problem arises with Date/Time fields during the conversion process from one type of file, such as Comma Separated to another, such as Excel. In this process, Date/Time fields may be incorrectly read as “Date Only” or a Date field may be read as Date/Time. Be sure to check your Date fields to make sure they are appropriately classified to avoid errors.

3.3.5 Out of Range

The value is not within the allowable range of values. Some numeric fields will not allow a negative value to be entered though certain exceptions are made for field measurements (such as pH). However, it is far more likely to receive an “Invalid Data Type” error instead.

3.3.6 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. Note that these duplicate locations have different coordinates. Look out for this is common problem.

Laboratories frequently report data from the same event in multiple parts, some times 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 EDD Reference Guide for further discussion of data integrity and duplicate records.

3.3.7 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 EDD file must include a sys_sample_code that corresponds to a sys_sample_code reported in the EPAR4_FSample_v1 file. If a record in the EPAR4_TST_v1 file has a sys_sample_code of GWSMP-006 then a record must also be included in the EPAR4_FSample_v1 EDD file with a sys_sample_code of GWSMP-006. If a record in the EPAR4_TST_v1 file has a sys_sample_code that is *not* included in the EPAR4_FSample_v1 file, an “Orphan Row” error will be identified. See Table 2-2 and Section 2.4 of the Region 4 EDD Reference Guide for further discussion of child/parent records.

3.3.8 Result_value is Required When detect_flag = Y

| reportable_result | detect_flag | lab_qualifiers | validat |
|-------------------|-------------|----------------|---------|
| Yes | Y | R | R |
| Yes | Y | | X |
| Yes | N | U | X |
| Yes | N | U | 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 test result value (i.e., it cannot be left blank).

3.3.9 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 | U | X |
| Yes | N | U | 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 reporting_detection_limit field populated with the appropriate detection limit value (i.e. it cannot be left null).

3.3.10 Parent_sample_code is Required Where sample_type_code = MS, MSD

| sample_type_code | sample_source | parent_sample_code | sample_delivery_group | sample_date | sa |
|------------------|---------------|--------------------|-----------------------|-------------|----|
| sample_type_code | sample_source | PARENT_SAMPLE_COD | sample_delivery_group | sample_date | sa |
| TW | Field | | | 12/2/2004 | 20 |
| MSD | Field | | 02-0169 | 11/29/2001 | 11 |
| N | Field | | 02-0169 | 11/29/2001 | 11 |
| N | Field | | 02-0169 | 11/29/2001 | 11 |

Identifies records that have a sample_type_code (EPAR4_FSample_v1) of “MS”, or “MSD” 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 EPAR4SMP file (i.e., there should be a record for the original sample and a separate record for the duplicate sample).

Please note that EPA Region 4 does not use a sample_type_code of “FD = Field Duplicate”. Field duplicates may be submitted with a unique sample name (indicating a duplicate if necessary, i.e. MW946 or MW46D where “9” and “D” indicate a duplicate) with a sample_type_code of “N” for Normal Environmental Sample.

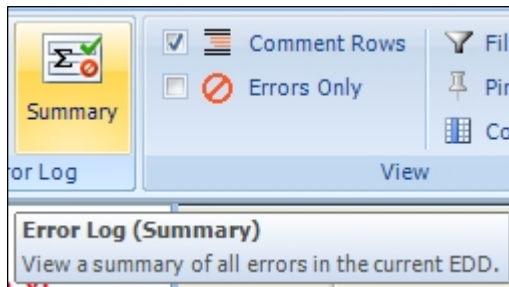
3.3.11 Sys_loc_code is required when sample_type_code = N

| sys_loc_code | start_depth | end_depth |
|--------------|-------------|-----------|
| MW04 | | |
| MW24 | | |
| 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 data base or have been previous submitted.

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.

Run Date: 10/23/2009 2:23:24 PM

| Table | # of Rows | Column | Value | Message | Type |
|-------------------|-----------|--------------------|---------|---|-------|
| EPAR4_Location_v1 | 1 | ~ | ~ | Duplicate row | ERROR |
| EPAR4_Location_v1 | 1 | sys_loc_code | [NULL] | Missing required field | ERROR |
| EPAR4_FSample_v1 | 490 | activity_code | BV-HIST | Reference value not found | ERROR |
| EPAR4_FSample_v1 | 1 | parent_sample_code | [NULL] | Parent_sample_code is required where sample_type_code=MS,MSD (10) | ERROR |
| EPAR4_FSample_v1 | 1 | sys_loc_code | [NULL] | Sys_loc_code is required where sample_type_code=N. (21) | ERROR |
| EPAR4_FSample_v1 | 6 | sample_type_code | FD | Reference value not found | 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. The types of errors being checked for by the EDP are described in section above.

A description of the error is provided when the cursor is placed over the field. 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 hang while it processes. For this reason, it is sometimes preferable to make large scale corrections outside of EDP.

Note: This method can only be used if “Yes” or “Audit” was selected in the “Editing and Auditing” screen during EDP installation.

Note: If data providers believe that a new reference value is required, they should follow the process described in the Section 3.3.3 of this guide or Section 2.6 of the Region 4 EDD Reference Guide 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.

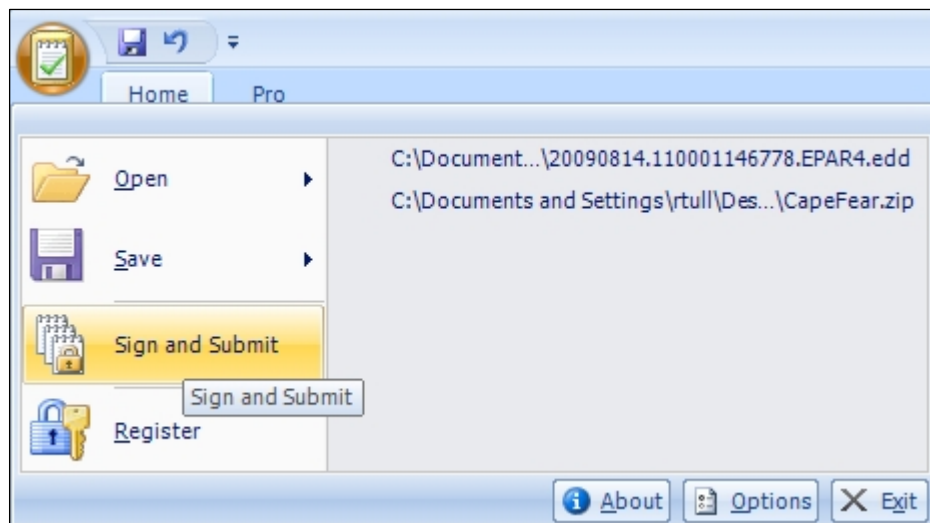
The “Find and Replace” function is activated by selecting highlighting a column (or leaving everything as is to search the entire EDD) then clicking the binoculars icon located in the Data menu. The “Find and Replace” dialog will appear. Type the value to be replaced in the “Find What” field and the 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 checked notepad icon located in the upper-right 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: Only the individual EDD file selected in the left-hand format field and displayed in the main workspace will be saved. Therefore each EDD file should be saved separately, as appropriate.

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 Region 4. During the “Sign and Submit” process, the EDP will name all loaded files from the Region 4 format according to predetermined naming conventions before compressing them into a

single .zip file. Also included in the .zip file is a user certificate, which consists of the username and password assigned upon registration of the EDP, as well as the EPA ID of the site for which data is being submitted. Users will need to rename the final Data Package per the instructions in the E-mail they received requesting the data or as instructed in Section 2.5 of the Region 4 EDD Reference Guide.

To create a Data Package using the “Sign and Submit” function, a user must first ensure that all files to be included in the data submission have been loaded into the EDP. Select the checked notepad icon in the upper-left corner of the screen and then select “Sign and Submit” from the menu list.

This will open the “Sign and Submit” authentication screen. This should be populated with your Region 4 provided user name, password, and the EPA ID for the site pertaining to the EDD files.

After entering the correct authentication information, click the “Submit” button. Next select the location where you would like the .zip file saved and ensure that the file name of the ‘Data Package’ matches the required naming conventions. Use the drop down menu in the “Submit” dialog box to change the file type to “.edd” and click the ‘Save’ button. The EPA electronic mail system will reject files with a .zip format due to security concerns. Files must be submitted with the “.edd” extension.

4.0 Submitting 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 the appropriate address (r4dart@epa.gov for Fund-lead sites and r4dartcoordinator@epa.gov for PRP-lead sites). Please follow the specific procedures for submitting EDD files described in the Region 4 Environmental Data Submission Guidelines document found on the EPA Region 4 website located at www.epa.gov/region4/waste/sf/edd/edd.html. Remember that Location EDDs **must** be submitted prior to submitting environmental chemistry or geology EDDs or the station locations must already exist in the EPA data base. A list of existing station IDs and their related coordinates was sent to you when the site was created in the Region 4 EQuIS data base.

5.0 Updating the Reference Value File

Periodically, EPA Region 4 will post an updated reference value file (.rvf) on the Region 4 Data Submission web site located at www.epa.gov/region4/waste/sf/edd/edd.html. The file will also be mirrored on the EarthSoft web site located at <http://www.earthsoft.com/wordpress/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 EarthSoft web site.
2. Replace the existing reference value file, 'EPAR4.rvf', located in the C:\Program Files\EarthSoft\EQuIS\Formats\EPAR4 folder, with the downloaded file.
3. The next time EDP is started, the new reference values will be loaded.

6.0 Updating the Format File

If EPA Region 4 makes changes to the format of the existing EDD, 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 EPA Region 4 or EarthSoft website as listed above.
2. Replace the existing format file, 'EPAR4.xse', located in the C:\Program Files\EarthSoft\EQuIS\Formats\EPAR4 folder, with the downloaded file.
3. The next time EDP is started, the new format files will be loaded.

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