

United States
Environmental
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Air Quality System
Precision & Accuracy Data Transaction Generator

AQSP&A Transaction Generator
Users' Guide

Version 3.5



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1. About AQSP&A

AQSP&A is a stand-alone PC tool to build precision and accuracy transactions for uploading P&A data into the Air Quality System (AQS). The intent of this tool is to provide you with a simple way to create the 2 AQS data input transactions used for uploading accuracy data (transaction type RA) and precision data (transaction type RP). The transactions are created in the "new" AQS format with pipe delimiters (vertical bars).

The scope of this tool is identical to the Precision and Accuracy Reporting System (PARS) tools that have been provided in the past. This additional tool is now available because the older PARS software does not execute on some of the newer PC operating systems (e.g. Windows 2000).

AQSP&A is an Excel 2000 workbook. You must have Excel software to use AQSP&A. The minimum version of Excel required is Excel 97.

Note: An Excel file is also called a Workbook. A workbook can include many worksheets. Each worksheet has a tab name. In the AQSP&A workbook, there are 7 worksheets, named Help, TransactionRA, TransactionRP, Valid Methods, Code Values, Audit Protocols, and Coding Manual.

We have created 10 workbooks, one for each USEPA region. Each workbook contains reference tables for active criteria pollutant monitors for every reporting organization in the USEPA region. You need only one of the workbooks; the one appropriate to your USEPA region. More information about this can be found in Chapter 2 of this guide.

To fulfill the intent of providing you with a simple way to create precision and accuracy transactions, we have included the following capabilities:

- Lists of values for data entry are provided whenever practical. The lists of values provided for data entry are taken from the reference worksheets, which have been loaded with AQS data. The lists of values are presented in drop down menus, and are available for most fields, including Method, Units, and Sampling Duration.
- Descriptions of codes and monitors are provided by "right-clicking" the field in question.
- The P&A data you enter in the worksheet are validated prior to creation of transaction. The use of valid monitors, methods, durations, units, various code values, and acceptable observation values are checked. Feedback is provided to you, enabling error corrections. **Note:** The existence of corresponding raw data values for collocated monitors is not checked, however.
- Help is provided for each field on each transaction by including the appropriate information from the AQS Data Coding Manual.

- A report can be generated for each transaction (as a Microsoft Word document). The generated report includes the % difference calculated value for each transaction, as well as a subset of the transaction fields.
- The use of Excel is considered to provide a user-friendly aspect to this application. Because this application is an Excel file, you can create multiple copies of the file, move it to different directories, and also use the many built-in capabilities provided by the Excel program.

2. Set up

Setting up this application consists of copying the appropriate file to your hard drive, and then running the **Set Up Screening Group** utility from the Help worksheet.

Copy the file

Log onto USEPA's Technology Transfer Network, go to the AQS page, and then go to the software page. The URL is:

<http://www.epa.gov/ttn/airs/airsaqs/software/software.htm>

Ten similar files have been "posted" on the TTN... one for each USEPA Region. Choose the file for the Region in which your agency resides. For example, if you are an agency in Region 1, then you would download the file named "AQSP&A RO1".

You must decide on a target drive and folder (directory) to download the file into. As a default suggestion, you could create a folder named "AQSP&A" on drive C. Then download the file from the TTN into this directory. You must then "unzip" the file. Be sure to unzip it, and then open the "unzipped" file. If you run the file from with WinZip or some other zip utility program, the file may not run properly.

Enable Macros

After unzipping the file, double click it to open it with Excel, or start Excel and then open the file from Excel. Because the file contains "macros", you must be sure that the security setting in Excel is set to let you run macros. If you do not get a prompt window to "Enable Macros" when the file is opening, then change the security setting in Excel.

To change the security setting in Excel, first close the AQSP&A file if open. Start Excel, and then from the Excel menu, choose Tools / Macro / Security. There are 3 settings, Low, Medium, and High. If security is set to High, you will not be able to run macros. In this case, change the level to "Medium". With this setting, Excel will prompt you every time you open a file; asking whether you want to enable macros, or not. You can still choose to disable macros when opening other Excel files.

Once you have opened the file from Excel and "Enabled Macros", you will see the Help worksheet.

Set Up Screening Group

The Help worksheet contains a green button labeled "Set Up Screening Group". This button runs a procedure that prompts you for your screening group, and then deletes all of the extraneous data for other screening groups from the look up worksheets (Valid Methods and Code Values) in the workbook. This helps ensure that you build transactions only for the monitors belonging to your screening group. You only need to run this utility one time.

Note about multiple screening groups

If you submit precision and accuracy data to AQS for monitors in more than one screening group, then you can set up additional AQSP&A files for each screening group that you use. The files must have different names, of course, or else reside in different directories. Then run the Set Up Screening Group utility for each copy, and choose different screening groups.

Different versions of Excel

AQSP&A was created using Excel 2000. Therefore, Excel 2000, and newer versions (e.g. 2002) are fully compatible. If you use Excel 97, there are a couple of potential incompatibilities as follows:

- The object libraries referenced by Excel 97 are an older version than those referenced by Excel 2000. So if you receive an initial visual basic error, the work around is as follows:
 - Open Excel 97
 - Select Tools / Macros / Visual Basic Editor
 - From the VBA Editor, select Tools / References
 - Make sure that valid references are made for the following:
 - Visual Basic for Applications
 - Microsoft Excel xx.x Object Library
 - OLE Automation
 - Microsoft Office xx.x Object Library
 - Microsoft Forms x.x Object Library
 - Microsoft Word xx.x Object LibraryWhere xx.x is the latest version contained in your software. The Visual Basic error should then “go away”.
- If you are using Excel 97, the set up screening group button will give you an error, because it uses a function not available to Excel 97. There are two “work-arounds” for this problem, as follows:
 - If you do not mind having all of the region’s data available in the lookup tables, then you do not need to do anything. The application will work properly without using the set up screening group button.
 - If you want a version of AQSP&A with only one specific screening group, (and you have Excel 97), you can call Bill Frietsche, and we will send you a copy specifically for your screening group(s).
 - Or you can get Excel 2000 or Excel 2002 and there should be no compatibility issues.
- Please give IMG a call if you run into problems. Our contact numbers are included in the back of this Users’ Guide.

3. Entering Data

Creating input data transactions consists of entering values into the columns of two worksheets; TrnsactionRA or TransactionRP. For accuracy transactions (type RA), use the TransactionRA worksheet. For precision transactions, (type RP), use the TransactionRP worksheet.

Each transaction worksheet has a fixed header area that contains the names of the fields in the order in which they appear in the transaction format for that transaction type. To create a transaction, populate a row with appropriate values in each column. If you want to create multiple transactions, populate multiple rows with the required data. Mandatory fields have black column headings, optional fields have blue headings.

Drop down lists are available for most fields. For fields that have a set of allowable codes or values, drop down lists will appear in each cell containing the allowable choices. The left mouse button is used to select the appropriate value from the list. In all cases, warnings are given if values not on the list are typed in; however you can proceed with those values if so desired. But if you generate a transaction with non-valid values, you may receive an error when attempting to load the transaction into AQS.

In cases where values are dependent upon other values, such as duration, units, and method, the drop down list of values will contain only the appropriate choices for the specific monitor.

To populate the monitor id fields, you can type the appropriate values into the monitor id columns (State – County – Site ID – Parameter – POC). If you enter monitor id data in this way, you should validate the data by using the lookup feature (right-clicking) to be sure that you have a valid monitor specified.

Another way to populate the monitor id fields is to use the “Look Up Monitor” button on the Excel menu. To add a monitor in this way, first select (left click) a cell in a blank row under one of the monitor id columns (State – County – Site ID – Parameter – POC). Then click the “Look Up Monitor” button on the Excel menu. A procedure will run that asks you to first select a county code. When you select the county, a list of monitors for that county is displayed in the dialogue window. You can then click on a monitor, and the monitor id will be filled in on the worksheet.

4. Using Lookups

In addition to the drop down list of values for selection, look ups are available for validating monitors and for displaying code descriptions. Look ups are performed by using the right mouse button.

After entering data, you can right-click the values for duration, units, or method to see a description of the code value. For example, right clicking on a unit code of "001" will display a message box with "UG/CU METER (25)".

If you type values for the monitor id fields directly into the spreadsheet, you can check the validity of the monitor id by right clicking any one of the monitor id fields you just populated. A message window will be displayed informing you whether or not the monitor exists on the reference worksheet (Valid Methods). This is an important validation step. Be sure to check that your monitors are valid prior to generating transactions. The validation routines that run before transaction generation do not check the monitor ids.

Note about using the mouse

Because the right mouse button is used for look ups on the two transaction worksheets, the default right-click function menu will not appear. To perform those functions (e.g. cut/copy/paste), you will have to use the menu at the top of the worksheet.

Important Note: If you use cut/copy/paste, always use paste special and paste only the values to prevent overwriting the specific cell validation formulas.

For more information about validation, see the Help Worksheet in AQSP&A.

5. Adding a new monitor or method to lookup worksheets

You may need to build a transaction for a monitor, or use a method, that is not included in the lookup worksheets. To provide for this possibility, a menu button labeled “Register New Monitor / Method” is provided. This procedure will present a form requiring you to enter the monitor, method, duration, and units for a new entry. After filling in the form, the appropriate lookup worksheets are updated with the new monitor or method. From then on the new values will be available in the drop down lists of values and the look ups in the transaction worksheets.

You may choose to use this button rather than reloading the lookup worksheets from AQS when the lookup worksheets start to get “out of sync” with AQS. At present, Discoverer retrievals are used to populate the lookup worksheets, and you should contact IMG if you want an updated set of lookup worksheets.

6. Generating a transaction file

The Generate Text File of Transactions button is used to create a text file of transactions. Select one or more rows for generating transactions and then press the button. Please note that when selecting rows to create input transactions, you do not have to be precise regarding which columns you have selected. All of the appropriate columns will be used by the transaction generation procedure. The procedure will reselect all of the columns in those rows.

You will then be prompted for the path and file name for saving the text file. To enable your PC to open the file in the application you normally use for text editing, you may want to add the appropriate file extension to the name (e.g. .txt).

Edit checks are also performed for mandatory fields, values within ranges, max values, and percent differences. For certain fields, the errors are highlighted with red text, and focus is returned to the field in error. Message boxes are used to inform you of the condition generating the error. Because the last step in the procedure is to generate the text file, you will not have files created until all of the fields in the selected rows have passed the edits. After successful text file creation, the rows that had been selected are set to a gray background as a reminder to you.

Note: When generating a text file of transactions, the monitor id is not validated again, so be sure that the monitor is valid when you first create it.

Separate files must be generated for each transaction type. You can append them together later after they have been created, but this application will not generate both transaction types in one file.

You may want to develop a file naming convention, and use certain directories, to stay organized and provide some audit trail capabilities.

7. Creating a Report

Some limited reporting capability has been added to the workbook. A “Create Report” menu choice allows you to create a report as a Microsoft Word document for the rows selected on either of the 2 transaction worksheets. The main benefit of running the reports is that you will be able to see the calculated percent differences for each transaction. Errors will be flagged with red text. So although the complete statistical summarization is not performed, one of the key indicators (the percent difference) is provided as a tool.

Reports can be generated for one transaction type at a time. Not all fields are included on the reports in order that the report is easier to print.

8. Tips for using Excel

Various tips to help with using this workbook:

- You can hide look up sheets, and unhide them, as desired. The coding manual worksheet must not be hidden if you want to access it via right clicking the field names.
- You should always use Paste – Special when copying and pasting. Choose Paste Values only; this will keep the formatting and validation in place for the selected cells.
- Deleting rows on the transaction spreadsheets is OK. The data validations are still in place.
- You can use Excel filters and sorting if helpful.
- The default “right-click” menu of commands is not active on the worksheets (cut, copy, paste, insert, delete, clear, format, etc.), because the right click event is used for providing look ups. You can still perform these functions by using the Excel menu or shortcut keys.
- If you do not use the “Set Up Screening Group” button, all of the active criteria monitors in the USEPA Region will remain on the look up worksheets. You can use the application in this way, but you must remember which monitors are appropriate for the screening group you will use to submit data input transactions.
- Excel 97 does not support one of the Visual Basic methods used in the “Set Up Screening Group” procedure. You will get an error in this case. Call IMG and we can provide you with a copy for your screening group.

8. Help

About Application Help

Application Help is included in the workbook as a worksheet. The help menu item and F1 key will provide Excel help only.

Data Questions

Right click the column headings on the TransactionRA and TransactionRP worksheets to see the coding manual information for each field. You can also get a copy of the data input formats from IMG's AQS website (<http://www.epa.gov/ttn/airs/airsaqs/index.htm>). Look under Manuals and Guides for Input Transaction Formats, Data Coding Manual, and Data Dictionary. Also, the AQS Helpline is available to help you get answers to your questions.

Contacts:

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AQS Help Line 1-866-411-4EPA (1-866-411-4372)