THE CLEAN WATER TEAM'S

TOOL BOX

FOR CITIZEN MONITORING PROGRAMS

In addition to the Clean Water Team Compendium for Watershed Monitoring and Assessment, this **Toolbox** has template files and documents that will help you manage and organize your water quality monitoring data. Most of the items are part of the Data Quality Management (**DQM**) system that the Clean Water Team has developed for the collection, management and sharing of reliable data of known quality. The utility of the tools contained within this virtual toolbox will be especially useful as you begin to analyze your project's data.

Part 1: The Basics

Your **Starter Kit for Field Activities** (Observations, Measurements, and Water Sample Collections) includes data sheets, instructions, and MS Excel spreadsheets that have been used had honed over many years of usage.

If you are looking for a **Field Data Sheet** to capture information in the field, you can customize this field data sheet to meet your specific needs. Instructions for using this data sheet are given with the data sheet itself and are also in this Standard Operating Procedure (SOP).
Basic DQM field data sheet (MS Excel, 20K)
Instructions for field data sheet, DQM-SOP 9.2.1.1 (PDF, 90K)

When you calibrate or run accuracy checks on your instrument(s), you can capture all of your **calibration records** on this data sheet. Refer to SOP for instructions.
Calibration data sheet (MS Excel, 50K)
Instructions for calibration data sheet, DQM-SOP 9.2.1.2 (PDF, 280K)

When you are ready to enter data into an electronic format, you can use this Basic DQM **Project File for Field Measurements**. This workbook file has spreadsheets for your results and all supporting documentation (calibration and accuracy checks records, station location, project organization ….).
Basic DQM Project File for Field Measurements (MS Excel, 90K)

The DQM System uses unique **Instrument IDs** to link each measurement result with the instrument that was used to collect it. This will enable you to use calibration records of a specific instrument to document the accuracy of each result. If you want to create unique IDs for your instruments and wish to use the naming conventions and instrument codes that the CWT and many others are already using, you will find them in this file:
CWT Instrument Naming Conventions (MS Excel, 40K)

Part 2: Data Validation Kit

The DQM field **data validation** kit includes tools for the calculation of measurement error and a "glossary" of terms that describe the data's validity status. When attached to your monitoring results this information will ensure that the data are defensible and can be used with confidence.
Basic DQM Project File for Field Measurements (same as above)(Excel, 90K)
Instruction for error calculation, DQM SOP-9.3.2.2 (PDF, 100K)

Part 3: Advanced Tools

If your field activities include sampling/preservation of water, sediment or other samples; recording GPS coordinates; or deploying/retrieving data loggers, you may want to create an **advanced field data sheet** from this generic template:
Advanced Field Data Sheet - Generic template (Excel, 50KB)

The **DQM Project File has been upgraded** and converted into a series of spreadsheets with drop-down menus and formulae that make data entry easy and fun. These spreadsheets can also be used on a **Personal Digital Assistant** (PDA) to capture information directly into an electronic format in the field. This file is the official "DQM Project File" and contains spreadsheets for all your documentation needs. Check out this file:
Advanced DQM Project File (also for PDA) (Excel, 290KB)

When you compile the information that describes your monitoring Stations you often look at many different information sources (e.g., reconnaissance data sheets, maps, etc). If you want to keep all the information you have compiled in the same place, you can use this **Master Location** file. This file also gives you a mechanism to import information from other spreadsheets/devices (e.g., GPS) and the ability to export information into databases or **Station-Finder** sheets.
Master Location Table (Excel, 330K)

Part 4: Monitoring Project Planning Kit

The Monitoring Project Planning Kit is useful if you are in charge of **planning a monitoring project**. This file presents an overview of typical tasks and roles in an environmental monitoring project:
Schematic view of monitoring tasks and roles over time (PDF, 1,300K)

Use of the DQM Generic Monitoring Task List Template will help you **organize staff and volunteers:**
Monitoring Task List Instructions, DQM SOP-9.4.1.1 (PDF, 40K)
Monitoring Task List Template for DQM SOP-9.4.1.1 (Excel 30 K)

The Monitoring Project Planning Kit also contains very **useful checklists** that are to be used when you need to assure the **representativeness** of your data, when **you negotiate with an analytical lab** or if you are **planning a bacterial monitoring project**.
Checklists for project planning and design (Excel 80 K)

Do you need to **write a Monitoring Plan and/or a Quality Assurance Project Plan** (QAPP) for your monitoring project? These examples might be a good start. The first link shows a 5-step systematic planning process for environmental measurements, and the second link provides information on instruments and attainable measurement quality.
Systematic Measurements Planning process (PDF, 180K)
Instrument Choices and Attainable Quality (Excel, 60K)

The **systematic planning process** helps create the planning documents for the monitoring project. These links show an example of an Environmental Monitoring Project Plan and also how it is used to derive information need for the same project's 24-Element Quality Assurance Project Plan (QAPP). The QAPP can then be reviewed, to assure it contains all the information required by EPA and by SWAMP, via this checklist.
Sycamore E. coli study -Environmental Monitoring Plan (Word, 540K)
Sycamore E. coli Quality Assurance Project Plan (QAPP) (Word, 390K)
Sycamore QAPP review checklist (for SWAMP-comparable QAPPs) (Excel, 38K)