



Enviro Data®

QUICK START GUIDE

Here's how to start learning Enviro Data and start creating your own database files. If you have problems along the way, please contact Geotech by email at support@geotech.com or by phone at 303-740-1999.

Installing Enviro Data

Install the Enviro Data program by running the **EnviroData2012Setup.exe** (or whatever name you received) that you obtained from Geotech. If you are evaluating Enviro Data, you can contact Geotech for a code to extend your evaluation from 7 to 30 days for no charge.

During the install, a sample database called **EnvDData2012.mdb** is copied into the program folder. Enviro Data connects to this database by default when it is first opened, if you have accepted the default program paths during installation. If you have installed the program and sample database in a different folder, you will need to locate the settings file and the database file. Contact Geotech if you have any trouble with this.

Enviro Data 2012 will run under 32-bit versions of Access 2007, 2010, and 2013. Due to the increased security in the newer Office product, you should have received information on how to configure these newer versions of Access to run Enviro Data without problems.

Learning About Enviro Data

Geotech Computer Systems offers and strongly recommends training for Enviro Data Users and Data Administrators. Time spent in this training will be more than repaid by your time saved avoiding problems and knowing how to use the features of the software. If you are evaluating the software, Geotech would be glad to provide a complimentary web-based presentation to familiarize you with the software before you try to use it. Contact Geotech for information on a web presentation or training.

Viewing the Tour

Before starting to work with your own data, it is strongly recommended that you take a few minutes to run through the software Tour that appears on the screen when you open the program. Example import files are provided that highlight some of the common problems that you are likely to encounter when you import real data. If you close the **TOUR** form with the *Suspend Tour* button it will come back the next time you start the program. If you close it with the *Tour Completed* button, it will not reappear.

Setting up Your Project

Once you have familiarized yourself with the major features of Enviro Data and how the software works, you will want to move on with setting up your database and importing data. These steps are listed here, and described in the following sections:

1. Create a new database
2. Modify the lookups

3. Set up a site
4. Import stations
5. Import results
6. Import regulatory limits
7. Select data
8. Determine display options
9. Create output

Create a New Database

After you have gone through the Tour, the first step in creating your own database is to create a new Access database in the Enviro Data format. This file contains blank tables for sites, stations, samples and analyses, for your data imports.



1. Open the **Enviro Data EDITOR** program using the icon on your desktop, or from the **MAIN MENU** program.



Figure 1 - **EDITOR MENU** form

2. Check the banner on the lower edge of the **EDITOR MENU** and verify that the **EDITOR** program is attached to the example database (**EnvDData2012.mdb**).
3. Click **Create New Database** at the top center of the **EDITOR MENU**. Navigate to the folder where you want to save your database and enter a file name in the *File name* dropdown at the bottom of the **OPEN FILE DIALOG**. It must have an extension of .mdb. Click **Save**.

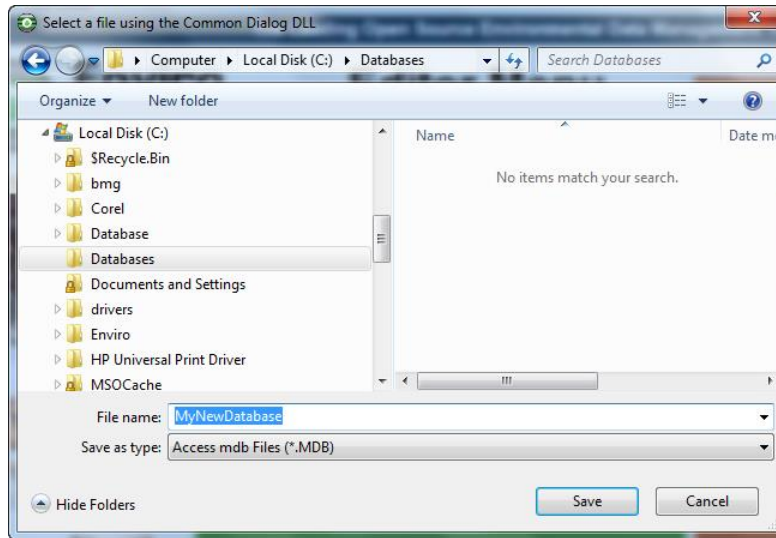


Figure 2 - **OPEN FILE** dialog

Notes: Because of a limitation in Microsoft Access, you can only create a database in a folder that has no spaces in the path, and the filename can't have spaces either. Once it has been created, the file can be named any valid filename, and placed and used anywhere you wish, but you can't CREATE it with a name like My Database, or in a folder like My Documents.

Answer No when asked if you want to export regulatory limits, then Yes when asked if you want to attach to the new database.

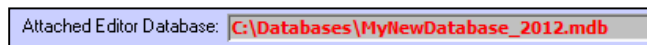
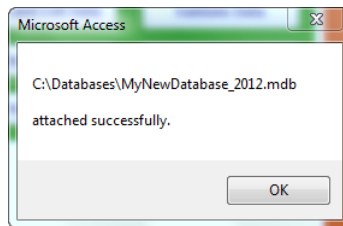


Figure 3 - Successful import

4. Success!

Modify the Lookups

You might want to modify the contents of the lookup tables, also called valid value lists, to suit your project. You can view the existing values, and modify them as necessary. When you create a new database, the lookup tables are brought into the new database from the database you were attached to when you created the new one. For your first database, the lookup tables will be from the sample database provided with the software (**EnvDData2012.mdb**). As you create more databases for different types of projects, these lookup tables can evolve. For each new database, you should use an existing database that will have the most similar lookup table contents, and use that to create the new one.

1. Click Maintain Database in the Your Projects section on the right side of the **EDITOR MENU**.
2. Click on Lookups Report, and print it if you wish. Then close the report, and the **MAINTAIN DATABASE** form.

Lookups Report

Lookups Report Date: February 15, 2012

Analytic Flags

Analytic Flags Code	Analytic Flags	Factor	Basis	ReportingFactor	ReportingBasis
*	Surrogate outside QC limits	1	v	1	b
a	Not available	0	v	1	v
b	Analyte detected in blank and sample	1	v	1	b
b,j	Analyte detected in blank and sample,	1	v	0	b
c	Coelute	1	v	1	v
d	Diluted	1	v	1	v
e	Exceeds calibration range	1	v	1	b
f	Calculated from higher dilution	1	v	1	v
g	Concentration > value reported	1.43	v	1	g
h	Result reported elsewhere	1	v	1	f
i	Insufficient sample	0	v	0	v
i	Est. value: conc. < own limit	1	b	1	b

Page: 14 of 1 | No Filter

Figure 4 - **LOOKUPS REPORT**

On the **EDITOR MENU**, click on *Manage Lookups*. This screen shows the lookups that you can change.

Manage Lookups

Sites

Stations

Samples

Analyses

Reg Limits

Bulk Data

Multiple Tables

Miscellaneous

Figure 5 - **MANAGE LOOKUPS** form

Click on one of the buttons, such as Sample Matrix, to open the editing form. Modify the values as necessary, and then close the form.

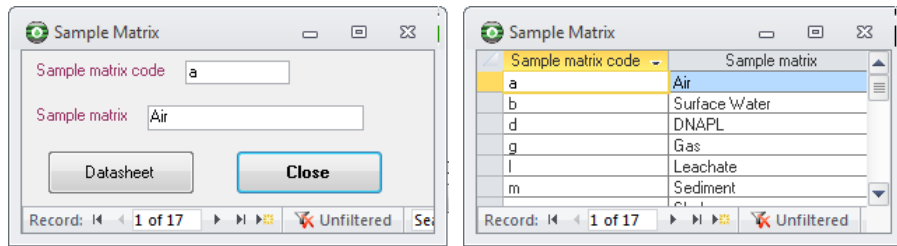


Figure 6 - **SAMPLE MATRIX** form

Note: You can switch to datasheet view to see multiple records, and click on the gray box to the left of a record to go back to Form View for that record.

3. Close the **MANAGE LOOKUPS** form.

Set Up a Site

The data hierarchy in Enviro Data has four major tables, **Sites** (projects or facilities), **Stations** (locations of samples or observations, such as soil borings or monitoring wells), **Samples**, and **Analyses**. Enviro Data uses a database feature called Referential Integrity to protect your data, and that means that the hierarchy is strictly enforced. So to add Stations, Samples, and Analyses, you will need to have at least one Site. Here's how to do that.

1. On the **EDITOR MENU**, click on Enter and Edit Data.

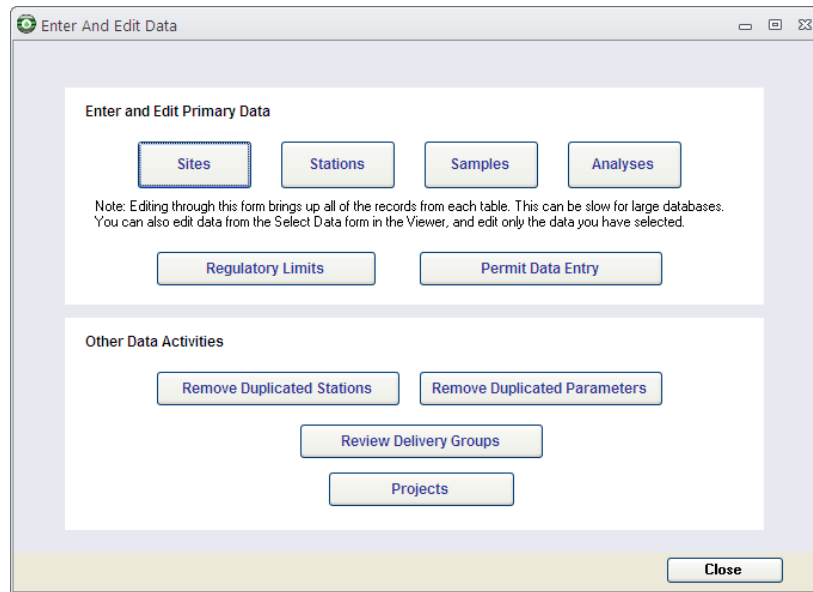


Figure 7 - **ENTER AND EDIT DATA** form

Then click Sites. Enter a *Site Name* and *State* at the top of the **SITES** form. All other fields are optional. Click Done on the upper right of the screen when finished.

Figure 8 - **SITES** form

Import Stations

The next data element to enter is Stations. You can type them in, as you did Sites, but often it's easier to import them, especially if you already have them in digital form.

1. Using **ImportStation2012.xls** as a template, create an Excel sheet with your station information. **ImportStationExample2012.xls** is an example of a completed stations import file. These files are located in the **Enviro\Edata2012** folder in Windows Explorer.

A	B	C	D	E	F	G	H	I	J	K	L	M
StationName	SiteName	ShortName	OldName	Location_CX	Location_CY	GroundElevation	DatumElevation	Depth	ScreenTop	ScreenBase	StationTypeCode	StationTypeCode2
MW-100	Refining Inc.	100									mw	z
MW-101	Refining Inc.	101									mw	z
MW-102	Refining Inc.	102									mw	z

Figure 9 - **ImportStationExample2012.xls** file

Notes: All columns with red captions must be populated.

You may use “z” as a default code for all lookups (StationTypeCode, StationTypeCode2, etc.).

You must enter a Station *ShortName*.

Use the SiteName that you entered above.

2. The **MANAGE LOOKUPS** form has buttons that display the various lookup codes. The lookup codes with red labels in the file are used by the **Stations** table. Be sure any of the values in the required fields match entries in the appropriate lookup table.
3. When your stations import Excel sheet is completed, click on Import Data on the **EDITOR MENU**.
4. Select Stations Excel 2012 for *File Type and Format*.

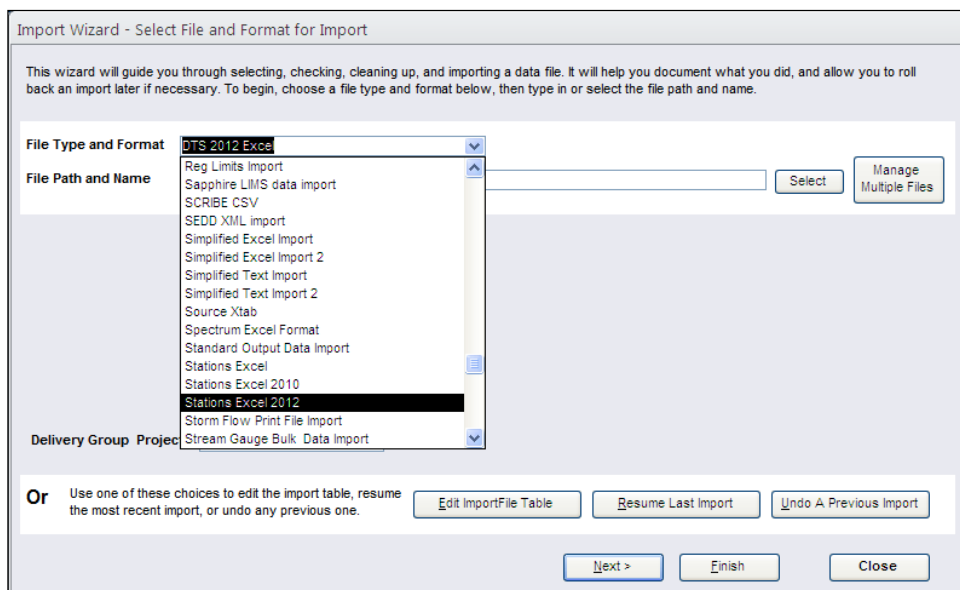
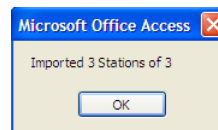


Figure 10 - **SELECT FILE AND FORMAT** form

5. Click Select at the right of the *File Path and Name* text box. Navigate to the file you made and click Open.
6. Click Finish.



Import Results (Samples and Analyses)

The last two data levels in Enviro Data are Samples and Analyses, and they generally are imported together. This section tells you how to do this.

Enviro Data contains an automated import routine that imports station, sample and result data received in one of the Data Transfer Standard (DTS) formats, or other supported formats. Analytical laboratories performing analyses can be provided with copies of the DTS, and are encouraged to deliver data in this format. Data received in this format can be imported into the database through the **IMPORT WIZARD** form. This software feature checks the import file for correct formatting and consistency with site, station and lookup table information. The program informs the Data Administrator if problems have been found, and presents options to fix data errors interactively, edit the import table and resume the import, or end the process if additional research of the data problems is required.

Once the data has been checked by the automated routines, you can choose to place the data in the main tables or in a validation table, where additional data review and validation can be performed before the data is imported into the database.

1. Using one of the DTS format files, such as **DTSFormat2012.xls**, as a template, create an Excel sheet with your samples and results information. **SuccessfulImport2012.xls** is an example that you can consult when populating your own import files. These files are located in the **Enviro\Edata2012** folder in your directory.

Notes: All lookup code columns with red captions must be populated.

You may use “z” as a default code for lookups (*SampleTypeCode*, etc.)

SampleTop, *SampleBottom*, *DuplicateSample* and *Superseded* can be left blank or default to zero.

If you have digital data in a columnar format, but different from one of the Enviro Data DTS formats, you can use the User-Defined Excel option in the Import Wizard. Contact Geotech if you need help with that.

A	B	C	D	E	F	G	H
SiteName	StationName	SampleDate_D	SampleTypeCode	SampleMatrix	SampleTop	SampleBottom	DepthUnits
Refining Inc.	MW-14	6/16/1999 0:00 z		Water	0	0	ft
Refining Inc.	MW-14	6/16/1999 0:00 z		Water	0	0	ft
Refining Inc.	MW-14	6/16/1999 0:00 z		Water	0	0	ft
Refining Inc.	MW-14	6/16/1999 0:00 z		Water	0	0	ft
Refining Inc.	MW-14	6/16/1999 0:00 z		Water	0	0	ft
Refining Inc.	MW-14	6/16/1999 0:00 z		Water	0	0	ft

Figure 11 - DTS format file

2. After constructing your import file, click on Import Data on the **EDITOR MENU**.
3. Select the *File Type and Format* that matches your import file format.
4. Click Select at the right of the *File Path and Name* text box. Navigate to the file you made and click Open.
5. Click Finish.
6. The **HELP MATCH STATIONS** form may open if there's a discrepancy in spelling Station names. You can use the dropdown on the right to find the correct station, or click Add Station to add a new station, if needed. After matching stations click Finish.

Figure 12 - **HELP MATCH STATIONS** form

- Another helper screen for matching or adding new parameters may appear.

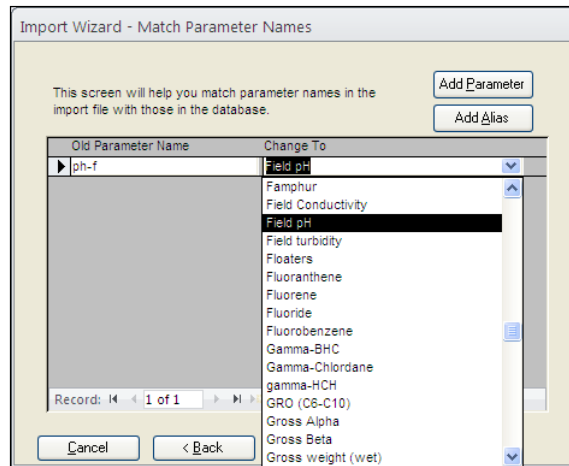


Figure 13 - Parameters helper screen

- And one for matching reporting units, and perhaps others.

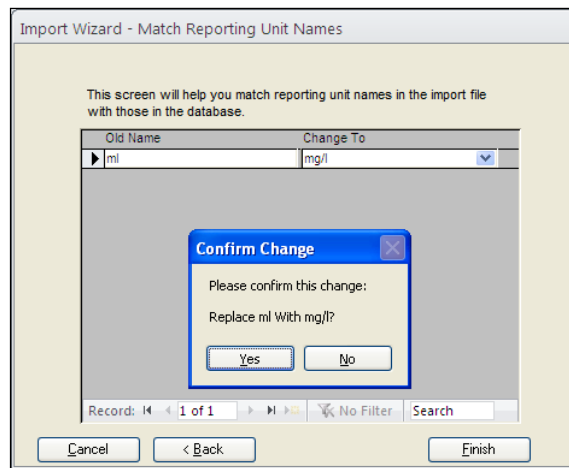


Figure 14 - Units helper screen

- When all is correct the import will run to completion.

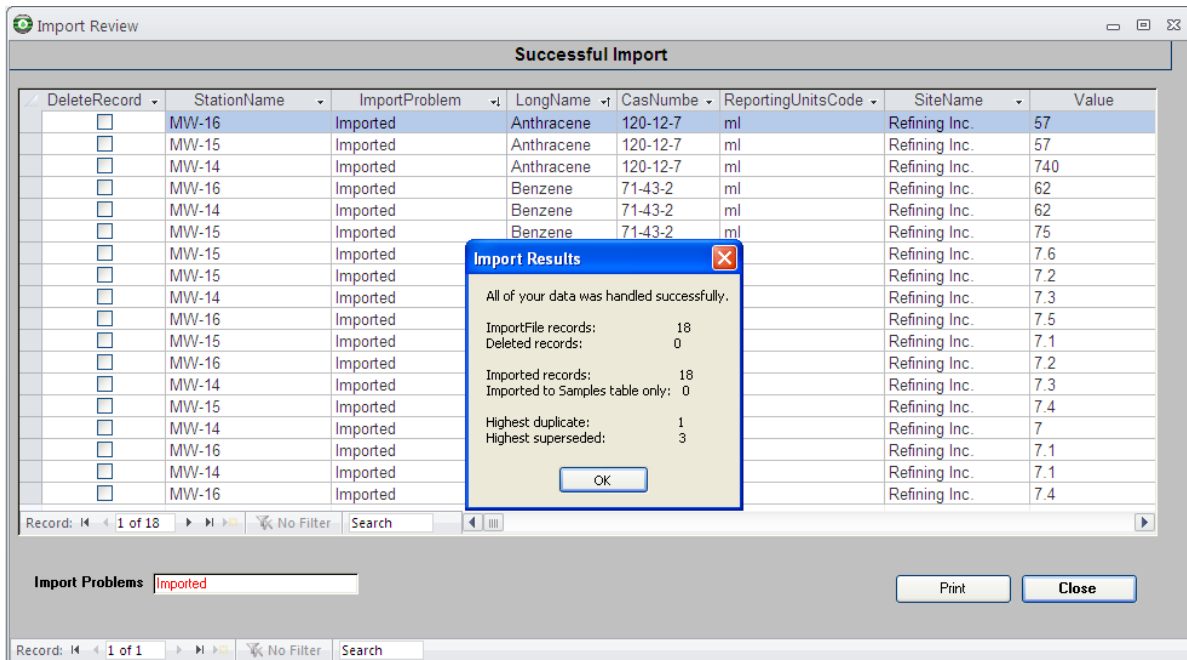


Figure 15 - **IMPORT RESULTS** form

Import Regulatory Limits

You will probably want to use Enviro Data's capability to compare your results to regulatory limits (action levels, targets, etc.). For each limit you can enter an upper limit, a lower limit, or both. Many users find it convenient to import their limits, rather than enter them by hand into Enviro Data. Here's how to do that.

1. Using **ImportRegLimits.xls** as a template, create an Excel sheet with your regulatory limits information. **ImportRegLimitsExample.xls** is an example of a completed regulatory limits import file. These files are located in the **Enviro\Edata2012** folder in Windows Explorer.

A	B	C	D	E	F	G	H	I
SiteName	CASNumber	ParameterName	RegLimit	RegUnit	RegLowerLimit	RegTypeCode	RegType	SampleMatrix
		Acenaphthene	2	mg/l		G1	Groundwater Class I	Ground Water
		Acenaphthene	10	mg/l		G2	Groundwater Class II	Ground Water
		Acetone	4	mg/l		G1	Groundwater Class I	Ground Water
		Acetone	4	mg/l		G2	Groundwater Class II	Ground Water
		Alachlor	0.002	mg/l		G1	Groundwater Class I	Ground Water
		Alachlor	0.01	mg/l		G2	Groundwater Class II	Ground Water
		Aldicarb	0.003	mg/l		G1	Groundwater Class I	Ground Water

Figure 16 - **ImportRegLimitsExample.xls** file

Notes: All columns with red captions must be populated.

Leave *SiteName* blank except for cases when you want to apply the regulatory limit values only to a specific site.

RegTypeCode is user-defined. You should make up your own two-digit codes here.

Don't forget to populate *SampleMatrix*.

RegLimit must be a number.

2. When your regulatory limits import Excel sheet is completed, click **Import** in the **Interactive Management** section of the **EDITOR MENU**.
3. Select **Reg Limits Import** for **File Type and Format**.

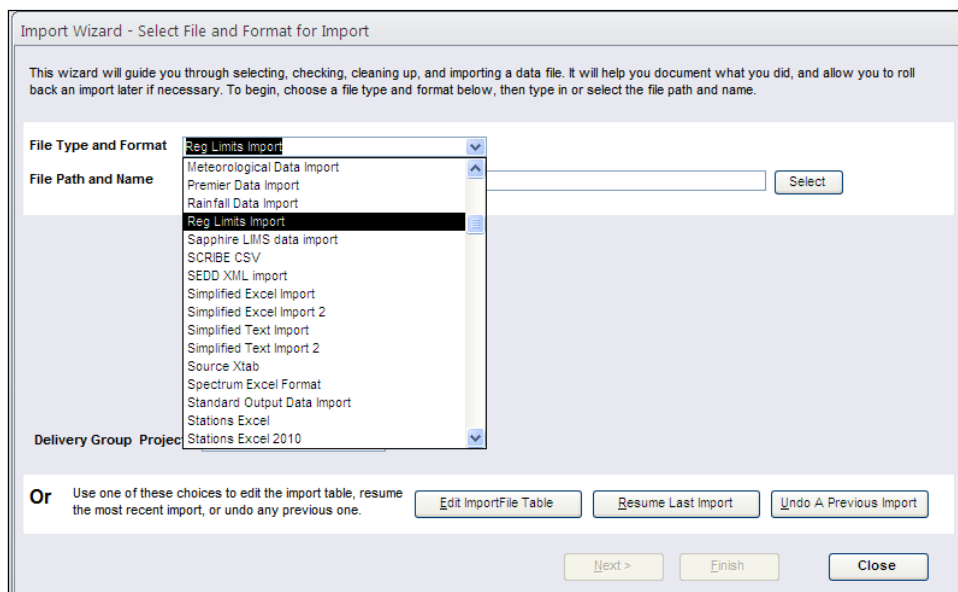
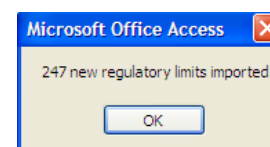


Figure 17 - Choosing file type and format

4. Click *Select* at the right of the *File Path and Name* text box. Navigate to the file you made and click *Open*.
5. Click *Finish*.
6. Success!



Now that you have imported data, you will want to retrieve it. Enviro Data provides a variety of ways to do this easily. The next selections will provide a brief overview of how to do this.

Validation

One of the options in the Import Wizard is to import the data either into the main tables or into the Validation Module. If you import the data into the main tables, you can later move it to the Validation Module using the **SELECT DATA** form. The Validation Module can be used for a variety of data checking activities ranging from “eyeball” checking all the way up to a full CLP Level 3 type validation. The system contains tables and forms for data validation activities. Many of these features are also useful to users who are not planning to perform strict data validation. Information can be stored regarding project required detection limits, spike amounts and target recoveries, QC sample and analysis frequencies, and holding times. The Validation Module also contains some statistics capabilities and a number of specialized reports.

Data Selection

Retrieving data in Enviro Data has three parts: Data Selection, Display Options, and Output Format. Start with selecting data. In the Data Selection step you determine which results you want to display, such as which locations, dates, depths, parameters, and so on.

1. Open the **Enviro Data VIEWER** program using the icon on your desktop, or from the **MAIN MENU** program.
2. Click on the *Select Data* button on the **VIEWER MENU**. This will display the **SELECT DATA** form. Most data retrieval activities are tied to this form, letting you display or export the selected data for further analysis. Click the *Analyses* radio button to activate the form, as shown near the top right side of the form below.



Figure 18 - **SELECT DATA** form

3. Enter selection parameters as you wish, and then create reports, graphs, maps, and exports. Selection Sets can be saved with names using the Save/Load tab.

Save/Load

Sometimes when you make selections on the **SELECT DATA** form, you may want to use the same or similar selections at a later time. The save/load feature in Enviro Data allows you to save those selections under a name you select, and then call them back up later.

Display Options

Display Options determine how the individual results are presented. These options let you configure graphing and reporting options, including, for example, designating whether regulatory limits are displayed, and whether results should be automatically converted to consistent measurement units before graphing. In many cases, the default options work just fine. Remember, when the display options are changed, Enviro Data retains these changes and continues to use them until they are modified, or until another display set is selected.

1. If you do want to change the Display Options, click on the Display Options button on the **SELECT DATA** form. This brings up the **DISPLAY OPTIONS** form. Display Option sets can be saved with names for later use.

The screenshot shows the 'Display/Graphing Options' dialog box with the following settings:

- Display Set:** Standard
- Detected Value Options:** Value Only (unselected), Use Analytic Flags Table (selected), Value and Validation Flag (unselected), Use Validation Flags Table (unselected)
- Non-detect Options:** Use Analytic Flags Table (selected), Display Detection Limit (unselected), Display 1/2 Detection Limit (unselected), Display Value (unselected), Display 0 (unselected), Value And Validation Flag (unselected), Use Validation Flags Table (unselected), Use Detect Type: Detect
- Display Options:** All Dilutions in Same Report Column (checked), Use Scientific Notation (unselected), Values >: 10, Values <: 1, Language Format: English
- Un-Alias Parameters:** Un-Alias Parameters (unselected), Un-Alias Stations (unselected), Alias Type: (empty)
- Append Leach Method to Parameter Name:** (unselected)
- Append Filtered Code to Parameter Name:** (unselected)
- Append Dilution to Parameter Name:** (unselected)
- Run Custom Queries:** (unselected)
- Number of Decimals:** Exact Value (unselected), Auto (selected)
- Unit Conversion:** Yes (unselected), No (unselected), Ask (selected)
- Max # Decimals:** (empty)
- Unit Conversion:** (empty)
- Date Options:** Date (selected), Date & Time (unselected)
- Regulatory Limits:** Display Limits? Yes (unselected), No (unselected), Ask (selected), Selected Limit: Federal MCL
- Field Data Options:** Columns (selected), Rows (unselected)
- Offset Type:** Callout1
- Calculated Parameters:** Calculate Parameters (unselected)
- Record:** 1 of 2

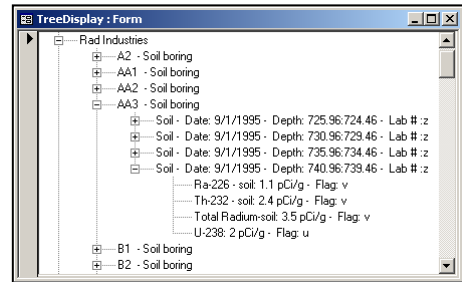
Figure 19 - **DISPLAY OPTIONS** form

Output Format

Output Format determines the physical configuration of the output, such as a report for printing, a graph, a map, or an export. Which output option to choose depends on the needs of your project. Some examples are shown in the next section.

Tree View

This output option displays the data in a hierarchical view similar to Windows Explorer. You can expand the nodes by clicking on the plus sign to the left of each one, or by double-clicking on them. Unlike the other output options, the Tree View displays all of the data in the database, not just the data you have selected with the filter criteria. It is called up by clicking on the *Tree View* button on the **VIEWER MENU**.



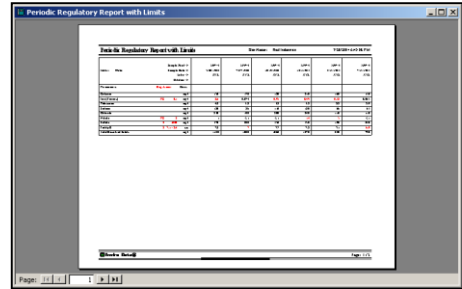
List

The List display is an easy way to view your data and capture it in the clipboard for further use. Select the data using the **SELECT DATA** form, and then click on *List* to bring up an Access list window showing your data. You can view it, print it, or select all or part of it to copy to the clipboard. You can also view the higher levels of the data (sites, stations, etc.), and easily export the contents of the window to Excel.

Station Name	Samp.Date	Sample	Parameter	Value	Units	Value/Flag	Flag	D
MW-1	3/23/1990	Water	Field pH	7.1	s.u.	7	v	
MW-1	6/4/1990	Water	Calcium	120	mg/l	120	v	
MW-1	6/4/1990	Water	Sulfate	260	mg/l	260	v	
MW-1	6/4/1990	Water	Nitrate	0	mg/l	n	n	
MW-1	6/4/1990	Water	Chloride	160	mg/l	160	v	
MW-1	6/4/1990	Water	Sodium	120	mg/l	120	v	
MW-1	6/4/1990	Water	Potassium	4.1	mg/l	4.1	v	
MW-1	6/4/1990	Water	Field pH	7.1	s.u.	7.1	v	
MW-1	6/4/1990	Water	Calcium	120	mg/l	120	v	
MW-1	8/22/1990	Water	Calcium	110	mg/l	110	v	
MW-1	3/23/1990	Water	Total Dissolved Solid	946	mg/l	946	v	
MW-1	3/23/1990	Water	Sulfate	270	mg/l	270	v	
MW-1	3/23/1990	Water	Nitrate	0.5	mg/l	< 0.5	u	
MW-1	3/23/1990	Water	Chloride	140	mg/l	140	v	
MW-1	3/23/1990	Water	Sodium	131	mg/l	131	v	
MW-1	3/23/1990	Water	Potassium	3.9	mg/l	3.9	v	
MW-1	3/23/1990	Water	Iron (Ferrous)	2.81	mg/l	2.81	v	
MW-1	6/4/1990	Water	Iron (Ferrous)	2.9	mg/l	2.9	v	

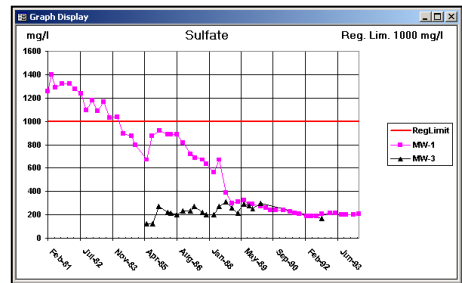
Report

This option is for preparing formatted reports for printing. Enviro Data comes with several dozen report formats, and you can modify the existing reports, or create your own. Then print them for project staff, clients, and regulators. Report formats include line-by-line, cross-tab with samples across or down, and various graph formats. Specialized reports can compare to multiple regulatory limits at once, or display groundwater and NAPL data.



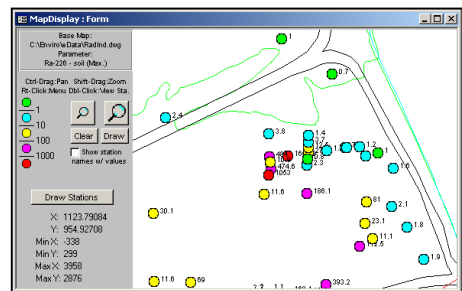
Graph

Enviro Data makes it easy for you to create time-sequence graphs of your data. You can graph multiple parameters for one station or multiple stations for one parameter. You can display a regulatory limit on the graph, and specify whether you want the points labeled, or a connecting line between the points.



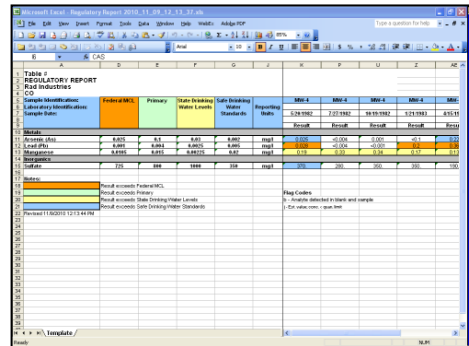
Map

This option makes it easy to understand the spatial component of your data. Select the data that you want, choose color cutoffs for the dots, and display it on a map without leaving Enviro Data. You can then zoom and pan the map, and double-click on a station for more information. You can enter a base map file for display for each site in your database. You can also display an image such as an air or satellite photo.



Export

Enviro Data allows you to export data in a variety of formats, and new formats are being added on a regular basis. Export formats are included for various programs that let you display and analyze your data, including two-dimensional contouring, three-dimensional modeling and display, and boring log software. Other formats are provided to satisfy various regulatory requirements, and for import into other data management programs. Another set of exports creates simplified files in Access or Excel for further analysis and formatting.



Subset

The Enviro Data program is designed to work with data stored in Access, SQL Server, or Oracle, or in a subset of a main database, also in Access format. The subset functionality lets you download a portion of the database to a local computer and work with it, based on selections in the **SELECT DATA** form. These subset databases are considered disposable, in that no corrections or changes are made to them, and they are discarded after use. You can take the subset database to the field for further analysis, or to work locally on a smaller dataset. All of the data selection and display operations that can be performed on the full database can be performed on one of the subsets, including creating a subset of the subset, if necessary.

Direct connection

It is also possible for some external programs to attach directly to Enviro Data without an intermediate file. A good example is the ArcGIS software from ESRI. The ArcMap component of ArcGIS can be connected to the **SelectedData** table in Enviro Data. The data then becomes a layer in ArcMap like any other layer,

except that when you make a new selection in Enviro Data and refresh **SelectedData** and ArcMap, the map changes to reflect your new selections.

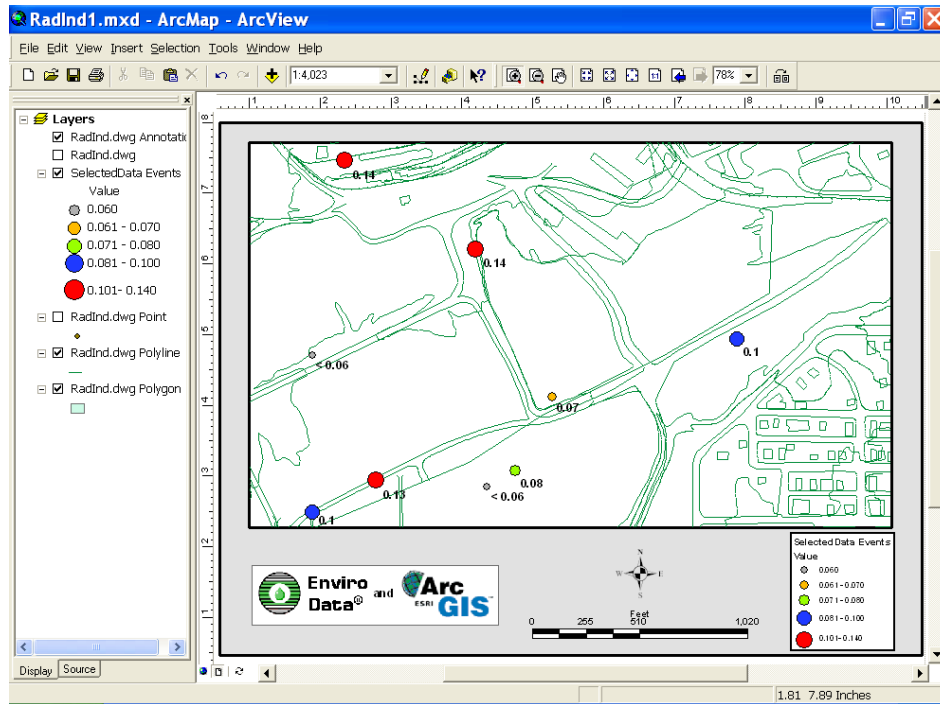


Figure 20 - Data from Enviro Data displayed in ArcGIS

Enviro Space

It is easy to display data from Enviro Data using its companion product, Enviro Space. This software, which runs within ESRI's ArcGIS, creates specialized environmental displays, including callouts (data tables on the map), Stiff water quality diagrams, simple soil borings, and graphs placed on your maps. Contact Geotech, or visit our web site at www.geotech.com, for more information on this powerful product.

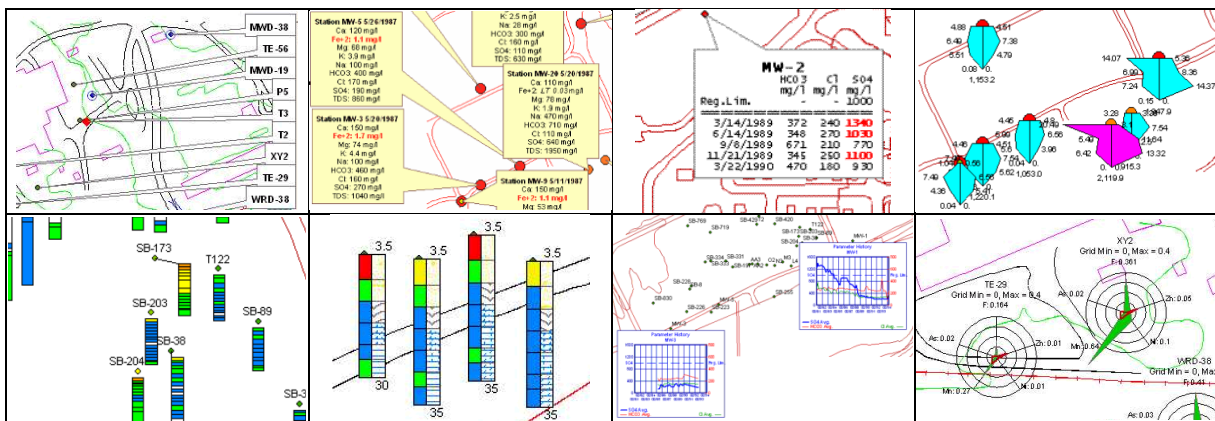


Figure 21 - Data from Enviro Data displayed in ArcGIS using Enviro Space

Modify Data

The following sections briefly describe data modification activities that are provided for Data Administrator use in the Enviro Data **VIEWER**. These activities are initiated using the **Modify** tab on the **SELECT DATA** form.

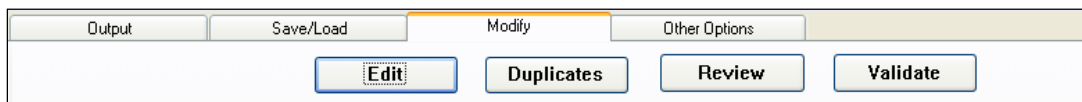


Figure 22 - **Modify** tab on the **SELECT DATA** form

Edit

Editing in the **VIEWER** is similar to editing in the **EDITOR** except in the **VIEWER** the data displayed for editing is based on selections on the Select Data form.

Duplicates

Duplicated data at the sample and analysis level can find its way into the database in a variety of ways. Some of this duplication is appropriate, such as field duplicates, or re-analyzed data. In other cases, due to import errors and so on, improperly duplicated data may be present. Enviro Data has a set of tools to help you find this duplicated data, both at the samples and analyses level, and correct it.

Review

The review status for each result in the database, including importing of the data into the database and checking at various levels, from a visual check through a complete validation, can be managed using data review entries in the database. Only Data Administrators can update these flags, and they can be used in selecting data, so that only data of at least a certain level of review or higher is displayed.

Validate

This option lets you move the selected data to the Validation module to perform the validation procedures.

Working with laboratories

One of the most important elements of successful implementation of data management on your projects is to develop and maintain a good working relationship with your lab(s). Most labs can generate electronic data deliverables (EDDs) in Enviro Data format, and if they can't, Geotech will work with them to help them get it going. We provide a document, called the Data Transfer Standard (DTS), which describes exactly how the EDD should be laid out, and what data it should contain. This document is included in Appendix B of the documentation, and is also available as a separate document to send to the lab.

Once the lab programs the electronic deliverable format, they can start providing data for you to import into Enviro Data. The next step is for them to check your data for consistency prior to sending it to you. (Many labs have purchased the Enviro Data Checker software to do this. You should ask your lab if they provide this service.) If they do provide this service, then you can use Enviro Data to create a reference file to send to the lab prior to them sending you an electronic deliverable. The lab then uses that reference file and the Checker to check your file before they send it to you. This can be a tremendous time saver for both you and the laboratory in obtaining and importing clean data.

Conclusion

Thank you for using Enviro Data. If you have problems anywhere along the way, please contact Geotech by email at support@geotech.com or by phone at 303-740-1999.