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EQWin 8

Manage your environmental monitoring data with power, depth and ease

If you are involved in environmental management at any level, from field operations to executive, and have responsibility for:

- collecting and documenting field samples
- analyzing and reporting data collected from environmental monitoring programs
- ensuring compliance with government regulations and operating permits
- maintaining accurate, accessible and fully documented long-term sampling records

... then EQWin is for you.

EQWin combines power and ease-of-use in high-performance Windows software to provide in-depth solutions to the unique requirements of sample data management in environmental monitoring situations worldwide.

A data model for environmental monitoring

EQWin models the things you deal with every day in environmental monitoring: sampling stations, samples, sample parameters (physical, chemical, biological measurements), standards, laboratories and more.

You can set up databases for water, air, soil and other types of monitoring programs – as many databases as you need.

The data model accommodates samples taken for quality assurance and quality control (QA/QC) purposes, such as duplicates, replicates, splits, blanks and spikes.

EQWin automatically handles the unique requirements of environmental measurements. Significant figures are preserved and reported exactly as they were imported into the database. Results reported as less-than or greater-than are fully supported, including their proper use in calculations. Qualitative (non-numeric) results are also supported.

Overview of features and functions

Fast, accurate data entry

A powerful, versatile data import system lets you import data from electronic lab reports and field logs quickly and accurately. Data in spreadsheets can be brought directly into EQWin import files.

The import system has comprehensive data validation and quality checks developed specifically for environmental data:

- over 60 data error checks and data quality warnings
- parameter value range checks
- user-defined parameter value validations
- exceedance detection
- variance analysis (comparison to previous results to detect anomalies)

EQWin Report Designer

Create reports easily, visually and interactively with EQWin Report Designer.

- choose from a gallery of predefined report layouts
- sort, group and filter data
- compare data to standards and flag exceedances with colors, fonts and codes
- calculate statistics for any reporting period
- add formatting, company logos and more

Graphs

Analyze trends with the integrated graphing tools. Add standards to graphs to visually show exceedances.

Maps

Visualize data on maps and site drawings with the easy-to-use mapping system. A separate GIS (geographical information system) is not required.

Office software connectivity

Send EQWin reports to Microsoft Excel with one click for advanced analysis and integration with other data. Insert tables, maps and graphs into reports and presentations being prepared with office software such as Microsoft Word and PowerPoint.

Shared documents

Share reports, graphs and maps with other EQWin users, saving time and work and leveraging expertise

Where and how is EQWin used?

EQWin is used around the world by industry, consultants and government agencies.

It has been applied to monitoring programs for:

- surface water
- groundwater
- potable water
- industrial effluent (discharge) streams
- ambient air
- dustfall
- soil and sediments
- biological sampling
- noise
- weather stations
- ... and other environmental matrices

Licensing and deployment

With even a single copy of EQWin, you can manage multiple monitoring programs for multiple sites.

- **Flexible licensing:** EQWin is licensed by the maximum number of installations (or "seats") that you want at a site. Choose a single seat license for a single computer, or a multi-seat license for a team of environmental staff. With even a single copy of EQWin, you can manage multiple monitoring programs for multiple sites
- **IT requirements:** EQWin is a Windows application that requires no infrastructure other than Windows itself. It installs simply and quickly on laptops and desktops. Databases can be located on remote servers for sharing between multiple users.

Support and training

User support is provided by environmental specialists with extensive deploying EQWin as the centerpiece of environmental data management systems in hundreds of real-world situations.

- 24/7 user support
- training classes on-site and/or in Vancouver, Canada
- installation and data conversion assistance
- regular software updates

EQWin 8: Full description

The EQWin data model

Sampling stations

Stations are usually point locations such as discharge outlets, wells, piezometers, surface points, monitoring equipment such as stream gauges and so on. They can also represent general areas such as entire sites.

Parameters

Parameters are the physical, chemical and biological properties of samples. EQWin supports:

- parameters measured by field or laboratory analysis
- qualitative (non-numeric) parameters
- calculated parameters, which are determined from the values of measured parameters in a sample. For example, you could set up a parameter called "dissolved metals" that is the sum of dissolved copper, iron, lead, zinc, etc. Once set up, calculated parameters can be used on reports, graphs and maps the same way as measured parameters.

Standards

You can set up any number of standards, which may include:

- government standards
- permits
- industry guidelines
- organizational objectives

EQWin supports both **fixed** and **calculated** standard values:

- fixed standard values are predefined limits
- calculated standard values vary depending on the sample matrix. For instance, standard values are sometimes related to the acidity or alkalinity of a sample.

Standards are used on reports, graphs and maps. They are also used during data entry to detect and highlight exceedances in new, incoming sample data.

Samples

EQWin has data fields for a wide range of commonly-used sample and sample result attributes. Not all of it is required to be entered; you can enter minimal information if that

is all that is available. You can also enter information in stages as it becomes available, and EQWin will find the previous information and merge the new with it.

Sample attributes include an identifying sample number, location, date, time, classification codes, sampling method, sampling agency and/or person, sample matrix, sample comments and other sample characteristics.

Multiple samples are often taken at the same location, date and time for quality assurance purposes and other reasons. The EQWin data model supports sample **duplicates**, **replicates**, **splits**, **blanks** and **spikes**.

Sample results

A sample usually has one or more associated results obtained by field measurement or laboratory analysis. Individual result attributes include:

- parameter
- result value
- result quality
- sampling protocol
- laboratory
- preparation method
- analytical method
- method detection level
- date/time received
- date/time prepared
- date/time analyzed
- comments

EQWin transparently and automatically handles the special results, such as less-than values, that occur frequently in environmental data.

Less-than values Many results are less than the laboratory analytical method detection level. EQWin accepts, stores and uses less-than values as entered. They are used on outputs (reports, graphs and maps) in the same way as any other results. They can be included in statistical calculations with a definable factor applied, and on reports they can be shown with various display options.

Greater-than values These are supported and handled similarly to less-than values.

Significant figures Significant figures are an important part of sample records because they indicate analytical precision. EQWin stores and reports significant figures exactly as originally entered.

Qualitative (non-numeric) results EQWin supports non-numeric results. For example, you may have a sample attribute for color that is entered as text. You can create a parameter called "Color", enter values for it and include it on reports in the same way as for a measured value such as temperature.

User-defined calculations

User-defined calculations (UDC's) are a versatile and powerful feature of EQWin.

A UDC consists of a series of calculation steps which use data values from a sample to calculate a result based on those values. For example, you could define a calculation called "dissolved metals" that is the sum of dissolved copper, iron, lead, zinc and other metals.

UDC's have three important uses in EQWin:

- to define custom data validation procedures that can be used to check data being imported into a database
- to compute calculated parameter values for use on reports, graphs and maps
- to compute calculated standards which are based on sample conditions

Other tables

- Laboratory information
- Sampling protocol information
- Analytical method information
- User-definable unit conversions
- User-definable lists of valid codes for database fields such as units, station type, sampling method and others

User-defined fields

EQWin provides a comprehensive set of database fields for the most common properties of the environmental entities that it models. For some entities, you can also create your own user-defined attribute fields to handle site-specific monitoring program requirements.

User-defined fields are fully supported at all stages in EQWin in the same way as built-in fields. They are available for these tables:

- Sampling stations
- Parameters
- Standards
- Samples

A powerful, versatile sample data import system

The daily realities of managing sampling records can be complicated:

- some results are recorded in the field and some are determined by laboratory analysis
- sample results may arrive in multiple stages at different times
- samples may be analyzed by multiple laboratories, each specializing in different aspects of analysis
- lab and field reports typically come in as spreadsheets and word processing files with multiple arrangements of the data
- for quality assurance and quality control (QA/QC) purposes, there can be duplicates, replicates, splits, blanks and spikes

EQWin's import system lets you handle the sample data from lab and field reports quickly, accurately and easily. Specifically designed for environmental data, it:

- accepts data directly from spreadsheets, and also tabulated data from word processors and some other applications.
- performs extensive data quality screening checks to ensure that data is properly coded and properly related to existing sample records in the database (relational integrity). There are over 30 error checks and over 30 data quality advisory checks (warnings).
- automatically detects and gives you options to combine related data from existing samples in the database, field reports, lab reports and multi-laboratory analyses
- performs parameter value range checks and user-defined validation checks
- checks for permit exceedances *
- compares new data to historical data to detect large variances *

* Doing these checks at the data import stage helps with early detection of possible problems. They can also be done via reports after incoming data is committed to the database.

Create reports easily with the EQWin Report Designer

Use this powerful tool to create reports visually and interactively. As you choose data and options, EQWin uses a portion of your data selection to give you instant feedback about the effect of your choices.

Create a report in a few simple steps:

- choose a report layout from a gallery of useful predefined layouts
- choose some data
- add some formatting
- print the report or send it to Excel

Control the appearance and content of your reports:

- filter, sort and group data in various ways, including on common reporting periods such as daily, weekly, monthly, n-monthly (2, 3, 4, 6 months) and annually
- show summaries, details or both
- calculate statistics: average, standard deviation, minimum, maximum, median, quartiles, count less than detection level, count of exceedances, percent exceedances and more
- choose how to display less-than/greater-than values and how to handle them in statistical calculations
- visually indicate exceedances (results that are out of compliance with standards) with fonts, colors and/or flags
- optionally show only exceedances
- add a company logo
- automatically generate footnotes to document your choices

Analyze trends with graphs

- include multiple data series on one graph
- curve-fit data series using cubic spline interpolation
- visually display exceedances by including standards
- copy graphs and insert them into your reports and presentations

Visualize data with integrated mapping

- display data on maps, plan views and schematic drawings
- copy maps and insert them into your reports and presentations
- a separate GIS (geographical information system) is not required

Browse your data with SQL queries

Select and browse data from the database with an SQL wizard or by typing your own queries. Query results are displayed in a table that can be copied, printed or sent to Excel.

Save and share your work

Your reports, graphs, maps and queries can be saved for reuse. For instance you might design a monthly report, save it, reopen it next month, change the dates and run it again. It's also easy to share your finished designs with other users by simply saving them in the database, thus leveraging expertise and saving time and work.

Connect with Excel and other office software

EQWin interacts easily with other office software to support data entry and reporting. It works with all versions of Microsoft Office from Office 2003 to Office 16, both 32-bit and 64-bit. You can:

- import laboratory and field reports from Microsoft Excel, Microsoft Word and other sources
- send reports directly to Excel for advanced analysis and integration with other data
- insert EQWin maps and graphs into reports and presentations being prepared with a word processor or other office software such as PowerPoint
- send SQL query results directly to Excel

Sending a report or other output from EQWin to Excel is simple and direct. It's exactly like printing to a printer except that instead of clicking a print button, you click an Excel button.

System requirements

EQWin is a Windows application that can run both standalone and on Window networks.

- installs easily on notebooks, desktop PC's and network workstations
- runs on all versions of Windows from Windows 7 to Windows 10, both 32-bit and 64-bit
- works with all versions of Microsoft Office from Office 2003 to Office 16, both 32-bit and 64-bit. MS Office is not required to run EQWin but can interact with it as described in the previous topic.
- in a multi-user network situation, databases are typically located in a shared Windows network folder