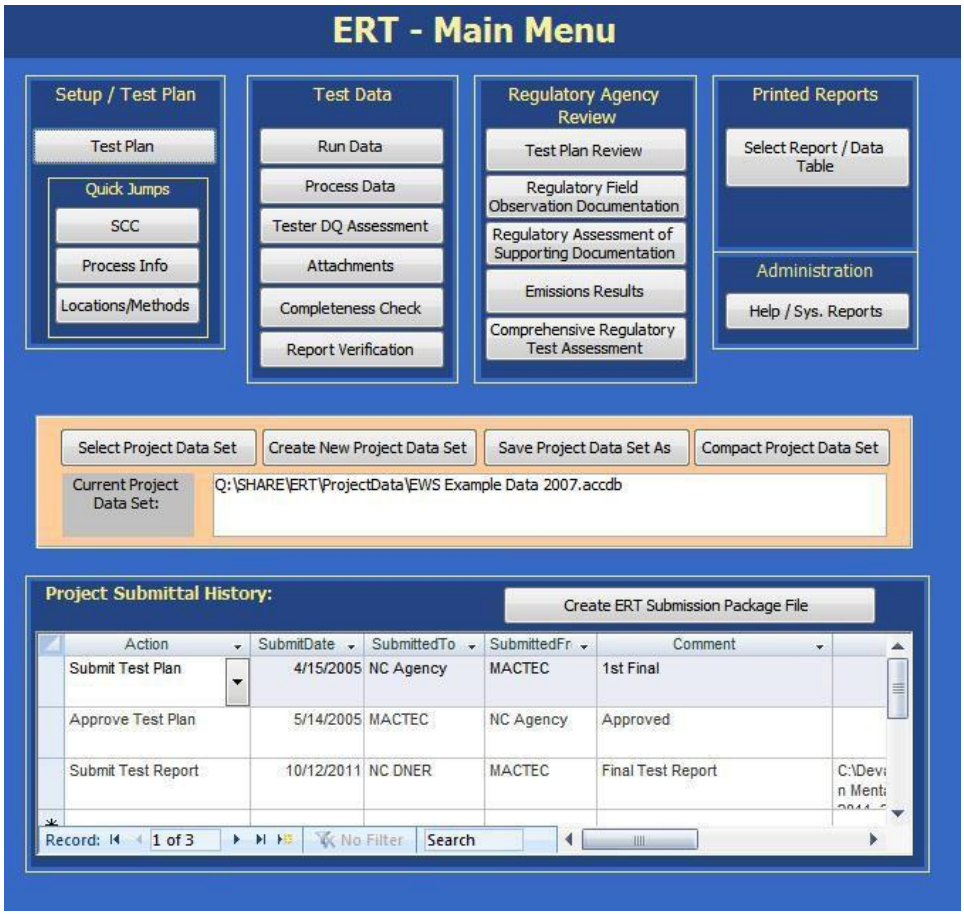
ELECTRONIC REPORTING TOOL (ERT)

USER'S GUIDE

Version 5

June 2017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Chapter 1: Introduction

Thank you for using this version of EPA's Electronic Reporting Tool (ERT). Please keep checking *https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert* for the latest version of ERT and the user's manual.

What is the ERT?

The ERT is used to electronically create and submit stationary source sampling test plans and reports to regulatory agencies, provide a means for regulatory agencies to give comments on a test plan after approval to document the test program, calculate results and submit (or resubmit) the test results as an electronic report to the regulatory agency. Additionally, the ERT provides a means for individuals to review and comment on the submitted test report. Certain EPA regulatory programs require the use of the ERT to submit compliance tests. The ERT allows one to create a compressed submittal package, which consists of the test data and an XML export file. Users can then send the submission package file to the EPA's Central Data Exchange (CDX)/CEDRI: Compliance and Emissions Data Reporting Interface. After a processing period, the test reports will be stored in the EPA's WebFIRE database [*https://cfpub.epa.gov/webfire/*].

ERT Main Parts

When you open the ERT for the first time, you will see the Microsoft Access Application. The application, which consists of the main screen, internal screens and menu buttons, allows one to create a Project Data Set (PDS). The PDS contains all of the information required, plus any attachments. The Microsoft Excel spreadsheet is an optional part of the ERT. You can use it to enter manual source test data and subsequently import that data into the ERT.

- ERT Application

  The ERT Application is a Microsoft Access Database. To run the ERT, you must have Microsoft Access 2007, 2010, 2013 or the runtime version of Microsoft Access. The runtime version is available for free from the Microsoft Access Download Center at *http://www.microsoft.com/en-us/download/details.aspx?id=10910*. Before running the ERT for the first time, please refer to Chapter 2: Before You Begin for instructions.

- Project Data Set

  The Project Data Set (PDS) is a Microsoft Access Database file generated by the ERT Application which, depending on the stage of completion, may contain the Test Plan, Test Plan Review (by the Regulatory Agency), Test Report Data and/or Test Report Assessment (by the Regulatory Agency). This is the file that will be exchanged between the source test contractor, the client and the state agency, and the EPA. Each PDS contains information for test reports from one emissions source. When you create a new PDS, you are prompted for a file name for the PDS that is created. The file is created automatically in a "ProjectData" directory by the ERT. You may change the location of the "ProjectData" directory if you

wish. The last PDS used is remembered by the ERT when restarted. There is no limit on the number of PDS files, but only one PDS can be opened at a time.

- Excel Spreadsheet

  The Excel spreadsheet can be used as an option for entering manual test data into the ERT. Manual test run data can be entered into the spreadsheet and then imported into the ERT. Users have the option of incorporating this spreadsheet into their legacy spreadsheets and then importing the data into the ERT.

Basic Workflow

The basic work flow is as follows, though other work flows are possible:

- Source Test Owner
  - Creates a partial test plan with basic information on facility and process requiring testing and target analytes to be included.
  - Emails the ERT PDS to source Test Company for completion.
- Source or Testing Company
  - Creates the test plan/report [Note: The test *plan* is part of the test *report*. You have the option to submit a test *plan* electronically to the regulatory agency before testing].
  - Creates the ERT Submission Package File.
  - Submits the ERT Submission Package File to regulatory agency.
- Regulatory Agency
  - Reviews test plan, **if** submitted, communicates with source/testing company, as necessary.
  - Approves test plan or marks areas where more information is needed.
- Source or Testing Company
  - Updates the test plan, **if** requested by the regulatory agency, creates new ERT Submission Package File, and resubmits to the agency.
  - **If** approved by regulatory agency, performs testing.
  - Enters run data into spreadsheet or directly into the ERT.
  - Enters lab data into the ERT.
  - Attaches supporting documentation.
  - Creates the “ERT Submission Package” file.
  - Submits the “ERT Submission Package” file to Regulatory Agency or EPA.
- Regulatory Agency
  - Reviews test report.

Chapter 2: Before You Begin

Here are some tips to help complete each section of the ERT.

Test Plan

Completing the test plan accomplishes two interrelated processes in the ERT. First, it is the vehicle used to inform all the parties associated with the planned test program of the needed details about the specific process unit to be tested, the test matrix (test methods, number of runs, duration of runs, analytical finish, etc.), the process information to be collected, the QA/QC activities, and the safety requirements. Second, the test plan provides the foundation for the test report since all of the information that is in the test plan is used in some aspect of a comprehensive test report.

Although, the operating permit is not needed to input the minimum information required to complete a test plan in the ERT, it is recommended that a copy of the operating permit for the affected source be available. The permit will provide most of the site identification information needed for the ERT.

Test location information, process descriptions, air pollution control device information and parameter monitoring information are the same as normally required for test plans (see EPA Emissions Measurement Center Guideline Document 42, Preparation and Review of Site Specific Test Plans *https://www3.epa.gov/ttn/emc/guidlnd/gd-042.pdf*).

The ERT requires detailed process information. This information is important in properly characterizing the emission process and is necessary for EPA to develop and update its emissions factors (EF) database. EF data is typically represented as a mass rate of emissions per process parameter (i.e. lb pollutant/ton of product made). The process data are needed to determine the value of the denominator. **Required** facility and process information includes, but is not limited to:

- Process rate information,
- Source Classification Code (SCC)
  Facility Registration Number, and,
- Air Pollution Control Device (APCD) operating parameters.

Manual Sampling Data

The ERT allows entering run field data two ways:

1. Entering data into the ERT spreadsheet and then importing the data into the ERT.

2. Entering the data directly into the ERT.

The spreadsheet option is provided for users that are more comfortable using spreadsheets. The ERT spreadsheet provided may also be incorporated into users' proprietary field data spreadsheets. Users

can link cells from their spreadsheets to the cells in the ERT spreadsheet. This allows for quicker data entry into the ERT and reduces the likelihood of key punch errors.

The ERT has been designed to accept data for most of the individual test methods commonly used today. Although we recognize that some test methods may be combined to minimize the number of sample trains in operation, ERT has not been set up to include all possible combinations. Therefore, if a single train is used for multiple methods which the ERT is not currently capable of combining (example: Method 5 and Method 8), data for each method must be entered into the ERT separately. To avoid the need to enter the same run data multiple times, we recommend the use of the included Excel spreadsheet and importing the data into each method, as appropriate.

Instrument Sampling Data

At this time, the ERT requires manual entry of instrumental test data, which is input by location and method. To allow for automatic calculation of system bias and linearity, each calibration standard must be entered into the ERT under item 16 of the "***Test Plan***" tab.

Chapter 3: Getting Started

Verify that you have a Version of Microsoft Access that will Run the ERT

If you have Microsoft Access version 2007:

- Verify that you have at least Service Pack 2 installed. Open Microsoft Access, click on the MS circle in the upper left corner of the Access window, click on "***Access Options***" at the bottom of the window, click on "***Resources***" in the left column. At the bottom of the window just below the text "about Microsoft Office Access 2007" the software (Microsoft Office Access 2007) and the Service Pack level is identified. If Service Pack 2 is installed, the text "SP2 MSO" will be between two sets of numbers that are in parentheses. If you do not have Service Pack 2 installed, click on "***Check for Updates***" and follow the directions to install the updates from Microsoft. Many corporate computers do not allow users to install software and you will need to contact your information technology center and have them update your software.

If you have Microsoft Access version 2010 or 2013: Any Service Pack level is acceptable in order to run the ERT Application.

If you do **NOT** have Microsoft Access:

- You will need to download and install the runtime version of Microsoft Access from the Microsoft Access Download Center. A link to the download center is provided on the EPA ERT website.

- After installing the Runtime version of Microsoft Access, follow the instructions below to install and run the ERT.

Downloading and Installing the ERT

The EPA website *https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert* contains the latest versions of the ERT, the spreadsheet, the user's guide, and example data sets.

Once you've determined that you are running a version of MS Access which is capable of running the ERT Application, follow these two steps.

1. Download the latest versions program files. This file includes the latest version of the ERT and the user's guide.

2. To run the ERT, right click on the downloaded zip file and select "***Open***". Select a destination for the extracted files. Go to the destination folder and double click on ERT5.accdb file. It is recommended that the ERT program file and the data set files be

located on a local drive (ie. C: or desktop). Some functionality of the ERT is lost across servers.

Example Data

The EPA's website also contains example data for use with the ERT. Download the files from the ERT Project Data Set example link. This file includes an example Project Data Set (PDS) and the associated spreadsheet. Unzip the files to your hard drive and use the ERT to select the ERT_TEST-PSD.accdb file. See the *Selecting a Project Data Set* section for more information on selecting a PDS.

Starting the ERT

To start the ERT, double click ERT5.accdb file from the location where you've installed the ERT application.

Depending on how your version of Access is configured, you may see a "Security Warning" window (as shown below) when you try to start the ERT.

When the ERT is first opened, the following screenshot may be seen:

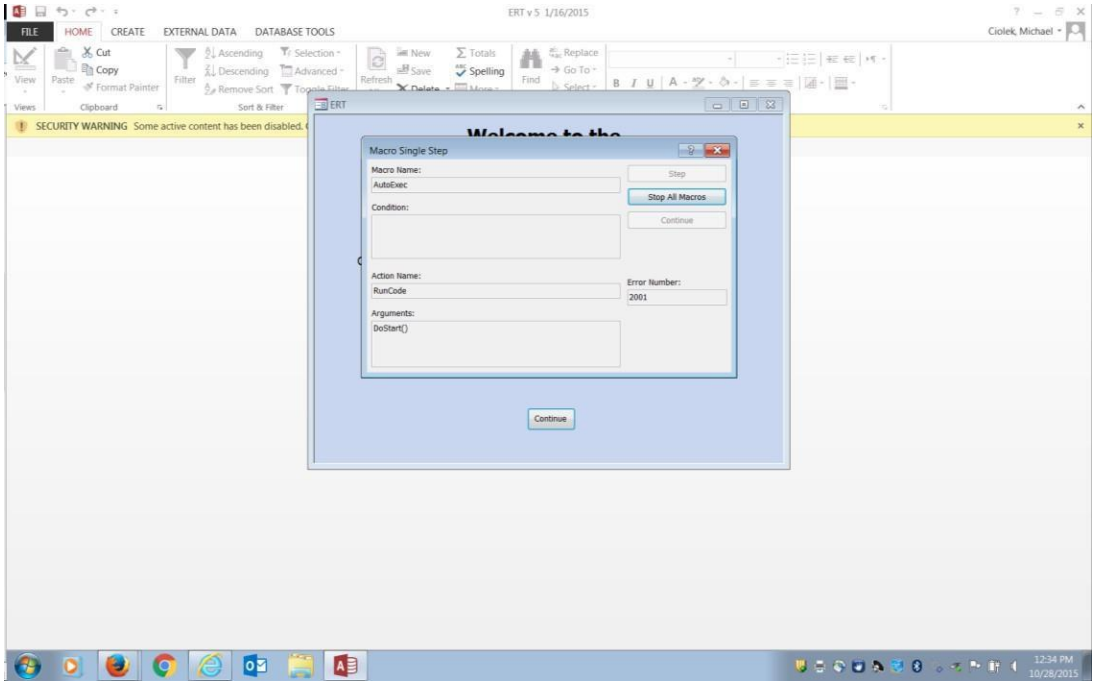


Figure 1 - Security Warning

Select "Stop all Macros" and the red X. Once the Macro box is closed, enable all macros in the yellow Security Warning banner. This should enable the program to run.

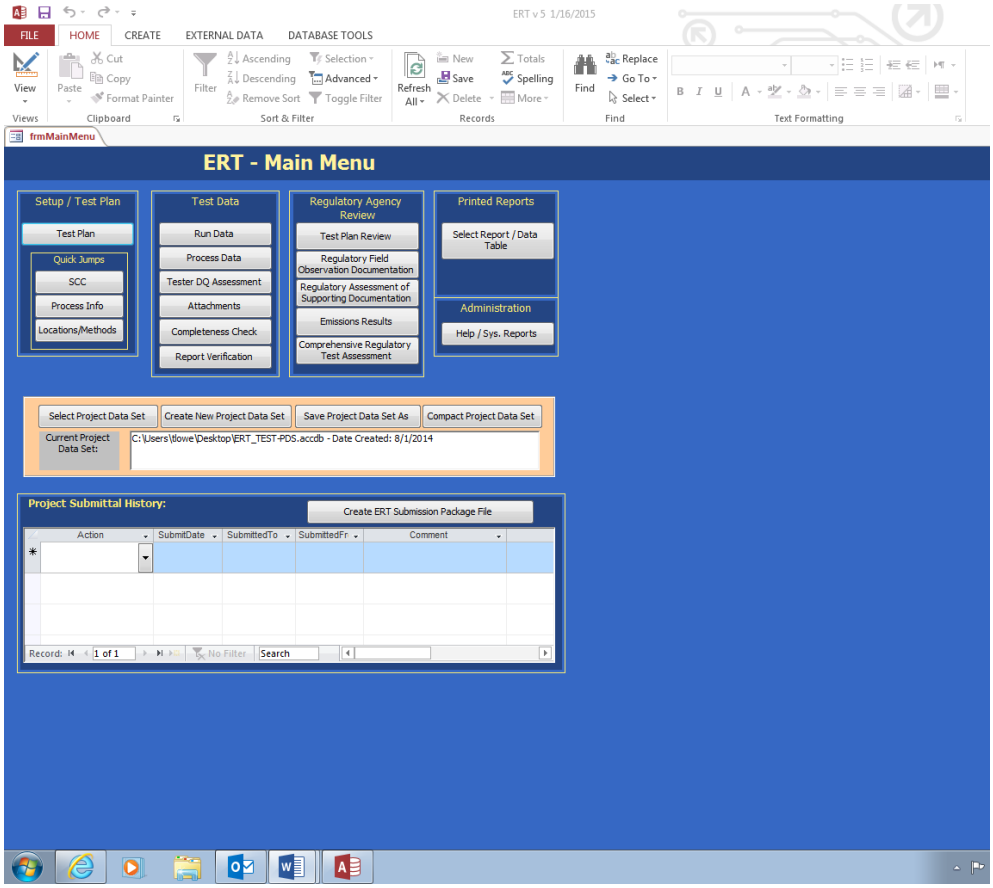


Figure 2 - ERT Welcome Screen and Main Menu

Project Data Sets

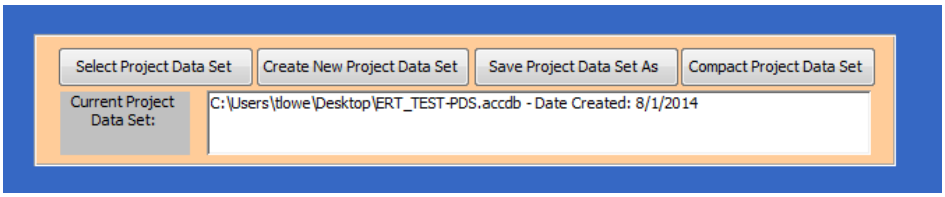


Figure 3 - Project Data Set Area of the ERT Main Menu

The PDS is a Microsoft Access file that contains all of the information for all the source tests performed at a single emissions source. This includes the test plan, run data, test report, test review and any supporting documentation that has been included as attachments.

When the PDS is sent to the regulatory agency, the agency can use the ERT to review and approve the PDS for the source test. When attachment file sizes are small, the ERT's file can be emailed through many corporate, commercial, state and Federal email systems.

You can select, create, save as, or compact a PDS from the "***ERT Main Menu***". The first time you create a PDS, you will select "**Create New Project Data Set**." Thereafter, you can select the project data set and click on "**Save Project Data Set As**" to save the entire PDS with another name or to save only the test plan part of the first data set as a template.

Creating a Project Data Set

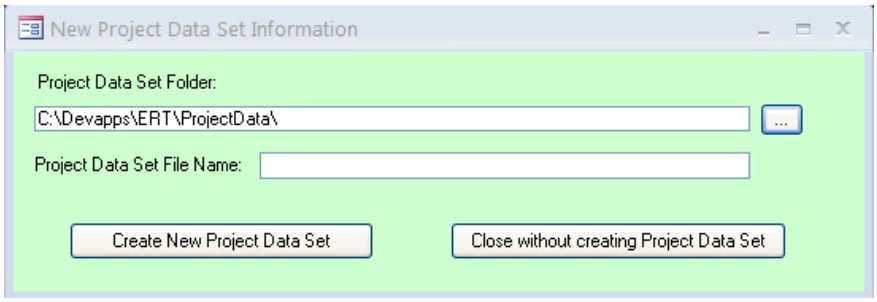


Figure 4 - Project Data Set Area of the ERT Main Menu

- Click "**Create New Project Data Set**" from the "***Project Data Set***" area of the ERT main menu.
- Browse for the location of the folder to store the PDS or let it stay in the default folder.
- Enter a name for the PDS file in the "Project Data Set File Name"box.
- Click "**Create New Project Data Set**" to create a PDS with the name you entered in the folder you created.

Selecting a Project Data Set

- Click "**Select Project Data Set**" from the ***project data set*** area of the ERT Main Menu. A "***Browse***" menu like shown in Figure 5 will appear.
- Select the PDS from the default folder (ProjectData) or browse to the folder containing the desired PDS and select the file and click "**Open**".

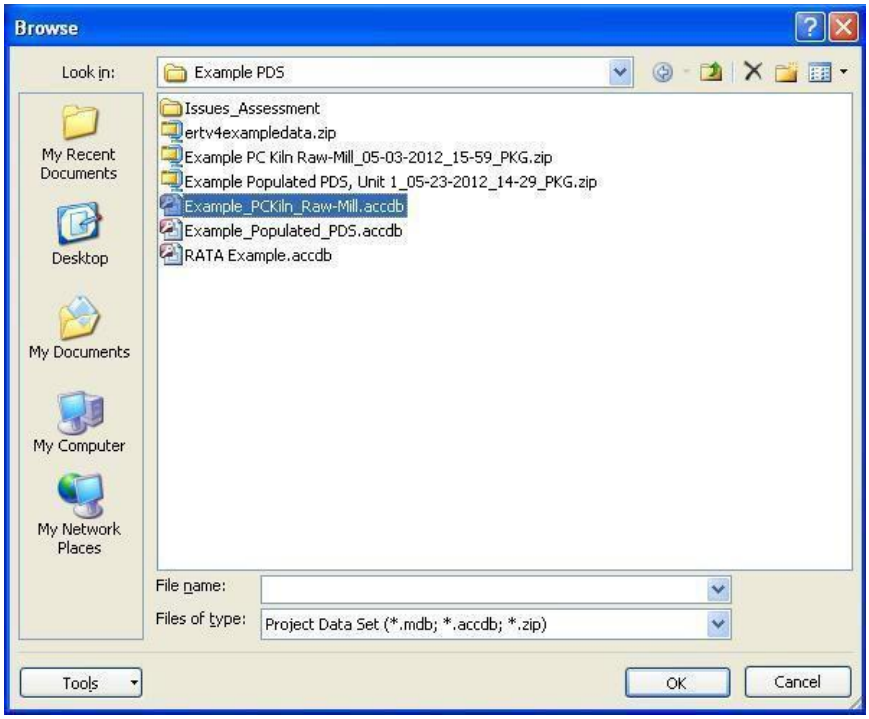


Figure 5 - Select Project Data Set Window

Performing a Save As on a Project Data Set

Source tests for similar sources may contain some of the same information. To keep from having to enter the same information for similar tests, the ERT has the ability to save the currently selected PDS as a template. When this happens, a new PDS is created with the current test plan information saved and all the other data deleted. The new template PDS can then is used as a starting point for a similar source test. The ERT also has the ability to save all of current PDS data into a new PDS.

- Click "**Save Project Data Set As**" from the ERT main menu. The window shown in Figure 6 will appear.
- Click "**Yes**" to save the current PDS as a Template (saving test plan data only).
- Click "**No**" to save the current PDS (saving all data).
- Click "**Cancel**" to cancel the operation.

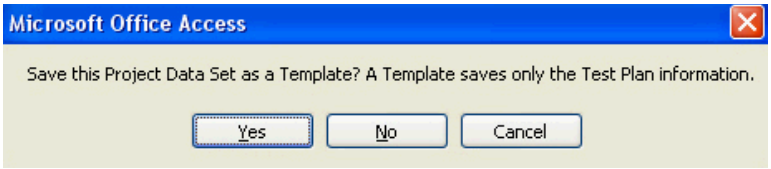


Figure 6 - Save Project Data Set as Template

Compacting a Project Data Set

Microsoft Access files can be very large. By clicking on "**Compacting a Project Data Set**" you can reduce the file size of the project data set. This will not affect the quality of content of the file. Do this by clicking "Compact Project Data Set" from the project data set area of the ERT main menu. A message will alert you when the process is complete.

Compacting the ERT

Because of the way Microsoft Access manages memory allocation, the file size of the ERT program will grow. If you have Access 2010, or runtime program from 2010, or later, installed then the file will automatically compact itself upon closing the program.

For versions of Access 2007, the user will need to periodically compact the ERT. Do this by following these steps:

1. Click the Microsoft Access icon on the upper left of the ERT Access program. This will open the Microsoft administration tools window, as seen in **Figure 7**.

2. In the left menu of the Administration tools window, click on the "Manage" icon. A submenu will open in submenu selection space in the right most part of the window.

3. Click on the "Compact and Repair Database" selection to compact the ERT.

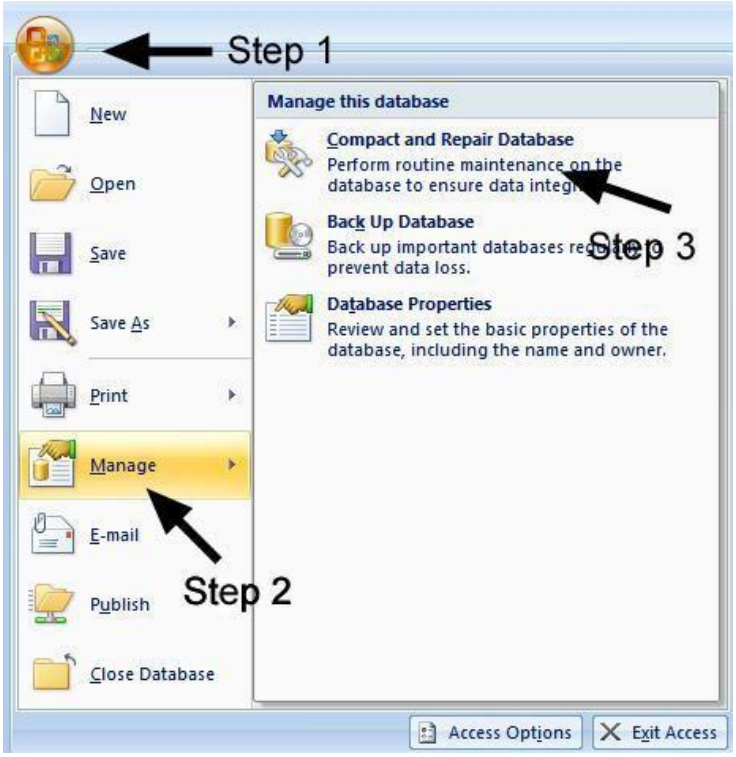


Figure 7 - Access 2007 Compacting of ERT

Project Submittal History/Creating the ERT Package for Regulatory Agency Submittal

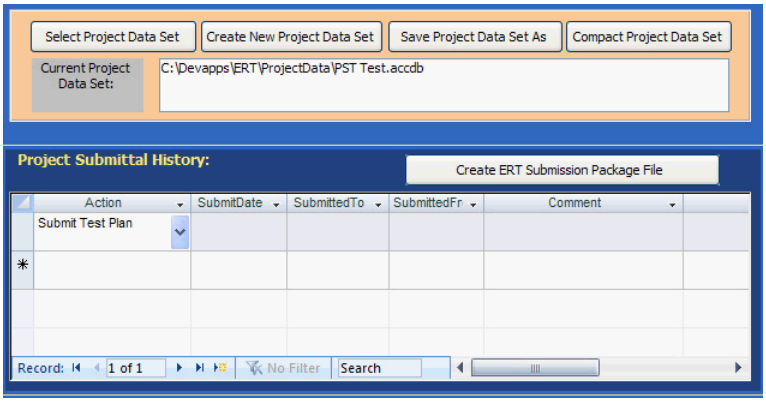


Figure 8 - Project Submittal History Area of the ERT Main Menu

The "***Project Submittal History***" area of the ERT allows you to create an ERT submission package file and keep track of where the PDS is in the workflow of the source test process. (Please see the

previous *Basic Workflow* section for more information on the workflow process). At the completion of each step (test plan, test plan review, test report, test report review / approval), the action, date submitted, to whom it is being submitted, who made the submission, and any special comments are entered into this area.

If the data set is required to be submitted to CDX/CEDRI, an ERT submission package file must be created. To create a submission file, click "**Create ERT Submission Package File.**" If any required fields are not complete, a window will open with a list of links to the screens. Click on the links to the screens to complete the fields. Once the field window is closed, click on the "**Re-Check Data**" button. When all the required fields have been completed, the "***Create ERT Submission File***" window will open, shown in **Figure 9**, in which the file preparation menu is activated.

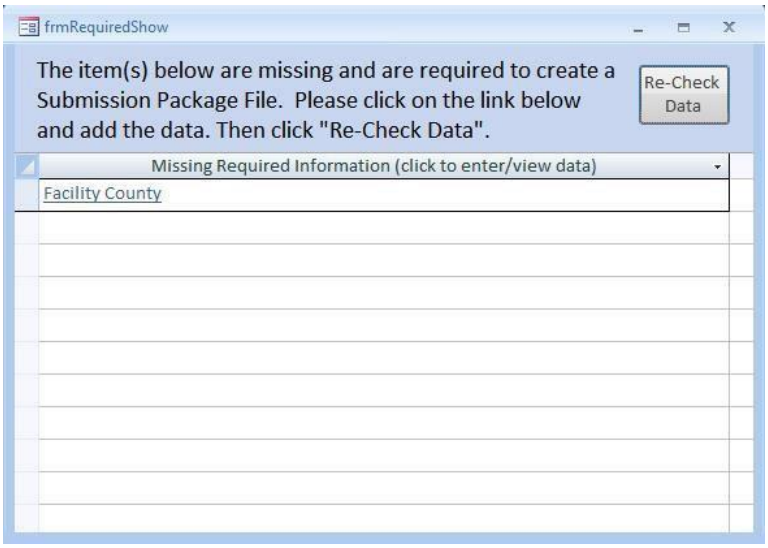


Figure 9 - Create ERT Missing Items List

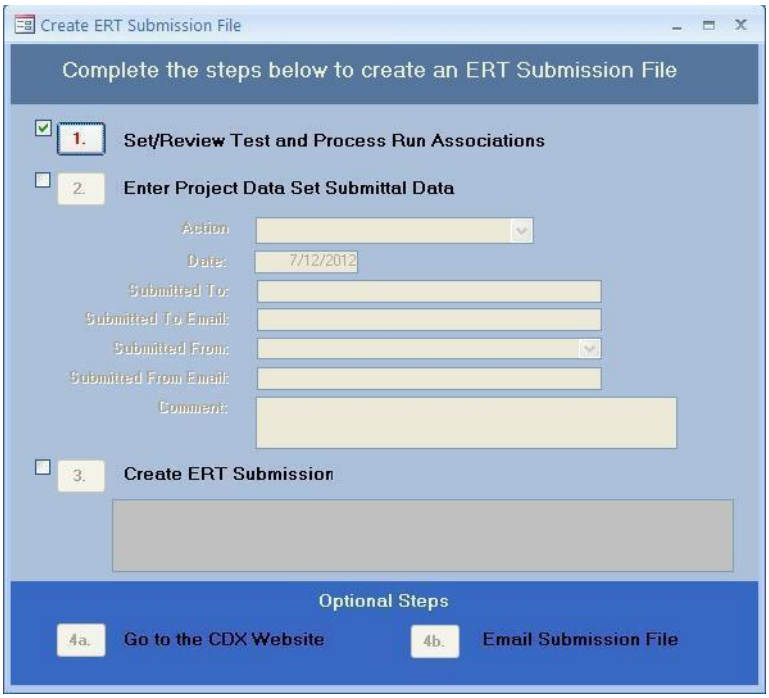


Figure 10 - Create ERT Submission Package File menu

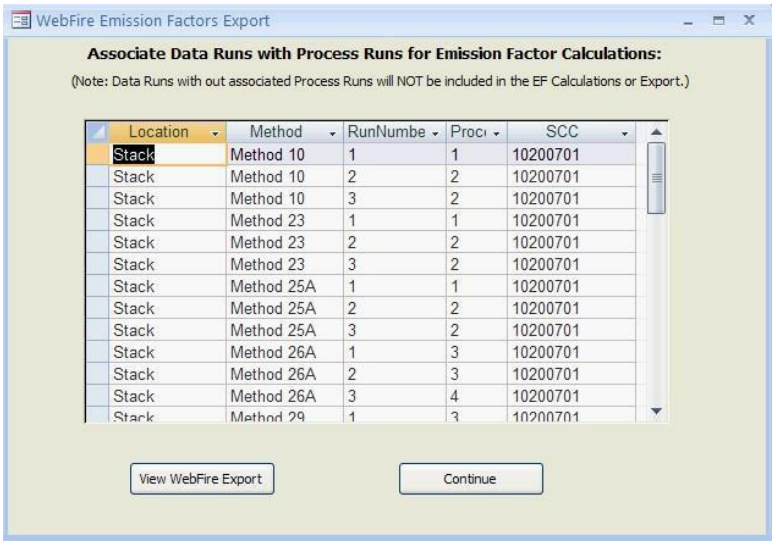


Figure 11 - Project Submittal History Step 1

Click on the number 1 of **Figure 10** - Create ERT Submission Package File menu to "***Set/Review Test and Process Run Associations***" and you will see the above screen (**Figure 11** -

Project Submittal History Step 1). This allows you to associate the process data with the test run data. Even if you associated process data with test run data in the emissions tab of the run data details screen, you will need to make the associations in this screen. **THIS IS REQUIRED FOR SUBMITTING TO CDX/CEDRI**. Successful association of the data will result in a table, as in **Figure 11** - Project Submittal History Step 1. Click on "**View WebFIRE Export**" to see results in spreadsheet format.

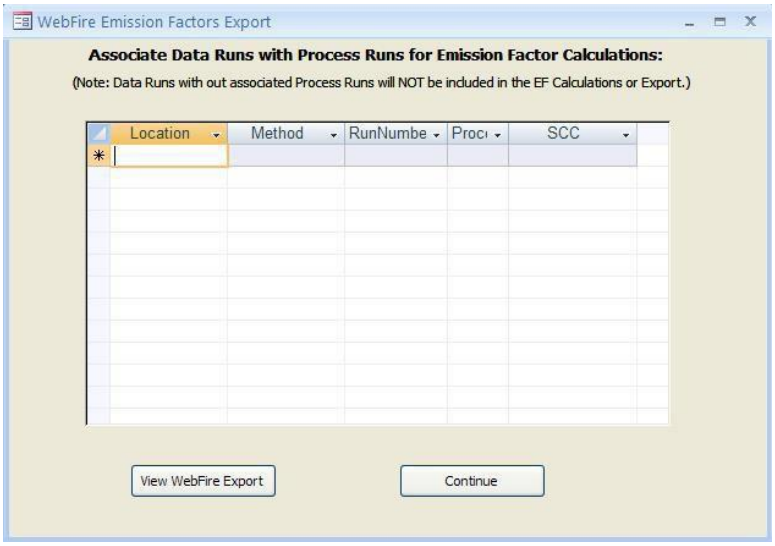


Figure 12 - Project Submittal History Step 1 of New Project with no associated data

When submitting a PDS with only test plan data there will be no run or process data to associate. Click on "**Continue**" button to skip this process and continue to create the submission package file.

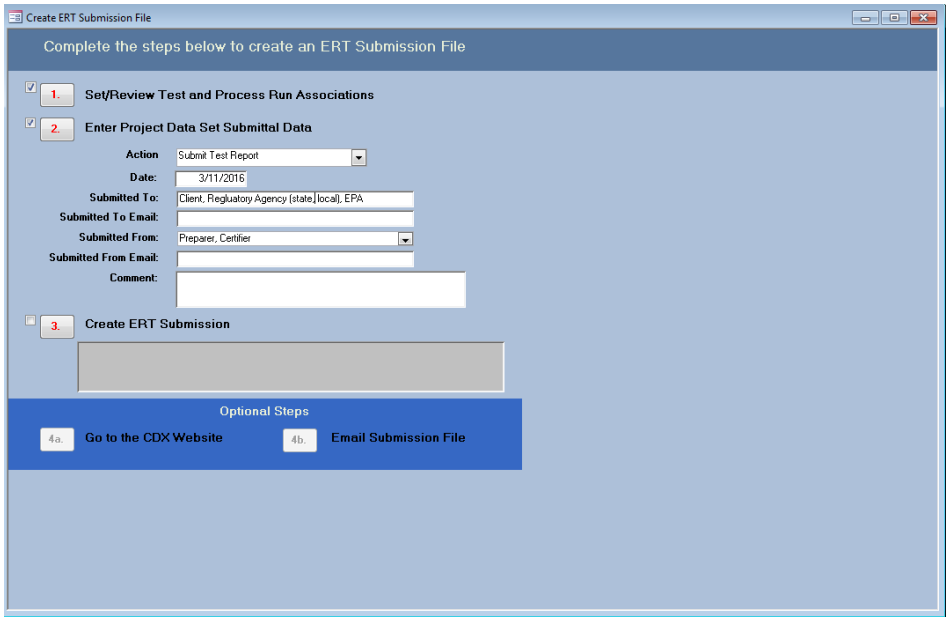


Figure 13 - Project Submittal History Step 2

Click the number 2 to "***Enter Project Data Set Submittal Data"***. This will activate the fields so that the data can be entered. Select the action from the dropdown list and enter the other information in the fields. The actions are as follows:

- "***Submit Test Plan***"
- "***Notice of Deficiency - Test Plan***"
- "***Resubmit Test Plan***"
- "***Approve Test Plan***"
- "***Submit Test Repor***t,"
- "***Notice of Deficiency - Test Report***"
- "***Resubmit Test Report***"
- "***Approve Test Report***"
- "***Request Additional Information***"
- "***Other***"

While you may create a submission file without entering information in all the fields, this information will be saved in the "***Project Submittal History***" as documentation of the activities associated with the source test program.

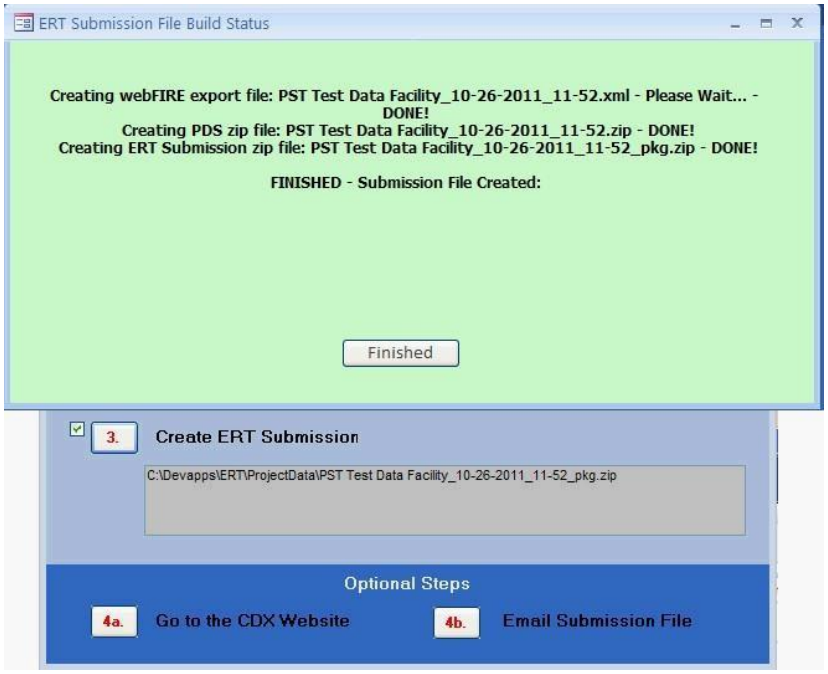


Figure 14 - Project Submittal History Step 3

Click on number 3 to "***Create ERT Submission***." An action window will appear with instructions as it creates the ERT Submission file, a PDS zip file and an ERT Submission zip file. When the "**Finished"** is clicked, the location of the field will be reported in the field. This screen should not take a long time to create. If it does take a long time (more than 5 minutes), most likely there is an issue with the data or the file. For instance, if the file is saved on a server and not a local drive, an ERT submission package file will not be created. It will give a blue spinning wheel and will not advance to creating a .zip file.

If the internet is active, by clicking on 4a to "***Go to the CDX Website***", you will be linked to the CDX website. By clicking on 4b to "***Email Submission File***", the local email will open with a reminder to attach the file from the provided location.

> ***Note:*** *If clicking on* 4a *to "**Go to the CDX Website**" generates a "**Cannot Connect to Proxy Error,**" click on "***Internet Options***", then on "**Advanced**." Check to be sure the SSL and TLS protocols are enabled under the security section.*

Chapter 4: Create Test Plan

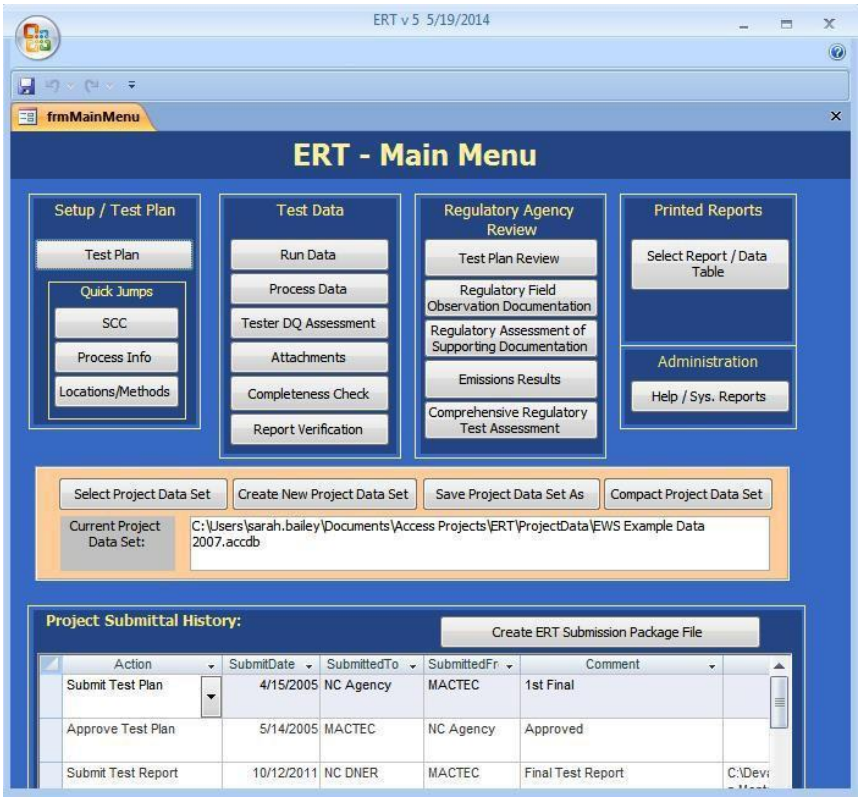


Figure 15 - The ERT MainMenu

Figure 15 - The ERT Main Menu shows the functional areas of the ***ERT Main Menu***.

- "***Setup / Test Plan***" with "***Quick Jumps***"
- "***Test Data"***
- ***"Regulatory Agency Review"***
- "***Printed Reports***"
- "***Administration***"
- "***Project Data Set***"
- "***Project Submittal History***"

If you are working with a new (empty) project data set (PDS) you will only be able to access the "***Setup / Test Plan***" functions of the ERT. After you have completed entering the setup information, you will be able to access the other menu items. If you have already entered data into a PDS (or will be working with the example dataset provided on the website) and it has not already loaded, click the "**Select Project Data Set**" and follow the file select dialog instructions.

General Information

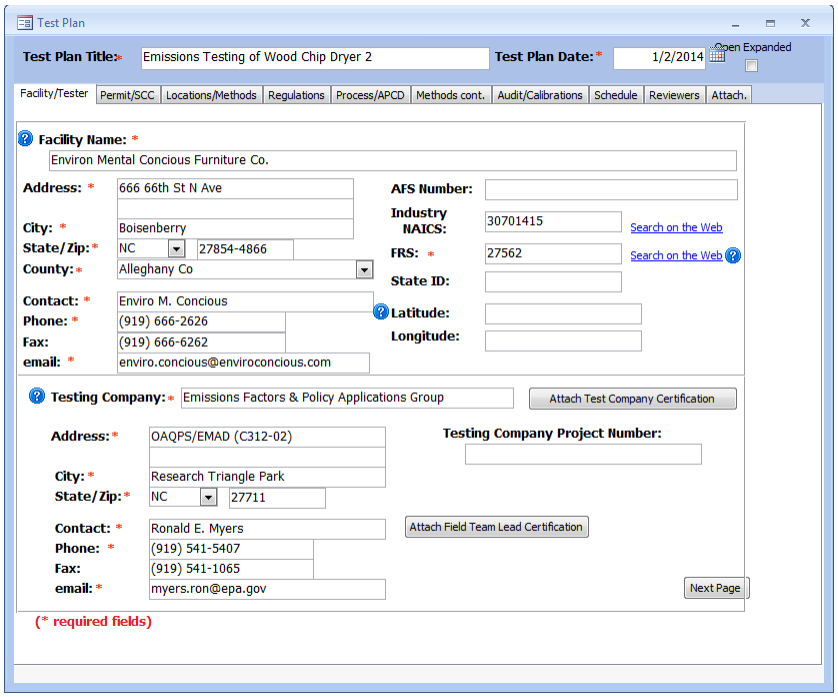


Figure 16 - Test Plan Facility/Tester Tab

Data Entry Process

To begin the data entry process, click "**Test Plan**" in the "***Setup / Test Plan***" on the ERT main menu. The screen shown in Figure 16 will appear. This screen contains a series of data entry tabs that cover the information required for a test plan/test report. [Recall a test *plan* is not required by the EPA to be submitted. However, a state air agency may require/request that it be sent to them. Keep in mind, these fields should be filled in before a submission package file is submitted] There are 10 tabs or sections in the test plan module: "***Facility/Tester***," "***Permit/SCC***," "***Regulations***," "***Process/APCD***," "***Locations/Methods***," "***Methods cont.***," "***Audit/Calibrations***," "***Schedule***," "***Signatures***," and "***Attachments***."

Requested Information

The information requested has been selected to adequately characterize a facility, the regulatory use of the data, and what tests are to be performed. In general, providing this information will give the test plan reviewer enough information to evaluate the test plan without needing additional information. However, it is not possible to create a generic list of information that includes all the information for all test plan scenarios. Use comments and attachments to provide information in the test plan to facilitate review whenever possible. Complete all sections to speed up the test plan review and approval process. You may access specific sections of the test plan data entry form by clicking the other control buttons on the ERT main menu (e.g. "**Locations/Methods**").

Screen Navigation

Move from one section to the next by clicking the "**Next Page**" button located in the bottom right corner of the screen or by clicking on the desired tab of the data entry form. You will generally have two options for entering data in the form, either typing in the spaces provided or using the copy and paste method to extract information from other electronic documents.

Screen Help Tips

Moving the cursor over the blue circled question mark displays a "pop up" help tip window that provides a detailed description of what is needed for that field.

Facility/Tester Screen

Enter information about the facility and the testing company. The fields are as follows:

***Facility Name*:**	The public or commercial name of the facility site (i.e., the full name that commonly appears on invoices, signs, or other business documents).
Address:	The address that describes the physical (geographical) location of the front door or main entrance of a facility site, including urban-style street address or rural address.
City:	The city in which the facility resides.
State/Zip:	The two letter state and mailing zip code in which the facility resides. Use the drop down menu to select the two letter postal code for the State.
County:	The county or parish in which the facility is located. Use the drop down menu to select the county. These will be available after the postal code for the State is selected. One use of this information is a search criterion to identify a facility which is in the regulatory jurisdiction of a local or tribal agency.
Contact:	The person with knowledge of the facility's operations during the test program who can assist reviewers of the test plan or test report if they have questions.
Phone:	The phone number of the contact or the facility.
Fax:	The facsimile number of the facility through which the contact can assist the reviewers (optional).
Email:	A working email address of the contact which can be used to assist the reviewers.
AFS Number:	EPA AIRS Facility System (AFS) number.
Industry NAICS:	North American Industry Classification System.

FRS:	EPA Facility Registry System number (FRS). A web link to EPA's Envirofacts web page is provided should you not know the FRS number. Several search methods are available to locate the facility and obtain the FRS number and other information on the facility.
State ID:	The state identification number as provided by a state air pollution control agency.
Latitude:	Latitude of emission release point (typically the stack), with a minimum of 5 decimal places.
Longitude:	Longitude of emission release point (typically the stack), with a minimum of 5 decimal places.
Testing Company:	The public or commercial name that commonly appears on invoices, signs or other business documents. A button is adjacent to the data entry field to attach a copy of certification documentation including that the testing firm qualifies as an AETB as described in ASTM D7036-12 Standard Practice for Competence of Air Emission Testing Bodies,
Address:	The standard address used to send mail to an individual with the source test company.
City:	The state in which the source test company resides.
State/Zip:	The two letter state and mailing zip code of the source test company.
Contact:	The person with knowledge of the design and conduct of the source test program. A button is adjacent to the data entry field to attach a copy of certification documentation including that the test team lead is a Qualified Individual as described in ASTM D7036-12 Standard Practice for Competence of Air Emission Testing Bodies,
Phone:	The phone number of the source test company through which the contact can assist the reviewers.
Fax:	The facsimile number of the source test company through which the contact can assist the reviewers (optional).
Email:	A working email address through which the contact can assist the reviewers.
Testing Company Project Number:	The assigned project number for the testing project by the test company (optional).

***Note**: If you have access to the Internet, clicking on "**Search on the Web**" link will connect to a website that will allow you to search for your NAICS or FRS number.*

Permit/SCC Screen

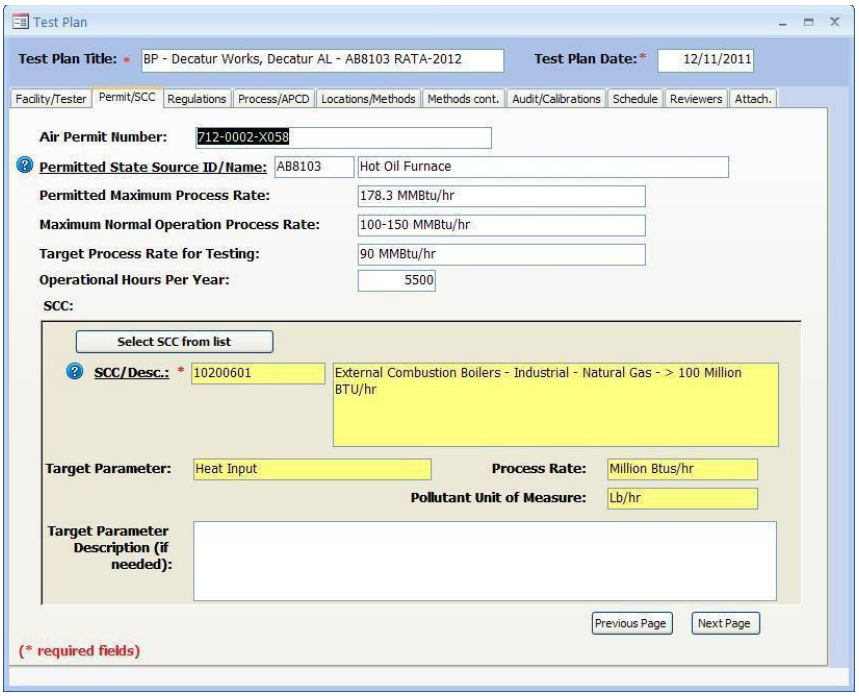


Figure 17 - Test Plan Permit/SCC Tab: Resulting SCC

The "***Permit/SCC***" tab screen is where permit information is inputted, including process rate information. Also, this is where the Source Classification Code (SCC) is selected by clicking on the "**Select SCC from list**" button. SCCs are 8 digit codes that represent a specific emission process, oftentimes for a specific industry. If you do not know the correct SCC, source descriptions in the relevant section of AP-42 may provide you the code or part of the code otherwise you should contact the facility. It is very important to select the proper SCC for the emission process you've tested.

The fields are described as follows:

***Air Permit Number*:**	State or Federal Permit Number.
Permitted State Source ID/Name:	Many state and local agencies have alphanumeric identifiers for individual process operating units with an associated name describing the unit. If the regulatory agency to which this test will be sent has a specific identifier for the unit tested, enter it in this location.
Permitted Maximum Process Rate:	Rate as listed in Title V or state permit.
Maximum Normal Operation Process Rate:	Rate as listed in Title V or state permit.
Target Process Rate for Testing:	Value of the target process rate for the test program.

Operational Hours Per Year: Normal hours the facility operates in a year.

SCC/Desc: The ***Source Classification Code*** (SCC) is selected through the use of the "***Select SCC from list***" button. Yellow fields are copied from another form (**Figure 18 -** Test Plan Permit/SCC Tab: Selecting SCC) and cannot be edited from the yellow highlighted field.

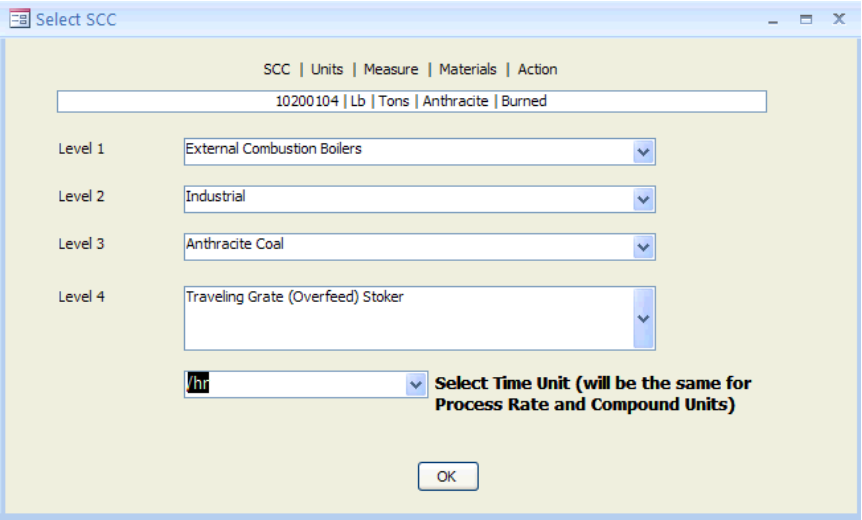


Figure 18 - Test Plan Permit/SCC Tab: Selecting SCC

Target Parameter: For most SCC's, this field is automatically filled based on the SCC selected. For those SCC's without an established target process parameter, this will be a user established parameter.

Process Rate: The rate units used to quantify the feed or output level of the target parameter for the source process.

Pollutant Unit of Measure: The unit of measure for the target pollutants measured during the test. The time units in the denominator for the process rate and the pollutant unit of measure must be the same. Additional pollutant units of measure may be selected in the "***Locations/Methods***" tab.

Target Parameter Description: Description of the identified target parameter and associated process rate and pollutant unit of measure if the text used in the fields requires clarification.

> ***Note:*** *The fields with yellow background are filled in automatically when the SCC is selected from the series of dropdown lists.*

While many SCC's have one or more established sets of emissions units and units for quantifying the process rate, there are also many which do not have a set of units for process rates. **Figure 19** shows a short list of SCC's where there are four SCC's with established units for the process rate and four SCC's where there are no established units to measure the process rate.

Description	SCC8	UNIT	MEASURE	MATERIAL	ACTION
Bleaching	30504160				
Calcining, calciner NEC	30504149				
Calcining, flash calciner	30504142	Lb	Tons	Clay	Produced
Calcining, multiple hearth furnace	30504141	Lb	Tons	Clay	Produced
Calcining, rotary calciner	30504140	Lb	Tons	Clay	Produced
Drying, apron dryer	30504132	Lb	Tons	Clay	Produced
Drying, dryer NEC	30504139				
Drying, rotary dryer	30504130				

Figure 19 - SCC selection menu with no established process units

When a user selects one of the SCC's where there is no established set of units for the process rate, the selection of one of these SCC's will initiate a sub menu shown in Figure 19**Figure 20** which allows the user to establish a set of units for documenting the process rate variable to associate with the measured emissions. The process variable is divided into four parameters. The first parameter is the units used to measure the pollutants. A default of pounds (Lb) is pre-populated in the "***Pollutant Unit***" field. Other units may be selected either from the drop down list or users may add emissions units. Users should limit their selection to units which are available as a rate (i.e. /hr or /minute) in the "***Add Emissions/Concentrations***" area of the "***Locations/Methods***" tab (Item 7b). The second parameter is "***Measure***" which is the units used to measure the process rate. Several existing units for measurement are available and include but not limited to tons, megawatt-hour, and pounds. Additional units of measurement may be added should the required measurement units not be in the list. The third parameter is "***Material.***" The parameter material is the designation of what material is measured as an indicator of the process rate. As with "***Measure***" many items are available in the drop down list of existing materials. Also, the user may add a parameter describing the material used to describe the process rate. Lastly, "***Action***" is used to describe what action is used to describe the measured material. The drop down list includes many existing actions that have been used to describe other process rates. If the user cannot find a suitable action to describe the process rate measurement, an additional action may be added.

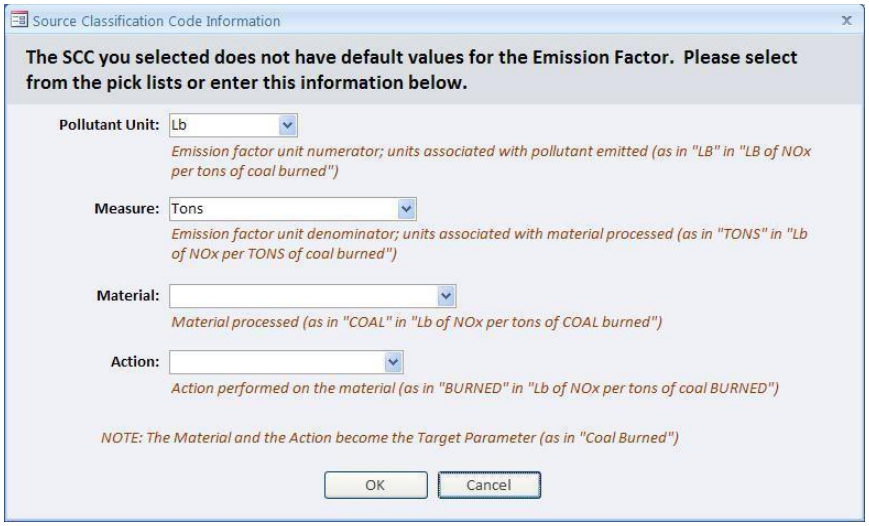


Figure 20 - Process units' selection for SCC's with no default units

Upon completion of the selection of the pollutant unit, measure, material and action, clicking on "**OK**" will return you to the SCC selection list where the time unit for measuring the process rate should be selected. The default time unit is hour but others may be selected from the drop down list. The time unit must be the same as the time unit used to measure the pollutant. Clicking on "**OK**" will return you to the tab for the entry of "***Permit/SCC***" information. You will notice that the fields "***Target Parameter***," "***Process Rate***" and "***Pollutant Unit of Measure***" will have the items that were selected in the emissions factor selection screen. You may provide more detail on the target parameter used to describe the process rate if needed.

Locations/Methods Screen

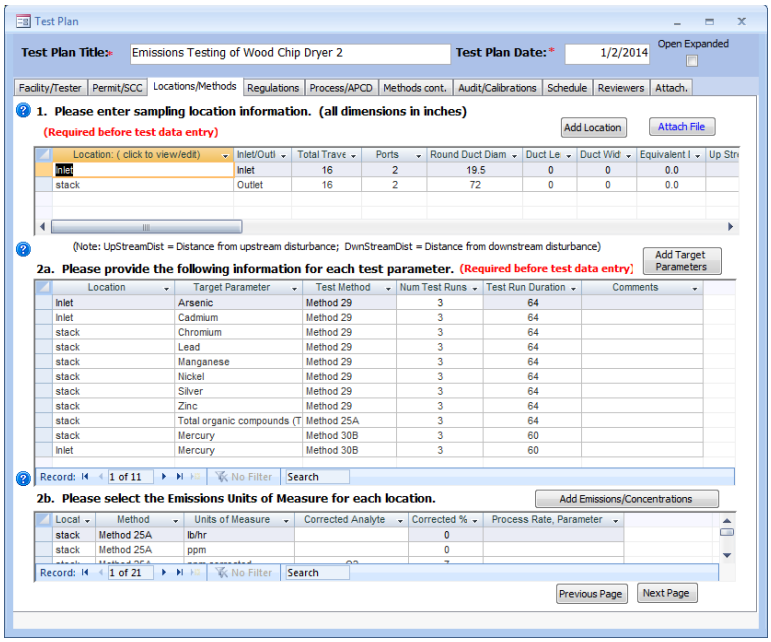


Figure 21 - Test Plan Locations/Methods Tab

You can input sampling locations and sampling methods using this screen.

- ***1. Please enter sampling location information:*** Section 1 is where sampling location information is entered. For existing test locations, you can either type the information directly into the fields, or click in the Location column which will open the "***Add Location"*** screen. You must click on the "**Add Location"** for a new location. The different locations must have a unique name which must be entered before the remaining fields become activated. Multiple sampling locations may be provided for emissions sources requiring inlet and outlet testing, for different operating conditions or with multiple emissions locations. The ERT does not currently sum or average emissions from multiple locations. As a result, for sources with multiple inlets or outlet locations testers are required to calculate the sum or average of these multiple stacks and provide the resulting information in the "***Tester DQ Assessment***" section.
  When you click "**Add Location**," you'll see a window like that shown in **Figure 22 -** Test Plan Locations/Methods Location Edit and Insert options. Enter a unique location name. Then select either inlet or outlet. If a "***Round Duct Diam***" is entered, the "***Duct Length***" and "***Duct Width***" fields will be inactivated. If a "***Duct Length***" value and "***Duct Width***" value are entered, the "***Equivalent Diameter***" will be calculated automatically.
  Enter the "***Up Stream Distance from Disturbance***" (Distance A- Fig 1-1, RM1) and "***Down Stream Distance fromDisturbance***" (Distance B -Fig 1-1, RM1) and click on the "**Calc Points**" button. The number of "***Total Traverse Points***" required by Method 1 will be automatically calculated. You may change the number in the"***Total Traverse Points***" field to reflect the proposed or actual number of traverse points.

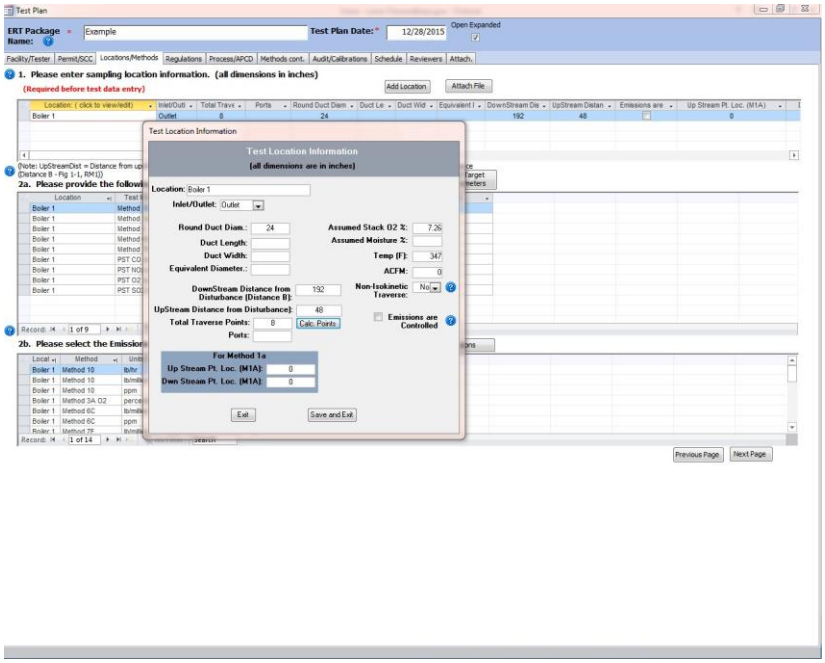


Figure 22 - Test Plan Locations/Methods Location Edit and Insert options

Enter the values for percent oxygen, percent moisture, stack temperature and actual gas flow that you expect to exist during the emissions test in the far right data fields. Select "***Yes***" in the "***Non-Isokinetic Traverse***" field if this is an instrumental test method (such as Method 10, 7E, 6C or 25A). Select "***No***" if this is an isokinetic or manual extractive test method which Particulate Traverse or a traverse which requires isokinetic sampling. Check the box if a control device is present prior to the test location.

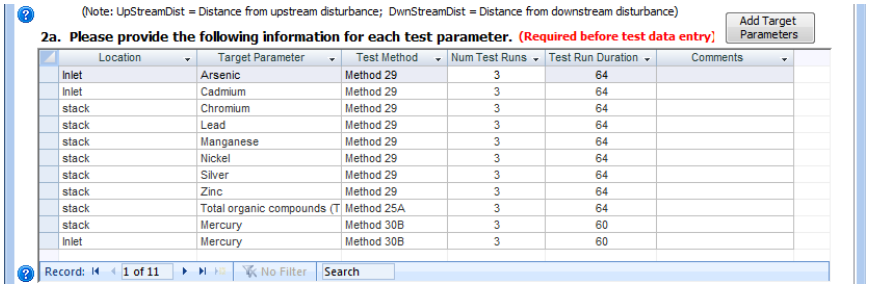
If Method 1a is being used, enter the port location measured in inches for "***Up Stream Pt. Loc. (M1A)***" and "***Down Stream Pt. Loc. (M1A)***".

The fields are described as follows:

Location:	Enter a unique sampling location name, such as inlet, stack, ESP inlet, scrubber outlet, etc.
Inlet/Outlet:	Inlet or outlet flow direction.
Round Duct Diam.:	Round duct diameter. The diameter of the sampling location, cross-section if round. Use/leave as zero (0) if the location is rectangular.
Duct Length:	Duct length or depth measured in inches. If the sampling location is rectangular, input the length or depth of the duct. Use/leave as zero (0) if the location is circular or round.
Duct Width:	Duct width measured in inches. If the sampling location is rectangular, input the width of the duct. Use/leave as zero (0) if the location is circular or round.

Equivalent Diameter:	Equivalent diameter of a rectangular duct as calculated per Method 1. This value is calculated from the duct dimensions.
Up Stream Distance from Disturbance:	Measurement site is upstream from flow disturbance (Distance A).
Down Stream Distance from Disturbance:	Measurement site is downstream from flow disturbance (Distance B).
Total Traverse Points:	Total number of sampling or traverse points. This value is calculated.
Ports:	Number of access or sampling ports used for testing.
Assumed Stack O2 %:	Assumed percentage Oxygen (O_2).
Assumed Moisture %:	Assumed percentage moisture.
Temp (F):	Temperature in degrees F.
ACFM:	Actual cubic feet per minute.
Non Particulate Traverse:	Selection of Yes/No of whether method is a particulate or non-particulate traverse.
Emissions are Controlled:	Controlled device was present.
Up Stream Port Location:	For Method 1a only. Location of disturbance upstream measured in inches.
Down Stream Port Location:	For Method 1a only. Location of disturbance downstream measured in inches.

- ***2a. Please provide the following information for each test parameter:*** Section 2a is where the test methods, target pollutants and test parameters for each test location. To add test methods and target parameters to a test location, click the "**Add Target Parameters**" button to select a location, method and compound, as seen in **Figure 23** - Test Plan Locations/Methods Test Parameter. Once there, you'll see **Figure 24** - Test Plan Locations/Methods Select Location, Method, and Compounds screen. You can either select a method directly from the drop down list or click "**[select method by compound]**".



Location	Target Parameter	Test Method	Num Test Runs	Test Run Duration	Comments
Inlet	Arsenic	Method 29	3	64	
Inlet	Cadmium	Method 29	3	64	
stack	Chromium	Method 29	3	64	
stack	Lead	Method 29	3	64	
stack	Manganese	Method 29	3	64	
stack	Nickel	Method 29	3	64	
stack	Silver	Method 29	3	64	
stack	Zinc	Method 29	3	64	
stack	Total organic compounds (T	Method 25A	3	64	
stack	Mercury	Method 30B	3	60	
Inlet	Mercury	Method 30B	3	60	

Figure 23 - Test Plan Locations/Methods Test Parameter

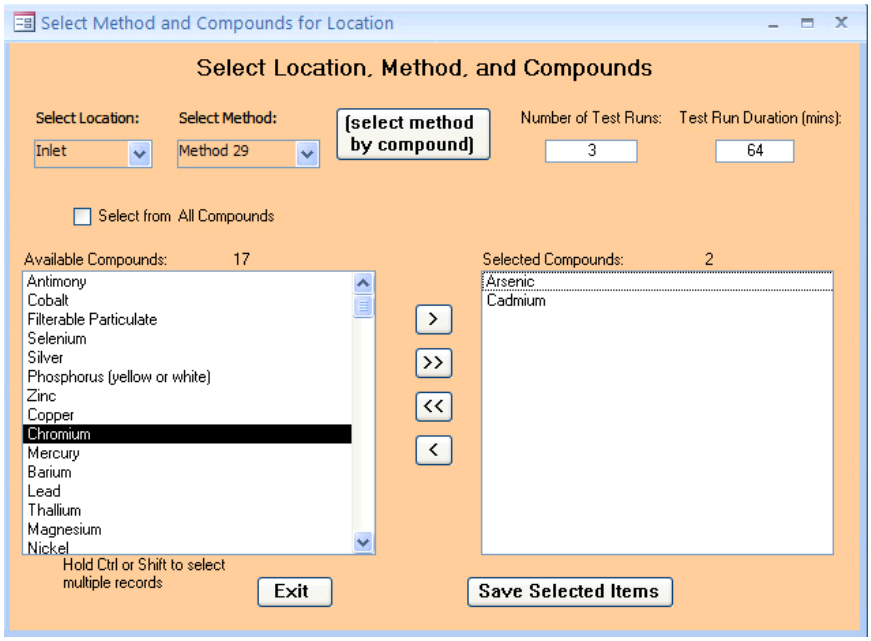


Figure 24 - Test Plan Locations/Methods Select Location, Method, and Compounds screen

Once the method has been selected "***Available Compounds***" box will automatically populate, as in **Figure 24 -** Test Plan Locations/Methods Select Location, Method, and Compounds screen. You must move the compounds you are measuring to the "***Selected Compounds***" window on the right. To do so use the arrow buttons:

- Select one or more of the available compounds or selected compounds. To select multiple compounds, hold the "***Ctrl***" key and click other compounds.
- Available or selected compounds are moved using one of the four buttons between the two windows.
  - The ">" arrow shifts the selected compound(s) to the right.
  - The ">>" arrow shifts all the compounds to the right.
  - The "<<" shifts all the compounds listed in the "***Selected Compounds***" box to the left.
  - The "<" shifts only selected compounds to the left.

You must enter the number of test runs and the duration of the test runs. If you have selected one of the Performance Specifications you can enter a "1" into the number of runs and the total duration of the tests in the test run duration. In addition, you must also create an entry for the reference test method(s) at the same location which will be used to evaluate relative accuracy of the CEM by the performance specification. You should enter the expected total test runs required for the RATA and the individual run durations.

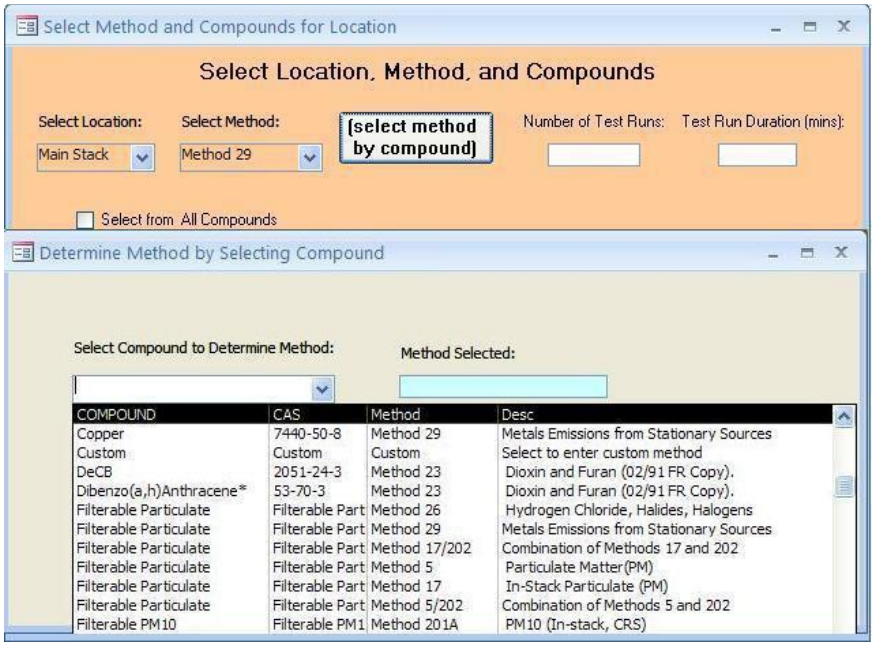


Figure 25 - Test Plan Locations/Methods Test parameter Insert (Enter by compound)

Rather than selecting the test method as described above, you may select the method from a list of compounds. By clicking the button "**(select method by compound)**," a window like the one shown in **Figure 25 -** Test Plan Locations/Methods Test parameter Insert (Enterby compound) is available. Scrolling down this list presents in alphabetical order all of the available pollutants, the test methods which may be used to measure these pollutants and a short descriptor of the test method. Selecting the pollutant and test method line will populate the method in the "***Method Selected***" field. Clicking in the "***Use Selected Method***" block will place the test method in the "***Select Method***" field. You will need to reselect the compound and any additional compounds from the available list as described above.

To complete the addition of a test method for the test location, you must enter the number of test runs which you propose and the proposed duration of the test runs. Clicking on "**Save Selected Items**" will populate the fields in item 2a. Clicking on "**Exit**" will return to item 2a without populating the fields. Once you have returned to item 2a with the populated method and pollutants, you can review, add or edit the fields "***Lb/Hr Limit***," "***Num Test Runs***," "***Test Run Duration***" and "***Comments***" without returning to the selection screen. You can revise the number of test runs, test run duration and comments directly in the form. Revisions of the Location, Target parameter and Test Method require deleting the row and reentering the information with one of the "**Add Target Parameters**" procedures described above. If you have already identified Emissions/Concentrations for the Location/Target Parameter/Test Method combination, you should delete these before deleting the row(s). To delete a row, move the cursor across the row until the cursor changes from a white arrow pointing up and to the left to a smaller black arrow pointing directly right across the row which you wish to delete. Select the whole row by clicking the left mouse button, and then either depress the delete key, backspace key or select delete after depressing the right mouse button.

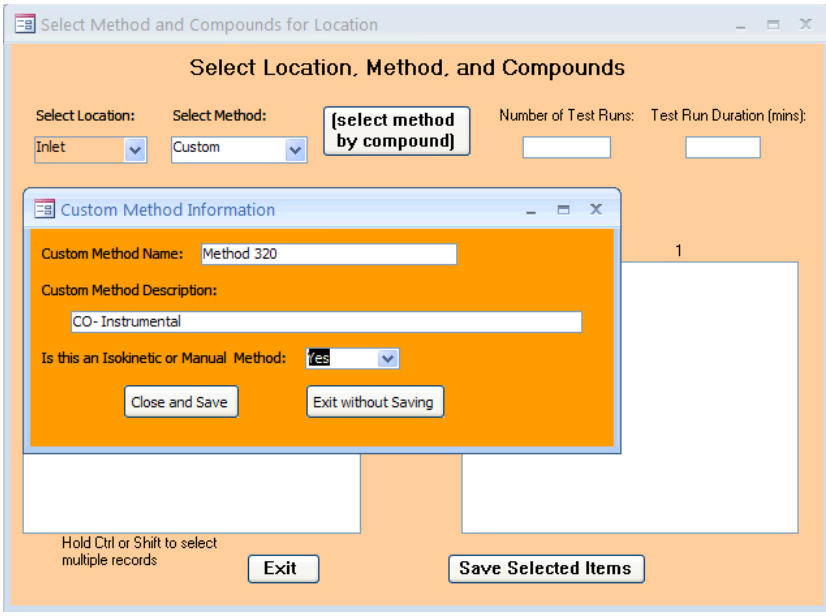


Figure 26 - Test Plan Locations/Methods Custom Method Information screen

If the method you used is not listed in the drop down menu, you may be able to choose "*Custom.*" When the selection is made, the "***Custom Method Information***" window, **Figure 26 -** Test Plan Locations/Methods Custom Method Information screen, will open. When you choose a custom method, you must enter a unique "***Custom Method Name***". The "***Custom Method Description***" is optional. Select "***Yes/No***" to the required question of "***Is this an Isokinetic or Manual Method***." Click on "**Close and Save**" to save the new method and return to the Parameter form, or "**Exit without Saving**" to return to the "***Parameter***" form without saving changes.

If you choose custom pollutant, you will be asked to enter the CAS number. The ERT provides a link to the National Institute of Standards and Technologies (NIST) Material Measurement Laboratory (MML) website where you may search for a CAS number and molecular weight. You should enter the CAS number including hyphens, a unique custom compound name (preferably one of the names listed on the NIST site) and molecular weight. Clicking on "**Close and Save**" will enter the custom pollutant in the "***Selected Compounds***" column. Clicking on "**Save Selected Items**" will cause the test location, test method and custom pollutant to populate one of the lines in item 2a. While the custom pollutant compound will be saved as one of the test parameters, it will not be saved as one of the available compounds in the "***Select Method and Compounds for Location***" menu. To use this custom compound at another location or with another method, you will have to complete the custom pollutant menu again.

- ***2b. Please select the Emissions Units of Measure for each location:*** Section 2b is for entering the units for reporting of the emissions.

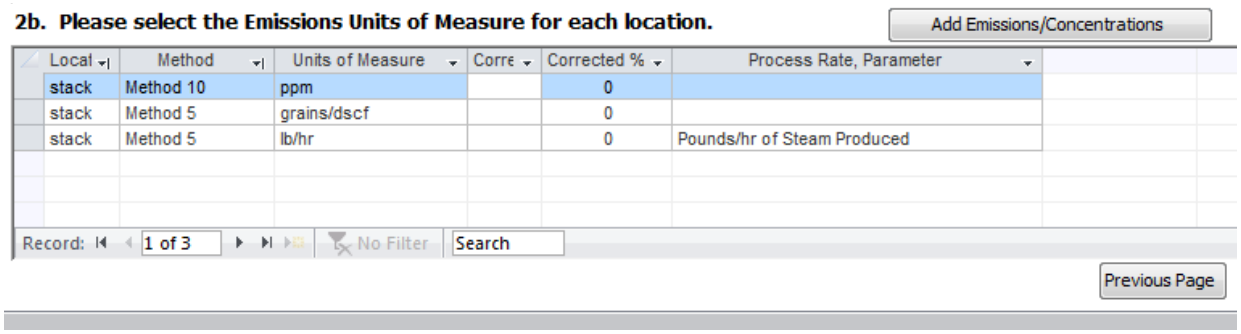
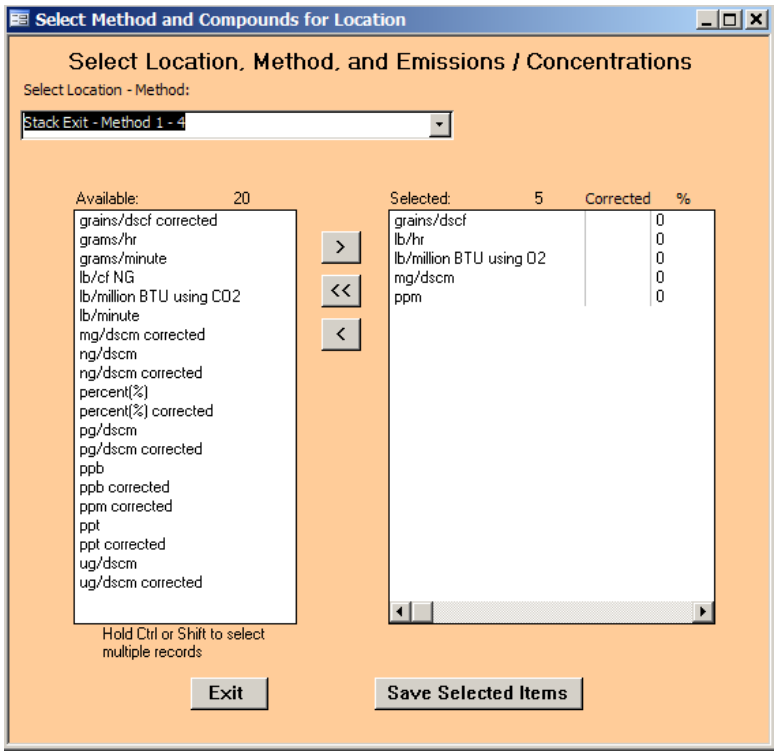


Figure 27 - Test Plan Locations/Methods Emissions/Concentrations Item

After adding one or more test locations in item 1 and adding the test methods and target analytes in item 2a you can enter the units for reporting the emissions in item 2b, shown in **Figure 27** - Test Plan Locations/Methods Emissions/Concentrations Item**.** Emissions units which include process information are not available in this area, although this area allows you to pair the emission rate and the process rate parameter which are used to calculate a process rate based emissions value. Begin by clicking on "**Add Emissions/Concentrations Units**" and the window in **Figure 28** -Add Emissions/Concentrations Screen will populate. The process rate parameter should only be associated with an emission rate and the time units (i.e. lb/hr, lb/min, lb/sec) should be the same for both the emissions rate and the process rate. The process rate will need to be entered into 6a before being able to select it in 2b.



28 - Add Emissions/Concentrations Screen

Select a combination of test location and method in the "***Location – Method,***" field which combines values from numbers 1 and 2a above. Be sure to move the units you are using from the "***Available***" box to the "***Selected***" box on the right.

If the selected emission concentration in the "***Available***" box has the word "corrected" on the end of it, two prompts will occur in succession. To the first prompt, "***Enter Corrected Analyte (O_2 or CO_2)***" for the concentration. To the second prompt, "***Enter Corrected Percentage (i.e. 7)***" for the concentration being corrected.

Once you entered all of the information, the only three columns that can be edited directly in the table are "***Corrected Analyte,***" "***Corrected %***" and "***Process Rate Parameter***."

If one of the "***Units of Measure***" chosen is a pollutant emission rate, you may pair this emission unit with a "***Process Rate Parameter***" which has been entered in 6a of the "***Process/APCD***" tab. You must use one of the available parameters that are available on the drop down list and that have the same time units as the emission rate. If the correct parameter is not available, you should go to the "***Process/APCD"*** tab to add the information required to create the correct parameter rate. For more detail on the creation of a process rate parameter, see the directions for *Process/APCD Screen*, section 6a above.

The following is a description of the fields:

***Location*:**	The choices which are available were those location names which were entered in Item 6. If the required location is missing, return to item 1 to add the location name required. This is required and will be used by the ERT during the process of entering test run data.
***Method*:**	The choices which are available were those test methods which were entered in Item 2a. The field identifies the method used to measure the analyte emissions. This is also required by the ERT and will be used during the process of entering test run data.
***Emission/ Concentration*:**	The emission concentration or mass rate that is being calculated.
***Correcting Diluent*:**	O_2 or CO_2.
***Correction %*:**	The percentage of the analyte is corrected.
Process Rate Parameter:	One of the items from items from section 6a of the "***Process/APCD"*** tab which includes a time unit. This parameter should be selected to pair with a test method having a unit of measure which includes the same time unit. Typically, the first listed parameter in section 6a is paired with a test method having lb/hr emission units. Process parameters other than listed in the first line of section 6 may be created if the emission limit has a unit of measure different from the default emission factor unit of measure.

Regulations Screen

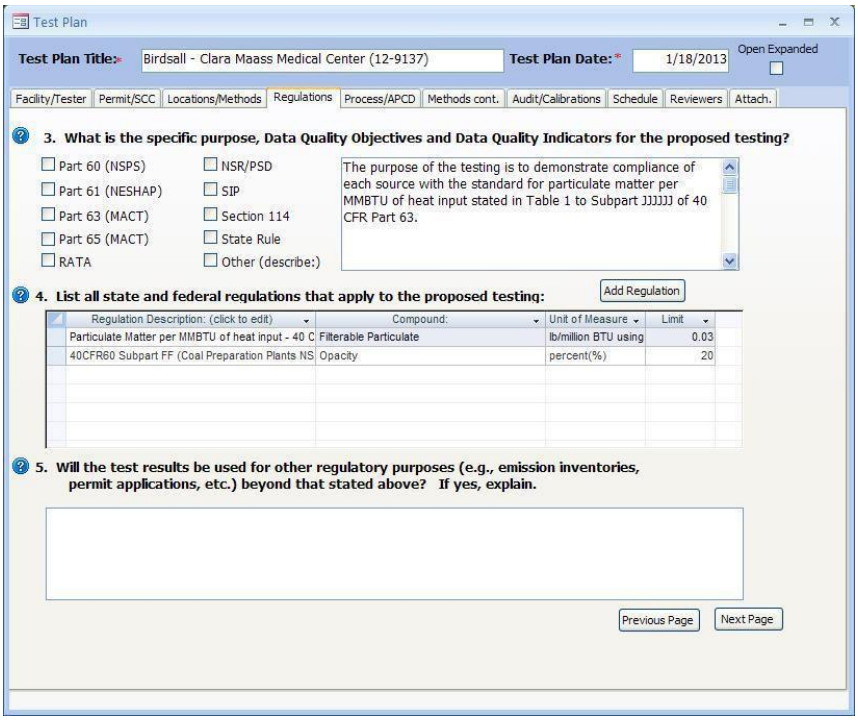


Figure 29 - Test Plan Regulations Tab

The Regulations screen shown in **Figure 29 -** Test Plan Regulations Tab has three sets of fields describing the purpose for the tests. Check all boxes that apply to the tests which are to be performed to identify the general regulatory purpose for which the test will be used. Use the text boxes to input detailed information on the test purpose, data quality requirements and regulations pertaining to the test.

- ***3. What is the specific purpose, Data Quality Objectives and Data Quality Indicators for the proposed testing?*** Ten check boxes are available to identify the general regulatory programs which form the primary reason(s) for performing the emissions test. Check all that apply. Use the text box to the right of the check boxes to provide additional information. This information would include details describing the purpose when the "Other" box is checked. The text box may also contain additional detail such as those pollutants that are of primary interest. This text box may also be used to identify the "***Data Quality Objectives***" (DQO's) for the test, "***Data Quality Indicators***" (***DQI's***) which will be collected, and the criteria which the ***DQI's*** will be used to determine whether the test program met the ***DQO's***.
- ***4. List all state and federal regulations that apply to the proposed testing:*** The majority of source tests are conducted to demonstrate compliance with a Federal, State or local emission

limit. These emission limits are typically codified in a regulation or permit. The "**Add Regulation"** button is available to identify any state and federal regulations that apply to the emissions test. Click on the **"Add Regulation**" button to open the form shown in **Figure 30** - Test Plan Add Regulations for entering a new regulation data. Double click on a previously entered regulation description to edit the contents of an existing entry. The drop down list under "***Part SubPart***" on the ***Test Plan Regulations*** tab and the new regulations ***Regulation Limits*** form list the Federal regulations in Part 60, 61 and 63

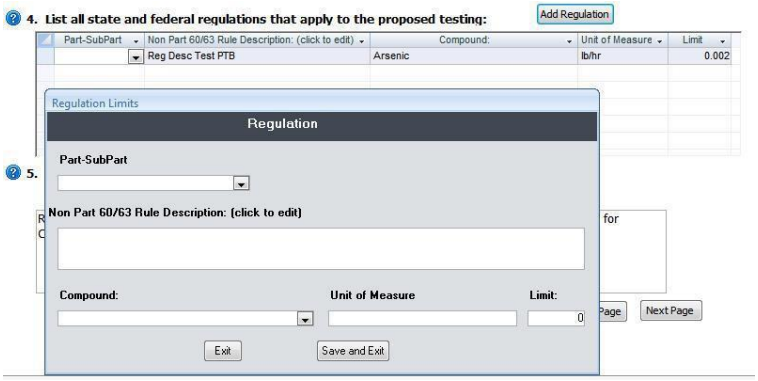


Figure 30 - Test Plan Add Regulations

The fields are described as follows:

Part-SubPart: The regulatory citation which requires the test for the compound and specifies the identified limit. For example: 40CFR60 Subpart UUU.

Regulation Description: The default description of the selected Part-SubPart. For clarity and conformation you may also add a generic identifier for the regulatory citation. For example: NSPS for Mineral Calciners and Dryers. If the testing is not performed to demonstrate compliance with an existing regulation, you should provide a general description of the purpose for the test.

Compound: The regulated or targeted compound. Use the drop down list to select the regulated compound and the regulatory unit of measure. If the compound and/or unit of measure for the regulatory limit for the pollutant are not shown, you will need to exit this screen and go to the *Locations/Methods Screen* to enter the compound in section 2a and the units of the standard in section 2b.

Unit of Measure: The units of measurement for the compound within the regulation or the desired units used to describe the emissions. The units of measure are tied to the selection of the target compound.

Limit: The numerical value for the compound as expressed in the Unit of Measure.

- ***5. Will the test results be used for other regulatory purposes (e.g., emission inventories, permit applications, ect.) beyond that stated above? If yes, explain:*** List the secondary reasons for performing this emissions test. If known, list those pollutants that are of secondary interest. For example, determine emissions of CO, THC, VOC and condensable PM emissions for use in emissions inventory reporting and determination of fees.

> ***Note****: Pressing "***Shift F2***" will expand the currently selected text field to a larger window to allow for easier editing and will allow changes in the Font (size, style, Effects etc.).*

Process/APCD Screen

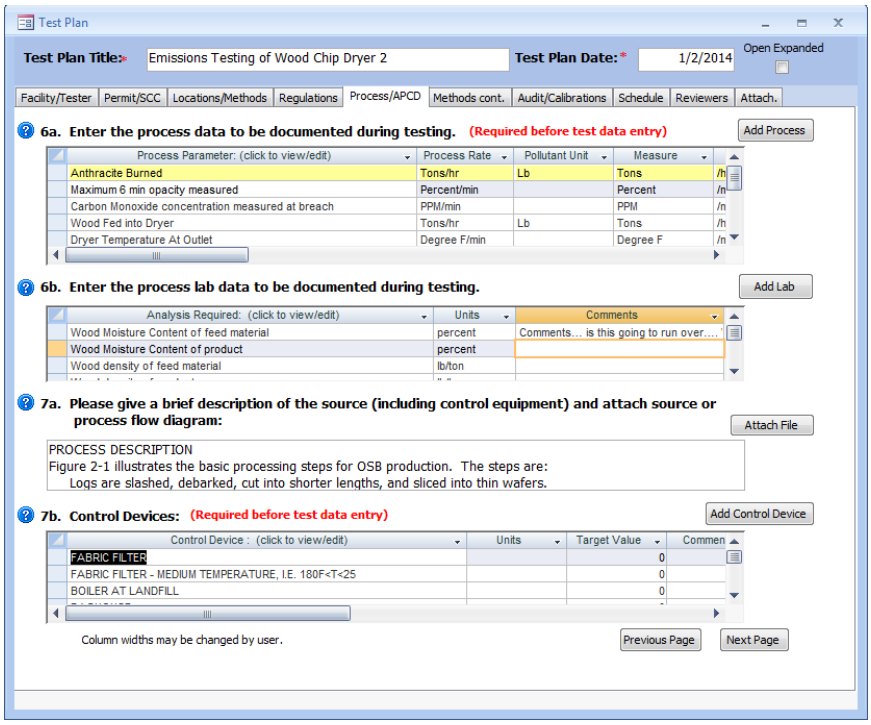


Figure 31 - Test Plan Process/APCD Tab

This section is to enter process and Air Pollution Control Device (APCD) data.

- ***6a. Enter the process data to be documented during testing:*** Section 6a is where process data is documented. Process data is quantifiable information on operational parameters for the production unit or controls. Process data includes documentation of parameters that may be used after the test for compliance assurance monitoring, indicators that the facility was operating at representative operating conditions or indicators of the performance of installed control equipment. It might include fuel feed rate, average steam output, one or more temperatures of the process, scrubber pressure drop, scrubber water flow, ESP current or another measureable parameter. Some process activity information might be used to calculate the emissions limit, for

example x pounds of pollutant per ton of clinker. Process information might also be information required in a Title V permit. *Process data is required.* You can either type the information in the fields directly, or click the "**Add Process**" button. If there are no populated process parameter lines, you should go to the *Permit/SCC Screen* to select the SCC and associated process parameter for the tested unit. The first field is pre-populated and highlighted yellow, which means the ERT completed this field based on the SCC you selected or an activity indicator that you established when you selected the SCC. But if the information in a yellow field is incorrect it can be changed by returning to the Permit/SCC Screen where it was established. For example, if the activity information is not correct, returning to the SCC selection may show that the SCC had multiple default activity parameters and the one selected was incorrect. By changing the selection, the first process data parameter will change to the process units identified in the SCC selection list.

While the first line in process parameters list is populated from the SCC selection list, additional process parameters may be added by clicking on "**Add Process**" which will display the "***Process Information***" menu shown in **Figure 32**. This menu is identical to the menu used to populate the SCC activity parameter when no default parameter was established for that SCC.

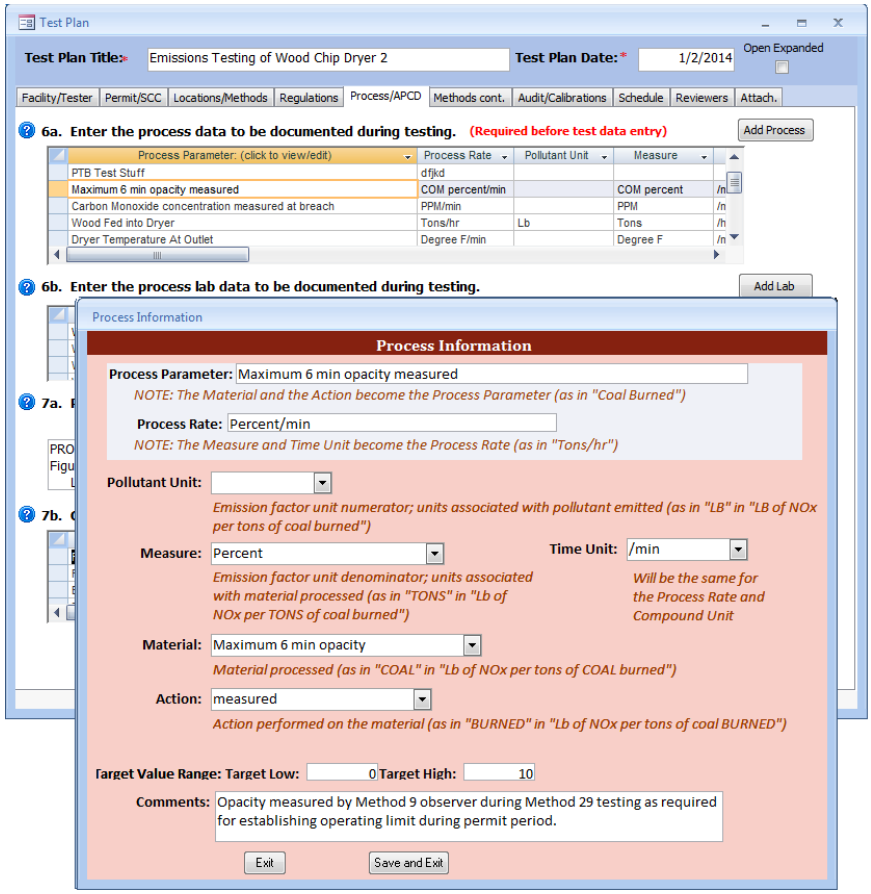


Figure 32 - Test Plan Process/APCD Add Process Form

To add or change the fields under the different column headings you must click in either the "***Process Parameter***" or the "***Process Rate***" columns. You will see a box like **Figure 32**. If the box is not visible, it may be hidden behind the test plan menu. By clicking on the test plan menu bar and moving it to a different location, you will see the "***Process Information***" menu.

Below is a description of the fields:

Process Parameter:	Process data parameter(s) documented during testing. Entries with a yellow background were pre-populated based on the SCC. Since the text is a combination of text from the Material and Action fields, you must enter or change text in those fields to change the text in this field.
Process Rate:	This is populated with a combination of the text entered in the Measure field and the Time Unit specified in the field to the right of the Measure field. As with the Process Parameter field, to change this field, you must change the text in the other fields. Process Information used to generate process based emissions (i.e. lb/Ton of Clinker) must use the same units specified for the emission rate time unit.
Pollutant Unit:	For a process base emission, this is the pollutant mass unit which will become the numerator unit (i.e. lb as in lb/Ton of Clinker). For process information that is not directly associated with mass emissions of a pollutant (such as a process temperature, reactant feed rate or opacity) no pollutant unit is required.
Measure, Material, Action:	These items are the same as were defined in the section for selecting the SCC. While a significant number of descriptors are provided in the drop down lists, almost all are primarily for creating an emission unit that combines an emission rate with a process rate. You may provide text which better describes the process parameter and the process rate information. For example the recording of stack opacity could be described by a Measure of "COM percent", Time Unit of "/min", Material of "Maximum 6 min opacity" and Action of "measured".
Target Low:	The lower bound of the process data information. This may be an expected value.
Target High:	The higher bound of the process information. This may be an expected value.
Comments:	Any comments concerning the process data which would clarify what is being measured, how it is measured and for what purpose.

Caution: Clicking "**Exit**" will not save your entry. Click "**Save and Exit**" to save.

- ***6b. Enter the process lab data to be documented during testing:*** Section 6b is where process lab data is entered. List the process materials requiring lab analysis to determine some characteristic of feed, output or byproduct from process. Like section 6a, this is quantifiable information that details what is going on during testing (for example, feed material moisture content or the results of a proximate or ultimate analysis of the fuel, etc). You can directly enter information into the Units or Comments fields or click the "**Add Lab**" button to open a form for easy entry, as seen in **Figure 33 -** Test Plan Process/APCD Add Lab Form. Clicking in the "***Analysis Required***" field of an existing parameter will also open the form.

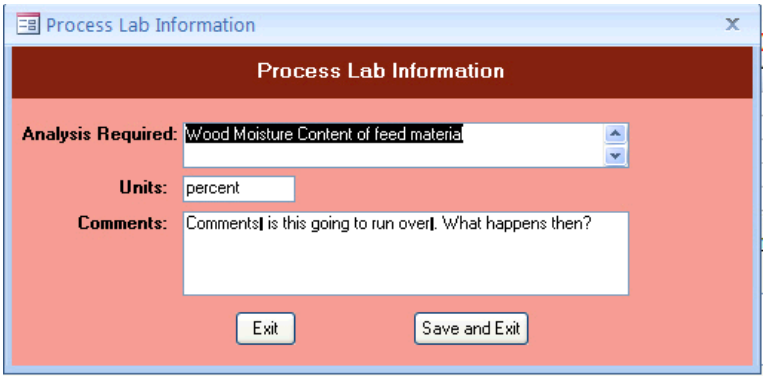


Figure 33 - Test Plan Process/APCD Add Lab Form

The fields are described as follows:

Analysis Required:	A description of the lab analysis. This should include any specification describing the specific preparation and analytical finish rather than a generic term. For example: carbon content by ASTM D 3176 is preferred over carbon content.
Units:	Units measured within the analysis.
Comments:	Any comments related to the process lab data.

- ***7a. Please give a brief description of the source (including control equipment) and attach source or process flow diagram:*** Section 7a is where you will give a description of the source, a description of the control equipment, and attach at least one process flow diagram. It is recommended that you provide a brief description in this text area so that the description is available to a reviewer without opening an attachment and is produced in the printed test plan and test report. You should use attachments for complex or more detailed descriptions and diagrams.

  You may submit multiple attachments.

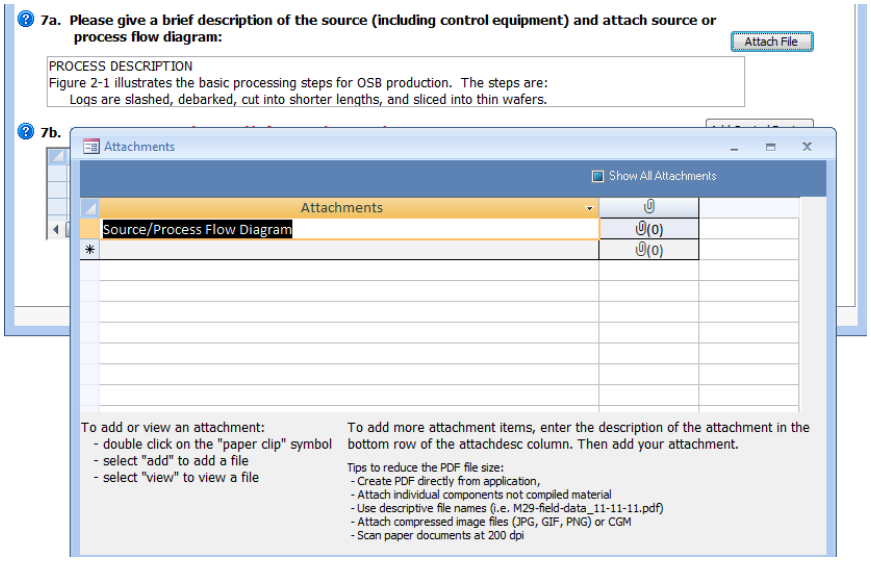


Figure 34 - Test Plan Process/APCD Attach File

To attach a file, click on the "**Attach File**" button. Double click on the "***paperclip***" icon to open the "***Attachments***" screen, as seen in **Figure 34**. Click the "**Add**" button to add a file as an attachment.

Once a file has been added as an attachment, click on "**OK**" to return to the "***Source/Process Flow Diagram***" screen. The number of attachments will show to the right of the paperclip.

(For more information concerning attachments, see *Chapter 4: Attachments Screen*.)

> ***Note****: When an attachment is associated with an item the "****Attach File****" button will turn blue.*

- ***7b. Control Devices:*** Section 7b is where you will list all emissions control devices in order of process flow. An extensive list of process controls and/or add-on control devices are available using the dropdown list. To enter a control device, you can either click the first blank cell in the "***Control Device***" column or click on the "**Add Control Device**" button. You should choose one of the control devices from dropdown lists unless a generic description of the installed control is not present. If a control is not on the list, you can type the name of the device directly into the field. You should ensure that you list all control devices which influence the emissions of the pollutants being quantified during the test. All devices you select in section 7b should also be described in section 7a with additional information to explain details which cannot be entered in section 7b. You should also insure that all parameters required to document the performance of each control device are listed in item 7a. You should identify the most critical APCD performance monitoring parameter that will be used for continuous compliance demonstration, describe the parameter in the comments field and provide the units of measure for that parameter. An existing entry can be edited by clicking in any column except the Control Device column. As described earlier, clicking in the "***Control Device***" column will open the "***Air Pollution Control Device Information***" screen.

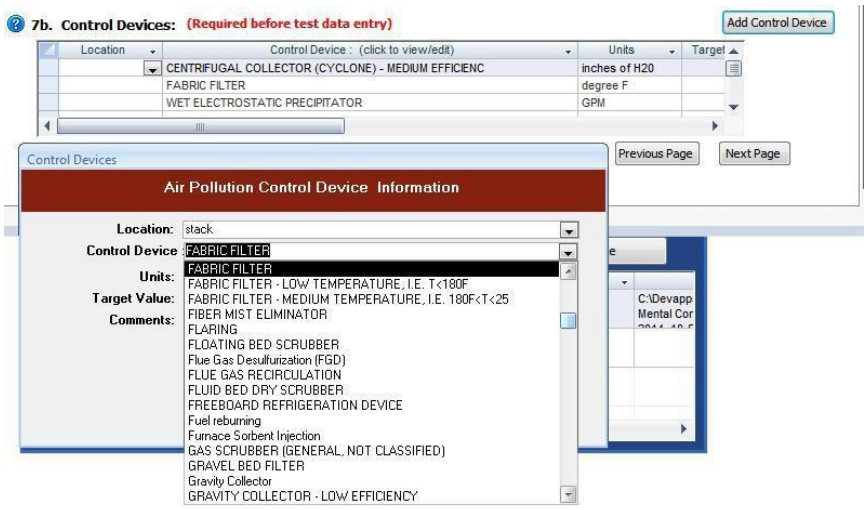


Figure 35 - Test Plan Process/APCD Control Devices editing options

The fields are described as follows:

Location: The selection of inlet or stack for location of APCD control device.

Control Device: A name or description of the control device as listed in the pull down list.

Units: Units of measure for the most critical operating parameter for the control device.

Target Value: The desired or expected value for the control device operating parameter.

Comments: Any comments pertaining to the control device, explanation of the operating parameter or method of collecting the operating parameter.

Methods Continued Screen

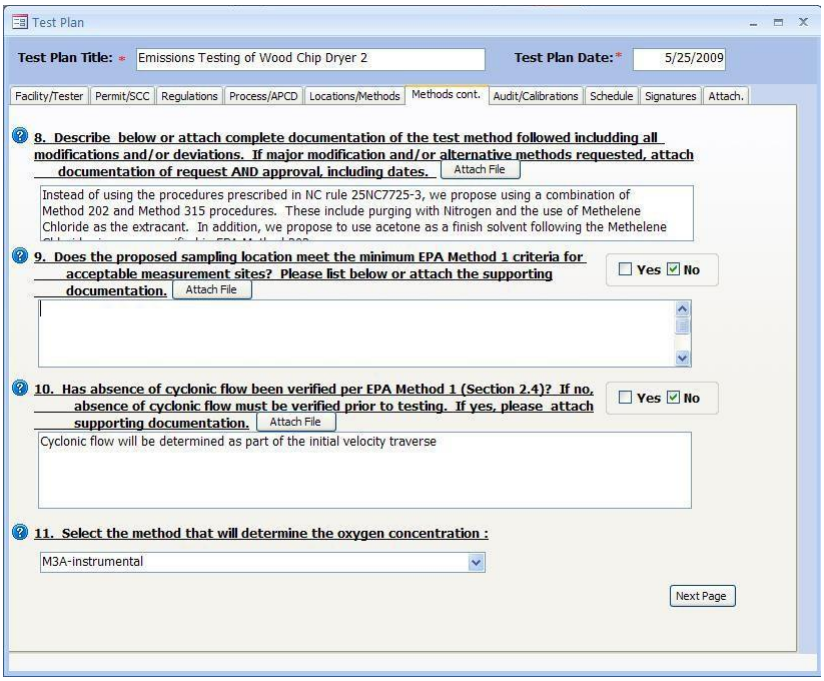


Figure 36 - Test Plan continued tab

This screen is the continuation of the "***Locations/Methods***" screen.

- ***8. Describe below or attach complete documentation of the test method followed including all modifications and/or deviations:*** In this section, it is suggested that the promulgation date of any specified test method be identified. Test methods which are not readily available free on the internet should be attached to the ERT for use by people reviewing the test plan or test report. If modifications and/or alternative methods are being proposed or were used, you must attach a document describing the proposed modification to the test plan and a copy of the request **AND** approval (including dates) to the test report. If the modification/alternative method was approved verbally by a regulatory agency, the name and date of the approval should be included. Written formal approval should be attached using the "**Attach File**" button. Test methods that are different from those published in the *Federal Register* should also be attached. Follow the steps in Item 7a to attach a file.

- ***9. Does the proposed sampling location meet the minimum EPA Method 1 criteria for acceptable measurement sites:*** In this section, answer the question about Method 1 criteria by checking "yes" or "no". If Method 1 criteria are not met, explain why the methods used at the sampling location provide a representative sample and document any approval, as applicable, To attach a file, click on "**Attach File"** and follow the steps in Item 7a.

- ***10. Has absence of cyclonic flow been verified per EPA Method 1 (Section 2.4):*** In this section, answer the question about cyclonic flow by checking "yes" or "no." This field is for the documentation of the absence of cyclonic flow. If the "no" checkbox has been selected, enter

documentation of why and approval, as applicable, or attach documentation and approval by clicking on "**Attach File**" and following the steps in Item 7a.

- ***11. Select the method that will determine the oxygen concentration:*** If flue gas characterization is for molecular weight purposes only, you may select:

Method 2:

M2- assign 29.0 Mol. Wt:	Ambient air, assign a molecular weight of 29.0 (per Method 2).

Method 3:

M3- mol Wt.Orsat or Fyrite:	Molecular weight only, Orsat or Fyrite.
M3-assign 30.0 Mol. Wt. combustion source:	Combustion source, assign 30.00 for molecular weight.
M3 – CO2 or O2 and Stoichiometric calc:	Using CO_2, O_2 or stoichiometric calculation
M3A:	Instrumental
M3B:	Using Orsat emission rate correction factors

Audit/Calibrations Screen

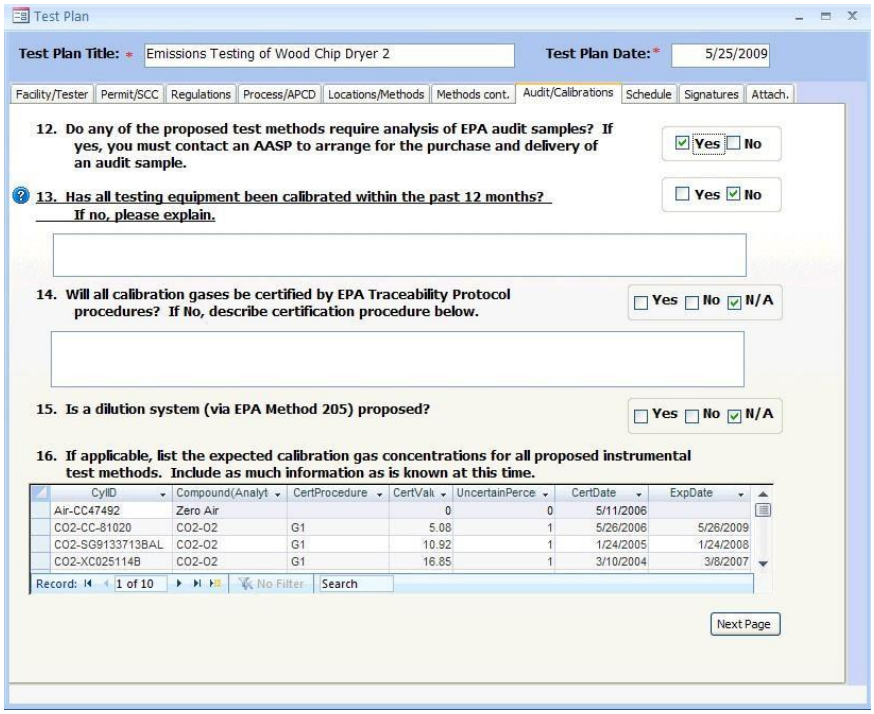


Figure 37 - Audit/Calibration tab

The "***Audit/Calibrations***" screen is for data relating to the test method and the calibration of the testing equipment.

- ***12. Do any of the proposed test methods require analysis of EPA audit samples:*** The test method should indicate whether or not audit samples are required. Select "***Yes***" or "***No***."

- ***13. Has all testing equipment been calibrated within the past 12 months:*** It is expected that your response to this question will be "***Yes***." If the answer is "***No***," please use the text box for the explanation. You can attach calibration documentation in the "***Attachments***" tab of the ERT.

- ***14. Will all calibration gases be certified by EPA Traceability Protocol procedures:*** If the answer is "***No***", use the text box for the explanation. If the answer is not applicable, select "***N/A***."

- ***15. Is a dilution system (via EPA Method 205) proposed:*** Select "***Yes***," "***No***" or "***N/A***."

- ***16. If applicable, list the expected calibration gas concentrations for all proposed instrumental test methods:*** Input information on the calibration gases to be used for any instrumental methods. For the test plan, you may enter incomplete information to provide the test plan reviewer the gases that you intent to use and the approximate concentrations. However, once the test is completed, this Item MUST be completed accurately since the instrumental test methods data processing uses the "CertValue" in calculating the concentrations.

  The following is a description of the fields:

CylID:	This is the cylinder ID provided by the provider and listed on the calibration certificate. For cylinders having more than one calibration gas, input the cylinder once for each gas and include a prefix or suffix with the cylinder ID.
Compound (Analyte):	Input the gas name for the compound with the indicated certification value.
Certification Procedure:	Give the certification procedure used.
Certified Value:	Input the certified value of calibration gas.
Uncertain Percent:	Input the percent uncertainty of the gas from the certificate.
CertDate:	Date the calibration gas was certified.
ExpDate:	Date the certification of calibration expires.

Schedule Screen

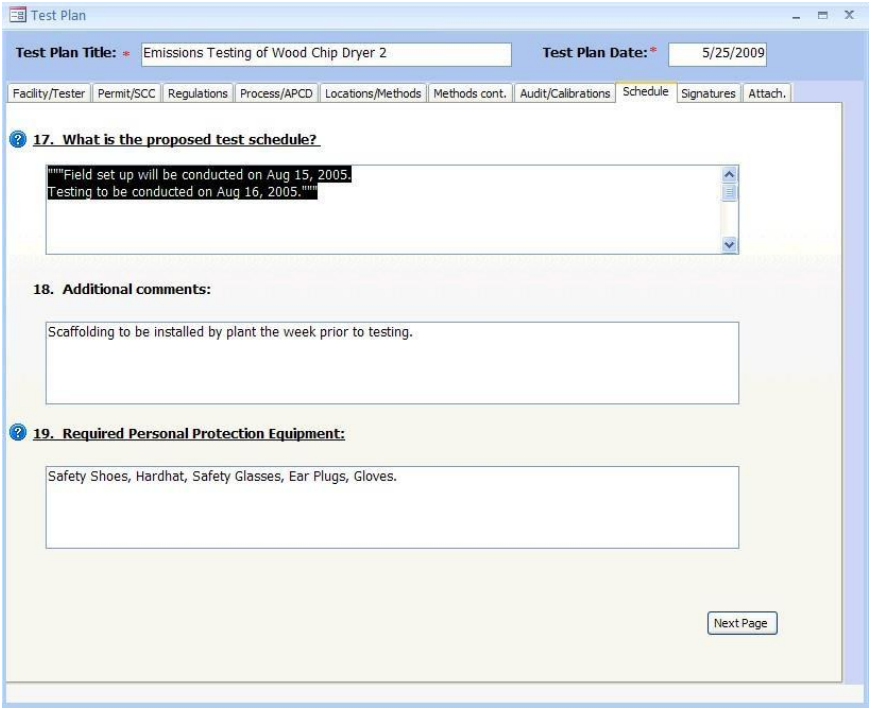


Figure 38 - Test Plan Schedule Tab

The Schedule screen concerns the scheduling of the test and any preparations for that test.

- ***17. What is the proposed test schedule:*** This field is primarily to advise the regulatory authority and facility the dates that emissions testing will be performed, including any set up dates.

- ***18. Additional comments:*** Provide any additional comments about the test.
- ***19. Required Personal Protection Equipment:*** This field is primarily to advise the regulatory authority of the type of personal protective equipment that will be required for them to use to access the sampling location and any other locations that are associated with the performance of the test program. It also serves to inform the facility of the source tester's knowledge of the required protective equipment they will use during the source test program.

Reviewers Screen

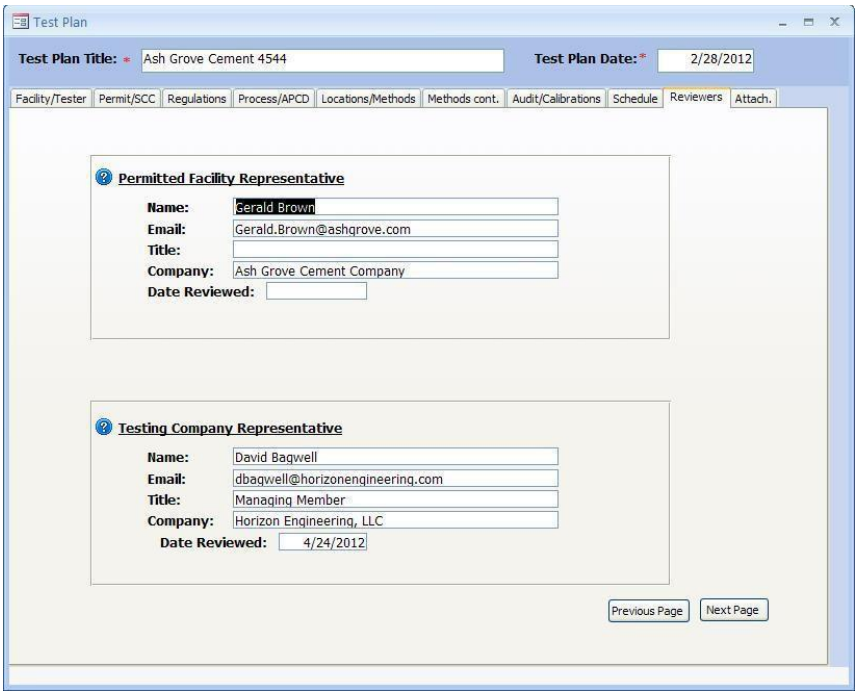


Figure 39 - Test Plan Reviewers Tab

The "***Reviewers"*** screen obtains data for the Reviewers of the test. All the fields on this screen are required. The two representative blocks are as follows:

- ***Permitted Facility Representative***: The person authorized to represent the facility being tested.
- ***Testing Company Representative:*** The person authorized to represent the testing company.

> ***Note***: *This is NOT an electronic signature!*

Attachments Screen

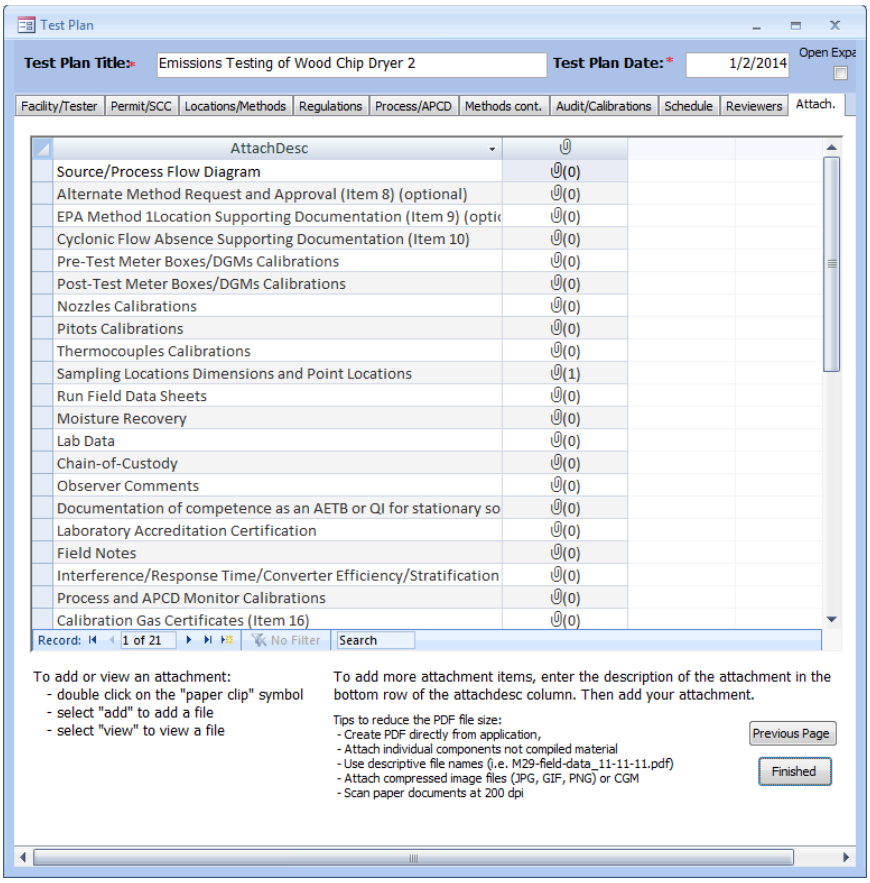


Figure 40 - Test Plan Attachments Tab

The Attachments screen allows you to attach any documentation pertaining to the Test Plan.

Adding an Attachment

Several of the questions in the test plan section allow the user to import files as attachments to the test plan. If you added an attachment in one of the earlier tabs, the attachment tab will show a number "1" (or however many attachments were added) next to the paperclip in parentheses.

To add attachments to an existing named documentation area, double click on the paperclip. A window like that in **Figure 41** will open. If files were attached previously, the file name will be listed in the field. If no files were attached, the field will be blank and all but the "**Add…**" button will be faded. In both situations, to add an attachment, click on the "**Add…**" button to display a Windows file selection menu.

In this screen you can add additional attachments by double clicking the paperclip next to the description that applies. If your type of attachment isn't specifically listed, follow these steps:

1. Click the empty lower left hand cell and add a description.
2. Double click the paperclip in the cell to the right of the description.
3. Follow the prompts to add your attachment(s).

These steps can be repeated if you have multiple types of attachments.

(Note: Many of the requested files will be part of the test report and are not required or available at the time the test plan is prepared.)

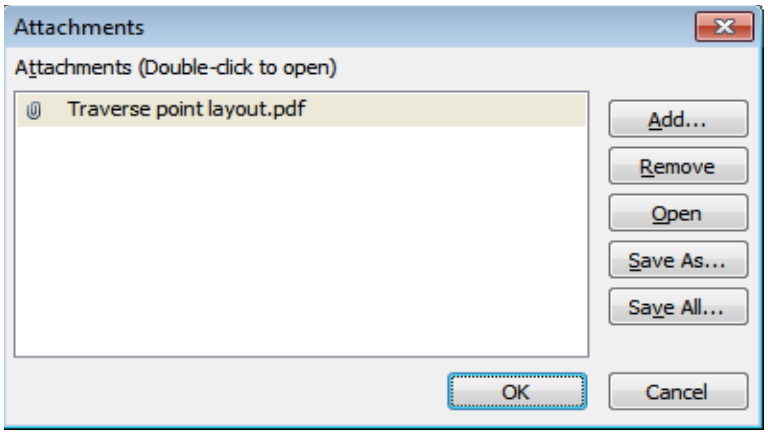


Figure 41 - Test Plan Attachments Options

Other Attachment Options

Click "**OK**" to save the changes and return to the "***Test Plan***" attachment screen. Click "**Cancel**" to return to the "***Test Plan***" attachment screen without saving the changes. The number of attachments will be beside the paper clip image.

Note *When one or more files are attached to a documentation area, when you double click on the paperclip a window like that in* ***Figure 41*** *will open. In addition to adding attachments as described above; one can click on one of the file names and then click on "***Open***", "***Remove***", "***Save As…***" or "***Save All…***" to open, remove or save the selected attachment(s). Simply follow the prompts. .****Note****: If you cannot see the paperclip image, it is likely that the PDS you are using was created by older ERT version. The old PDS files have an OLE object field instead of an attachment file type. As a result; PDS file sizes in ERT version 3 are greater than ERT version 4. In addition, very large attachments may not be able to be viewed because of memory constraints. If so, revise the PDS file to the ERT version 4 file type which with an .accdb extension. If you create a new PDS you will see the paper clips. If the existing ERT version 3 PDS is extensive and was created in, you can change the PDS to a version 4 format by: 1) Save all the attachments in the old ERT file using a descriptive file name; 2) Create an new blank PDS using ERT version 4; 3) Close ERT, open MS Access and load the blank PDS; 4) Delete all the tables in the PDS except "tblAttachments;" 5)In the Access menu, select "External Data" then select "Import" "Access"; 6) Use "Browse" to locate the ERT version 3 PDS; 7) Specify the importing of all tables, queries, forms;8) Click "OK"; 9) Select the "Select All" button; 10) Deselect "tblAttachments" and click "OK"; 11) Close Access and open the new PDS.*

Chapter 5: Test Data

Run Data

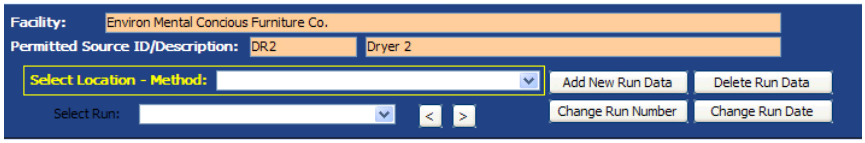


Figure 42 - Run Data Details Screen

The ERT separates methods into three basic categories – single train isokinetic/manual methods, paired train manual methods and instrumental methods. Currently, only the paired sampling train form mercury by Method 30B can be documented in the ERT. For a single train isokinetic/manual method, to complete the "***Test Data***" section you may either import the data from a spreadsheet or manually enter the data. For a paired train manual method and an instrumental method, you must enter the data manually.

If you have your field data organized in a spreadsheet format consistent with the template described at http://www.epa.gov/ttn/chief/ert/index.html#spreadsheets you can import the majority of information for the "***Header Data***" and "***Point Data***" tabs for single train manual test methods as follows:

- Click "**Run Data**" in the "***Test Data***" area of the "***ERT- Main Menu***" to bring up the "***Run Data Details***" Screen, as in **Figure 42**.
- Click on the "**Add New Run Data**" button to add data.

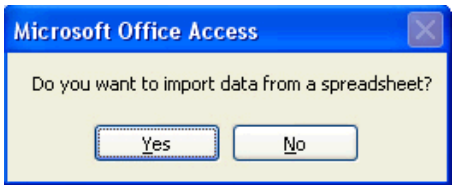


Figure 43 - Import from Spreadsheet Option Dialog

This brings up a spreadsheet option dialog. Click "**Yes**" button to import the data from a spreadsheet (for more information, see *Add New Run Data - Spreadsheet Import*). Click the "**No**" button to manually add data directly into the ERT (for more information, see *Add New Run Data - Directly*).

Add New Run Data - Spreadsheet Import

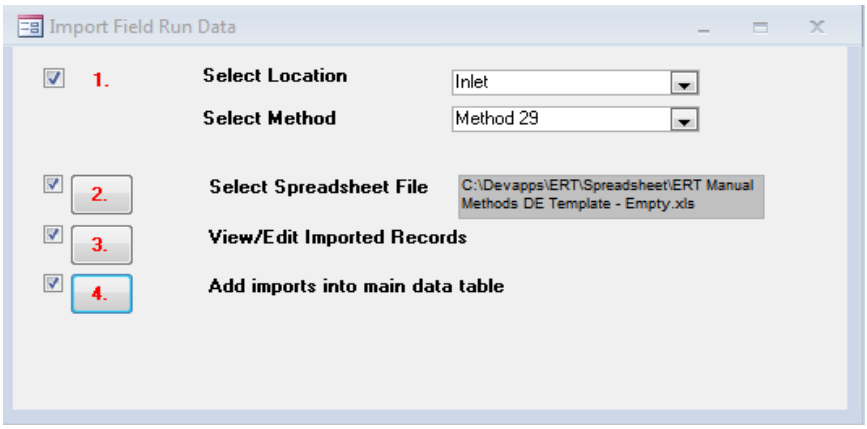
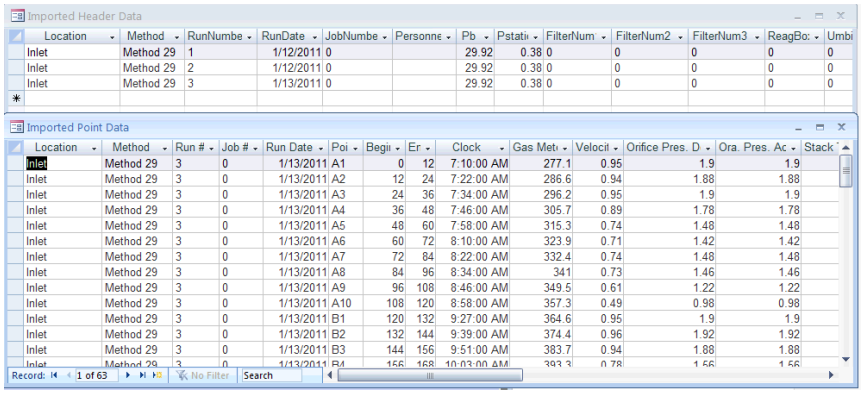


Figure 44 - Import Field Run Data Window

To import single train field data, it must be entered into the sample field data spreadsheet that is consistent with the template provided on the website where you obtained the ERT. Only one sample location data set can be imported at a time.

- **Step 1:** Select the ***location*** and the ***method*** from the drop down lists, as in **Figure 44**. A green checkmark will automatically appear in the box to the left of the red number 1 after the selection.
- **Step 2:** Click the # ***2*** and select the spreadsheet in the browse window, then click "**OK**" or "***Open***" to select the spreadsheet. The file path will appear beside step 2 "***Select Spreadsheet File***", as shown in **Figure 44**.
- **Step 3:** Click the # ***3*** to view the imported data. You will see two tables as in **Figure 45 - View Imported Data Windows**. One table is the header data from the spreadsheet and one table is the point data from the spreadsheet.

  Review and edit the data in these windows. Click on the "**X**" in the top right corner of each window to close them when you have finished your review.



Imported Header Data

Location	Method	RunNumbe	RunDate	JobNumbe	Personne	Pb	Pstati	FilterNum	FilterNum2	FilterNum3	ReagBo	Umbi
Inlet	Method 29	1	1/12/2011	0		29.92	0.38	0	0	0	0	0
Inlet	Method 29	2	1/12/2011	0		29.92	0.38	0	0	0	0	0
Inlet	Method 29	3	1/13/2011	0		29.92	0.38	0	0	0	0	0

Imported Point Data

Location	Method	Run #	Job #	Run Date	Poi	Begi	Er	Clock	Gas Meti	Velocit	Orifice Pres. D	Ora. Pres. Ac	Stack
Inlet	Method 29	3	0	1/13/2011	A1	0	12	7:10:00 AM	277.1	0.95	1.9	1.9	
Inlet	Method 29	3	0	1/13/2011	A2	12	24	7:22:00 AM	286.6	0.94	1.88	1.88	
Inlet	Method 29	3	0	1/13/2011	A3	24	36	7:34:00 AM	296.2	0.95	1.9	1.9	
Inlet	Method 29	3	0	1/13/2011	A4	36	48	7:46:00 AM	305.7	0.89	1.78	1.78	
Inlet	Method 29	3	0	1/13/2011	A5	48	60	7:58:00 AM	315.3	0.74	1.48	1.48	
Inlet	Method 29	3	0	1/13/2011	A6	60	72	8:10:00 AM	323.9	0.71	1.42	1.42	
Inlet	Method 29	3	0	1/13/2011	A7	72	84	8:22:00 AM	332.4	0.74	1.48	1.48	
Inlet	Method 29	3	0	1/13/2011	A8	84	96	8:34:00 AM	341	0.73	1.46	1.46	
Inlet	Method 29	3	0	1/13/2011	A9	96	108	8:46:00 AM	349.5	0.61	1.22	1.22	
Inlet	Method 29	3	0	1/13/2011	A10	108	120	8:58:00 AM	357.3	0.49	0.98	0.98	
Inlet	Method 29	3	0	1/13/2011	B1	120	132	9:27:00 AM	364.6	0.95	1.9	1.9	
Inlet	Method 29	3	0	1/13/2011	B2	132	144	9:39:00 AM	374.4	0.96	1.92	1.92	
Inlet	Method 29	3	0	1/13/2011	B3	144	156	9:51:00 AM	383.7	0.94	1.88	1.88	
Inlet	Method 29	3	0	1/13/2011	B4	156	168	10:03:00 AM	393.3	0.78	1.56	1.56	

Record: 1 of 63 No Filter Search

Figure 45 - View Imported Data Windows

- **Step 4:** Click the # **4** to add the imported data into the main data tables.
- **Step 5** – Click "**OK"** on the data imported successfully dialog and then close the "***Import Field Run Data***" window.

Add New Run Data - Directly

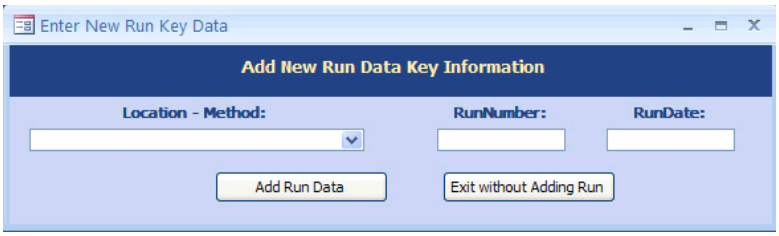


Figure 46 - Enter New Run Key Data Window

Run data do not have to be imported from spreadsheets. They can be manually entered directly into the ERT "***Run Data Details***" screens. To do this:

- Click "**Add New Run Data**" from the "***Run Data Details***" window (see **Figure 42 -** Run Data Details ScreenFigure 42 - Run Data Details Screen).
- Click "**No**" from the import from spreadsheet option dialog (see **Figure 43 -** Import from Spreadsheet Option Dialog). You will be prompted to enter a location – method, run number, and run date for the run data to be inputted.
- Select the *"**Location – Method***" from the pick list.
- Enter the "***Run Number***".
- Enter the "***Run Date***".
- Click the "**Add Run Data**" button to save data, or click "**Exit without Adding Run**" to return to "***Run Data Screen***" without saving data.
- For both single train and paired train manual or isokinetic methods, you must repeat this process until all test runs have been added. For instrumental methods, you can add additional runs up to the number specified in the test plan from the "***ITM Run Results***" tab of the "***Run Data Details***" screen. Adding runs from the "***ITM Run Results***" tab will copy a significant amount of calibration and test setup information to the created runs.

  Once the location, method, run number and date have been entered, you must find that run under the drop down list called "***Select Location – Method – Run***" (highlighted in yellow) to enter more information or view that run. See the "***Selecting Locations / Methods / Runs***" section.

  This will add the key information for the run data to be input. The display will then show either the "***Run Data Details***" screens for an isokinetic run or an "I***nstrumental Method***" run depending on the method selected.

Correcting Run Data Entry Information

Incorrect entry of test data information can be corrected either by deleting the incorrect runs, changing the run numbers associated with one or more runs, or changing the date associated with one or more runs. The following three sections describe the procedures to perform these corrections.

Delete Run Data

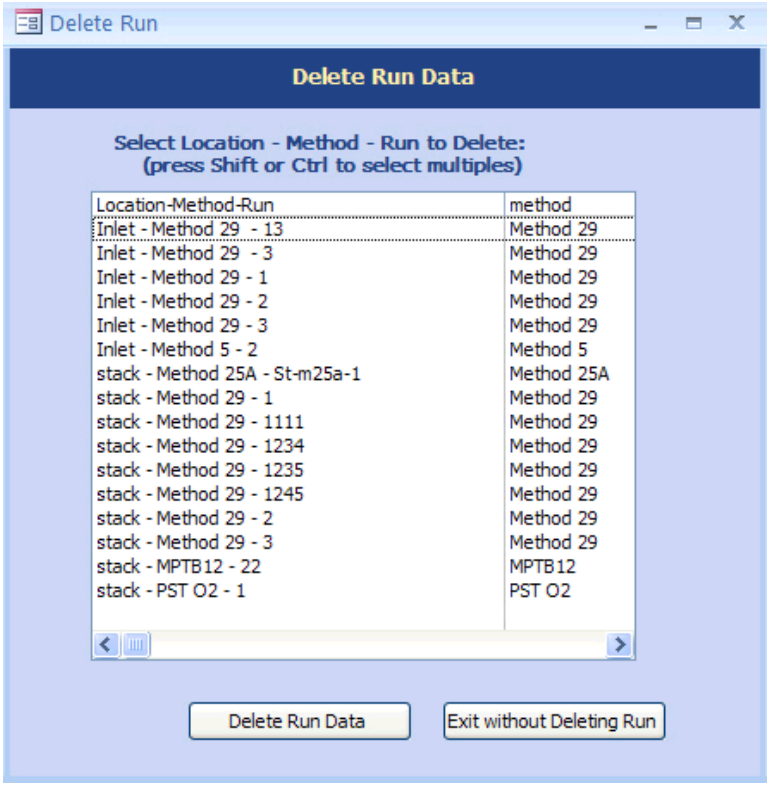


Figure 47 - Delete Run Window

This will delete all of the runs and lab data for the selected run.

- Click the "**Delete Run Data**" button from the "***Run Data Details Screen***".
- Select the "***Location – Method – Run***" from the pick list.
- Click the "**Delete Run Data**" button to permanently delete the data and return to the "***Run Details***" screen. Click "**Yes**" on the delete confirmation dialog.
- Click on "**Exit without Deleting Run**" to keep the data and return to the "***Run Details***" screen. You will be prompted to confirm the deletion.

Change Run Number

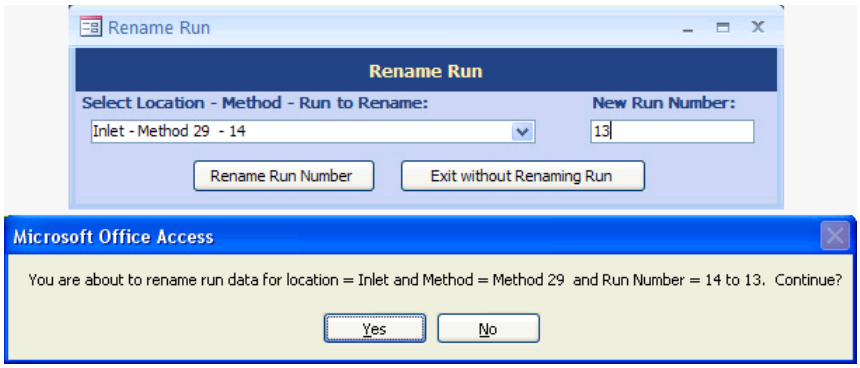


Figure 48 - Rename Run Window with Prompt

This will change the number for the selected run.

- Click the "**Change Run Number**" button on the "***Run Data Details***" screen.
- Select the "***Location – Method – Run***" from the pick list.
- Enter the new run number.
- Click the "**Rename Run Number**" button. You will be prompted to confirm the renaming. Click "**Yes**" on the rename confirmation dialog to save the new run number, receive confirmation message of the change, and return to the "***Run Data Details***" screen. Click "**No**" to return to the "***Change Run Number***" window.
- Click on the "**Exit without Renaming Run**" to return to the "***Run Data Details***" screen without saving changes.

Change Run Date

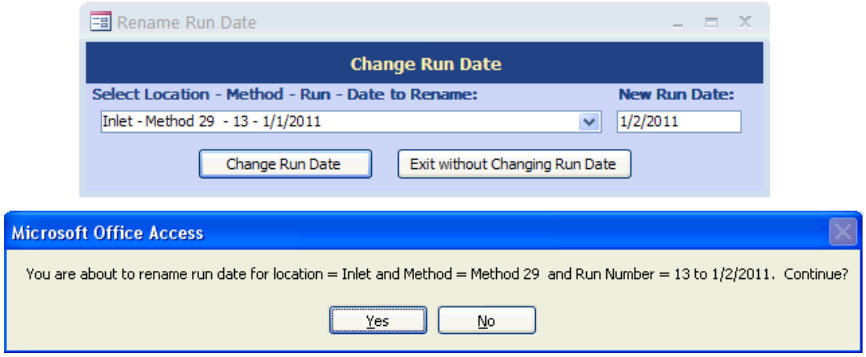


Figure 49 - Change Run Date Window with Prompt

This will change the date for the selected location – method – run - date.

- Click the "**Change Run Date**" button from the run data details screen.
- Select the "***Location – Method – Run – Date***" from the pick list.
- Enter the new run date.
- Click the "**Change Run Date**" button. You will be prompted to confirm the renaming. Click "**Yes**" on the rename confirmation dialog to change the date and return to the "***Run Data Details***" screen. Click "**No**" to return to the "***Run Date***" window without saving.
- Click the "**Exit without Changing Run Date**" to return to the "***Run Data Details***" screen without saving changes.

Selecting Locations / Methods / Runs

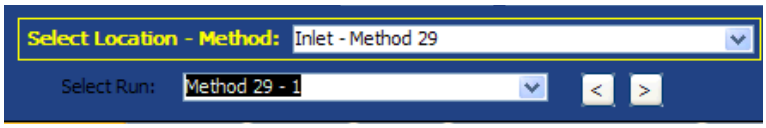


Figure 50 - Select Run Data

This is how you view the data for the different runs when you are on the Run Data Detail screens.

- Select the "***Location – Method – Run***" from the pick list.
- Click on the "<" or ">" button to scroll through runs of selected locations and methods. The "***Method Setup***" tab will be the same for all runs. The effects of scrolling through runs can be seen on the other tabs. Calculations made on 0 values will result in a field with #Error.

  Selecting either "<" or ">" will change the run number in the field to the left of the symbols. In addition to changing the run number, changes in the run data details entered into the most of the screens below the run identifier are presented.

Isokinetic/ Measured Method Test Data

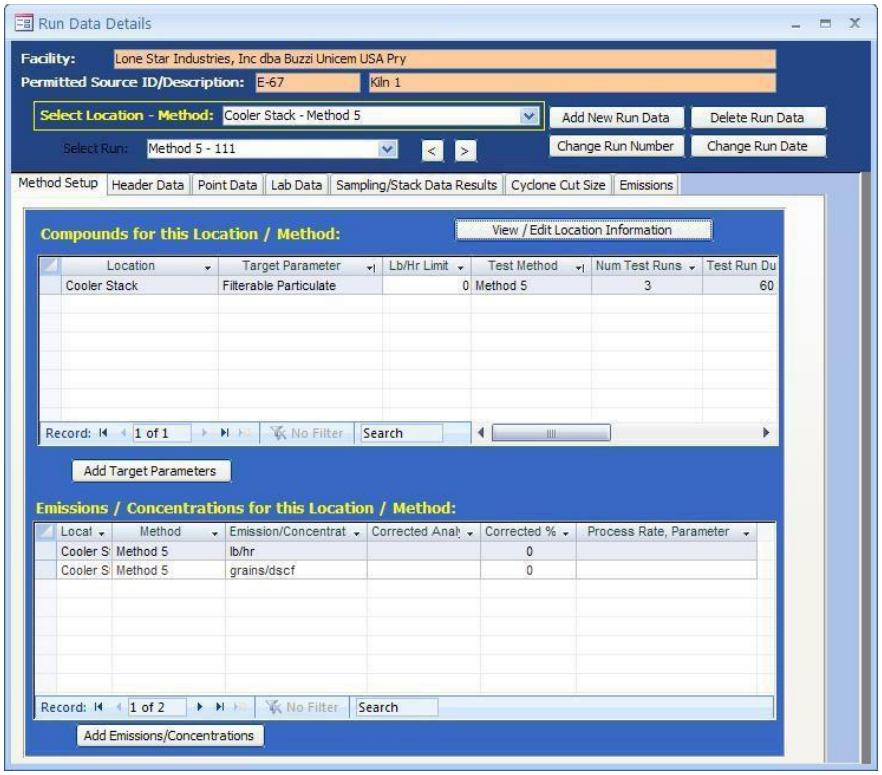


Figure 51 - Run Data Details Screen for Isokinetic/Measured Methods

Depending on the method selected, the ERT will display different run data details tabs. For instrumental methods, go to the *Header Data Screen* section below. For single train Isokinetic methods, the tabs include:

- "***Method Setup***"
- "***Header Data***"
- "***Point Data***"
- "***Lab Data***"
- "***Sampling/Stack Data Results***"
- "***Cyclone Cut Size***"
- "***Emissions***"

You can import field data information for up to nine isokinetic test runs from a spreadsheet (see *Add New Run Data - Spreadsheet Import*) or manually enter the information into the appropriate screens. Importing data from spreadsheets populates only data for the header data tabs and the point data tabs, to produce the emissions calculations users are required to enter the lab data by clicking on the "***Lab Data***" tab. For paired train manual methods, go to *Header Data Screen* section below.

Method Setup Screen

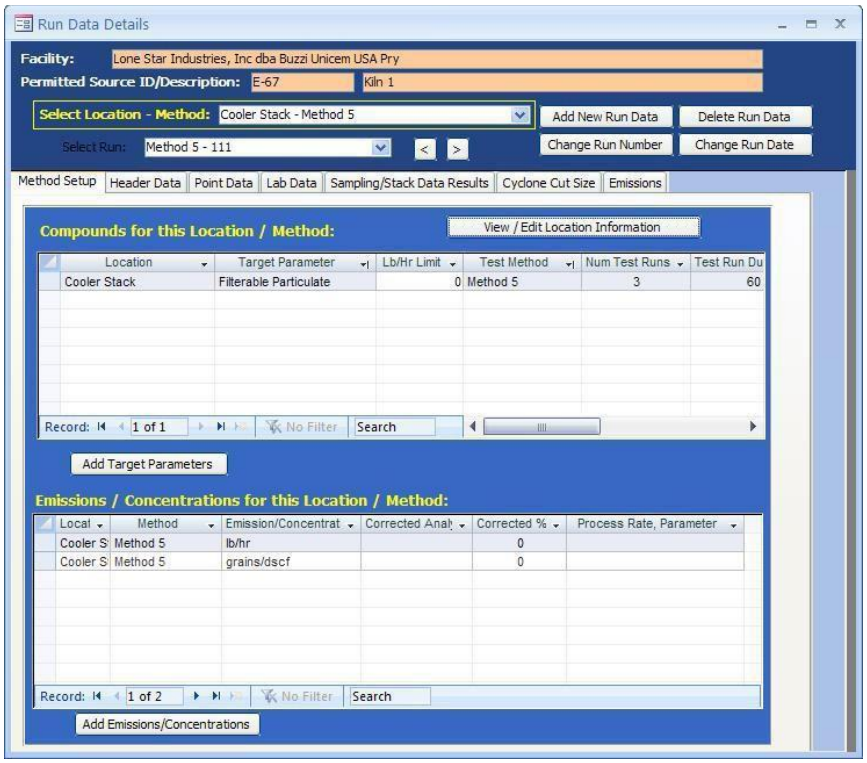


Figure 52 - Isokinetic Method: Method Setup Tab

The Method Setup screen contains a common set of fields for all three categories of test methods. The fields in this section will be pre-populated based on information entered in the test plan. However, they can be modified:

- ***View / Edit Location Information:*** Allows you to revise the test location information supplied during the test plan development (see **Figure 22 -** Test Plan Locations/Methods Location Edit and Insert options).
- ***Add Target Parameters:*** Allows you to add target parameters for this run at this location/method (see **Figure 23 -** Test Plan Locations/Methods Test Parameter for more information).
- ***Add Emissions/Concentrations:*** Allows you to add emissions/concentrations for this run at this location/method (see **Figure 27 -** Test Plan Locations/Methods Emissions/Concentrations Item for more information).
- ***Delete Target Parameters or Emission/Concentrations***: Highlight the row of the emission/concentration by clicking on the gray cell to the left of the column named "***Location***" and press the keyboard "**Delete**" button. When you are in the correct column, the cursor will change from a white arrow pointing up and left (⇖) to a black arrow (➡pointing right.

- ***Delete Process Rate, Parameter***: To delete the process rate, parameter you must block all of the text in the field and then press the keyboard "**Delete**" button. It should be noted that the process rate parameter should only be associated with an emission rate and the time units (i.e. lb/hr, lb/min, lb/sec) should be the same for both the emissions rate and the process rate.
- ***Change Process Rate Parameter***: To add or change the process rate parameter, click within the field and then on the down symbol (▾) to reveal the drop down list of available process parameters. You should choose a process parameter only for emissions rates that have the same time units as the emissions rate (i.e. tons of material processed/hr).

Header Data Screen

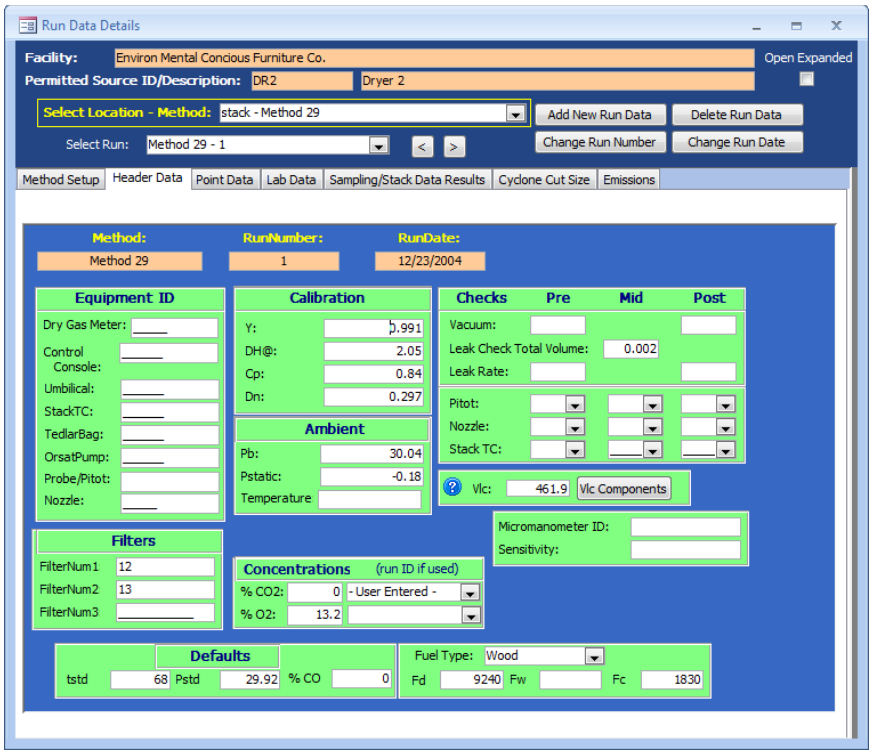


Figure 53 - Single Train Isokinetic Method: Header Data

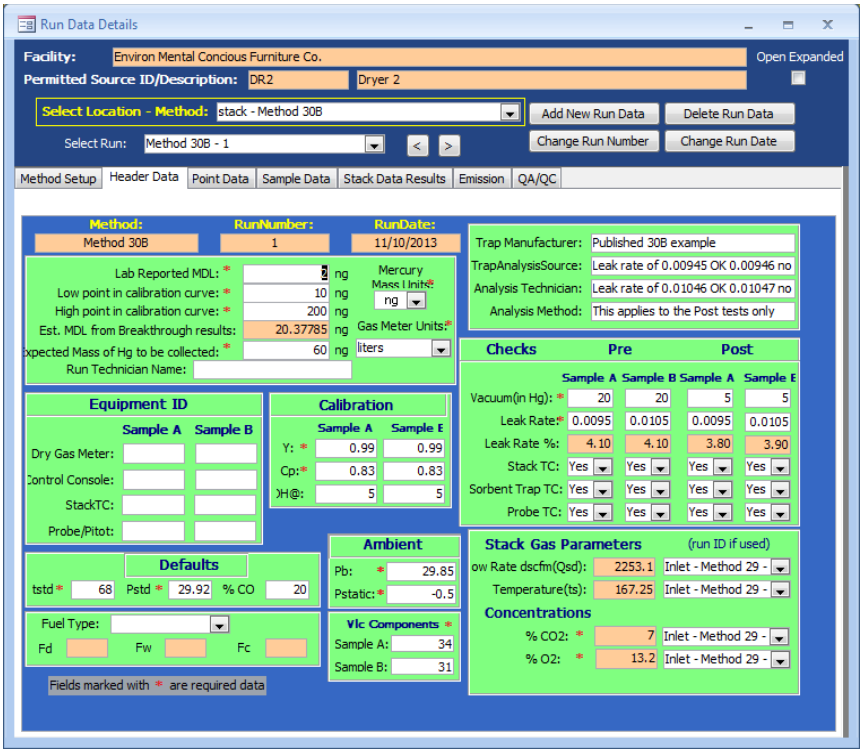


Figure 54 - Paired Train Manual Method: Header Data

Most of the components in the "***Header Data"*** tab are common between the single train and paired train sampling methodologies. The information for the single train may be imported from spreadsheets. The information for both methodologies may be entered directly into the fields. **Figure 53** shows the layout of the single train or isokinetic train "***Header Data"*** tab. **Figure 54** shows the layout of the paired train "***Header Data"*** tab. Below are descriptions of the fields for both methodologies. Fields present in only one methodology will be identified.

Analytical Set Up: The analytical Set up area is only present in the paired train sampling methodology. Information included in the "***Analytical Set Up***" area provides the critical parameters the analyst established during the initial instrument calibration in preparation for the analysis. Except for the "***Run Technician***" name every data element is used in the acceptance assessment of the sample results.

Lab Reported MDL: The laboratory must establish their minimum detection limit (MDL). Method 30B requires that the MDL must be determined at least once for the analytical system using an MDL study such as that found in section 15.0 to Method 301.

Low Point of the Calibration Curve: This is the lowest mass which the technician selects for calibration of the analytical instrument. Method 30B states that the lowest point of the calibration curve should be five and

preferably ten times the MDL. Since Method 30B includes an acceptance criterion that a valid analysis result must be within the calibration range, the low point of the calibration curve establishes the minimum analytical result which meets the acceptance criteria.

High Point of the Calibration Curve: This is the highest mass which the technician selects for calibration of the analytical instrument. As with the low point of the calibration curve, the high point of the calibration curve establishes the maximum analytical result which meets the acceptance criteria.

Est MDL from breakthrough results: This value is a calculated value based upon the trap 2 results. The estimated MDL multiplies the standard deviation of the trap 2 mass by the one tailed *t*-value at the 99% significance level with a degree of freedom of the number of samples less one.

Expected Mass of Hg to be collected: This is the mass value of Hg expected to be collected in Section 1 of the sample trap. The expected mass is used to assess the acceptability of the spike level used during the field recovery test. Method 30B section 8.2.6.1 indicates that the pre-sampling spike mass must be within 50 to150 percent of this expected mass.

Run Technician Name: This field is the name of the person that operated the equipment used to collect the sample. (Optional)

Mercury Mass Units: This field provides the metric units associated with all the reported mass values used in the sample data tab. Metric mass values available range from grams (g) to nanograms (ng). You should select mass units which will display the trap two values with at least number in the one place.

Gas Meter Units: This is the units that the dry gas meter displays. The ERT limits selection to liters, cubic meters and cubic feet. You should select the display units for the gas meters used to collect the sample and shown on the point data sheet.

Sampling Media Information: This area is only present in the paired train sampling methodology. Information in this area is used to identify the supplier of the sampling media, analytical instrumentation, the analyst and the analysis method.

Trap Manufacturer: This is the manufacturer of the sample cartridge or sleeve containing a sorbent media (typically activated carbon treated with iodine or some other halogen) with multiple sections separated by an inert material such as glass wool. These sorbent traps are optimized for the quantitative capture of elemental and oxidized forms of Hg and can be analyzed by multiple techniques.

Trap Analysis Source: This is the combined equipment and apparatus used to perform sample analyses. This includes any associated sample preparation apparatus e.g., digestion equipment, spiking systems, reduction devices, etc., as well as analytical instrumentation such as UV AA and UV AF cold vapor analyzers.

Analysis Technician: This is the name of the person operating the trap analysis equipment. (Optional)

Analysis Method: This is information to identify the method used extract, prepare and analyze the collected samples. Recovery techniques may include acid leaching, digestion, and thermal desorption/direct combustion. Example analytical techniques include, but are not limited to, ultraviolet atomic fluorescence (UV AF), ultraviolet atomic absorption (UV AA) with and without gold trapping, and X-ray fluorescence (XRF) analysis.

Equipment ID: Information provided in the equipment ID area is used to identify specific pieces of equipment used for the test run. Identifiers which may be used include but are not limited to manufacturers' product name and serial numbers or test company identification numbers.

Dry Gas Meter: The dry gas meter is the piece of hardware responsible for quantifying the volume of gas passing through the meter. Typically this is a diaphragm or bellows meter. The bellows in the meter drive an odometer-like counter indicating the total volume of gas which has passed through the meter. The ID is necessary for calibration documentation purposes. (Optional)

Control Console: The control console describes the combination of the dry gas meter, pumps, temperature controllers, manometers, pressure transducers and vacuum gauge. The ID is necessary for calibration documentation purposes. (Optional)

Umbilical: This is the sample gas transport line from the sample box to the control console or meterbox. The umbilical usually consists of bundled tubing, thermocouple, electrical lines, etc., used to control the probe and sample box filter temperatures. The Umbilical ID is present only on the "***Single Train***" header tab. (Optional)

StackTC: This is the ID of the thermocouple device used for monitoring the stack gas temperature. The ID is necessary for calibration documentation purposes.

TedlarBag: This is the ID of a Tedlar bag, if used. The Tedlar bag ID is present only on the "***Single Train***" header tab. (Optional)

OrsatPump: This is the ID of the pump used for filling a Tedlar bag, for example. The Orsat Pump ID is present only on the "***Single Train***" header tab. (Optional)

Probe/Pitot: This is the sample probe and or Pitot equipment identification number. The Pitot is the piece of hardware used to measure the velocity pressure of the stack gas. The ID is necessary for calibration documentation purposes.

Nozzle: The nozzle ID is necessary for calibration documentation purposes. The Nozzle ID is present only on the "***Single Train***" header tab.

Filters: Information provided in the filters area is used to identify the specific filter used for the test run. The numbers assigned to each of the filters is necessary for associating laboratory analyses with the specific test program. Since at this time filters are not used with the paired train methods which can be documented in the ERT, the filter numbers are present only on the "***Single Train***" header tab.

FilterNum1: For particulate sampling, enter the filter's unique identification number.

FilterNum2: This is for the second filter ID, if two filters are used.

FilterNum3: This is for the third filter ID, if three filters are used.

Calibration: Documenting equipment IDs allows for the calibration data for the specific equipment used in sampling to be included with the test data.

Y: This is the dry gas meter correction coefficient, gamma, of an isokinetic sampling train meterbox (such as used for Method 5 sampling). The value is determined by the calibration of the dry gas meter with a volume device traceable to the National Institute of Standards and Technology (NIST). The units of gamma are dimensionless and should be between 0.95 and 1.05.

DH@: Delta H @ ($\Delta H_{@}$) is the orifice pressure differential in inches of H_2O of an isokinetic sampling train meterbox (such as used for Method 5 sampling) that correlates to 0.75 cfm at 528ºR and 29.92 in Hg.

Cp: The Pitot tube coefficient for an S-type Pitot can range from 0.80 to 0.88 but is usually between 0.84 and 0.864. The default value allowed for S-type Pitots' meeting the Method 2 design specification and which have not been calibrated is 0.84. Any S-type Pitot with a Cp other than 0.84 should also include documentation of calibration by the procedure described in Section 10 of Method 2. The Cp for a standard Pitot is 0.99.

Dn (in): The nozzle diameter is measured in inches. Since at this time the nozzle diameter is not needed with the paired train methods which can be documented in the ERT, the nozzle diameter is present only on the "***Single Train***" header tab.

Ambient: Information provided in this area is used to identify ambient air surrounding the sampling location.

Pb: The barometric pressure of the sampling location. If the pressure is reported to sea level conditions, adjust the pressure for the elevation of the location above sea level. A 0.1 inches Hg decrease for every 100 feet of elevation is typically used.

Pstatic: The static pressure, inches of water, of the sampling location.

Temperature: Ambient Temperature in degrees F. The ambient temperature field is present only on the single train "***Header Data***" tab.

Concentrations: The following two parameters refer to the concentrations of carbon dioxide and oxygen in the gas stream as measured by one of several other test methods'

% CO2: The carbon dioxide percent of the gas stream tested. The pull-down to the right of the field for the CO_2 concentration provides access to the results of instrumental measurements of CO_2.

% O2: The oxygen percent of the gas stream tested. The pull-down to the right of the field for the O_2 concentration provides access to the results of instrumental measurements of O_2.

Checks: The following parameters refer to leak checking of various equipment components. "Pre" refers to checks done before the start of a run, "mid" is in reference to checks performed sometime during the run (such as between port changes), and "post" means after the run. For paired train sampling, there are fields for documenting checks for both sample trains verses a single sampling train system.

Vacuum- Pre & Post: The vacuum at which the pre and post sampling train leak checks were performed.

Leak Check Total Volume, Mid: For single sampling trains, this is the total volume recorded by the dry gas meter (DGM) during all leak checks performed between the pre test and post test leak checks. This volume is subtracted from the total sample volume recorded for the test run. These leak checks are typically conducted during sampling port changes. Since the ERT capable test method which requires paired sampling trains does not allow for leak checks with port changes this field is present only on the single train "***Header Data***" tab.

Leak Rate- Pre & Post: These include the pre- and post-test sampling train leak check rates. For Method 5, the post-test leak rate must be less than or equal to 0.02 acfm. For paired sampling trains, both sampling trains must have leak rates below 4%. The pre-test leak rate is compared to the initial sampling rate and the post-test leak rate is compared to the average sampling rate.

Pitot- Pre, Mid, & Post: These include the pre, mid, and post-test leak check results, as applicable. This field is present only on the single train "***Header Data***" tab.

Nozzle- Pre, Mid, & Post: These are pull-down selections for nozzle inspections for dents, nicks, etc. This field is present only on the single train "***Header Data***" tab.

Stack TC- Pre, Mid, & Post: These include the pre, mid, and post-test results of the thermocouple check, as applicable. Since the ERT capable test method which requires paired sampling trains also requires the recording of sorbent trap and probe temperatures, there are checks for these thermocouples.

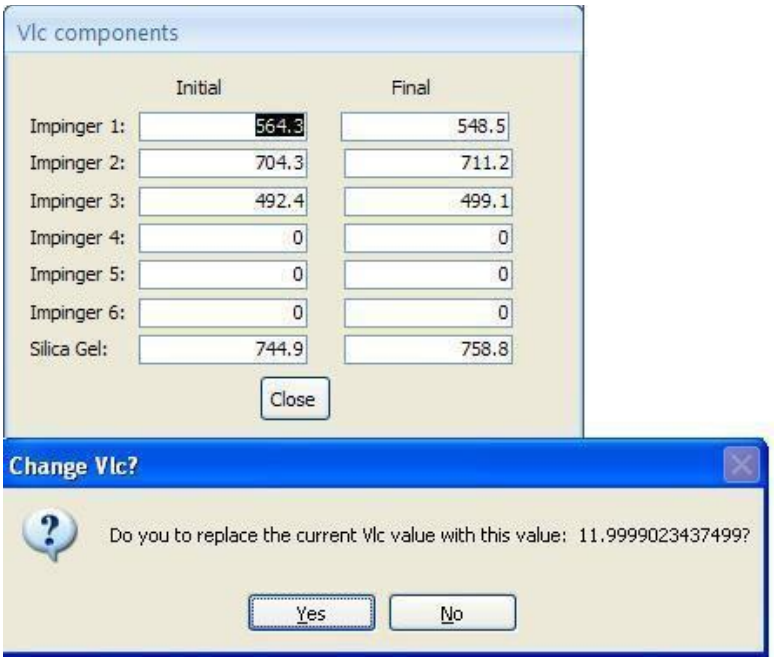


Figure 55 - Volume of liquid collected sub menu.

Vlc Components: The following parameters refer to "***Vlc***," where "***Vlc***" is the volume of liquid condensate. The "***Vlc***" is the volume or mass of water condensed from the sample gas and collected in the impingers of an isokinetic sampling train.

Vlc: Click on "**Vlc Components**" button on the single train "***Header Data***" tab to open a form shown in **Figure 55 -** Volume of liquid collected sub menu. to enter "***Vlc Components***". Enter the values for the initial volume or mass and final volume or mass for up to 6 Impingers and the silica gel. When complete, click on "**Close**". A prompt will appear with the new calculated "***Vlc***" value to verify that the current "***Vlc***" value should be replaced with the new "***Vlc***" value. Click "**Yes**" to replace current value.

Click "**No**" to close without replacing the current "***Vlc***" value. If you selected "**Yes**" to the prompt the "***Vlc***" value will populate the "***Vlc***" data field in the header date tab. The paired train header tab does not have the capability to document individual impinger contents at this time.

Micromanometer

ID: This is the identification number of the micromanometer.

Sensitivity: This is the units of inches of water column.

Defaults: The following parameters refer to the EPA standards.

Tstd: This is the standard temperature which defaults to EPA standard of 68 degrees F. When the test method performed requires the use of a different standard temperature, the "68" in this field should be changed to the temperature specified.

Pstd: This is the standard pressure which defaults to EPA standard of 29.92 inches of mercury. When the test method performed requires the use of a different standard pressure, the "29.92" in this field should be changed to the pressure specified.

% CO: This is the carbon monoxide percentage which defaults to zero (0).

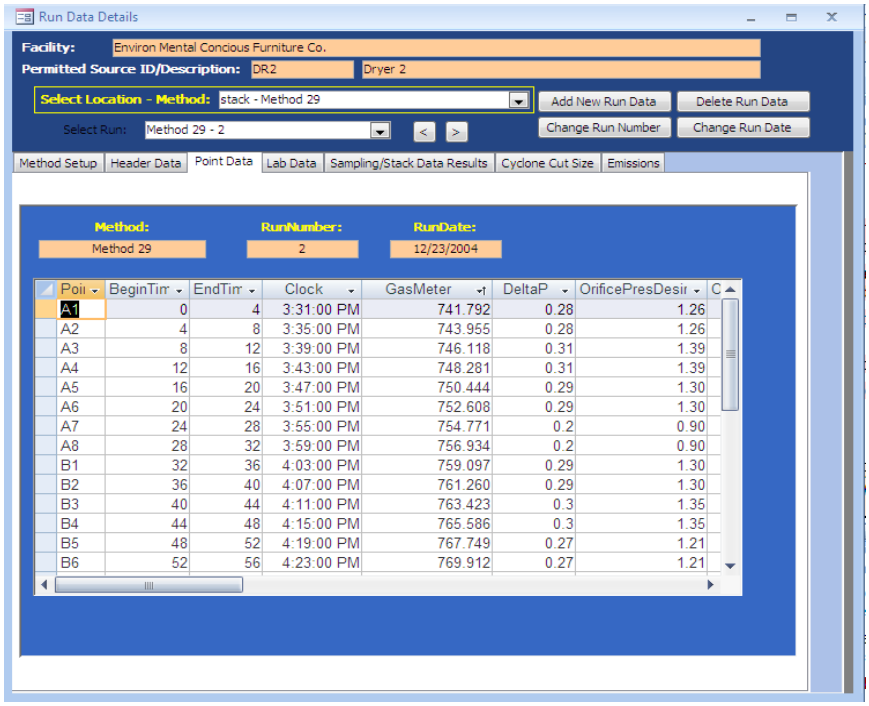
Fuel Type: The selection of the ***Fuel Type*** with this drop down menu populates the three F-factor fields below this selection with the values presented in Table 19-2 of EPA Method 19. In addition, "***Override***" may be selected and fuel specific F-factors as calculated by equations 19-13, 19-14 and 19-15 in EPA Method 19 may be entered in the appropriate F-factor field. The values entered are based upon an ultimate analysis of the fuel or combination of fuels using equations 19-16, 19-17 and 19-18 of EPA Method 19.

Fd: The value "***Fd***" is the ratio of the quantity of dry effluent gas generated by combustion to the gross calorific value of the fuel. When combined with the oxygen concentration, the emission rate in lb/MMBtu can be calculated from the dry pollutant emissions concentration. By selecting the fuel type, the F-factor, "***Fd***," from US EPA Reference Method 19 is populated in this field. If override is selected, the user should enter the "***Fd***" as calculated by equation 19-13 or 19-16 of US EPA Reference Method 19.

Fw: The value "***Fw***" is the ratio of the quantity of wet effluent gas generated by combustion to the gross calorific value of the fuel. When combined with the wet oxygen concentration and the moisture concentration, the emission rate in lb/MMBtu can be calculated from the wet emissions concentration. By selecting the fuel type, the F-factor, "***Fw***," from US EPA Reference Method 19 is populated in this field. If override is selected, the user should enter the "***Fw***" as calculated by equation 19-14 or 19-17 of US EPA Reference Method 19.

Fc: The value "***Fc***" is the ratio of the theoretical carbon dioxide produced during combustion to the higher heating value of the fuel combusted. When combined with the carbon dioxide, the emission rate in lb/MMBtu can be calculated from either the wet or dry emissions concentration. By selecting the fuel type, the F-factor, "***Fc***," from US EPA Reference Method 19 is populated in this field. If override is selected, the user should enter the "***Fc***" as calculated by Equation 19-15 or 19-18 of US EPA Reference Method 19.

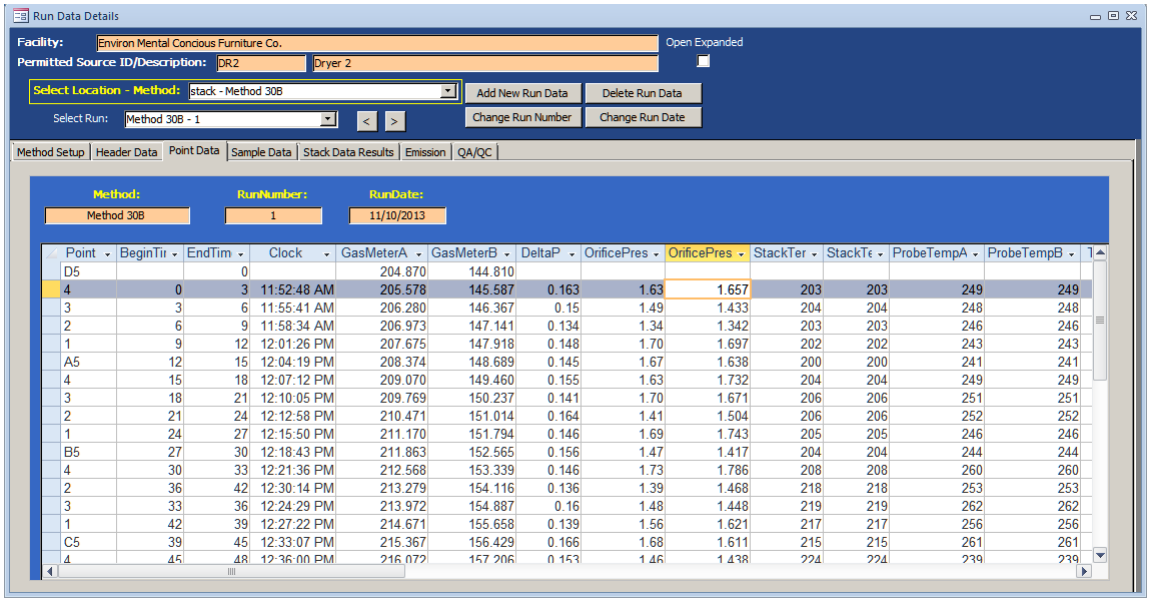
Point Data Screen



Poi	BeginTim	EndTim	Clock	GasMeter	DeltaP	OrificePresDesir	C
A1	0	4	3:31:00 PM	741.792	0.28	1.26	
A2	4	8	3:35:00 PM	743.955	0.28	1.26	
A3	8	12	3:39:00 PM	746.118	0.31	1.39	
A4	12	16	3:43:00 PM	748.281	0.31	1.39	
A5	16	20	3:47:00 PM	750.444	0.29	1.30	
A6	20	24	3:51:00 PM	752.608	0.29	1.30	
A7	24	28	3:55:00 PM	754.771	0.2	0.90	
A8	28	32	3:59:00 PM	756.934	0.2	0.90	
B1	32	36	4:03:00 PM	759.097	0.29	1.30	
B2	36	40	4:07:00 PM	761.260	0.29	1.30	
B3	40	44	4:11:00 PM	763.423	0.3	1.35	
B4	44	48	4:15:00 PM	765.586	0.3	1.35	
B5	48	52	4:19:00 PM	767.749	0.27	1.21	
B6	52	56	4:23:00 PM	769.912	0.27	1.21	

Figure 56 - Isokinetic Method: Point Data Tab

Although the point data for single train and paired train sampling are similar, the point data screen for paired trains provides additional columns for documenting comparable information for the duplicate components for the combined test train. At this time, the point data for the single sampling train may be imported from the spreadsheet. Data for both the single sample train and the paired sampling train can be manually entered here. Use the side and bottom scroll bars to view more information. Recall at any time you can change the width of the columns in Access by placing the cursor over the split between the columns and clicking and dragging the column to the desired width.



Point	BeginTi	EndTim	Clock	GasMeterA	GasMeterB	DeltaP	OrificePres	OrificePres	StackTer	StackTe	ProbeTempA	ProbeTempB
D5		0		204.870	144.810							
4	0	3	11:52:48 AM	205.578	145.587	0.163	1.63	1.657	203	203	249	249
3	3	6	11:55:41 AM	206.280	146.367	0.15	1.49	1.433	204	204	248	248
2	6	9	11:58:34 AM	206.973	147.141	0.134	1.34	1.342	203	203	246	246
1	9	12	12:01:26 PM	207.675	147.918	0.148	1.70	1.697	202	202	243	243
A5	12	15	12:04:19 PM	208.374	148.689	0.145	1.67	1.638	200	200	241	241
4	15	18	12:07:12 PM	209.070	149.460	0.155	1.63	1.732	204	204	249	249
3	18	21	12:10:05 PM	209.769	150.237	0.141	1.70	1.671	206	206	251	251
2	21	24	12:12:58 PM	210.471	151.014	0.164	1.41	1.504	206	206	252	252
1	24	27	12:15:50 PM	211.170	151.794	0.146	1.69	1.743	205	205	246	246
B5	27	30	12:18:43 PM	211.863	152.565	0.156	1.47	1.417	204	204	244	244
4	30	33	12:21:36 PM	212.568	153.339	0.146	1.73	1.786	208	208	260	260
2	36	42	12:30:14 PM	213.279	154.116	0.136	1.39	1.468	218	218	253	253
3	33	36	12:24:29 PM	213.972	154.887	0.16	1.48	1.448	219	219	262	262
1	42	39	12:27:22 PM	214.671	155.658	0.139	1.56	1.621	217	217	256	256
C5	39	45	12:33:07 PM	215.367	156.429	0.166	1.68	1.611	215	215	261	261
4	45	48	12:36:00 PM	216.072	157.206	0.153	1.46	1.438	224	224	239	239

Figure 57 - Paired Sample Train Point Data Tab

Below is a description of the column fields:

Point: The sampling point label, such as A1, A-1, D-2, etc.

BeginTime: The cumulative sampling time that sampling at the sample point was started, in minutes. Port changes DO NOT reset the time to zero (0).

EndTime: The cumulative sampling time that sampling at the sample point was ended, and is the begin time plus the sampling time per point. Values in end time are used in calculating Net Run Time and isokinetics.

Clock: The actual clock time at the start of sampling at a point.

GasMeter: The dry gas meter volume reading at the *beginning* of the sampling at a point. This means that the final volume reading is recorded in a row without a point label and no other recorded point data. Sometimes the sampling data is recorded at the end of sampling at a point which would require that the first volume reading is recorded without any other sampling data. Values in "***Gas Meter***" are used in the calculation of sample volume metered, standard sample volume metered, isokinetics, calculated moisture content of sampled gas stream, dry mole fraction of water, wet molecular weight of gas stream, velocity of gas stream, and actual and standard stack gas flow. For paired sample train tests there are two columns for recording the gas meter volumes.

DeltaP: The velocity pressure (delta p) expressed in inches of water. Values in "***Delta P***" are used in the calculation of isokinetics, average delta p, velocity of gas stream and actual and standard stack gas flow.

OrificePresDesired: This is the orifice pressure setting required for sampling isokinetically, measured by inches water. For paired sample train tests there are two columns for recording the desired orifice pressure.

OrificePresActual: Orifice pressure actually sampled or reached, measured by inches of water. The values in the "***Orifice Pressure Actual***" are used in the calculation for "***Delta H***," sample volume corrected to standard conditions, isokinetics, moisture percentage, dry mole fraction of water, velocity of gas stream and actual and standard stack gas flow. For paired sample train tests there are two columns for recording the actual orifice pressure.

StackTemp: Stack temperature is the temperature of the effluent gas at the sampling point and is expressed as degrees F. The values in the stack temp are used in the calculation for isokinetics, moisture percentage at saturation, dry mole fraction of water, wet molecular weight of sampled gas stream, average stack temperature, velocity of gas stream, and actual and standard stack gas flow. For paired sample train tests there are two columns for recording the stack temperature.

ProbeTemp: This is the temperature of the sampling probe, degrees F. For paired sample train tests there are two columns for recording the probe temperature.

Trap Temp: This is the temperature of the sample collection traps. For paired sample train tests there are two columns for recording the trap temperature. There is no column for trap temperature for single train sample methods.

FilTempIn: This is the filter temperature entering the filter box or compartment, degrees F. All filter temperatures should be the temperature measured by a thermocouple in direct contact with the sample gas. Where a sampling protocol requires the monitoring of two filter temperatures, this may be used as the exit gas temperature for the first filter. For example, this would be the Method 5 filter temperature for a combined Method 5 and Method 202 sampling train.

FilTempOut: This is the filter temperature exiting the filter box or compartment, degrees F. Where a sampling protocol requires the monitoring of two filter temperatures, this may be used as the exit gas temperature for the second filter. For example, this would be the Method 202 filter temperature for a combined Method 5 and Method 202 sampling train.

FinalExitTemp: This is the temperature of sample gas exiting silica gel impinger, degrees F. For paired sample train tests there are two columns for recording the final exit temperature.

DryGasInlet: This is the dry gas meter inlet gas temperature, expressed as degrees F.

DryGasOutlet: This is the dry gas meter outlet gas temperature, expressed as degrees F. The values in the dry gas outlet are used in the calculation for dry gas meter temperature, sample volume corrected to standard conditions, isokinetics, moisture percentage of stack gas, dry mole fraction of water, wet molecular weight of sampled gas stream, average stack temperature, velocity of gas stream and actual and standard stack gas flow. For paired sample train tests there are two columns for recording the dry gas outlet temperature.

PumpVac: This is the vacuum of the sampling pump, measured in inches mercury. For paired sample train tests there are two columns for recording the pump vacuum.

SampleRate: This is the sampling rate, measured in cubic ft per min. For paired sample train tests there are two columns for recording the sampling rate. For paired sample train tests this is in the units of measure selected on the "***Header Data"*** tab and is a required field which is used in the quality analysis of the test.

Notes: These are any observations or comments concerning the test run.

Single Sample Lab Data Screen

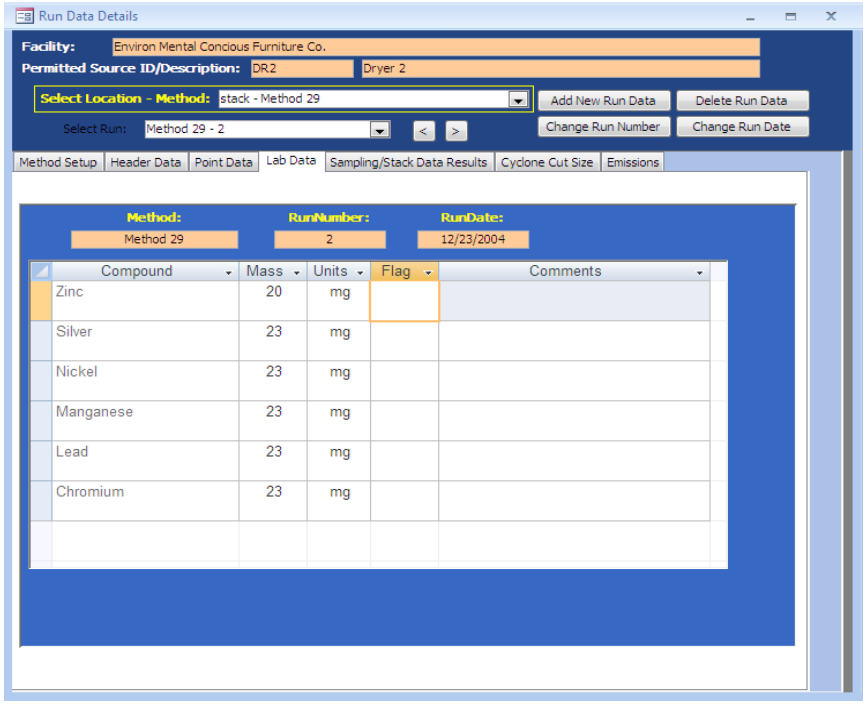


Figure 58 - Isokinetic Method: Lab Data Tab

At this time the single sample "***Lab Data*"** screen presents a limited amount of information and the comparable paired sample screen is named "***Sample Data***". Enter the lab data for each compound. Below is a description of the single sample "***Lab Data***" fields:

Compound:	Analyte name from the "***Setup***" window.
Mass:	Sample catch weight reported from the lab.
Units:	The mass units, including: gm (grams), mg (milligrams), ug (micrograms), ng (nanograms) or pg (picograms).
Flag:	Lab quantifier comment about the sample data, which may be ND, EMPC, J, etc. EMC Guidance document GD-051F recommends using the following flags for stack test results which have multiple reported fractions: BDL (below detection level) – all analytical values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s); DLL (detection level limited) – at least one but not all values used to calculate and report an in-stack emissions value are less than the laboratory's reported detection level(s); and ADL (above detection level) - all analytical values used to calculate and report an in-stack emissions value are greater than the laboratory's reported detection level(s).

Comments: Observations or comments. EMC Guidance document GD-051F recommends the reporting of individual components and laboratory detection level(s) in the comment field. Each component should be provided in the order of the sampling train with comas separating the individual values. Values which are below the detection limit should be enclosed with brackets and the value proceeded with a less than sign. For example, a four fraction sample would be reported as 0.036, [<0.069], 1.239, [<0.945]. It is suggested that the method to address below detection level results should be included in the comment field as well as a summary of the methodology used to establish the detection level.

Paired Sample Data Screen

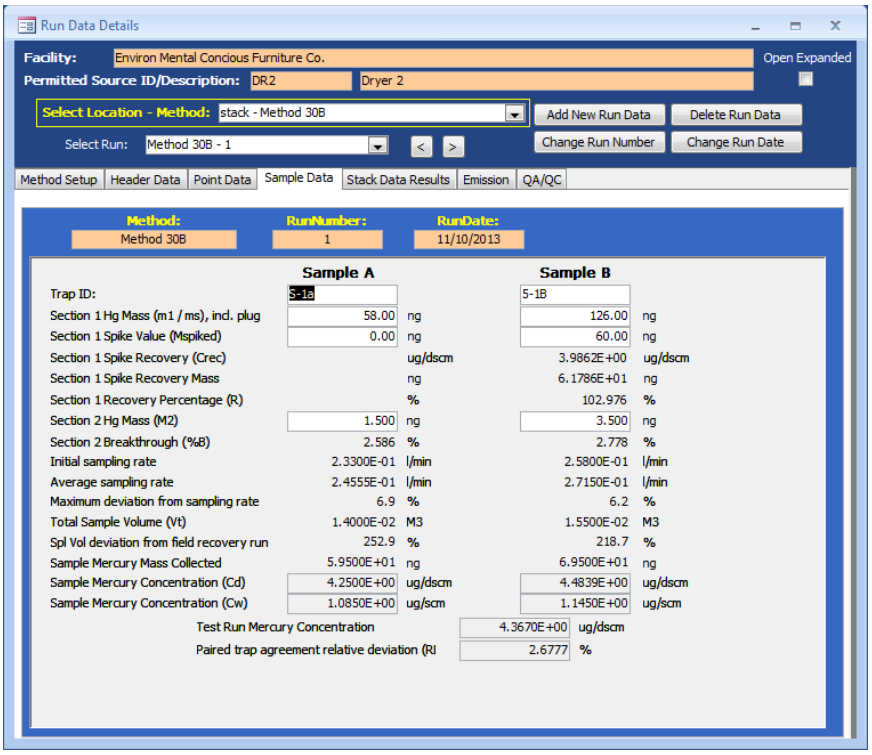


Figure 59 - Paired Sample Train: Sample Data Screen

For paired sample trains, the "***Sample Data"*** screen contains only eight fields for the user to provide information. The remaining information presented is intermediate calculations and final calculated results based upon the user entered information. Below is a description of the user entered and calculated fields:

Trap ID: This is usually an alphanumeric code as required by section 6.1.1 of Method 30B which uniquely identifies a cartridge or sleeve containing a sorbent media with two sections separated by an inert material.

Section 1 Hg Mass: This is the mass determined by the analysis of the first section of the sorbent trap and the inert separation material. The units of measure displayed after the date entry fields are the units selected on the paired train "***Header Data***" screen.

Section 1 Spike Value: This is the mass which was spiked (added) to "**Section 1**" of one of the pairs of traps used for the Field Recovery Test. All spiked samples will be considered to be one of the tests for the "***Field Recovery Study***." The mass spiked should be between 50 and 150 percent of the expected mass collected on the unspiked samples.

Section 1 Spike Recovery: For samples which were spiked, the concentration calculated by Method 30B Equation 30B-6 is presented. The units of measure are µg/dscm.

Section 1 Spike Recovery Mass: For samples which were spiked, the product of the spike recovery concentration and the volume of gas sampled are presented. The units of measure are those selected in the "***Header Data***" screen.

Section 1 Recovery Percentage: For samples which were spiked, the percentage of spike mass recovered calculated by Method 30B Equation 30B-7 is presented. While there are no specifications for individual recoveries, the average of all the Field Recovery tests should be between 85% and 115%.

Section 2 Hg Mass: This is the mass determined by the analysis of the second section of the sorbent trap. The units of measure displayed after the entry fields are the units selected on the "***Header Data***" screen. You should adjust the units of measure on the "***Header Data***" screen such that all figures for the mass are visible within the three visible decimal places of this field.

Section 2 Breakthrough: This is the breakthrough percentage from the section 1 mass. Method 30B Equation 30B-2 calculates breakthrough by dividing the Section 1 sorbent trap results by the Section 2 sorbent trap results. The units of measure are percent. The acceptability of the breakthrough percentage is dependent on the average concentration for the test run.

Initial Sampling Rate: This is the initial sample flow rate entered in the point data by the source tester. This value will be used to assess the acceptability of the Pre-test leak rate and the ability of the source tester to maintain this sampling rate during the test period. The

units of the sampling rate are those selected in the "***Header Data***" screen.

Average Sampling Rate: This is the average sampling rate achieved by the source tester during the run. This value will be used to assess the acceptability of the Post-test leak rate and the ability of the source tester to maintain this sampling rate during the test period. The units of the sampling rate are those selected in the "***Header Data***" screen.

Maximum deviation from sampling rate: This is the maximum sampling rate deviation from the average sampling rate. While there are no criteria for acceptability, this value is an indicator of the source testers' ability to achieve the intent of the method to maintain a constant sample flow rate. The units of the deviation are in percent.

Total Sample Volume: This is the total volume of gas sampled through the collection traps. The units of this value are Cubic Meters. This value will be compared to the average sample volume collected during the "***Field Recovery***" study tests.

Spl Vol deviation from field recovery run: This is the percentage deviation from the average sample volume recorded for the "***Field Recovery***" study tests. To meet the acceptability requirements of Method 30B Section 8.3.3.3, each test run must be within 20 percent of the volume for the "***Field Recovery***" study tests.

Sample Mercury Mass Collected: This is the sum of the mass collected on Section 1 and Section 2 reduced by any mass spiked on Section 1. The units of measure are those selected in the "***Header Data***" screen.

Sample Mercury Concentration (Cd): This is the dry concentration of mercury measured by each of the two sampling trains based upon the "***Sample Mass***" collected and the "***Total Volume Sampled***". The units of measure for the concentration are in µg/dscm.

Sample Mercury Concentration (Cw): This is the wet concentration of mercury measured by the two sampling trains based upon the dry concentration and the measured moisture content. The units of measure for the concentration are in µg/scm.

Test Run Mercury Concentration: This is the average of the paired trap concentrations. Although the values are displayed to five significant figures users should base any decision on local policy for rounding and use of significant figures. EPA policy is that final values should be rounded to two or three significant figures.

Paired Trap Agreement Relative Deviation: This is the relative difference between the two samples as calculated by Method 30B Equation 30B-5. The unit of measure is percent. The criteria specified in Method 30B for acceptance depends upon the average measured concentration.

Sampling/Stack Data Results Screen

Figure 60 - Isokinetic Method: Data Results Tab

Figure 61 - Paired Sampling Trains: Data Results Tab

This tab shows results for a specific run, which were calculated from data entered into the previously. Except for the percent isokinetic field at the bottom left of the isokinetic "***Methods***" screen as shown in **Figure 60**, the data elements displayed are identical. Since the Paired Sampling trains have two independent sampling systems, the paired sampling train "***Stack Data Results***" has a separate column for each sampling train in the "***Sampling Train Parameters***" area as shown in Figure 61. None of the fields are editable.

By placing your mouse over either the abbreviations or the data fields and pausing for about two seconds, a popup tip will appear explaining the abbreviations. This feature is not used for either "***Net Run Time***" or "***Net Traverse Points***" as these are easily deciphered.

Click the "**View All Runs**" button to display a print-ready window showing the results from all runs in a side-by-side manner.

Below is a description of the fields:

NetRunTime:	Net time in minutes of run.
NetTravPts:	Net number of traverse points.
Dn:	Diameter of nozzle, inches.
Cp:	Pitot coefficient.
Y:	Meter box coefficient, Gamma.
Pb:	The barometric pressure of the sampling location.
DeltaH:	DGM orifice pressure differential, water inches.
Vm:	Sample Volume metered, actual cubic feet.
Tm:	Dry gas meter temperature, degrees F.
Vmstd:	Sample volume corrected to standard conditions, DSCF.
Vlc:	Equivalent volume of liquid water collected in moisture sample, ml.
Vwstd:	Volume of water collected at standard conditions, SCF.
%I:	Percent Isokinetic, percentage.
% H2O:	Calculated moisture content of sampled gas stream, percentage.
% H2Osat:	Calculated moisture content of saturated gas stream, percentage.
Mfd:	Dry mole fraction, 1-BWS.
% CO2:	Carbon Dioxide concentration of sampled gas stream, percentage.
% O2:	Oxygen concentration of sampled gas stream, percentage.

% CO + N2:	Balanced gas concentration of sampled gas stream, percentage.
Fo:	Ratio of excess oxygen and carbon dioxide. Calculation uses $(20.9 - \%O_2)/\%CO_2$.
Md:	Dry molecular weight of sampled gas stream, lbs/lb-mole.
Ms:	Wet molecular weight of sampled gas stream, lbs/lb-mole.
Pg:	Static pressure of sampled gas, water inches.
Ps:	Absolute pressure of sampled gas, inches of Hg.
Ts:	Temperature of sampled gas, degrees F.
DeltaPavg:	Average Pitot tube differential pressure, water inches.
Vs:	Velocity of gas stream, feet per second.
Dstk:	Diameter of exhaust, feet.
Dwdth:	Width of exhaust, feet.
Dlngth:	Length of exhaust, feet.
As:	Area of stack, feet squared.
Qsd:	Dry volumetric flow rate of exhaust at standard conditions, DSCFM.
Qaw:	Actual volumetric flow rate of exhaust, ACFM.
MMBtu/Hr:	Heat Rate, mmBtu per hour.

Note: *Fields with "#Error" is a result of missing or incomplete Run data. See the descriptions for the point data columns to identify data entry errors that may cause one or more field in the sampling results tab to display "#Error." Errors in the sampling results may also be due to errors in one of the fields in "Calibration," "Concentration," or volume of liquid components (Vlc).*

Cyclone Cut Size Screen

Figure 62 - Isokinetic Method: Cyclone Cut Size Tab

These results are calculated for every isokinetic method. However, they are only intended for methods using PM10 and PM2.5 cyclone heads. Click on the value to expand the value to twelve positions to the right of the decimal.

Emissions Screen

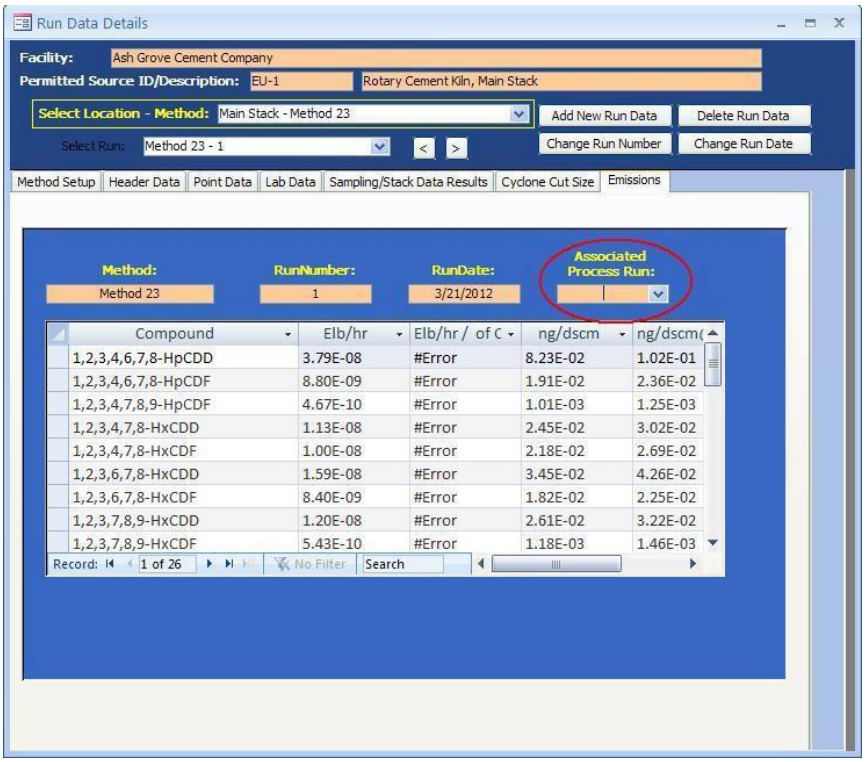


Figure 63 - Isokinetic or Paired Train Method: Emission Results Tab

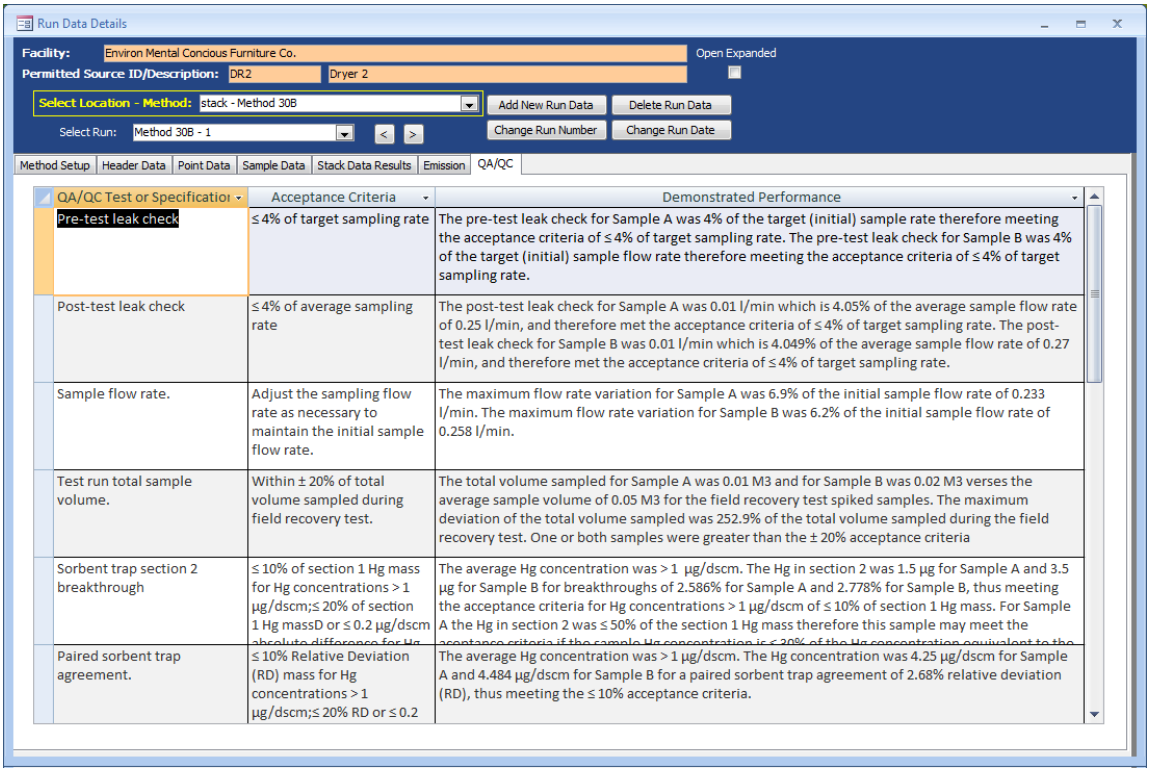
This tab shows the calculated emissions/concentrations for each compound by run. Generally, these fields are not editable. Columns other than "***Compound***" are dependent on the "***Emissions / Concentrations***" selected in the "***Methods Setup***" tab (**Figure 52 -** Isokinetic Method: Method Setup Tab). If a process rate variable has been associated with an emission rate, there will be an additional column which presents the process based emissions calculation. You will see the text "#Error" in this column until the test run has an associated process rate selected. To calculate the process based emissions select the process run using the drop down menu in the far right salmon colored field below the text "***Associated Process Run***" which is circled in **Figure 63 -** Isokinetic or Paired Train Method: Emission Results Tab. The "#Error" will be replaced by the quotient of the test run emission rate divided by the process rate for the selected process run.

Below is a description of a few of the more common column headings:

Compound:	Analyte name from setup window.
Gr/dscf:	Grain per dry standard cubic feet.
Gr/dscf@7%O2:	Grain per dry standard cubic feet corrected to 7% O_2.
Elb/hr:	Pounds per hour.

Elb/Tons of …: Pounds per Ton of … The full text of the divisor (Tons of …) is dependent on the choice of process variable selected under the "***Process Rate Parameter***" heading of the "***Emissions/ Concentration***" area of the "***Method Setup***" tab.

Paired Train QA/QC Screen:



QA/QC Test or Specificatio	Acceptance Criteria	Demonstrated Performance
Pre-test leak check	≤ 4% of target sampling rate	The pre-test leak check for Sample A was 4% of the target (initial) sample rate therefore meeting the acceptance criteria of ≤ 4% of target sampling rate. The pre-test leak check for Sample B was 4% of the target (initial) sample flow rate therefore meeting the acceptance criteria of ≤ 4% of target sampling rate.
Post-test leak check	≤ 4% of average sampling rate	The post-test leak check for Sample A was 0.01 l/min which is 4.05% of the average sample flow rate of 0.25 l/min, and therefore met the acceptance criteria of ≤ 4% of target sampling rate. The post-test leak check for Sample B was 0.01 l/min which is 4.049% of the average sample flow rate of 0.27 l/min, and therefore met the acceptance criteria of ≤ 4% of target sampling rate.
Sample flow rate.	Adjust the sampling flow rate as necessary to maintain the initial sample flow rate.	The maximum flow rate variation for Sample A was 6.9% of the initial sample flow rate of 0.233 l/min. The maximum flow rate variation for Sample B was 6.2% of the initial sample flow rate of 0.258 l/min.
Test run total sample volume.	Within ± 20% of total volume sampled during field recovery test.	The total volume sampled for Sample A was 0.01 M3 and for Sample B was 0.02 M3 verses the average sample volume of 0.05 M3 for the field recovery test spiked samples. The maximum deviation of the total volume sampled was 252.9% of the total volume sampled during the field recovery test. One or both samples were greater than the ± 20% acceptance criteria
Sorbent trap section 2 breakthrough	≤ 10% of section 1 Hg mass for Hg concentrations > 1 µg/dscm;≤ 20% of section 1 Hg massD or ≤ 0.2 µg/dscm	The average Hg concentration was > 1 µg/dscm. The Hg in section 2 was 1.5 µg for Sample A and 3.5 µg for Sample B for breakthroughs of 2.586% for Sample A and 2.778% for Sample B, thus meeting the acceptance criteria for Hg concentrations > 1 µg/dscm of ≤ 10% of section 1 Hg mass. For Sample A the Hg in section 2 was ≤ 50% of the section 1 Hg mass therefore this sample may meet the
Paired sorbent trap agreement.	≤ 10% Relative Deviation (RD) mass for Hg concentrations > 1 µg/dscm;≤ 20% RD or ≤ 0.2	The average Hg concentration was > 1 µg/dscm. The Hg concentration was 4.25 µg/dscm for Sample A and 4.484 µg/dscm for Sample B for a paired sorbent trap agreement of 2.68% relative deviation (RD), thus meeting the ≤ 10% acceptance criteria.

Figure 64 - Paired Sampling Train: QA/QC Tab

For paired sampling trains, there is a QA/QC tab which identifies several of the QA/QC specifications contained in the test method and the Acceptance Criteria specified in the test method. In addition, the last column has text which describes the specific conditions for deciding the acceptability criteria and an acceptability assessment. Because of differences in display of numbers by the software, and variations in the rounding and significant figures conventions of different programs, the values presented show more decimal places than necessary. The acceptability assessment uses EPA's criteria of carrying all digits through the calculations and rounding to two significant places except when otherwise indicated. It is assumed that acceptance criteria presented in the method with one or two places are to be evaluated at two significant figures and that criteria presented in the method with three places are to be evaluated at three significant figures.

Due to the length of the text, you may not be able to see all of the information for a QA/QC specification, you can adjust the row heights or column widths. Do this by placing your cursor in

the row indicator on the left or column header above until the cursor changes to a symbol indicating the ability to change the width or height.

QA/QC specifications which are assessed include:

- Pre-test leak check
- Post-test leak check
- Sample flow rate
- Test run total sample volume
- Sorbent trap section 2 breakthrough
- Paired sorbent trap agreement
- Field recovery test
- Sample analysis
- Calibration Curve

Instrumental Method Test Data

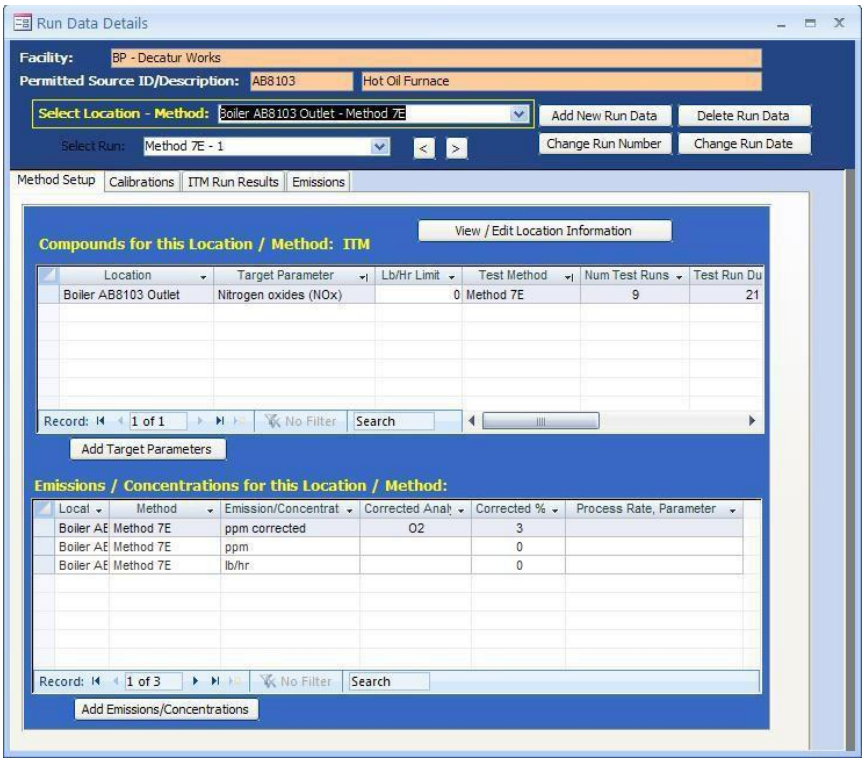
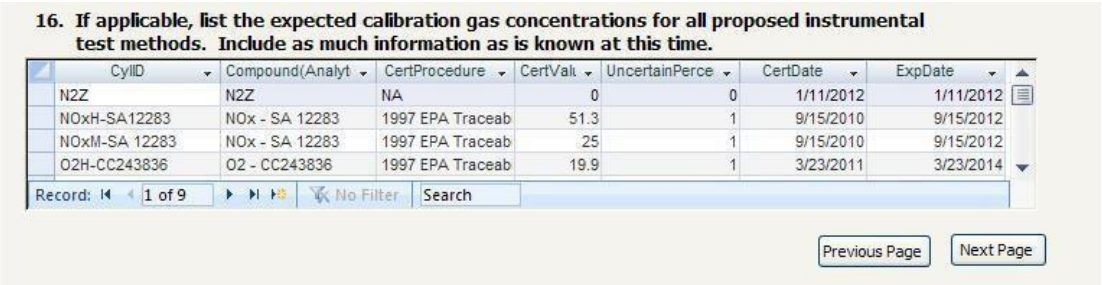


Figure 65 - Run Data Details Screen for Instrumental Methods



16. If applicable, list the expected calibration gas concentrations for all proposed instrumental test methods. Include as much information as is known at this time.

CylID	Compound(Analyt	CertProcedure	CertValu	UncertainPerce	CertDate	ExpDate
N2Z	N2Z	NA	0	0	1/11/2012	1/11/2012
NOxH-SA12283	NOx - SA 12283	1997 EPA Traceab	51.3	1	9/15/2010	9/15/2012
NOxM-SA 12283	NOx - SA 12283	1997 EPA Traceab	25	1	9/15/2010	9/15/2012
O2H-CC243836	O2 - CC243836	1997 EPA Traceab	19.9	1	3/23/2011	3/23/2014

Record: 1 of 9 No Filter Search

Previous Page Next Page

Figure 66 - Calibration gas cylinder identification and information.

You must enter the instrumental method test data manually. Begin by returning to the "***Audit/Calibrations***" tab in the "***Setup / Test Plan***" area. Update or input the calibration gases certified cylinders information in Item 16, as shown in Figure 66. When you update or input the calibration gas cylinder information, you must enter a unique name in the "***CylID***" column for each gas that was used in the emissions test. For cylinders which contain multiple calibration gases, you can make the cylinder identification number unique with the addition of the compound and range indicator (as an example see the names used under "***CylID***" in **Figure 66**). Once unique cylinder identification is provided in the "***CylID***" column, you should insure that the remainders of the columns contain the correct information as is documented by the certificate provided by the cylinder supplier.

In addition, you must enter all the instrumental test method data required for any Performance Specifications prior to entering the CEM data associated with the reference method test runs.

Once you have performed the audit calibration update, the procedure is similar to inputting isokinetic data with the exception that the tabs in the "***Run Data Details***" screen for Instrumental Methods differ from those of the isokinetic methods screen. These tabs include: "***Method Setup***," "***Calibrations***," "***ITM Run Results***," and "***Emissions***". While the information in the "***Method Setup***" and "***Emissions***" are identical to the isokinetic methods screens, the differences in the test methods require different information than isokinetic test methods.

To minimize data entry time and reduce data entry errors, it is suggested that the first run be completed prior to adding subsequent test runs. The ERT uses information in the completed test run to pre populate the next test run. For example, all information in the "***Calibrations***" tab is retained and selected information in the "***ITM Run Results***" tab is transferred to the appropriate field for the next run. Users can revise these pre populated fields if needed. In addition, to minimize warning messages, users should enter the specific required information suggested in the below instructions before entering the majority of the remaining information.

Method Setup Tab

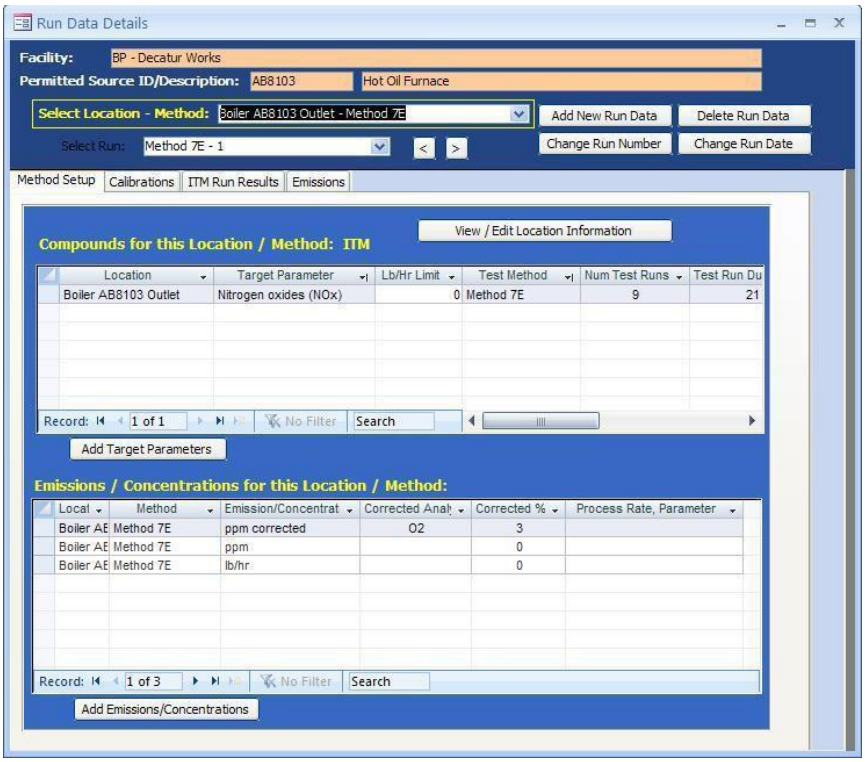


Figure 67 - Instrumental Method: Method Setup Tab

As is the case with the method setup screen for the isokinetic methods, the majority of the fields in this section will be pre-populated based on information entered in the test plan. However, they can be modified without returning to the test plan by using the following:

- ***View / Edit Location Information:*** Allows you to revise the test location information supplied during the test plan development (see **Figure 22 -** Test Plan Locations/Methods Location Edit and Insert options for more information).
- ***Add Target Parameters:*** Allows you to add target parameters for this run at this location/method (see **Figure 24 -** Test Plan Locations/Methods Select Location, Method, and Compounds screen for more information).
- ***Add Emissions/Concentrations:*** Allows you to add emissions/concentrations for this run at this location/method (see **Figure 27 -** Test Plan Locations/Methods Emissions/Concentrations Item for more information).
- ***Delete Target Parameters or Emission/Concentrations***: Highlight the row of the emission/concentration by clicking on the gray cell to the left of the column named location and press the keyboard "**Delete**" button.
- ***Delete Process Rate, Parameter***: To delete the process rate, parameter you must block all of the text in the field and then press the keyboard "**Delete**" button. . It should be noted that the

process rate parameter should only be associated with an emission rate and the time units (i.e. lb/hr, lb/min, lb/sec) should be the same for both the emissions rate and the process rate.

- ***Change Process Rate Parameter***: To add or change the process rate parameter, click within the field and then on the down symbol (▾) to reveal the drop down list of available process parameters. You should choose a process parameter only for emissions rates that have the same time units as the emissions rate (i.e. tons of material processed/hr).

Calibrations Tab

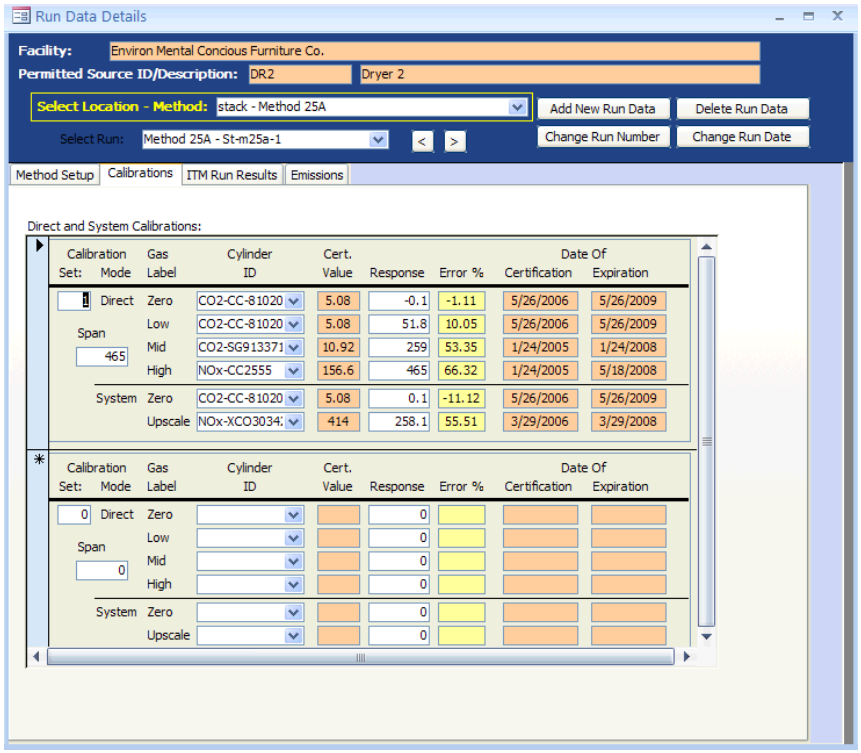


Figure 68 - Instrumental Method: Calibrations Tab

The results of the instrument calibration and system zero and span responses must be entered in the "***Calibrations***" tab prior to data entry in the "***ITM Results***" tab. In addition, you should enter the "***set"*** number and the "***span"*** values for before you select any calibration cylinders under "***Cylinder ID***". After entering a "***set"*** number and "***span"*** value, select the "***Cylinder ID***" from the pick list. For each selected "***Cylinder ID***," the orange fields will be automatically filled using information that was entered in the "***Audit/Calibrations***" tab of the "***Test Plan***". You will note that when you select the "***Cylinder ID,***" the ERT will display an error percent in the yellow fields. Initially this value is based upon calculations using the certification value and a response of zero. When you enter the actual response for the "***Direct and System Calibrations***" you will note that the calculated error percent changes.

> ***Note:*** *Be sure to input the span value before inputting the responses; otherwise a non-fatal error message is generated (which may be ignored).*

Below is a description of the columns:

Calibration Set:	The number used to associate this set of calibrations with the run data entered in the ***"ITM Run Results"*** tab.
Calibration Mode:	Direct or System.
Span:	Span concentration used to calculate percent bias and percent drift. Generally, the span value is set at the concentration of the high level calibration gas although the value is dependent on the method being used.
Gas Label:	Direct Mode includes Zero, Low, Mid and High. System mode includes zero and upscale. Calibration level of measurement range.
Cylinder ID:	Cylinder identification number on the gas cylinder and any additional label to make this identifier unique for the gas and concentration. This field is populated by the selection of one of the available ID's entered in the test plan section of the ERT.
Cert. Value:	Calibration gas certified concentration. This field is automatically populated from the information entered in the test plan section of the ERT.
Response:	The analyzer's response to gas injection. This is the value measured by the instrument when challenged with gas from the gas cylinder identified in the Cylinder ID column.
Error %:	Difference between certified value and analyzer measurement. Specific calculation procedures are dependent on the reference method being performed.
Date of Certification:	Date cylinder received certification for use. This field is automatically populated from the information entered in the test plan section of the ERT.
Date of Expiration:	Date cylinder certification expires. This field is automatically populated from the information entered in the test plan section of the ERT.

ITM Run Results Screen

Figure 69 - Instrumental Method: ITM Run Results Tab

Enter the results from the test run. If you followed the guidance presented in the first section of "***Instrumental Test Method Data***," only one blank run was created. By completing the information in the "***ITM Run Results***" for one run and adding new runs with the menu button on this page, much of the information on this page will be pre populated on the pages of the new runs. If "***ITM Run Results***" have been completed on some but not all runs or if the number of runs entered is equal or greater than specified in the test plan, the "**Add New Run**" button will be available on only the last run. If the "**Add New Run**" button is not visible, new runs can be added using the "**Add New Run Data**" button near the top of the screen.

To complete the information on the "***ITM Run Results***" tab, it is suggested that the units for "***Cavg"*** be selected before selecting the calibration set or entering any system response information. If you start entering data in the "***Start Time***" field, you can use the *tab* key to progress through all data entry fields without using the mouse to change fields. If flow rate, moisture percent, CO_2 concentration percent or O_2 concentration percent have been documented in the ERT by other tests, you can select the test and run ID using the drop down menu to populate these fields. You should associate the test run data with the calibration gas set by selecting the set from the "***Set"*** pick list. **Figure 70** shows the use of both the selection of other stack test results for populating the stack parameter information and the use of the set pick list for associating calibration sets with the test run. Enter the zero and upscale system responses for the pre and post test calibrations. Then record the test run average concentration value measured by

the instrument in "***Cavg"***. The value in "***Cgas"*** will be calculated. If the source is a combustion unit you can select the fuel type and the F-factors for that fuel will be populated in the orange field below the "***Fuel Type***" selection field. If the "***Fuel Type***" option "***Override***" is selected, you can enter fuel specific F-factors based upon an analysis of the combusted fuel.

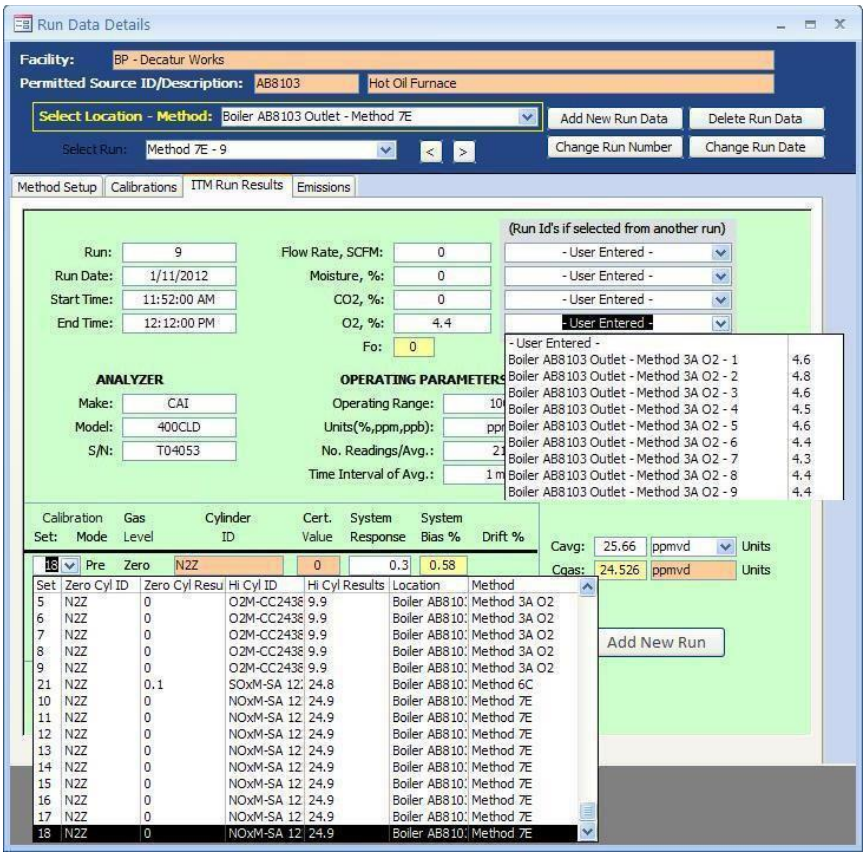


Figure 70 - ITM Run Results, stack parameter and calibration set selection.

If additional test runs are required and the "**Add New Run**" button is visible within the green "***ITM Run Results***" screen, you can add the next run by clicking on this button. The screen then updates with the next numbered run pre populated in the ***run*** field. The run date field will have the same run date. In addition, the "***ANALYZER***" section, the "***OPERATING PARAMETER***" section, the pre test calibrations and the fuel type fields will be pre- populated with information from the previous run. The start time, end time, flow rate, moisture, CO_2, O_2, Post-test calibrations and "***Cavg"*** will be empty. In addition to entering data into the empty fields, you can revise any pre populated fields or change the calibration set.

If you select a run ID associated with the test you are viewing, or a Run Id from another test, the run Id will be automatically filled. If the ID is not associated, an alert box stating "*Data type mismatch in criteria expression*" will appear and the system will not record the run results. If this happens, close the "***Run Data Details***" screen and click on the "***Data Details***" tab's "**Run Data**". Select the "***Location – Method***" and begin again.

You can click on "**Delete Run Data**" on "***Run Data Details***" screen to remove erroneous run data.

Field descriptions are below:

Run: Prefilled, but editable, number of run.

- ***Run Date:*** Date run was performed.
- ***Start Time:*** Hour-minute-second AM/PM that run was performed. Time can be entered as 24 hour time or 12 hour time with the AM/PM extension and the time will revert to the latter time format.
- ***End Time:*** Hour-minute-second AM/PM that run was completed. Time can be entered as 24 hour time or 12 hour time with the AM/MP extension and the time will revert to the latter time format.
- ***Flow Rate, SCFM:*** The standard cubic feet per minute volumetric flow rate.
- ***Moisture, %:*** Percentage moisture in gas.
- ***CO2, %:*** Percentage carbon dioxide, CO_2.
- ***O2, %:*** Percentage oxygen, O_2.
- ***Fo:*** Ratio of excess Oxygen and Carbon Dioxide. Calculation uses $(20.9 - \%O_2)/\%CO_2$.

Analyzer:

- ***Make:*** Analyzer Make.
- ***Model:*** Analyzer model number.
- ***S/N:*** Serial Number of Analyzer.

Operating Parameters:

- ***Operating Range:*** Acceptable range of fluctuations of concentrations of analytes being measured.
- ***Units (%, ppm, ppb);*** Units used for the operating range.
- ***No. Readings /Avg:*** Number of readings or average number of readings.
- ***Time Interval of Avg:*** Time interval between readings.

- ***Fuel Type:*** Drop-down menu of fuel types. The selection of the fuel type populates the three F-factor fields below this selection with the values presented in Table 19-2 of EPA Method 19. In addition, "***Override***" may be selected and fuel specific F-factors as calculated by equations 19-13, 19-14 and 19-15 in EPA Method 19 may be entered in the appropriate F-factor. The values

entered are those calculated based upon an ultimate analysis of the fuel or combination of fuels using Equations 19-16, 19-17 and 19-18 of EPA Method 19.

Fd: The value "***Fd***" is the ratio of the quantity of dry effluent gas generated by combustion to the gross calorific value of the fuel. When combined with the oxygen concentration, the emission rate in lb/MMBtu can be calculated from the dry pollutant emissions concentration. By selecting the fuel type, the F-factor, "***Fd***", from US EPA Reference Method 19 is populated in this field. If "***Override***" is selected, the user should enter the "***Fd***" as calculated by Equation 19-13 or 19-16 of US EPA Reference Method 19.

Fw: The value "***Fw***" is the ratio of the quantity of wet effluent gas generated by combustion to the gross calorific value of the fuel. When combined with the wet oxygen concentration and the moisture concentration, the emission rate in lb/MMBtu can be calculated from the wet emissions concentration. By selecting the fuel type, the F-factor, "***Fw***", from US EPA Reference Method 19 is populated in this field. If "***Override***" is selected, the user should enter the "***Fw***" as calculated by Equation 19-14 or 19-17 of US EPA Reference Method 19.

Fc: The value "***Fc***" is the ratio of the theoretical carbon dioxide produced during combustion to the higher heating value of the fuel combusted. When combined with the carbon dioxide, the emission rate in lb/MMBtu can be calculated from either the wet or dry emissions concentration. By selecting the fuel type, the F-factor, "***Fc***", from US EPA Reference Method 19 is populated in this field. If "***Override***" is selected, the user should enter the "***Fc***" as calculated by Equation 19-15 or 19-18 of US EPA Reference Method 19.

Calibration Set: The number assigned to the set of readings. The number used to associate this data to the data entered in "***Calibrations"*** tab.

Calibration Mode: Pre (before) and post (after) readings.

Gas Label: Calibration level of measurement range, assigned as zero or upscale.

Cylinder ID: Cylinder identification number on the gas cylinder and label.

Cert. Value: Prefilled calibration gas certified concentration.

Instrument Response: The manufactured listing of the proper instrument response settings.

System Bias %: Calculated percentage of bias.

Drift %: Calculated percentage of drift.

Cavg: Average gas concentration displayed by gas analyzer.

Cgas: Average gas effluent concentration.

Emissions Tab

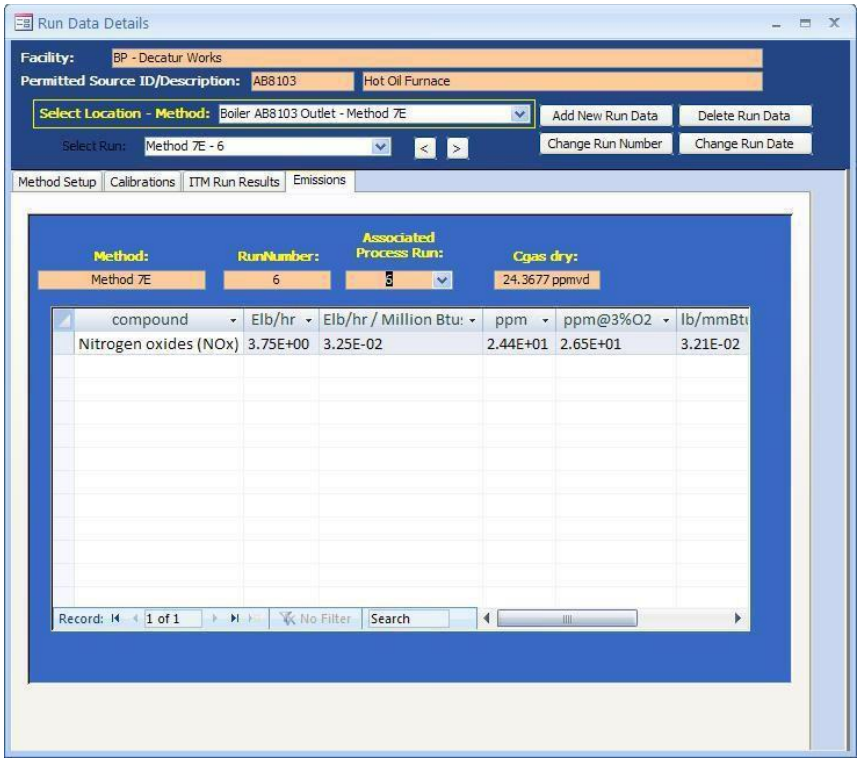


Figure 71 - Instrumental Method: Emissions Tab

This shows the calculated emissions/concentrations for each compound by run. Column headings other than "***compound***" are based upon the output units selected in the "***Emissions / Concentrations***" area of the "***Setup / Test Plan***" or the "***Method Setup***" of the "***Run Data Details"*** screen (see **Figure 67** - Instrumental Method: Method Setup Tab).

Some of the more common column names are as follows:

Compound: Analyte name from Setup window.

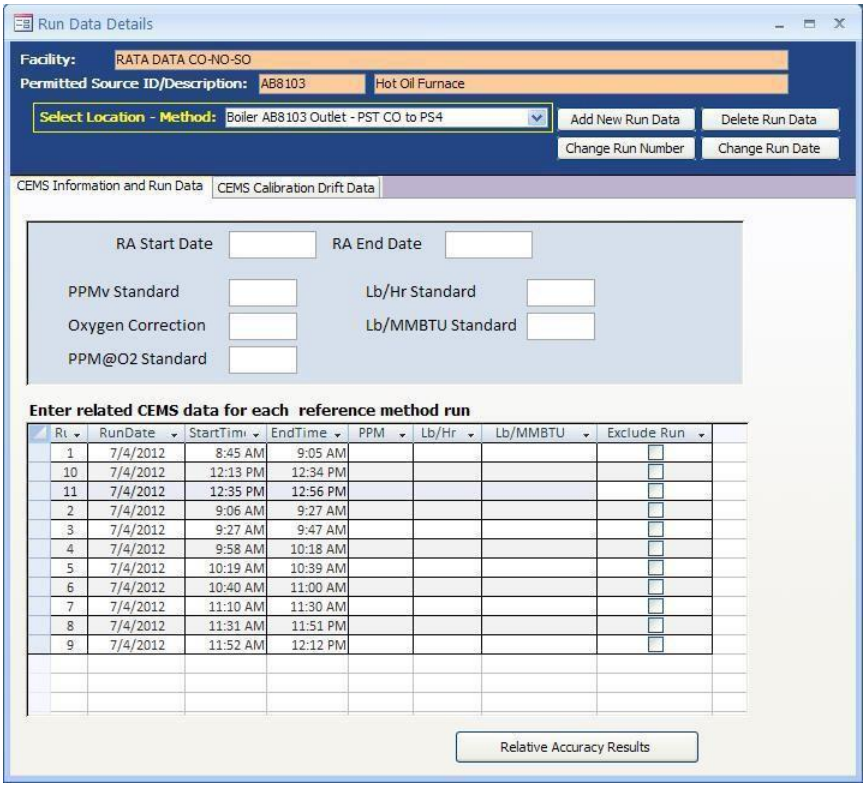
Elb/hr: Emissions, pounds per hour.

Elb/Million Btu: Pounds per Million Btu… Units in this form are calculated from the emissions rate (pounds per hour) and the process rate (Million Btu per hour) The full text of the divisor (million Btu…) is dependent on the choice of process variable selected under the "***Process Rate Parameter***" heading of the "***Emissions / Concentration***" area of the "***Method Setup***" tab.

ppm	Concentration, parts per million.
ppm@7%O2:	Concentration, pounds per million corrected to 7% O_2.
Lb/mmBtuO2	The pounds per million Btu of fuel combusted when calculated using one of the F-factors.

Performance Specification Data

The ERT calculates Continuous Emissions Monitoring Systems (CEMS) Relative Accuracy Test Audits (RATAs) and Calibration Drift using the instrumental test method results from ERT data entered for Method 3A, Method 10, Method 7E or Method 6c as described above and the manual entry of the continuous emissions monitoring systems data as described below. The first step in the process is the addition of at least nine test runs of the applicable reference method. The user should verify that the reference method emissions are in the same units generated by the CEMS. Next, you should click on the "**Add New Run Data**" as described in *Chapter 5: Add New Run Data - Directly*. When you select one of the performance specifications, you will notice that the fields for "***Run Number***" and "***Run Date***" are no longer visible. Clicking on "**Add Run Data**" will create the forms for documenting the performance specification. To enter data into the performance specification forms you should select the performance specification from the "***Select Location – Method***" menu. The performance specification "***Run Data Details***" screen as shown in **Figure 72 -** Performance Specification Run Data DetailsError! Reference source not found. will be displayed.



Ru	RunDate	StartTime	EndTime	PPM	Lb/Hr	Lb/MMBTU	Exclude Run
1	7/4/2012	8:45 AM	9:05 AM				
10	7/4/2012	12:13 PM	12:34 PM				
11	7/4/2012	12:35 PM	12:56 PM				
2	7/4/2012	9:06 AM	9:27 AM				
3	7/4/2012	9:27 AM	9:47 AM				
4	7/4/2012	9:58 AM	10:18 AM				
5	7/4/2012	10:19 AM	10:39 AM				
6	7/4/2012	10:40 AM	11:00 AM				
7	7/4/2012	11:10 AM	11:30 AM				
8	7/4/2012	11:31 AM	11:51 PM				
9	7/4/2012	11:52 AM	12:12 PM				

Figure 72 - Performance Specification Run Data Details

There are two data entry screens for performance specifications. The one labeled "***CEMS Information and Run Data***" is used to document the RATA of the CEMS, while the one labeled "***CEMS Calibration Drift Data***" is used to document the performance of the seven day calibration drift evaluation. **Figure 72 -** Performance Specification Run Data Details is a screen shot of the blank tab for entering RATA CEMS information and **Figure 73** is a screen shot of the blank tab for entering CEMS calibration drift information.

CEMS Information and Run Data

The RATA CEMS tab has two fields for the date of the relative accuracy assessment, five fields for the entry of the applicable emissions limitations and three columns of fields for the reported CEM emissions data. As shown in the columns labeled "***Run***," "***RunDate***," "***StartTime***" and "***EndTime***" are pre-populated with information from the reference method test runs. The three columns for entry of CEMS data include "***PPM***," "***Lb/Hr***" and "***Lb/MMBTU***". The reference method emissions calculated by the ERT for these pre populated test run identifiers will be used in the calculations of the relative accuracy but are not presented in this CEMS data entry screen.

Field descriptions for the "***CEMS Information and Run Data***" are as follows:

RA Start Date: This is the date of the first test run for evaluating the relative accuracy of the CEMS.

RA End Date:	This is the date of the last test run for evaluating the relative accuracy of the CEMS.
PPMv Standard:	This is the emissions limitation standard when the measured pollutant is not corrected for dilution.
Oxygen Correction:	This is the oxygen concentration used to standardize the concentration values for the measured pollutant.
PPM@O2 Standard:	This is the emissions limitation standard when the measured pollutant is corrected for dilution using the measured oxygen concentration.
Lb/Hr Standard:	This is the emissions limitation standard when the measured pollutant is expressed as an hourly emissions rate.
Lb/MMBTU Standard:	This is the emissions limitation standard when the measured pollutant is expressed as a ratio of the mass emissions per unit of fuel energy.
Run:	These are the run numbers which are pre-populated from the reference test method for the pollutant and the parameter used for correcting the pollutant.
Run Date:	These are the dates of the test runs which are pre-populated from the reference test method for the pollutant and the parameter used for correcting the pollutant.
Start Time:	These are the start times of the test runs which are pre-populated from the reference test method for the pollutant and the parameter used for correcting the pollutant.
End Time:	These are the end times of the test runs which are pre-populated from the reference test method for the pollutant and the parameter used for correcting the pollutant.
PPM:	These are the uncorrected concentrations for the pollutant or diluent measured by the CEMS during the reference method test runs. These values are entered by the user.
Lb/Hr:	These are the emissions rates in pounds per hour for the pollutant measured by the CEMS during the reference method test runs. These values are entered by the user.
Lb/MMBTU:	These are the emissions factors in pounds per million Btu fuel combusted for the pollutant or diluent measured by the CEMS during the reference method test runs. These values are entered by the user.
Exclude Run:	This column contains boxes which may be checked to exclude runs from the relative accuracy calculations. Up to three boxes may be selected but at least nine runs must remain for calculation of the RA. All runs (including those selected for exclusion) will be presented in the RATA report. All runs which

have not been excluded will be used to calculate the relative accuracy.

Data entry is required in only those standards fields where there is an emissions limitation for which the CEMS is used for measuring the pollutant of interest. Those fields for the other units of emissions standards may be left empty. Users are required to enter CEMS data only for the units of emissions of the standards which apply to the tested source. If there are emissions limits in two or more sets of units, the user will need to enter data for all of the units of standards which apply. When an emissions standard in units of PPM corrected to a specified oxygen level is used, data entry is required for EPA Method 3A for O_2, the reference method for the pollutant, the CEMS O_2 concentration and the uncorrected CEMS pollutant concentration. The ERT will use the diluent concentrations to calculate the corrected pollutant concentrations.

CEMS Calibration Drift Data

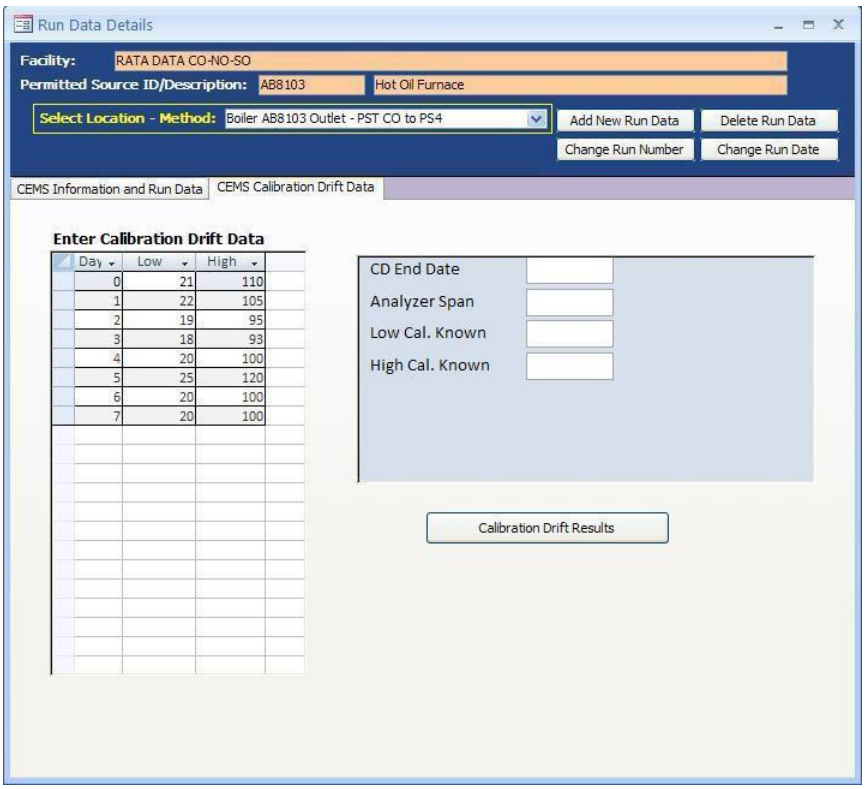


Figure 73 - CEMS Calibration and Drift Data Entry

The second performance specification data entry tab labeled "***CEMS Calibration Drift Data***" is used to enter the data required for the CEMS calibration drift calculations. This tab has fields for the end date of the drift assessment, the analyzer span value, the low calibration gas value, the high calibration gas value and seven pairs of fields for the results of the daily low and high calibrations.

Field descriptions for the "***CEMS Cal. Drift and Run Data***" are as follows:

Analyzer Span:	This is the operational range of the CEM instrument.
Low Cal. Known:	This is the low calibration gas value for the CEMs.
High Cal Known:	This is the high calibration gas value for the CEMs.
CD End Date:	This is the date of the last day for the calibration drift assessment.
Day:	This is the numerical order of the consecutive days used for assessing the calibration drift results.
Low:	These are the results of the daily low calibrations of the CEMS.
High:	These are the results of the daily high calibrations of the CEMS.

After entering the required data in the tabs "***CEMS Information and Run Data***" or "***CEMS Calibration Drift Data***," the results can be displayed. Click on the box below the data entry fields "**Relative Accuracy Results**" or the "**Calibration Drift Results**," respectively. For the calculation of the RATA results, users are permitted to exclude up to three test runs from the calculations by checking the box in the "***Exclude Run***" column. Users which select more than three runs for exclusion will receive a pop-up warning stating that they can only exclude up to 3 runs. Also, users that do not leave nine or more runs available for calculating the relative accuracy will receive a pop-up warning stating that they must have 9 runs for the RA report. The ERT will not perform calculations if there are not nine runs remaining.

Relative Accuracy Results

Press Ctrl+P to Print

Relative Accuracy Results

Boiler AB8103 Outlet
PST CO to PS4

Facility RATA DATA CO-NO-SO

RAStartDate 7/4/2012
RAEndDate 7/4/2012

	Ref	CEMS	Ref.	CEMS	Ref.	CERMS	Ref.	CERMS	Differences				Ex
Run	PPM	PPM	PPM@3%O2	PPM@3%O2	Lb/Hr	Lb/Hr	Lb/MMBTU	Lb/MMBTU	PPM	PPM@3%O2	Lb/Hr	Lb/MMBTU	Run
1	94.89	106.00	104.21	116.33	8.69	9.44	0.0770	0.0885	11.11	12.13	0.75	0.0115	☐
10	81.74	75.00	88.73	64.23	7.49	8.30	0.0656	0.0750					☑
11	46.17	65.00	50.67	55.67	4.29	6.50	0.0375	0.0980					☑
2	92.91	98.90	103.29	116.93	8.63	7.89	0.0764	0.0879	5.99	13.64	-0.74	0.0115	☐
3	91.42	93.90	100.39	96.88	8.37	8.96	0.0742	0.0742	2.48	-3.52	0.59	0.0000	☐
4	92.22	96.00	100.65	111.58	8.53	9.04	0.0744	0.0854	3.78	10.93	0.51	0.0110	☐
5	92.23	88.80	101.28	103.82	8.53	9.46	0.0749	0.0720	-3.43	2.54	0.93	-0.0029	☐
6	89.11	83.60	96.67	85.56	8.24	8.28	0.0715	0.0636	-5.51	-11.11	0.04	-0.0079	☐
7	88.20	73.50	95.11	79.21	8.16	8.26	0.0703	0.0619	-14.70	-15.90	0.10	-0.0084	☐
8	90.14	82.90	97.78	84.60	8.37	8.61	0.0723	0.0717	-7.24	-13.18	0.24	-0.0006	☐
9	90.62	111.10	98.31	128.39	8.46	9.83	0.0727	0.0733	20.48	30.08	1.37	0.0006	☐
Sums									12.97	25.61	3.78	0.0148	
Avg's	91.30	92.74	99.74	102.59	8.44	8.86	0.0737	0.0754	1.44	2.85	0.42	0.0016	
Standard Deviation									10.55	15.22	0.61	0.0079	
Confidence Coefficient									8.11	11.70	0.47	0.0061	
Emissions Standard									182.00	199.00	16.88	0.1474	

Relative Accuracy using the Reference Method (< or = to 10%)	< or =	>	< or =	< or =
	10.46	14.58	10.49	10.4943
Relative Accuracy using the Standard (< or = to 5%)	N/A	N/A	N/A	N/A
	5.25	7.31	5.25	5.25
Relative Accuracy using 5ppmv absolute difference (Performance Specification 4A only)	>	>		
	9.55	14.54		

The average CO ppm Reference Method measurements were greater than 50% of the identified standard.
The Relative Accuracy assessment for CO using uncorrected ppm met at least one of the acceptance critera specified in Performance Specification 4A.

The average corrected CO ppm Reference Method measurements were greater than 50% of the identified standard.
The Relative Accuracy assessment for CO using corrected ppm did not meet the acceptance critera specified in Performance Specification 4A.

The average Reference Method measurements of hourly CO emissions were greater than 50% of the identified standard.
The Relative Accuracy assessment for CO using hourly emissions met at least one of the acceptance critera specified in Performance Specification 4 and 4A.

The average Reference Method lb/MMBtu CO measurements were greater than 50% of the identified standard.
The Relative Accuracy assessment for CO using emissions units of lb/MMBtu met at least one of the acceptance critera specified in Performance Specification 4 and 4A.

Note: All calculations performed are as specified in Section 12 of PS2 and use the US EPA rounding conventions.

Figure 74 - RATA results report

A "***Relative Accuracy Results***" report similar to **Figure 74 -** RATA results report will be produced if the "**Relative Accuracy Results**" box is selected. This report includes the ERT calculated emissions for the reference test method, the emissions the user entered for the CEMS, the differences between the reference test method and the CEMS and the averages of each of the data selected for inclusion by the user. Below the averages of the differences, the RATA results report presents the calculated standard deviation, the confidence coefficient, the relative accuracy calculations using the reference method and the relative accuracy calculations using the emissions standard. The descriptions to the left of the calculations of the relative accuracy provide a summary of the acceptance criteria and when they are to be applied. Above each of the calculated values for the "***Relative Accuracy Results***" report is one of the mathematical symbols "< or =" or ">" indicating the relative value of the relative accuracy compared to the acceptance criteria.

While the Relative Accuracy values are presented to more than two significant figures, the symbols are assigned based upon the US EPA criteria for significant figures and rounding conventions. The EPA conventions for calculating and reporting were clarified in a June 6, 1990 memorandum titled *Performance Test Calculation Guidelines* which is available at *http://www3.epa.gov/ttn/emc/informd/tid-024.pdf* and reiterated in the Office of Compliances National Stack Testing Guidance which is available at http://www2.epa.gov/sites/production/files/2013-09/documents/stacktesting_1.pdf . Below the descriptions and relative accuracy calculations are descriptions of the decision criteria used for selecting the performance criteria calculation and a written statement comparing the calculated results to the acceptance criteria. While Figure 74 presents calculations for all units of emissions, a RATA for only one set of units will have printed results for only the units where there are standards, calculated test results and CEM data.

Calibration Drift Results

Likewise, if the "**Calibration Drift Results**" box is selected, a report similar to **Figure 75 -** Calibration Drift Results report will be produced. The "***Calibration Drift Report***" includes the measured responses for the daily calibrations at the low and high values, the differences between the responses and the calibration standard for each day, and the percent of span that the differences represent. Below the calibration drift results the report presents the criteria specified in the performance specification for acceptance.

Press Ctrl+P to Print

Calibration Drift Results

Boiler AB8103 Outlet
PST CO to PS4

Day	Low Response	High Response	Low PPM Drift	High PPM Drift	Low % of Span	High % of Span
1	22.00	105.00	2.00	5.00	1.33	3.33
2	19.00	95.00	-1.00	-5.00	-0.67	-3.33
3	18.00	93.00	-2.00	-7.00	-1.33	-4.67
4	20.00	100.00	0.00	0.00	0.00	0.00
5	25.00	120.00	5.00	20.00	3.33	13.33
6	20.00	100.00	0.00	0.00	0.00	0.00
7	20.00	100.00	0.00	0.00	0.00	0.00

ALL Differences Must Not Exceed 5% for Six Out Of Seven Days!

Page 1 of 1

Figure 75 - Calibration Drift Results report

Process Data

Click the "**Process Data**" button in the "***Test Data***" area of the main menu to display the "***Process Data***" screen. This allows entry of process run data, APCD run data and lab data that was identified to be captured in the test plan.

Process Run Data Tab

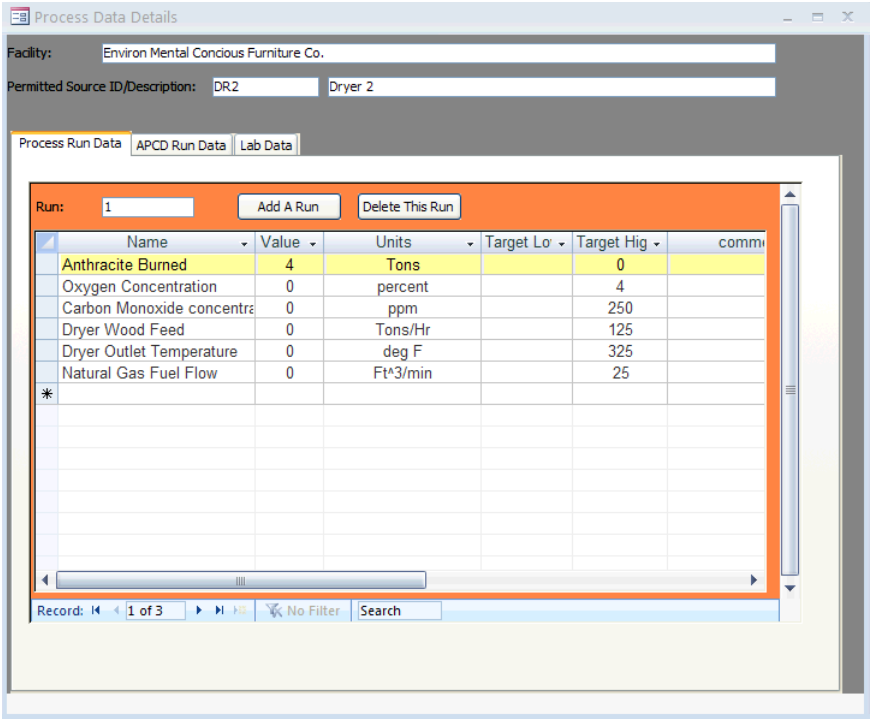


Figure 76 - Process Data: Process Run Data Tab

This list was created during the test plan on item 4a. (See *Process/APCD Screen* section for more information.)

The name, units, target low and target high are prefilled with data from item 4a, and *are not editable*. If corrections to the information shown under these columns are required, you should close this window and click on "***Process Info***" under the "***Setup / Test Plan***" area of the "***Main Menu***". Corrections to the information in the first line which is highlighted yellow may be a default established by the selection of the SCC. However, if the name and units were established by the user during the selection of the SCC, you may be able to return to the SCC selection area under the "***Setup / Test Plan***" to revise this information. Process activity rate information (i.e., the name is a production or feed material parameter and the units have a denominator of time), consistent with a measured emissions rate calculated by the ERT may be paired with the emissions rate in the "***Emissions"*** tab of ***"Run Data Details***" for either an isokinetic or instrumental test method.

- Enter the value for the process name for the duration of the run. Enter comments as needed for the run.

- Move to the next or previous runs by using the navigation bar at the bottom of the screen.

Figure 77 - Run Navigation Bar

- Click the "**Add a Run**" button to add a new process run.

- To delete run data, highlight the row by clicking on the gray cell before cell containing the name of the run. Click on "**Delete This Run**". The first run cannot be deleted. You should be extremely wary of deleting individual rows as this may introduce unintended consequences where this row is used to calculate a process based emissions. You may wish to use Windows Explorer to duplicate the Project Data Set prior to performing a row deletion and evaluate the results of the deletion.

> ***Note**: Only the "**Value**" and **"Comments"** columns are active on this tab.*

APCD Run Data Tab

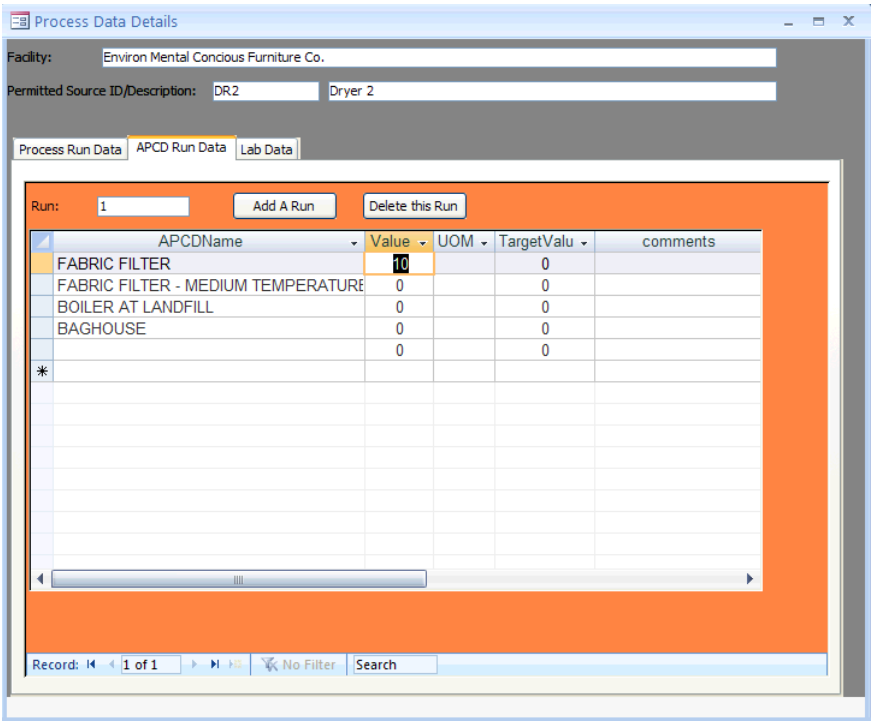


Figure 78 - Process Data: APCD Run Data Tab

This list was created during the test plan on item 5b (see **Figure 35 -** Test Plan Process/APCD Control Devices editing for more information). Using the data from item 5b, the "***APCD Name***", "***UOM***", and "***TargetValue***" are prefilled.

- Enter the value for the APCD parameter associated with the name for the duration of the run.
- Enter comments for the APCD run as needed.
- Move to the next or previous runs by using the navigation bar.
- Click the "**Add a Run**" button to add a new process run.
- Click the "**Delete This Run**" button to delete run data.

> ***Note****: Only the "**Value**" and **"Comments"** columns are active on this tab.*

Lab Data Tab

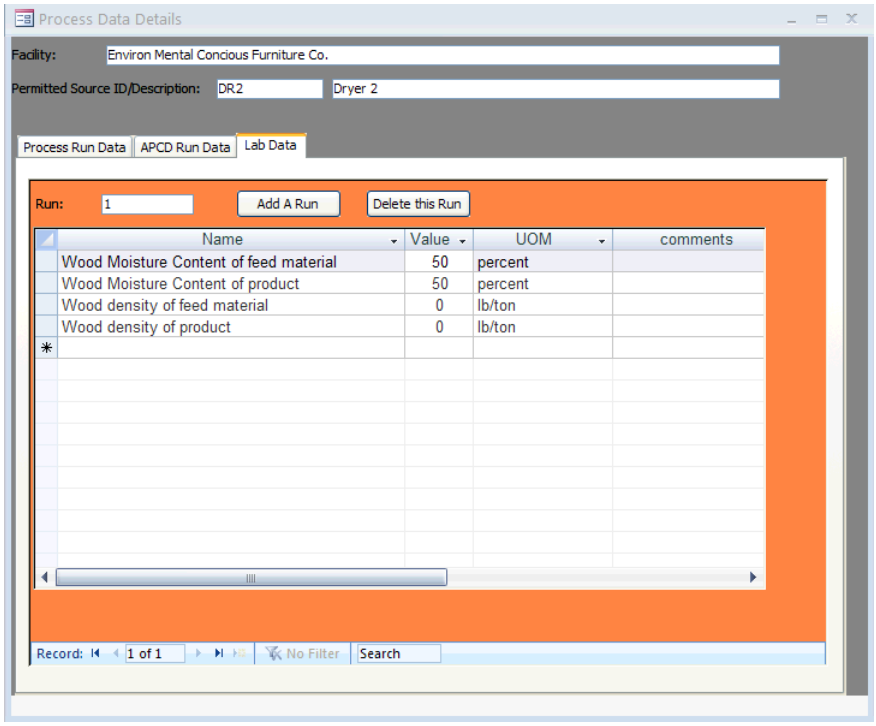


Figure 79 - Process Data: Lab Data Tab

This list was created during the test plan on item 4b (see **Figure 33 -** Test Plan Process/APCD Add Lab Form section for more information).

- Enter the value for the lab data results for the parameter identified by the name for the duration of the run. You should insure that the value entered is consistent with the units of measure specified.
- Enter comments for the value entered in the lab data run as needed.
- Move to the next or previous runs by using the navigation bar.
- Click the "**Add a Run**" button to add a new process run.
- Click the "**Delete This Run**" button to delete run data.

***Note**: Only the **Value** and **Comments** columns are active on this tab.*

Tester DQ Assessment

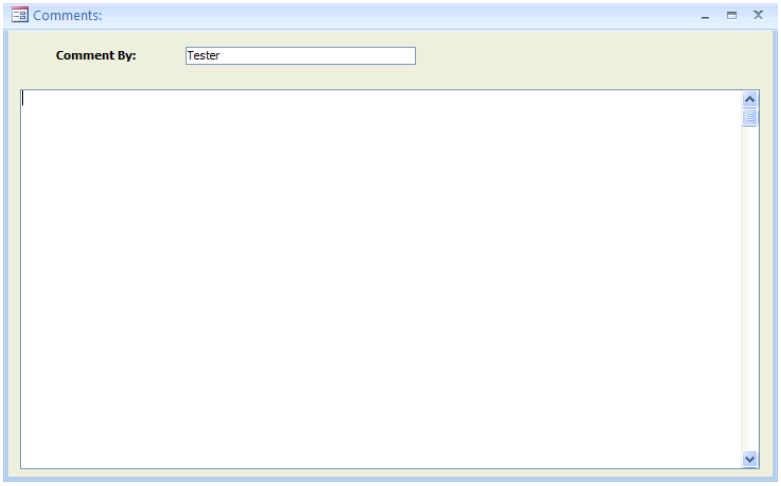


Figure 80 - Tester Comments Window

Click the "**Tester DQ Assessment**" button in the "***Test Data***" area of the "***ERT Main Menu***" to allow entry of any comments from the tester on: 1) their assessment of the validity of the test, 2) the representativeness of the process operation, 3) an assessment of the achievement of the data quality objectives, 4) the use of the data quality indicators supporting the statements about meeting the DQO's, 5) documentation on the conduct of the tests, 6) explanations of the test results, and 7) any other statements about the use of the test for other purposes.

This is a freeform text field that is unlimited in the amount of text that can be entered.

This text will be included in the printed test report.

The "***Tester DQ Assessment***" tab can be used to enter a narrative of the test plan, any deviations from methods, mishaps or problems during testing, a summary or discussion of the results, etc. *It is highly recommended that testers provide comments in this section.*

Attachments

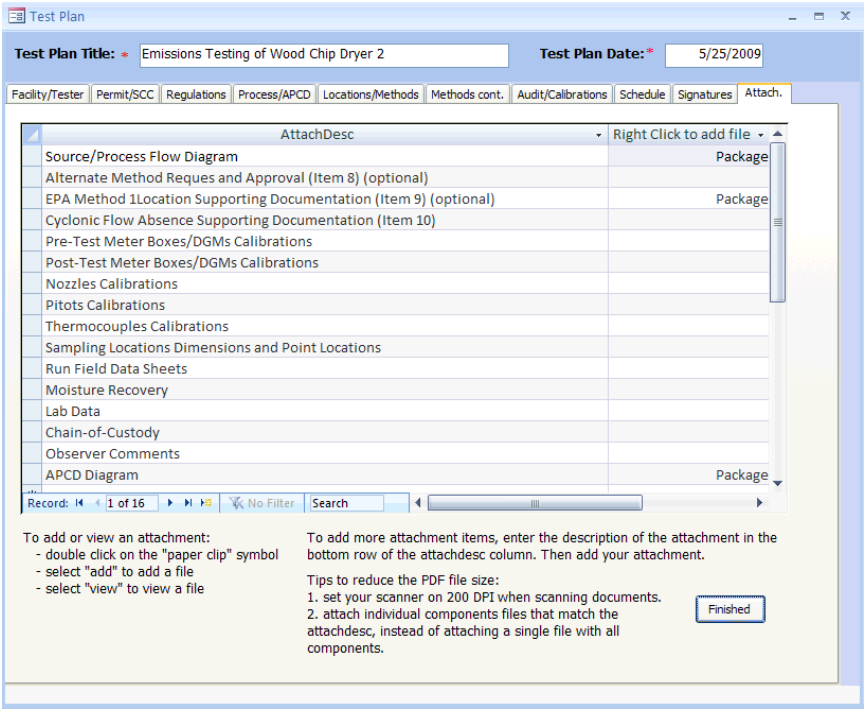


Figure 81 - Attachments Tab

Once the test data have been entered, click "**Attachments**" in the "***Test Data***" area of the "***ERT Main Menu***". This will display the "***Attachments***" screen from the test plan.

All documents to support the test need to be included as attachments here.

See the *Attachments Screen* section of the Test Plan for more information on how to attach files.

Completeness Check

The ERT provides a means for the stack test report writer, the source test company test reviewer, the tested company representative and others to systematically review the ERT project data file for completeness prior to the creation of the "***Submission Package File***" and submission to **CEDRI**. The ERT checks those specific locations in the Project Data Set to determine whether text has been entered into the field for a required or optional piece of documentation or an attachment has been provided for the item.

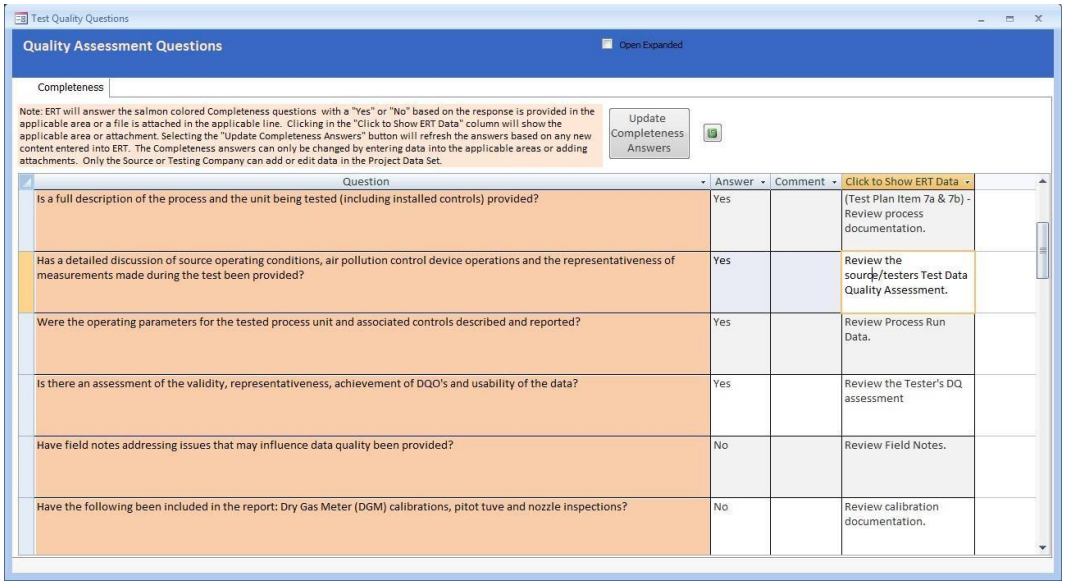


Figure 82 - Completeness Check: Quality Assessment Questions

As shown in **Figure 82**, the "***Quality Assessment Questions***" are in the salmon colored column with the ERT provided response in the next column. There are three groups of questions: The first group is for information about the facility and general test report documentation; The second group is about documentation of manual or isokinetic test methods; and the third group is about documentation of instrumental test methods. Users can not change the questions. Nor can the user change the ERT provided response. The user can cause a change in the response by entering information in the required field or providing the supporting documentation in the attachments area. The "***Completeness Check***" screen includes a "***Note***" providing general instructions for using this function of the ERT. This screen also includes a column labeled "***Comment***" where the Facility representative or their contractor may provide supplementary information. Any comment(s) provided will not affect the ERT's response to the question but may provide the Regulatory Agency Reviewer with information that they may not otherwise know. The last column identifies what area of the ERT contains the documentation necessary for assessing the proper response to the question. Clicking in the cell identifying the ERT area will open the item identified. Once open, the information or attachment may be reviewed, revised or added as necessary. You will not see a change in the response to the question until you click in the "**Update Completeness Answers**" which will force the ERT to update the responses.

A more detailed list of questions is available for State/local agencies to use as a checksheet for their review of the test report. Users preparing the report for submission may use this more detailed list of questions to more completely assess the completeness of the documentation provided to support the representativeness, precision and accuracy of the test report. The preparer of the test report should not respond to this more detailed list of questions as they are intended only for State/local agency source test assessment.

Report Verification

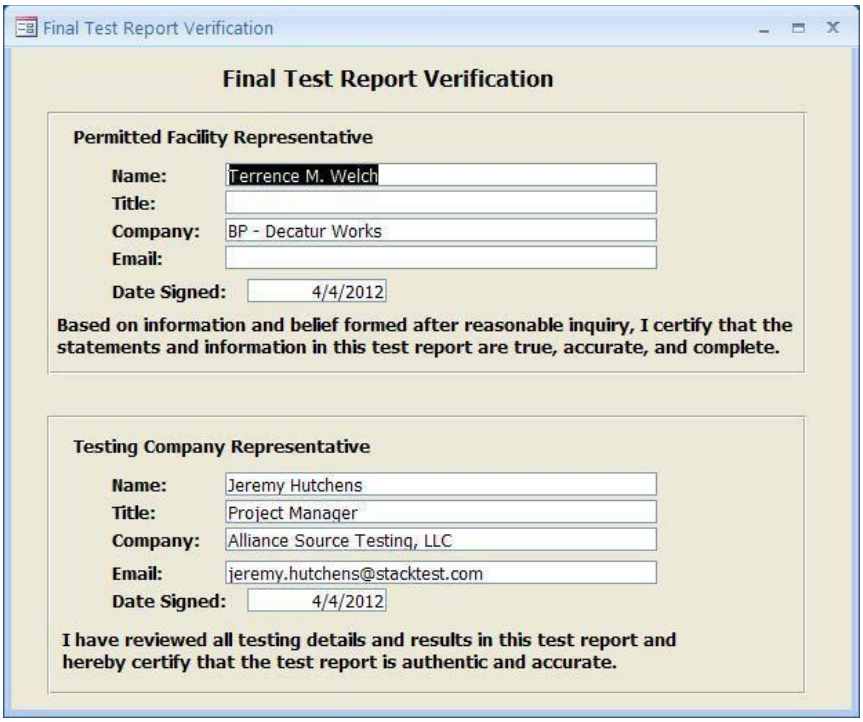


Figure 83 - Final Test Report Verification Window

Click the "**Report Verification"** button in the "***Test Data"*** area of the ***"ERT Main Menu"***. The two types of reviewers are as follows:

- ***Permitted Facility Representative***: The person authorized to represent the facility being tested. Enter the representative's name, title, company and date reviewed.
- ***Testing Company Representative:*** The person authorized to represent the testing company. Enter the representative's name, title, company and date reviewed.

> ***Note****: This is NOT an electronic signature! The person submitting the final ERT file to EPA's Central Data Exchange (CDX) will be required to register as a report submitter for the facility and receive an Cross-Media Electronic Reporting and Recordkeeping Rule (CROMERR) compliant electronic signature agreement which will allow that individual to provide an electronic signature with the submission of the file to EPA through the CDX/CEDRI.*

Chapter 6: Test Plan Review

Test Plan Review

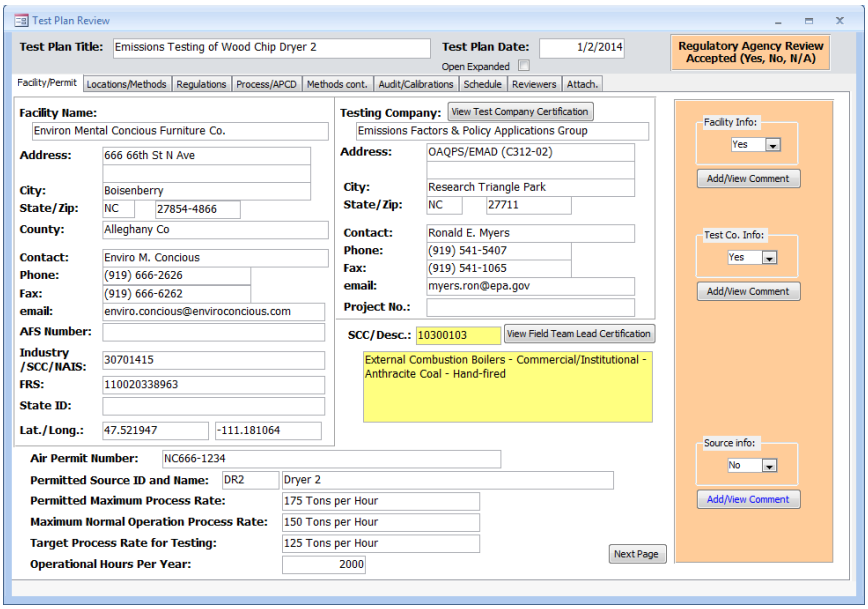


Figure 84 - Test Plan Review Screen

This section of the ERT may be used by a person evaluating the proposed source test protocol and if necessary identifying areas requiring improvement. Generally, if performed, the evaluation is performed by a regulatory agency employee. Upon receipt of a completed test plan, the reviewer (typically the state or other delegated authority) may access the database by selecting the appropriate project data set (see *Selecting a Project Data Set* section for more information on selecting a project data set) and clicking "**Test Plan Review**" in the "***Test Plan Review***" area of the "***ERT Main Menu***".

The test plan will be displayed in a split window that contains the test plan as submitted for review on the left side and several areas with check boxes and buttons to access comment areas on the right side. Each of the areas are associated with key elements of the test plan. The left side of the test plan review is nearly identical with respect to the tabs identifying the type of information and the layout of information contained on each tab area to the test plan. This provides an organized "*step-through*" process for the test plan review.

Select "***Yes***" or "***No***" on each section based on whether the information provided is acceptable or not. If "***No***", click the "**Add/View Comment**" button to explain why the information is not acceptable and request what additional information is needed.

Upon completion, update the "***Submittal History***" and return the Project Data Set to the tester. (See the *Project Submittal History* section for more information on how to update the history).

Test Plan Review Locations/ Methods

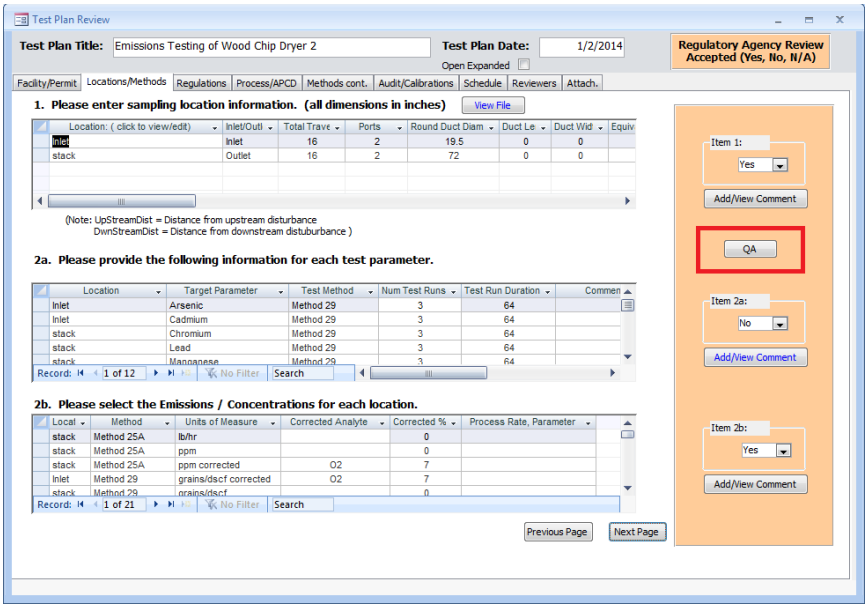


Figure 85 - Test Plan Review Locations/Methods Tab

For Item 1, the reviewer will select "***Yes***" or "***No***" on each section depending on whether the information provided is acceptable or not. If "***No***", click the "**Add/View Comment**" button to explain why the information is not acceptable and request what additional information is needed.

In Item 1, below the "***Yes***" or "***No***" response, click on the "**QA**" button, as the red box in **Figure 85** indicates, to open the quality assurance calculations screen. The "***Protocol Evaluation Calculations***" screen will open. There are two sets of results for the calculations depending on the selection of location as "inlet" or "stack."

QA – Inlet

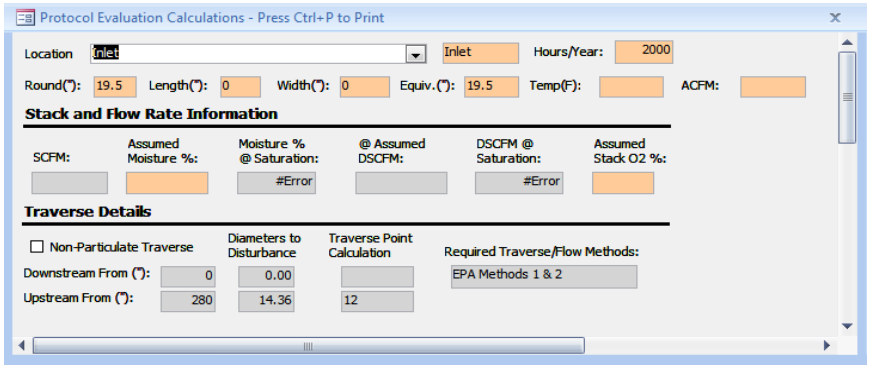


Figure 86 - QA - Inlet Protocol Evaluation Calculations

In the "***Protocol Evaluation Calculations***" screen, select the "***Location***" as "inlet". The calculations from the data as provided in Item 6 will fill the orange fields. The calculations based on the data entered in the "***Regulations***," "***Locations***," "***Methods***" and "***Concentrations***" areas of the test plan will fill the gray fields. Use the calculations to determine whether or not the proposed sampling protocol is acceptable.

The fields are as follows:

Hours/Year:	Hours location operates in a year.
Round ("):	Round duct diameter in inches.
Length("):	Duct length or depth measured in inches.
Width("):	Duct width measured in inches.
Equiv.("):	Equivalent diameter of a rectangular duct.
***Temp.*(F):**	Temperature in degrees F.
ACFM:	Actual cubic feet per minute.
Stack and Flow Rate Information:	
SCFM:	Source gas emission rate in cubic feet per minute.
Assumed Moisture %:	Assumed percentage moisture.
Moisture % @ Saturation:	Calculated moisture content of saturated gas stream percentage.
@ Assumed DSCFM:	Assumed percentage moisture at point of dry standard flow rate in cubic feet per minute.
DSCFM @ Saturation:	Dry standard flow rate in cubic feet per minute.
Assumed Stack O2 %:	Oxygen concentration of sampled gas stream, percentage.
Traverse Details:	
Non-Particulate Traverse:	Checked if "***Yes***" if the test location includes non-particulate traverse.
Downstream From ("):	Distance to downstream disturbance in inches.
Upstream From ("):	Distance to upstream disturbance in inches.
Diameters to Disturbance/Downstream:	Number of equivalent diameters to the downstream disturbance.
Diameters to Disturbance/Upstream:	Number of equivalent diameters to the upstream disturbance.
Traverse Point Calculation/Downstream:	Calculated number of traverse points from downstream disturbance.
Traverse Point	Calculated number of traverse points from

Calculation/Upstream: upstream disturbance.

Required Traverse/Flow Methods: Required Method for calculation of flow rate.

> ***Note:*** *Fields with "#Error" is a result of missing or incomplete run data.*

QA – Stack

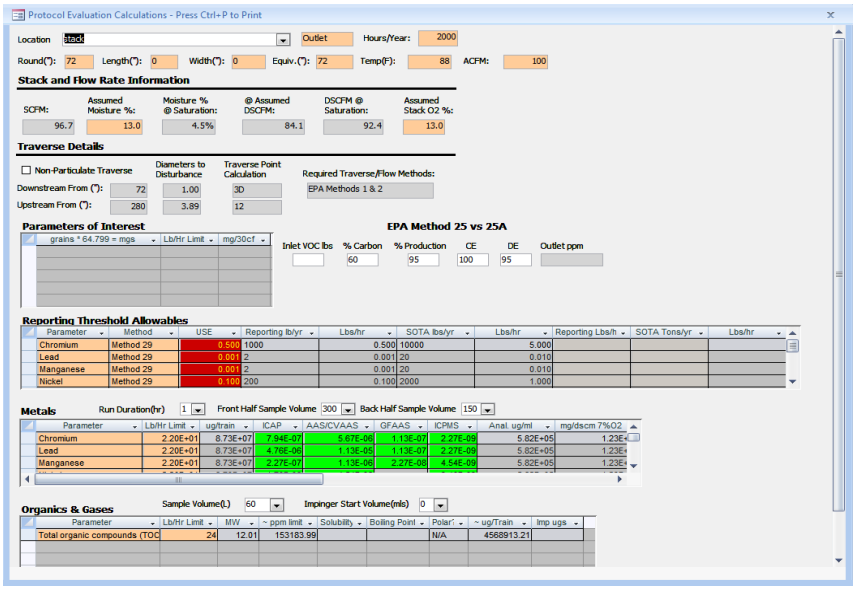


Figure 87 - QA - Stack Protocol Evaluation Calculations

In the "***Protocol Evaluation Calculations"*** screen, select the "***location"*** as "stack". The calculations from the pre-selected data as provided in Item 6 will fill the orange fields. Currently editable fields have white background. The calculations based on the data entered in the "***Regulations***," "***Locations***," "***Methods***" and "***Concentrations***" areas of the test plan will fill the fields with gray background. Use the calculations to determine whether the state review is accepted or not.

The red background of the "***USE***" column under "***Reporting Threshold Allowables***" is the values which the tester/reviewer should use in calculations of the selected method. This calculated value is based on a New Jersey formula using the look-up values in the following columns.

Check the box if the test-run includes non-particulate traverse.

The editable fields beneath the comparison of ***EPA Method 25 vs. 25A*** determine the calculation of the outlet ppm.

The editable fields in the "***Metals***" section include the run duration (hr), the front half sample volume, and the back half sample volume. They directly affect the calculations in the gray boxes. The columns beneath "***ICAP***," "***AAS/CVAAS***," "***GFAAS"*** and "***ICPMS"*** can have either a green, yellow or red background. The green color indicates the estimates for the calculated values fall within EPA measurement capabilities at the compliance limits. Red indicates that the calculated values fall outside the EPA measurement capabilities at the compliance limits. Yellow indicates there is a potential issue somewhere within the proposed test protocol or analytical finish. It may indicate that the estimated values for the test run or analytical finish are close to the measurement capabilities of the selected combination compared with the compliance limits.

The editable fields of organics & gases include the sample volume (L) and the impinger start volume (mL). The changes affect the calculations for the parameter.

The fields below the calculations for inlet are as follows:

Parameters of Interest:

Grains * 64.799 = mgs: The conversion of grains to milligrams.

Lb/hr limit: The flow limit in lb/hr of location of run.

Mg/30cf: The milligrams per sample rate, where the minimum is 30 cubic feet.

EPA Method 25 vs. 25A

Inlet VOC lbs: The pounds of volatile organic compounds in inlet stream.

% Carbon: The percent of weight fraction of carbon in VOC.

% Production: The percent of carbon of VOC (i.e., %carbon * Inlet VOC).

CE: The capture efficiency typically from permit.

DE: The destruction efficiency, typically found on permit.

Outlet ppm: The emission of carbon through outlet in parts per million. If emission is less than 50 ppm carbon, select Method 25A. If emission is greater than 50 ppm carbon, select Method 25.

Reporting Threshold Allowables:

Parameter: The analyte/ target parameter reported.

Method: The allowable test method for the analyte.

USE: The calculated value based on the New Jersey lookup table values following.

Reporting lb/yr: The look up values for number of reported pounds per year.

Lbs/hr: The analyte allowable pounds per hour.

SOTA lbs/yr:	The analyte value in lbs per year in state-of-art stack.
Lbs/hr:	The analyte in pounds per hour in state-of-the-art stack.
Reporting lb/hr:	The reportable analyte in pounds per hour in state-of-the-art stack.
SOTA tons/year:	The analyte measurement in tons per year in state-of-the-art stack.

Metals:

Run Duration (hr):	The number of hours of duration of the run. The selection will affect the calculations of the table below.
Front Half Sample Volume:	Select the volume of the front half of the stack in run. The selections are from 30 to 500 in increments of 5.
Back Half Sample Volume:	Select the volume of the back half of test sample of the stack in run. The selections are 25 to 500 in increments of 5.
Parameter:	The test analyte being measured.
Lb/hr limit:	The test analyte's test limit in pounds per hour.
Ug/train:	Micrograms of analyte per sampling train.
ICAP:	The calculated Inductively Coupled Argon Plasma.
AAS/CVAAS:	The Atomic Absorption Spectrometry technique utilizing Cold Vapor Atomic Absorption Spectrometry detection technique of measuring the analyte in lower concentration ranges.
GFAAS:	The Graphite FurnaceAtomic Absorption Spectrometry technique utilizing graphite furnace technique of measuring the analyte in lower concentration ranges.
ICPMS:	The Inductively coupled Plasma/Mass Spectrometry technique for measuring trace amounts of the analyte.
Anal. Ug/ml:	The calculated value of micrograms per milliliter of the analyte.
Mg/dscm 7% O2:	The micrograms of analyte particulate per dry standard cubic meter corrected to 7% O_2.

Organics & Gases:

Sample Volume (L):	Select the test sample volume collected in liters. The list range is from 15 to 180 in increments of 15.
Impinger Start Volume (mls):	Select the volume in the impinger at the start of the test, measured in milliliters. The range is from 0 to 20 in increments of 1.
Parameter:	The test run selected parameters for organics and gases.
Lb/hr Limit:	The pre-selected pound/hour limit of the parameter.
MW:	The calculated molecular weight of the parameter.

ppm limit:	The calculated approximate parts per million of the parameter.
Solubility:	The calculated solubility of the parameter, if applicable.
Boiling Point:	The calculated boiling point of the parameter, if applicable.
Polarity:	The calculated polarity of the parameter, if applicable.
ug/Train:	The approximate calculation of micrograms per sampling train.
Imp ugs:	The calculated micrograms of the impinger.

Chapter 7: Test Data Review

All of the access buttons for test data review appear on the "***ERT – Main Menu***". They include "**Regulatory Field Observation Documentation**," "**Regulatory Assessment of Supporting Documentation**," "**Emissions Results**" and "**Comprehensive Regulatory Test Assessment**".

Obtaining Test data for Review

Test data can be obtained for review in two ways:

1. If an ERT submittal package was submitted through EPA's Central Data Exchange (CDX), the data can be accessed in WebFIRE (see instructions below).
2. States or other delegated authorities can review test data if the ERT file is sent to them (via email, CD, etc).

How to Obtain and View ERT Submissions to WebFIRE

1. Go to EPA's WebFIRE site: *http://cfpub.epa.gov/webfire/*.
2. Scroll down to the paragraph titled "Search and Retrieve WebFIRE Report Submissions"
3. Click the "***Search for reports***" text below the list of available search criteria.
4. A page with the available search criteria as shown in **Figure 88** will be displayed.

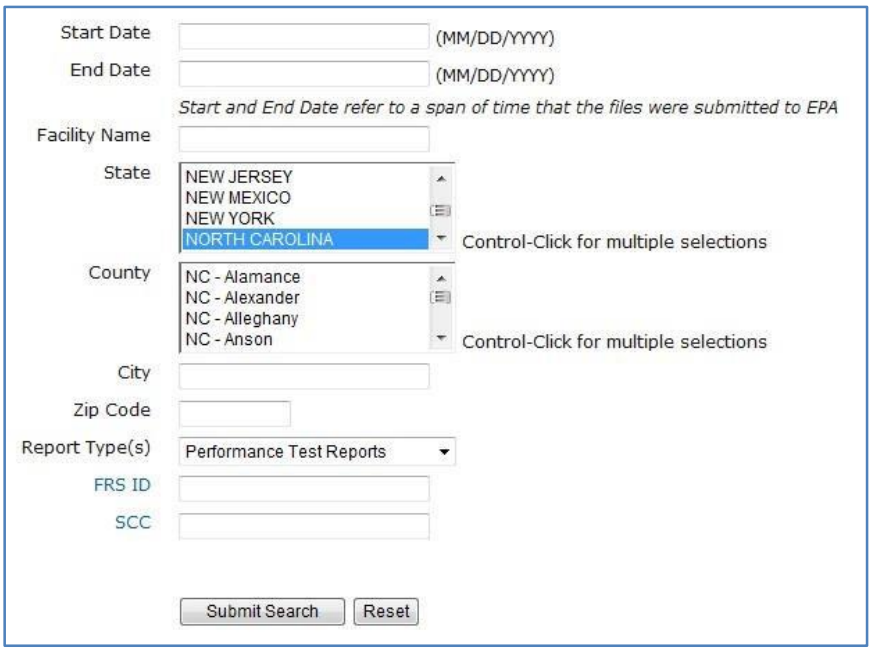


Figure 88 - WebFIRE Search Criteria

5. Enter your desired search criteria and click the "**Submit Search**" icon OR you can leave the search criteria fields blank (this may result in a long list of files). Currently, four types of reports are available in WebFIRE. If you limited your search to "***Performance Test Reports***," the last column will only have "***ERT***" as the "**Report Type**." The results of your search as shown in **Figure 89** will be displayed. You can adjust the column widths to see more or all of the text and you can click on the column heading to change the order of the displayed results.

The following acronyms are used to designate the report type in the results table:
ERT = Performance test reports
EVAL= Performance evaluations
NCOS = Notification of compliance status reports
AER = Air emissions reports

Report Search Results

Organ...	Facility	City	State	County	Submission Date	Document Name	Size (Bytes)	Report Type
AIR A...	Lehigh Cement Company	Union Bridge	MD	Carroll	08/07/13	Lehigh Cement Company_08-07-2013...	3066893	ERT
AIR C...	Arcelor Mittal Weirton LLC	Weirton	WV	Hancock	09/19/13	Arcelor Mittal Weirton LLC_09-19-201...	970197	ERT
AIR C...	Lehigh Cement Company LLC	York	PA	York	06/14/13	Lehigh Cement Company LLC_06-14-...	1773958	ERT
AIR C...	Argos USA Harleyville Plant	Harleyville	SC	Dorchester	07/25/13	Argos USA Harleyville Plant_07-25-20...	37053495	ERT
AIR C...	Lafarge Whitehall Cement Plant	Whitehall	PA	not provided	10/29/12	Lafarge Whitehall Cement Plant_10-29...	11566809	ERT
AK ST...	AK Steel Middletown Works	Middletown	OH	Butler	01/23/13	AK Steel Middletown Works_01-22-20...	4069041	ERT
AMERI...	AEP John W. Turk Jr. Power Plant	Fulton	AR	Fulton	07/30/13	AEP John W. Turk Jr. Power Plant_07-...	15953629	ERT
ARCEL...	ArcelorMittal Indiana Harbor LLC	East Chicago	IN	Lake	12/12/13	ArcelorMittal Indiana Harbor LLC_12-1...	1613961	ERT
ARGO...	Argos Cement LLC	Calera	AL	United States	07/22/13	Argos Cement LLC_07-22-2013_09-5...	80579	ERT
ASH G...	Ash Grove Cement Company	Clancy	MT	Jefferson	04/26/13	Ash Grove Cement Company_04-26-2...	3084960	ERT
ASH G...	Ash Gr5ove Cement Company	Leamington	UT	Juab	04/10/13	Ash Gr5ove Cement Company_04-10-...	11082392	ERT
ASH G...	Ash Grove Cement, Inc.	Chanute	KS	Neosho	12/18/12	Ash Grove Cement, Inc._12-18-2012 ...	3258768	ERT

Figure 89 - WebFIRE Search Results

6. All files in the "***Document Name***" column are Zip files – these files contain a Project Data Set (PDS) file created by the ERT application. To review a test report, use one of the following procedures:

   a. Click the name of the zip file you wish to review and click "**Open.**"
   b. Depending on your operating system, you can click "**Extract**", "Unzip" or drag the file to a folder. This will save the file to the location you specify. Make sure you are cognizant of the location and have selected a location that you will remember.
   c. Open the ERT application.
   d. In the ERT, click "**Select Project Data Set**" and choose the file (it will have an extension of either .accdb or .mdb, depending on the version of the ERT that was used to create the file). You will see that the location and name of the extracted file will be displayed in the "***Current Project Data Set***" box

   OR

   a. Click the name of the zip file you wish to review and click "**Save.**"
   b. Save the zip file to a location you will remember.
   c. Open the ERT application.

d. In the ERT, click "**Select Project Data Set**" and choose the zip file. The ERT application will extract the PDS from the zip file and store it in the same directory as the zip file. You will see that the location and name of the extracted file will be displayed in the "***Current Project Data Set***" box.
e. CAUTION: Use this procedure only the first time you open the PDS. The use of this procedure will overwrite the existing PDS and you may lose any saved changes. Subsequent times that you open the PDS, using step d of the first procedure will preserve changes you made to the PDS.

Regulatory Field Observation Documentation

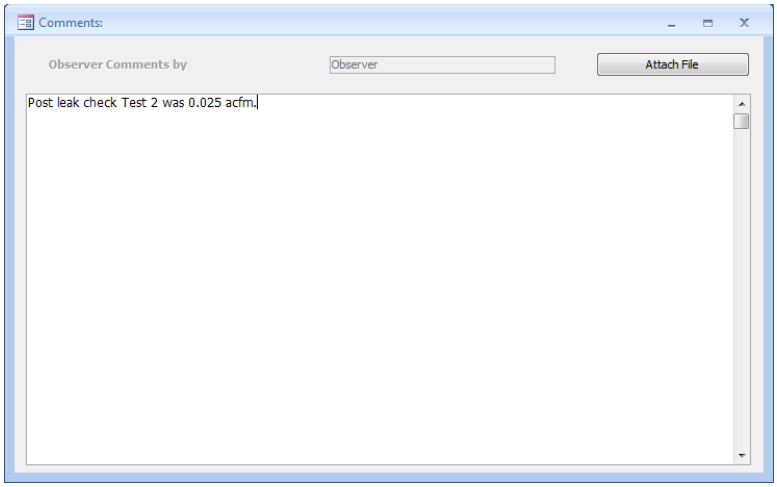


Figure 90 - Regulatory Field Observation Documentation Window

In this tab the observations made by the "***Regulatory Agency***" field observer may provide comments directly into the text box, or attach a file that contains his/her observations of the performance of testing at the facility. (See *Attachments Screen* for more information on how to attach a file).

Regulatory Assessment of Supporting Documentation

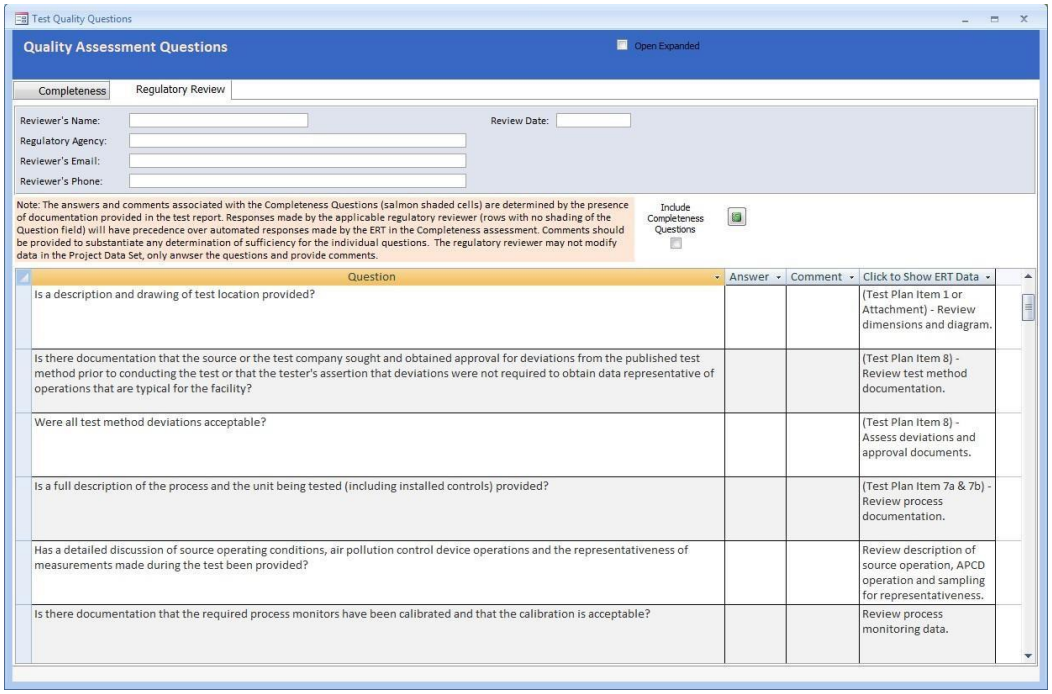


Figure 91 - Regulatory Assessment of Supporting Documentation - QAQ's

The "***Regulatory Assessment of Supporting Documentation***" is an extension of the "***Completeness Check***" questions. The QAQ screen as shown in **Figure 91** provides a check sheet to assist in the assessment of the test report. While there may be several reasons for the assessment, one would be for the regulatory agency to be assured that the information contained in the report is sufficiently complete, accurate and representative for the purposes which were intended. Unlike the "***Completeness Check***," no answers have been selected. To determine the responses for the "***Completeness Check***," the user of the QAQ screen can switch between the "***Completeness Check***" questions and the "***Regulatory Review***" questions by clicking on the two tabs. Alternatively, the screen can be expanded to show both the "***Completeness Check***" questions and the "***Regulatory Review***" questions by selecting the "***Include Completeness Questions***" box (in large red circle as shown in **Figure 92**). The "***Completeness Questions***" are highlighted with salmon colored shading and include the ERT response. In some instances, the questions are identical to those which the ERT provided a response based upon the presence of a response or attachment. However, while the ERT only checks that information has been entered in the field or that an attachment has been provided, the assessor can determine if that information provided meets the requirements for that item.

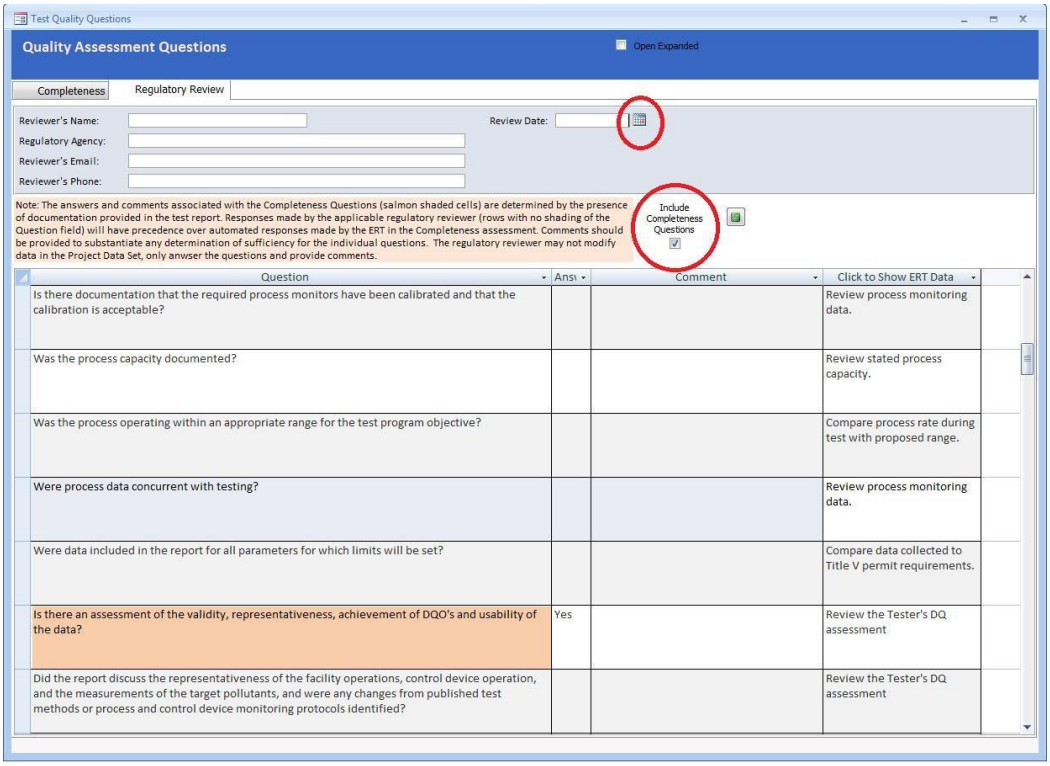


Figure 92 - Completeness and Regulatory Review Questions

The "***Regulatory Review***" screen contains a heading to identify the name, agency, email and phone number of the individual responsible for the review. A date for the review is also available and may be selected using the calendar (small red circle) pop up. Below the heading is a "***Note***" providing a short description of the function of the "***Completeness***" question rows (salmon shaded question cells) and use of the "***Answer***" and "***Comment***" areas. Below the "***Note***" are the "***Questions***" providing a guide for the reviewer. To the right of the "***Question***" is the "***Answer***" which is selected by a drop down answer (Blank, N/A, Yes and No). None of the questions require a response since the reviewer may have higher priorities and thus limits the review to the most critical areas. In many instances, the reviewer may limit the review to the "***Emissions Results***" and a brief assessment of the ERT completeness responses, thus none of the questions will have a response. Even with a complete review of the questions, many questions may not have a response since the questions may cover a test which was not required nor conducted. If an "***Answer***" is selected, the reviewer may provide a note in the "***Comment***" column to the right of the response justifying or clarifying the response. While the reviewer's observation may not be necessary for a blank, "N/A" or "Yes" response, it is expected that a justification and/or explanation would be provided for a negative response. There is no limit on the text length allowed in the "***Comment***" fields and you may adjust the width of the columns or the height of rows to allow you to see all of the text in the cell.

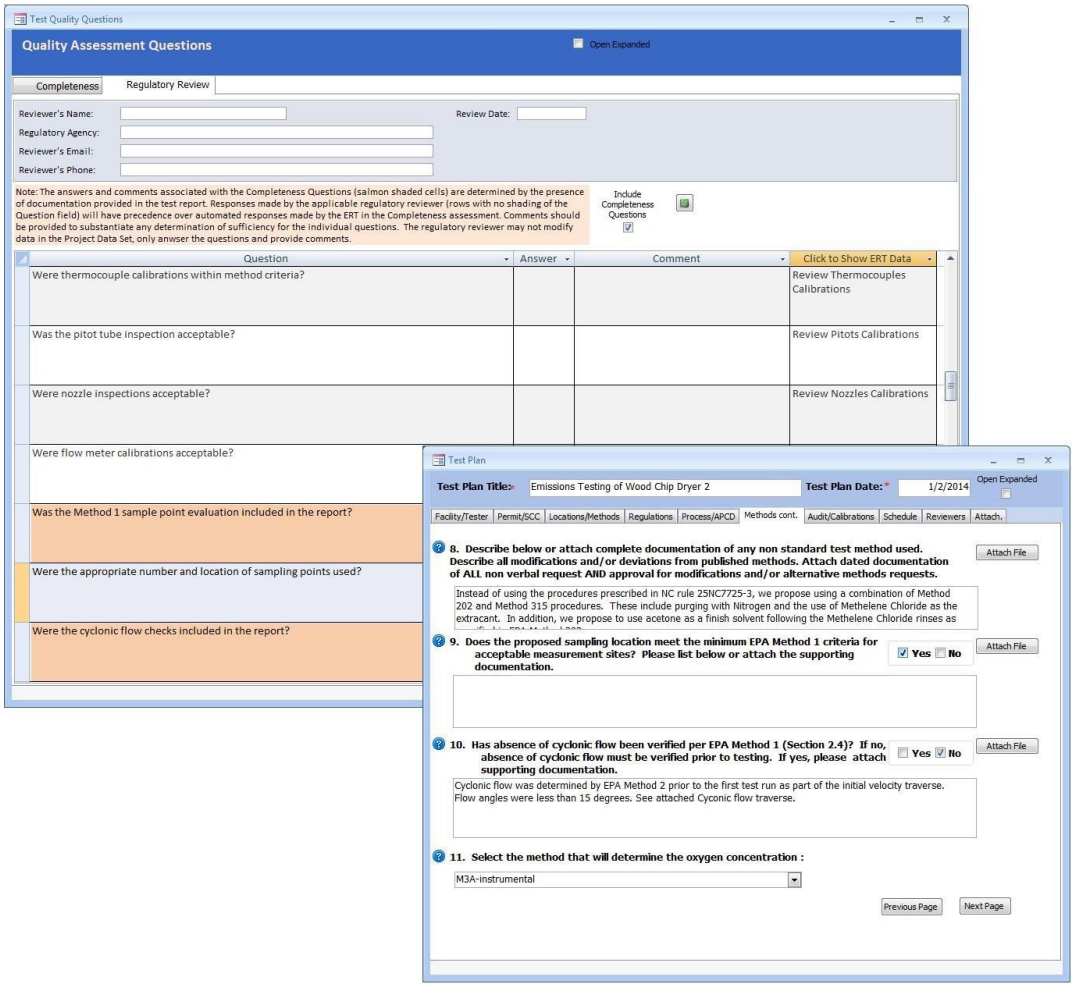


Figure 93 - Test Data Review: QAQ's Show Data

By clicking in the "***Click to Show ERT Data***" cell beside the question the test report area(s) which provide most or all of the documentation supplied by the facility is opened as shown in **Figure 93**. There are some questions which have documentation in multiple areas to fully document the parameter covered by the comment. For example there may be attachments which provide additional detail which is not provided in another area. In some cases two windows will open. In other cases you may open multiple cascading windows by clicking on the "**Attach File**" button associated with the field associated with the original item. **Figure 94** shows an example of cascading open windows. The original field in the "***Quality Assessment Question***" sheet that caused the first window to open is circled in red. This larger circle points to the window which opened and the smaller red circle identifies the button used to open the "***Attached File***" window to show the files containing additional details. You can switch between the different windows while compiling or editing the text in the "***Comment***" field or deciding on the response. It is suggested that you have some of every window which you are using visible when another window is above it to facilitate switching between windows. In some cases, when some areas of the ERT are opened, you will hear a "bell" when you try to switch

to another window. In these cases, you will need to close the higher level window in order to open the other window.

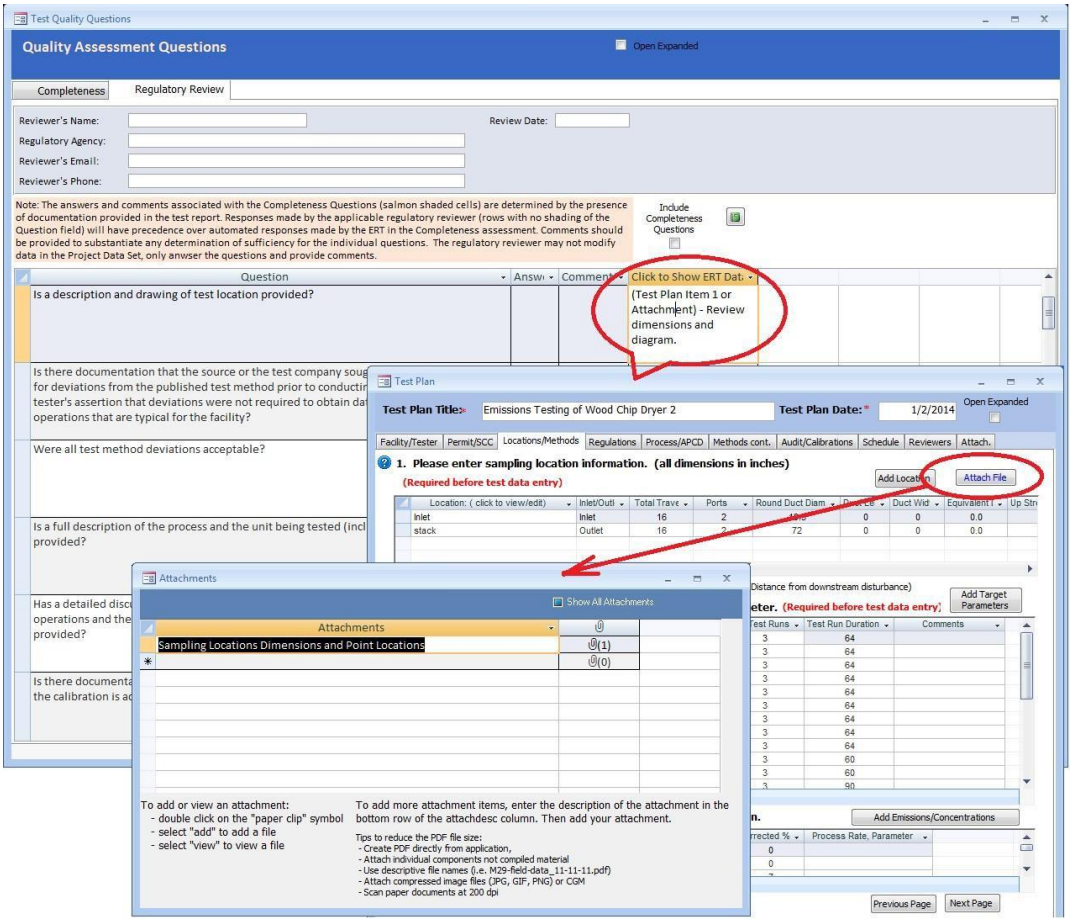


Figure 94 - Quality Assessment Questions: Multiple Windows

Emissions Results

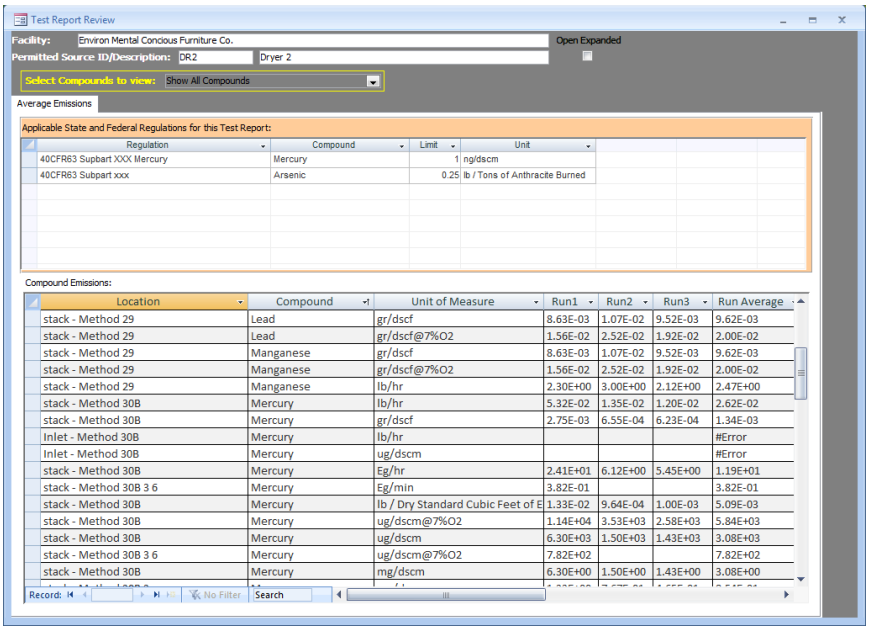


Figure 95 - Test Report Review Screen

Upon receipt of a completed test report, you may access and review the data by selecting the appropriate project data set (see the *Selecting a Project Data Set* for more information on selecting a project data set) and clicking the "**Emissions Results**" button in the "***Regulatory Agency Review***" area of the "***ERT Main Menu***".

The top part of the screen shows the applicable state and/ federal regulation for the test report as was entered in Item 2 of the "***Regulations Screen***" of the test plan section of the "***ERT Main Menu***".

As shown in **Figure 95 -** Test Report Review Screen, the "***Emissions Results***" screen provides a quick method to directly compare the measured emissions with the Regulatory requirements provided in the "***Setup/Test Plan***" area of the ERT. As is evident in the figure, there is a limited amount of detail associated with the test program and some additional review may be desirable for a proper assessment of the representativeness, precision and accuracy of the values shown.

The bottom part of the screen shows the emissions for each compound.

Click on the record arrows in the bottom left of the screen to scroll through the compounds.

The columns are as follows:

Applicable State and Federal Regulations for this Test Report:

Regulation: The title of the regulation (auto-populated from information entered in the test plan).

Compound: The analyte applicable in the regulation.

Limit: The upper limit of the analyte concentration.

Unit: The unit of regulation measurement.

All Runs for Selected Compound:

RunNumber: The run number of the compound tested.

RunDate: The date of the run.

Gr/dscf: In the example in figure 95, the uncorrected parameter was selected as grain per dry standard cubic feet either in the *Test Plan*, Item *7b*, or the *Test Data*, *Method Setup*. If the user wants to see any other parameter, go back to either of those locations and select it.

Gr/dscf @ 7% O2: The parameter selected corrected to 7% O_2.

Elb/hr: Emission flow, pounds per hour.

Other Emissions Units: There will be other units of emissions as were established in the *Create Test Plan* or the Test Data *Method Setup Screen*.

Alternatively, you may select the "**Run Data**" from the "**ERT - Main Menu**" then select the location and method to view from the "***Select Location – Method***" pick list. Accessing the test information at this level allows you to review and identify details about the individual data entered by the report preparer and or intermediate calculations or QA/QC indicators which are not available using the high level "***Emissions Results***" screen. For details on the contents of these more detailed screens, you should go to the appropriate location of this User Manual in either *Chapter 4: Create Test Plan* or *Chapter 5: Test Data*.

Comprehensive Regulatory Test Assessment

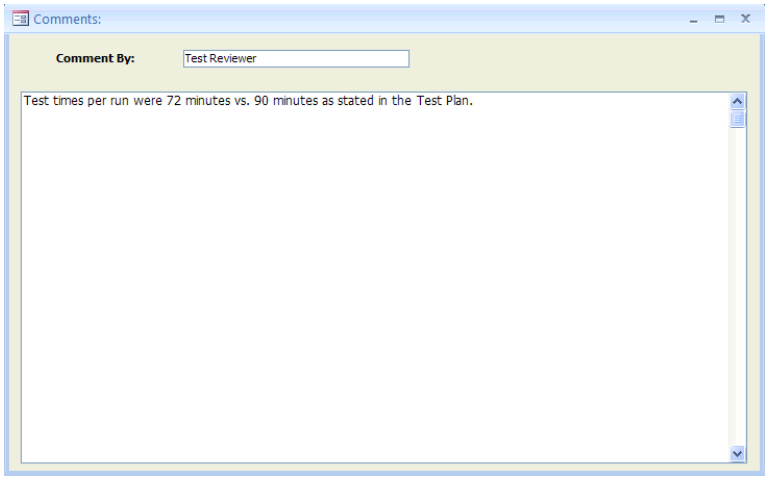


Figure 96 - Test Reviewer Comments Window

In this tab the Regulatory Agency test reviewer can enter additional comments which are not provided in the "***Regulatory Assessment of Supporting Documentation***" or provide other information which the Regulatory Authority wishes to make. Comments may be entered directly into the text box.

Chapter 8: Printed Reports

In the "***Printed Reports***" section of the ERT "***Main Menu***," you have the option to print whichever section(s) of the test report you choose. You can view the report or table on screen, export the report or table to Microsoft Word, or create a .pdf of the report or table. Click on the "**Select Report/Data Table**" and a screen like **Figure 97 -** Report selection menu will open. The type of reports include: "***Test Plan***," "***Test Plan Review***," "***Full Test Report***," "***Sampling Location Table***," "***Test Parameters Table***," "***Sampling/Stack Data Results Summary Table***," "***Sampling/Stack Data Results Summary Table***," "***Sampling/Stack Data Results Detail Table***," "***Emissions Summary Table***," "***Emissions Summary Table with Limits***," "***Process Run Data Table***," "***APCD Run Data Table***," "***Process Lab Run Data Table***," "***Attachments***," "***Completeness Questions***," and "***Regulatory Review Questions***." There are also process detail reports for the stacks.

To print "***Relative Accuracy Results***" from the "Run Data" screen of the "CEMS Information and Run Data" tab, click on the "Relative Accuracy Results." (See *Performance Specification Data* for more information). The RATA results are not included when you print the "***Full Test Report***." As a result, you will need to add the printed RATA results to the "***Full Test Report***" pages.

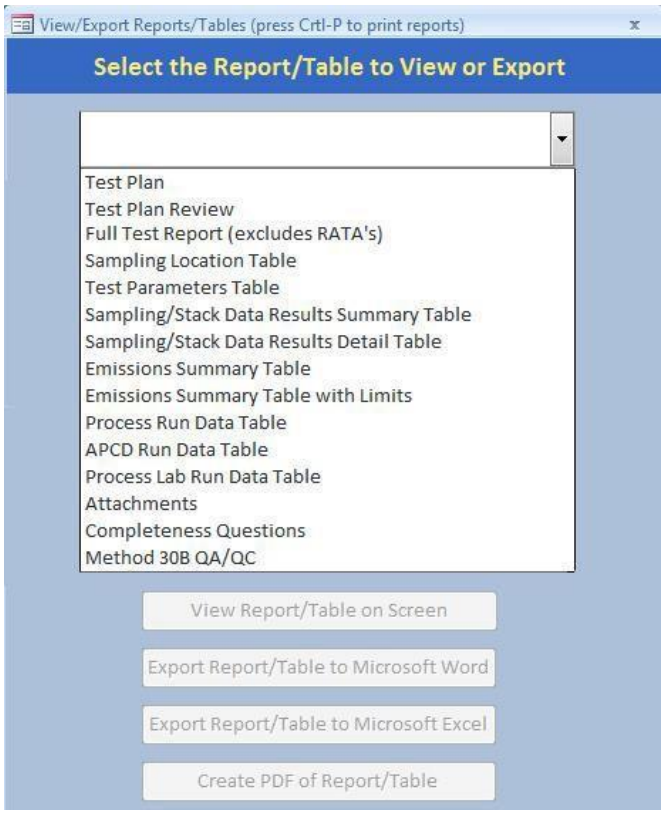
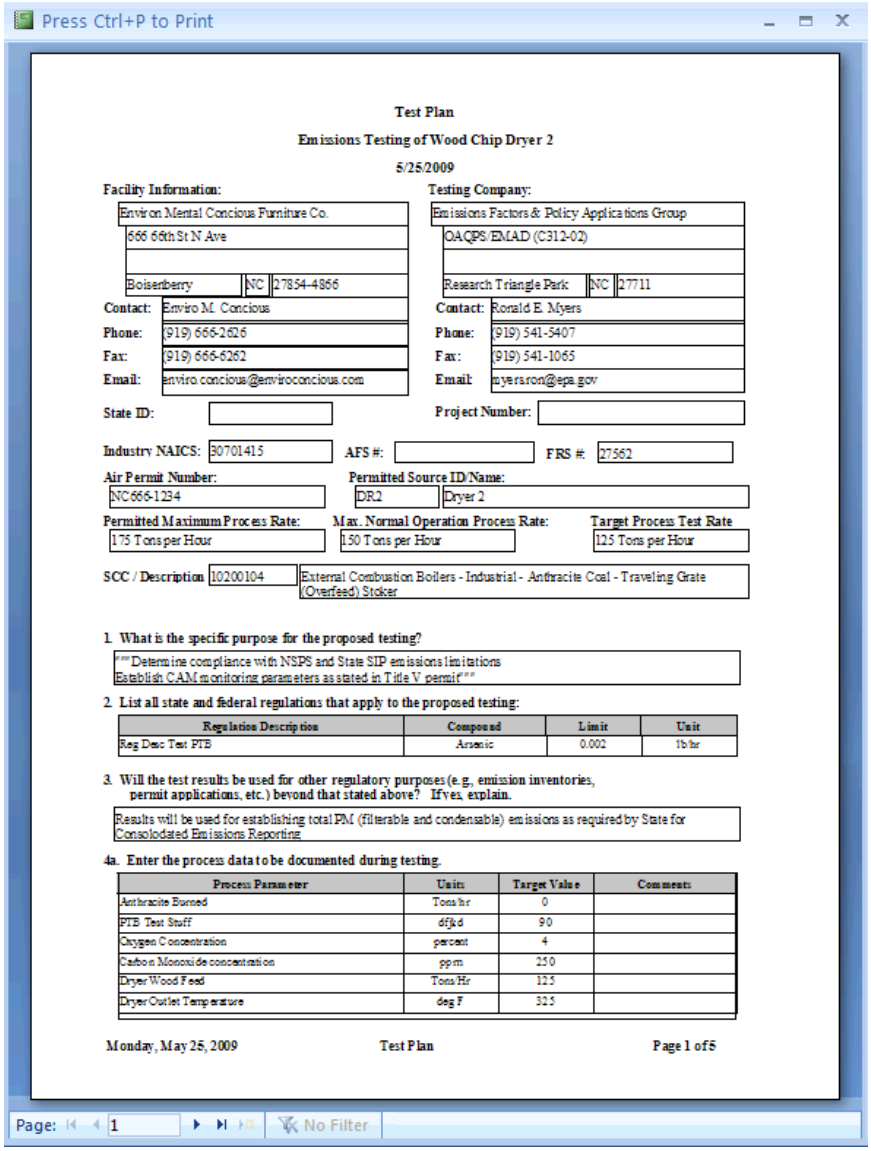


Figure 97 **- Report selection menu**

Test Plan



Press Ctrl+P to Print

Test Plan

Emissions Testing of Wood Chip Dryer 2

5/25/2009

Facility Information:

Environ Mental Concious Furniture Co.
666 66th St N Ave
Boiserberry NC 27854-4866
Contact: Enviro M. Concious
Phone: (919) 666-2626
Fax: (919) 666-6262
Email: enviro.concious@enviroconcious.com

Testing Company:

Emissions Factors & Policy Applications Group
OAQPS/EMAD (C312-02)
Research Triangle Park NC 27711
Contact: Ronald E. Myers
Phone: (919) 541-5407
Fax: (919) 541-1065
Email: myers.ron@epa.gov

State ID:

Project Number:

Industry NAICS: 30701415 **AFS #:** **FRS #:** 27562

Air Permit Number: NC666-1234

Permitted Source ID/Name: DR2 Dryer 2

Permitted Maximum Process Rate: 175 Tons per Hour

Max. Normal Operation Process Rate: 150 Tons per Hour

Target Process Test Rate 125 Tons per Hour

SCC / Description 10200104 External Combustion Boilers - Industrial - Anthracite Coal - Traveling Grate (Overfeed) Stoker

1. What is the specific purpose for the proposed testing?

""Determine compliance with NSPS and State SIP emissions limitations
Establish CAM monitoring parameters as stated in Title V permit""

2. List all state and federal regulations that apply to the proposed testing:

Regulation Description	Compound	Limit	Unit
Reg Desc Test PTB	Arsenic	0.002	lb/hr

3. Will the test results be used for other regulatory purposes (e.g., emission inventories, permit applications, etc.) beyond that stated above? If yes, explain.

Results will be used for establishing total PM (filterable and condensable) emissions as required by State for Consolodated Emissions Reporting

4a. Enter the process data to be documented during testing.

Process Parameter	Units	Target Value	Comments
Anthracite Burned	Tons/hr	0	
PTB Test Stuff	dfjkd	90	
Oxygen Concentration	percent	4	
Carbon Monoxide concentration	ppm	250	
Dryer Wood Feed	Tons/Hr	125	
Dryer Outlet Temperature	deg F	325	

Monday, May 25, 2009 Test Plan Page 1 of 5

Page: 1 No Filter

Figure 98 - Final Test Plan Report Print Preview Screen

The test plan preparer must enter the information in the screens of "***Facility/Tester***" (**Figure 16**); "***Permit/SCC***" (**Figure 18**); "***Locations/Methods***" (**Figure 21 -** Test Plan Locations/Methods Tab); "***Regulations***" (**Figure 29**); "***Process/APCD***" (**Figure 31**); "***Methods continued***" (**Figure 36 -** Test Plan continued tab); "***Audit/Calibrations***" (**Figure 37 -** Audit/Calibration tab); "***Schedule***" (**Figure 38**); "***Reviewers***" (**Figure 39**); and "***Attachments***" (**Figure 40**). After these have been completed, several types of reports can be created. You begin by clicking the "**Select Report/Data Table**" button in the "***Printed Reports***" area of the "***ERT Main Menu***". You will then see a screen like is shown in **Figure 97 -** Report selection menu but without the drop down list of report types. Clicking the ▾ to

the right of the white rectangle, will open the report types, such as the one shown in **Figure 98 -** Final Test Plan Report Print Preview Screen.

Selecting "**Test Plan**" from the menu will activate the four buttons below the menu selection field. The four buttons are "**View Report/Table on Screen**," "**Export Report/Table to Microsoft Word**," "**Export Report/Table to Microsoft Excel**," and "**Create PDF of Report/Table**." By selecting "**View Report/Table on Screen**" a "***Final Test Plan Report***" like **Figure 98** will be created and opened on your desktop screen. You can adjust the location and size of the window and thus view the produced report. You can also magnify the size of the report and scroll around the opened page. Since only one page at a time is visible, you can see other pages of the report by clicking on the arrows at the bottom left of the screen.

You can either press "***Ctrl+P***" to print the pages to any of your available printers or you can close the window and use one of the other three options. You can produce a Microsoft Word file which approximates the document generated to the desktop screen. While the Word file may be edited to improve the appearance or correct minor imperfections, the effort to produce a desired appearance may not justify the extra effort required. You may also produce a Microsoft Excel file. This file row is not formatted to produce the document previewed but separates the individual elements which are printed into different column and rows. Lastly, you may produce an Acrobat PDF file which can be emailed, or attached to the ERT as a time stamped file for documentary purposes.

Test Plan Review

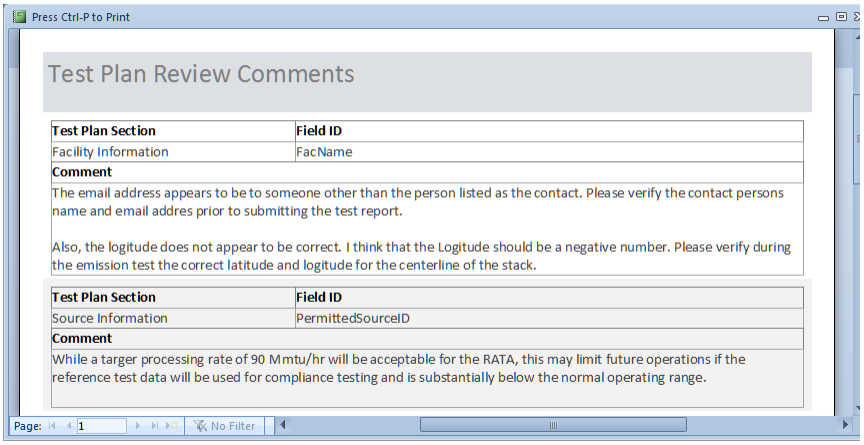


Figure 99 - Agency Test Plan Review Comments Window

Selecting "***Test Plan Review***" produces a printed report that looks like **Figure 99**. While this report may be mailed, emailed or attached to the ERT "***Project Data Set***," this information is included in the PDS for use by both the person reviewing the plan and the preparer. While the size of the PDS of a plan makes it amenable to send as an email attachment, some reviewers may wish to transmit their review by paper or as a separate electronic file. If the agency returned the test plan comments in the PDS, the tester can click on "**Test Plan Review**" in the "***Printed Reports***" area of the "***ERT Main Menu***". Click on the "**Test Plan Review**" button to view the agency's comments on the test plan. No fields are editable in the comments.

The "***Project Data Set Submittal History***" will show if the agency approved the test plan or requires more information.

You can update the test plan based on the agency's comments, update the "***Submittal History***," and resubmit the Project Data Set.

Full Test Report

Selecting "***Full Test Report***" will produce a file comprised of almost all of the components of a typical complete test report. The report will have a cover page with signature blocks for the facility representative and the test company representative. Reports of the RATA results are not produced during the creation of the "***Full Test Report***" and must be generated separately. Attachments like RATA results are not included in the "***Full Test Report.***" However, a list of attachments is provided in the report. If the regulatory authority requires the attachments, each attachment must be produced separately for inclusion in the file or printed report. Any changes made to the "***Test Plan***" sections to reflect as tested changes will be produced in the "***Full Test Report***." The full data set includes all the individual report components listed below the "***Full Test Report***." Details of the information in each of these components are described below.

Sampling Location Table

This table includes the information related to all sampling locations. This includes the location, round duct diameter, rectangular duct length, rectangular duct width, equivalent diameter, distance from upstream disturbance, distance from downstream disturbance, number of traverse ports and minimum traverse points. These values were provided in the test plan item 6.

Test Parameters Table

This table includes the full data set for the parameters of the test plan. This includes the location, target parameter, test method, number of test runs, test run duration, sample points and comments.

Sampling/Stack Data Results Summary Table

This report includes a summary of all location – methods run with calculated data with average. These include isokinetic and instrumental test data. The report includes the location-method; run numbers; test dates; run start and finish times; net run time (minutes); dry gas meter volume sampled (dscf); moisture content of stack gas (%); moisture saturation at stack gas temperature (%), or moisture (%); carbon dioxide (%); oxygen (%); average stack gas temperature (degrees F); dry volumetric flow rate (dry scfm); actual wet volumetric flue gas flow rate (acfm); percent isokinetic of sampling rate(%); F-Factor (dscfm/mmBtu @ %O_2); fuel type; Fw; and Fc.

Sampling/Stack Data Results Detail Table

This report includes the details of all location – methods per run. The report includes: location-method; run number; test date; run start and finish time; net traversing points; net run time (minutes); nozzle diameter (inches); Pitot tube coefficient; dry gas meter calibration factor; barometric pressure (inches of mercury); average orifice meter differential (inches in water); dry gas meter volume sampled (cubic feet); average dry gas meter temperature (degree F); dry gas meter volume sampled (dscf); total moisture collected (g);volume of water vapor (standard cubic feet); moisture content of stack gas (%); moisture saturation at stack gas temperature (%); dry mole fraction; carbon dioxide (%); oxygen (%); carbon monoxide & nitrogen (%); fuel factor; dry molecular weight (lb/lb-mole); wet molecular weight (lb/lb-mole); flue gas static pressure (inches of water); Absolute flue gas pressure (inches of mercury); average stack gas temperature (degrees F); average velocity head (inches of water);average stack gas velocity (feet/second); stack cross-sectional area (squared feet); dry volumetric flow rate (dry scfm); actual wet volumetric flu gas flow rate (acfm); percent isokinetic of sampling rate (%); percent excess air (%); F-Factor (dscfm/mmBtu @ %O_2); round duct diameter (inches); rectangular duct width (inches); rectangular duct length (inches); Fw; Fc.

Emissions Summary Table

This summary report includes all of the compound data for each run of a location-method. For each compound, the table provides for each run the run number, Mmass (mg); gr/dscf; gr/dscf @ 7% O_2; and average of these.

Emissions Summary Table with Limits

This report is identical to the "***Emissions Summary Table***" with the addition of any regulatory emission limits which were provided in Item 4 "***Regulations***" of the "***Test Plan***."

Process Run Data Table

This data table contains all of the process run data. This includes the name; run number; value provided; UOM; target value; and any comments per run.

APCD Run Data Table

This data table contains the air pollution control device data. This includes the name of the control device; run number; value provided; UOM; target value; and any comments per run.

Process Lab Run Data Table

This data table contains the process parameters requiring lab analysis. This includes the name of the process parameter; run number; value provided; UOM; and any comments per run.

Completeness Questions

This data table contains the list of the "Completeness Questions" describing those components of a manual test program and an instrumental test program. The ERT's assessment of the presence or absence of each component is also provided along with any comments provided by the report preparer concerning those components described in the question.

Regulatory Review Questions

This data table contains the list of "***Regulatory Review Questions***" which in addition to the "***Completeness Questions***" include supplementary detail questions about the presence and quality of components within those broad categories. The regulatory agency responses to the detail questions are provided as well as any comments justifying or describing the response.

Relative Accuracy Results

Due to the complexity and variations in Relative Accuracy Tests the reports cannot be produced with the current test report generator in the ERT. To produce a report of the ***RATA*** results, you should open the ***Run Data*** area, select the Performance Specification to be printed from the "***Select Location – Method***" area of the "***Test Data Details***", then produce the report by selecting "***Relative Accuracy Results***" at the bottom right of the screen. Once the report is shown on the screen, you can print the report to any printer available from your computers print menu. You may also depress the right mouse button then select "Export" and select one of the options. If available, selecting "PDF" replicates the report on the screen. Selecting "Word RTF file" produces a file which when imported into MS Word is usable but not easily edited to improved appearance.

The "***Relative Accuracy Results***" data table contains the reference test method results and the CEM results in the emissions concentration, rate or fuel energy units specified in the reference test method run data emissions and the CEM output, the arithmetic average of the runs performed, the individual run differences between the two measurement systems, the arithmetic averages of the differences, the standard deviations of the differences, the confidence coefficient of the differences, the relative accuracy calculated using the reference method and the relative accuracy calculated using the emissions standard.

Method 30B QA/QC

This data table includes the list of Method 30B runs that do not meet QA/QC specifications. The report includes the stack run number, the specifications, and acceptance criteria.

Chapter 9: Administration

Help/ System Reports

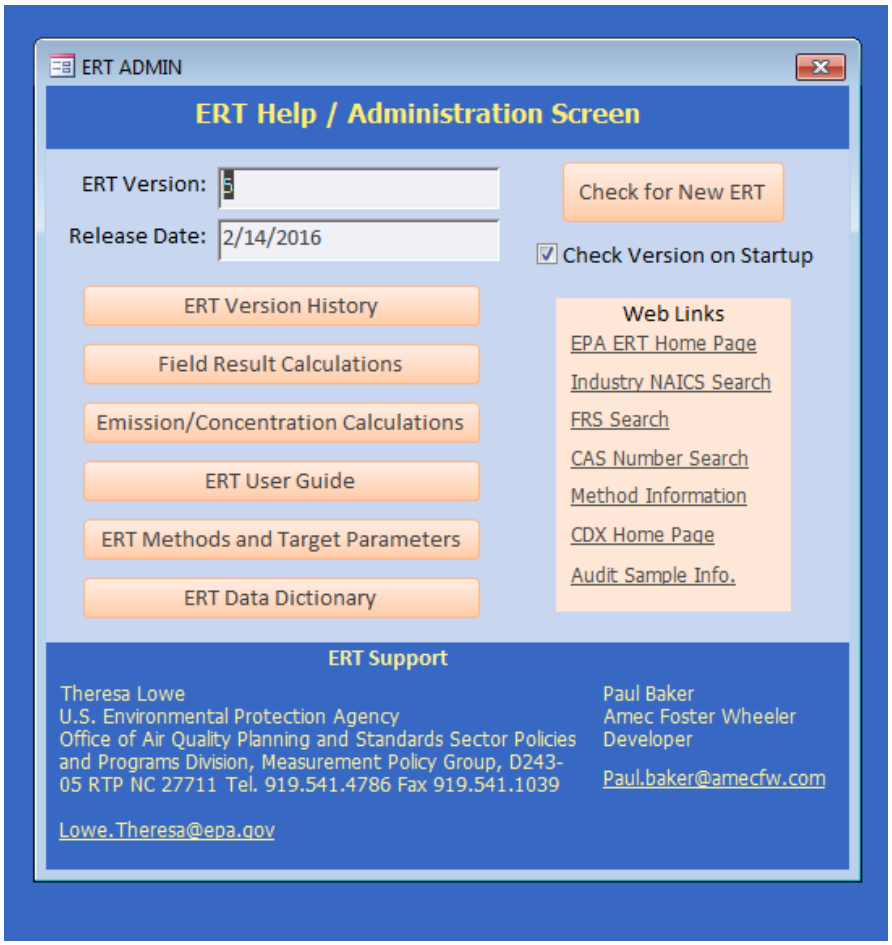


Figure 100 - The ERT Help /Administration Screen

The administration area of the ERT includes a "**Help /System (Sys) Reports**" button. Clicking on the button will open the "***ERT Help / administration***" screen, as seen in **Figure 100**.

The ERT version and release date are at the top. The ERT support names and contact information is provided at the bottom. The two middle sections include buttons that provide more information or help, and websites for more information or help.

Buttons:

ERT Version History The ERT Versions from oldest to most current with a listing of the descriptions of the updates.

Field Result Calculations Broken down per test run tabs, a table of the field, field description, and the formula used to calculate the provided value.

Emission/Concentration Calculations	A table providing the formula to provide the calculated value of emission/concentration. The table provides the emission/concentration, and the formula used.
ERT User's Manual	If the file "uman.pdf" is available in the folder with the ERT; the "***Users Manual***" will be accessed for the user to read. If the file is not available, an alert reminds the user to download the user's manual from the ERT website.
ERT Methods and Target Parameters	Clicking on this tab brings up a table that lists all source test methods which the ERT is capable of documenting. The table identifies the methods by number with their associated description and the compound(s) associated with the test method

Web Links:

EPA ERT Home Page	The ERT home page within the CHIEF web pages. *https://www.epa.gov/*electronic-reporting-air-emissions/ electronic-reporting-tool-ert
Industry NAICS Search	North American Industry Classification (NAICS) website. *http://www.census.gov/eos/www/naics/*
FRS Search	Federal Registry System (FRS). *https://www.epa.gov/enviro/frs-query-page*
CAS Number Search	Chemical Name search to get the Chemical Abstract Service identifier associated with a gas or chemical. *http://webbook.nist.gov/chemistry/name-ser.html*
Method Information	The main page for the Emissions Measurement Center which provides information on test methods for measuring pollutants from stationary sources and other sources. *https://www.epa.gov/emc/*
CDX Home Page	Central Data Exchange website. *https://cdx.epa.gov/epa_home.asp*

Appendix A: Calculations

Calculations and Decision Criteria Determinations for RATA's

The numerous, interrelated and complex calculations and decision criteria for Performance Specifications 2, 3 and 4 for O_2, CO, NOx and SOx preclude a simple listing of all the equations and logic statements in a printed document format. To document the calculations used in the ERT for the Performance Specifications, an Excel Spreadsheet is attached to this page for users to download and examine to assess the calculations, logic decisions and decision criteria. To examine or save the Excel Spreadsheet, open the attachments module of Adobe Acrobat. To open the module, click on the paper clip symbol of the left side of screen. The spreadsheet is named RATA_Evaluation.xlsx. Click on the file and select the option desired (open in the native application or save attachment). This procedure may vary depending on the version of Acrobat that you are using.

ERT Emission/Concentration Calculations

Emission/Concentration	Formula
grains/dscf	Format(7000*[lb/dscf],'Scientific') AS [gr/dscf]
grains/dscf corrected	Format([gr/dscf]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS [gr/dscf@[CorrPerc]%O2] Format([gr/dscf]*([CorrPerc]/[PercCO2]),'Scientific') AS [gr/dscf@[CorrPerc]%CO2]
grams/hr	Format(60*[Qsd]*[lb/dscf]*453.592,'Scientific') AS [g/hr]
grams/minute	Format([Qsd]*[lb/dscf]*453.592,'Scientific') AS [g/min]
grams/sec	Format([Qsd]*[lb/dscf]*453.592/60,'Scientific') AS [g/sec]
kg/day	Format(0.06*[Qsd]*[lb/dscf]*453.592*24,'Scientific') AS [kg/day]
kg/hr	Format(0.06*[Qsd]*[lb/dscf]*453.592,'Scientific') AS [kg/hr]
kg/year	Format(0.06*[Qsd]*[lb/dscf]*453.592*24*365,'Scientific') AS [kg/year]
lb/cf NG	[lb/dscf] AS [lb/dscfNG]
lb/day	Format(60*[Qsd]*[lb/dscf]*24,'Scientific') AS [lb/day]
lb/hr	Format(60*[Qsd]*[lb/dscf],'Scientific') AS [lb/hr]
lb/million BTU using CO2	Format([lb/dscf]*[Fc]*100/[PercCO2],'Scientific') AS [lb/mmBtuCO2]
lb/million BTU using O2	Format([lb/dscf]*[Fd]*20.9/(20.9-[PercO2]),'Scientific') AS [lb/mmBtuO2]
lb/minute	Format([Qsd]*[lb/dscf],'Scientific') AS [lb/min]

Emission/Concentration	Formula
lb/trillion BTU using CO2	Format([lb/dscf]*[Fc]*100000000/[PercCO2],'Scientific') AS [lb/TBtuCO2]
lb/trillion BTU using O2	Format([lb/dscf]*[Fd]*1000000*20.9/(20.9-[PercO2]),'Scientific')AS[lb/TBtuO2]
lb/year	Format(60*8760*[Qsd]*[lb/dscf],'Scientific') AS [lb/Year]
mg/dscm	Format([lb/dscf] * 453.592 * 35.32*10^3,'Scientific') AS [mg/dscm]
mg/dscm corrected	Format([mg/dscm]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS [mg/dscm@[CorrPerc]%O2] Format([mg/dscm]*([CorrPerc]/[PercCO2]),'Scientific') AS [mg/dscm@[CorrPerc]%CO2]
mg/hr	Format(60*[Qsd]*[lb/dscf]*453.592*1000,'Scientific') AS [mg/hr]
ng/dscm	Format([lb/dscf] * 453.592 * 35.32*10^9,'Scientific') AS [ng/dscm]
ng/dscm corrected	Format([ng/dscm]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS[ng/dscm@[CorrPerc]%O2] Format([ng/dscm]*([CorrPerc]/[PercCO2]),'Scientific') AS [ng/dscm@[CorrPerc]%CO2]
ng/hr	Format(60*[Qsd]*[lb/dscf]*453.592*1000*1000*1000,'Scientific') AS [ng/hr]
ng/joule using CO2	Format([lb/dscf]*[Fc]*429.922614182135*100/[PercCO2],'Scientific') AS[ng/jouleCO2]
ng/joule using O2	Format([lb/dscf]*[Fd]*429.922614182135*20.9/(20.9-[PercO2]),'Scientific') AS [ng/jouleO2]
percent(%)	format([lb/dscf] * 385.3 / [Fwt] * 10^2,'Scientific') as [Percent(%)]
percent(%) corrected	Format([percent(%)]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS [percent(%)@[CorrPerc]%O2] Format([percent(%)]*([CorrPerc]/[PercCO2]),'Scientific') AS [percent(%)@[CorrPerc]%CO2]
pg/dscm	Format([lb/dscf] * 453.592 * 35.32*10^12,'Scientific') AS [pg/dscm]
pg/dscm corrected	Format([pg/dscm]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS [pg/dscm@[CorrPerc]%O2] Format([pg/dscm]*([CorrPerc]/[PercCO2]),'Scientific') AS [pg/dscm@[CorrPerc]%CO2]

Emission/Concentration	Formula
ppb	format([lb/dscf] * 385.3 / [Fwt] * 10^9,'Scientific') as [ppb]
ppb corrected	Format([ppb]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS [ppb@[CorrPerc]%O2] Format([ppb]*([CorrPerc]/[PercCO2]),'Scientific') AS [ppb@[CorrPerc]%CO2]
ppm	Format([lb/dscf] * 385.3 / [Fwt] * 10^6,'Scientific') as [ppm]
ppm corrected	Format([ppm]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS [ppm@[CorrPerc]%O2] Format([ppm]*([CorrPerc]/[PercCO2]),'Scientific') AS [ppm@[CorrPerc]%CO2]
ppt	format([lb/dscf] * 385.3 / [Fwt] * 10^12,'Scientific') as [ppt]
ppt corrected	Format([ppt]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS [ppt@[CorrPerc]%O2] Format([ppt]*([CorrPerc]/[PercCO2]),'Scientific') AS [ppt@[CorrPerc]%CO2]
tons/day	Format(60*[Qsd]*[lb/dscf]*.0005*24,'Scientific') AS [tons/day]
tons/hr	Format(60*[Qsd]*[lb/dscf]*.0005,'Scientific') AS [tons/hr]
tons/year	Format(60*[Qsd]*[lb/dscf]*.0005*24*365,'Scientific') AS [tons/year]
ug/dscm	Format([lb/dscf] * 453.592 * 35.32*10^6,'Scientific') AS [ug/dscm]
ug/dscm corrected	Format([ug/dscm]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS[ug/dscm@[CorrPerc]%O2] Format([ug/dscm]*([CorrPerc]/[PercCO2]),'Scientific') AS [ug/dscm@[CorrPerc]%CO2]
ug/hr	Format(60*[Qsd]*[lb/dscf]*453.592*1000*1000,'Scientific') AS [ug/hr]

ERT Field Results Calculations

ITM Run Results

FieldID	FieldDesc	FieldCalcs
CalPreZSysBias	Calibration Pre Zero Cylinder Bias	FormatNumber(100 * (Crv - Cv) / CS, 2); Crv = Instrument Response; Cv=Cylinder Response; CS=Span
Cgas	Cgas	CalcCgas = (Cavg - Co) * (Cma / (Cm - Co))
CalPreHSysBias	Calibration Pre High Cylinder Bias	FormatNumber(100 * (Crv - Cv) / CS, 2); Crv = Instrument Response; Cv=Cylinder Response; CS=Span
CalPostZSysBias	Calibration Post Zero Cylinder Bias	FormatNumber(100 * (Crv - Cv) / CS, 2); Crv = Instrument Response; Cv=Cylinder Response; CS=Span
CalPostZDrift	Calibration Post Zero Cylinder Drift	Abs(Me.CalPostZSysBias - Me.CalPreZSysBias)
CalPostHSysBias	Calibration Post High Cylinder Bias	FormatNumber(100 * (Crv - Cv) / CS, 2); Crv = Instrument Response; Cv=Cylinder Response; CS=Span
Cgasw	Cgasw	Me.Cgas = Me.Cgasw / (1 - (Me.MoisturePerc / 100))
CalPostHDrift	Calibration Post High Cylinder Drift	Abs(Me.CalPostHSysBias - Me.CalPreHSysBias)

Method 30B Sample Data

FieldID	FieldDesc	FieldCalcs

AM3	Section 1 Spike Recovery (Crec)A	SpikeRecovery([AM1],[AVT],[AMS],[BM1],[BVT],[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmHdrData30B]![MercuryMassUnits])
		Function SpikeRecovery(M11, VT1, Ms, M12, VT2, MMUnits) As Variant
		If Nz(M11, 0) = 0 Or Val(Nz(Ms)) = 0 Or Val(Nz(VT1)) = 0 Or Val(Nz(VT2)) = 0 Then
		SpikeRecovery = ""
		Else
		SpikeRecovery = Abs(((M11 / VT1) - (M12 / VT2)) * MassScalar(MMUnits))
		End If
		End Function

BM3	Section 1 Spike Recovery (Crec)B	SpikeRecovery([BM1],[BVT],[BMS],[AM1],[AVT],[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmHdrData30B]![MercuryMassUnits]) Function SpikeRecovery(M11, VT1, Ms, M12, VT2, MMUnits) As Variant
		If Nz(M11, 0) = 0 Or Val(Nz(Ms)) = 0 Or Val(Nz(VT1)) = 0 Or Val(Nz(VT2)) = 0 Then
		SpikeRecovery = ""
		Else
		SpikeRecovery = Abs(((M11 / VT1) - (M12 / VT2)) * MassScalar(MMUnits))
		End If
		End Function

SRMA	Section 1 Spike Recovery MassA	IIf(Nz([AM3],"")="","",[AM3]*[AVT]/MassScalar([Forms]![frmRunDataDetailsMaster]![subForm]![subfrmHdrData30B]![MercuryMassUnits]))
SRMB	Section 1 Spike Recovery MassB	IIf(Nz([BM3],"")="","",Abs([BM3]*[BVT])/MassScalar([Forms]![frmRunDataDetailsMaster]![subForm]![subfrmHdrData30B]![MercuryMassUnits]))
ASRP	Section 1 Recovery Percentage (R)	IIf(Nz([AM3],"")="","",Round(Abs(([SRMA]/[AMS])*100),3))
BSRP	Section 1 Recovery Percentage (R)B	IIf(Nz([BM3],"")="","",Round(Abs(([SRMB]/[BMS])*100),3))
ABP	Section 2 Breakthrough (%B)A	IIf(Nz([AM1])="" Or Nz([AM2])="","",Round([AM2]/[AM1]*100,3))
BBP	Section 2 Breakthrough (%B)B	IIf(Nz([BM1])="" Or Nz([BM2])="","",Round([BM2]/[BM1]*100,3))
ISRA	Initial sampling rateA	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![InitA]
ISRB	Initial sampling rateB	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![InitB]
ASRA	Average sampling rateA	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![AvgOfSampleRateA]
ASRB	Average sampling rateB	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![AvgOfSampleRateB]
MaxDevA	Maximum deviation from sampling rateA	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![MaxDevA]
MaxDevB	Maximum deviation from sampling rateB	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![MaxDevB]
AVT	Total Sample Volume (Vt)A	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![VtA]
BVT	Total Sample Volume (Vt)B	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![VtB]
SampDevA	Spl Vol deviation from field recovery runA	Round(100*Abs([AVT]-[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![AvgSpikeVolume])/[AVT],1)
SampDevB	Spl Vol deviation from field recovery runB	Round(100*Abs([BVT]-[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![AvgSpikeVolume])/[BVT],1)
SMCA	Sample Mercury Mass CollectedA	[AM1]-[AMS]+[AM2]
SMCB	Sample Mercury Mass CollectedB	[BM1]-[BMS]+[BM2]

CdA	Sample Mercury Concentration (Cd)A	HGConcentration2([AM1],[AM2],[AMS],[AVT],[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmHdrData30B]![MercuryMassUnits])
		Function HGConcentration2(M1, M2, Ms, VT, MMUnits) As Single
		If Nz(M1, 0) = 0 Or Nz(VT, 0) = 0 Then
		HGConcentration2 = 0
		Else
		HGConcentration2 = (Nz(M1, 0) + Nz(M2, 0) - Val(Nz(Ms, 0))) / VT * MassScalar(MMUnits)
		End If
		End Function

CdB	Sample Mercury Concentration (Cd)B	HGConcentration2([BM1],[BM2],[BMS],[BVT],[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmHdrData30B]![MercuryMassUnits])
		Function HGConcentration2(M1, M2, Ms, VT, MMUnits) As Single
		If Nz(M1, 0) = 0 Or Nz(VT, 0) = 0 Then
		HGConcentration2 = 0
		Else
		HGConcentration2 = (Nz(M1, 0) + Nz(M2, 0) - Val(Nz(Ms, 0))) / VT * MassScalar(MMUnits)
		End If
		End Function

CwA	Sample Mercury Concentration (Cw)A	Round([CdA]*(1-([Forms]![frmRunDataDetailsMaster]![subForm]![subfrmCalcData30B].[Form]![lowH20]/100)),3)
CwB	Sample Mercury Concentration (Cw)B	Round([CdB]*(1-([Forms]![frmRunDataDetailsMaster]![subForm]![subfrmCalcData30B].[Form]![lowH20]/100)),3)
DryAMC	Test Run Mercury Concentration	IIf(Nz([CdA])="" Or Nz([CdB])="","",Round((([CdA]+[CdB])/2),3))
WetAMC	Test Run Mercury Concentration Wet	IIf(Nz([CwA])="" Or Nz([CwB])="","",Round((([CwA]+[CwB])/2),3))
RD	Paired trap agreement relative deviation (RD)	IIf(Nz([CdA])="" Or Nz([CdB])="","",Abs(Round((([CdA]-[CdB])/([CdA]+[CdB]))*100,4)))

RATA Results

FieldID	FieldDesc	FieldCalcs
raPPM	Relative Accuracy using the Reference Method	(Abs([avgPPMdif])+Abs([ccPPMdif]))/[avgRefPPM]*100
rasPPM	Relative Accuracy using the Standard	(Abs([avgPPMdif])+Abs([ccPPMdif]))/[PPMvStandard]*100
ra5PPM	Relative Accuracy using 5ppmv absolute difference	IIf([PPMvStandard]<200,Abs([avgPPMdif])+[ccPPMdif],'')

FieldID	FieldDesc	FieldCalcs
NetRunTime	Net Run Time, minutes	NetRunTime: Max([EndTime])
NetTravPtsB	Net Traversing Points - Sample B	NetTravPtsB: Sum(IIf(Len(Trim([StackTempB]))>0,1,0))
NetTravPtsA	Net Traversing Points - Sample A	NetTravPtsA: Sum(IIf(Len(Trim([StackTempA]))>0,1,0))
NetTravPts	Net Traversing Points	NetTravPts: Sum(IIf(Len(Trim([velocity]))>0,1,0))
Dn	Nozzle Diameter, inches	Dn: Min([DnHDR])
Cp	Pitot Tube Coefficient	Cp: Min([CpHDR])
CpB	Pitot Tube Coefficient - Sample B	CpB: [CpHDRB]
CpA	Pitot Tube Coefficient - Sample A	CpA: [CpHDRA]
YA	Dry Gas Meter Calibration Factor - Sample A	YA: [YHDRA]
YB	Dry Gas Meter Calibration Factor - Sample B	YB: [YHDRB]
Y	Dry Gas Meter Calibration Factor	Y: Min([YHDR])
Pb	Barometric Pressure, inches of Mercury	Pb: Min([PbHDR])
DeltaH	Average Orifice Meter Differential, inches H2O	DeltaH: Avg([OrificePresActual])
DeltaHA	Average Orifice Meter Differential, inches H2O	DeltaHA: IIf([NetTravPtsA]>0,[OrificePresActualA]/[NetTravPtsA],0)
DeltaHB	Average Orifice Meter Differential, inches H2O	DeltaHB: IIf([NetTravPtsB]>0,[OrificePresActualB]/[NetTravPtsB],0)

VmB	Dry Gas Meter Volume, cubic feet - Sample B	VmB: ([MaxGasMeterB]-[MinGasMeterB])*35.315
VmA	Dry Gas Meter Volume, cubic feet - Sample A	VmA:([MaxGasMeterA]-[MinGasMeterA])*35.315
Vm	Dry Gas Meter Volume Sampled, cubic feet	Vm: Format(Max([gasmeter])-Min([gasmeter])+Min([InitDGM])-Min([FinalDGM]),"#.000")
tm	Average Dry Gas Meter Temperature, °F	tm: Format((Avg(nz([DryGasInlet],0))+Avg(nz([DryGasOutlet],0)))/2,"#.00")
tmB	Average Dry Gas Meter Temperature, °F - Sample B	tmB: Avg([DryGasB)
tmA	Average Dry Gas Meter Temperature, °F - Sample A	tmA: Avg([DryGasA)
VmstdB	Dry Gas Meter Volume Sampled, dscf - Sample B	vmstdB: [VmB]*[YB]*(([tstd]+460)/[pstd])*(([pbB]+([deltahb]/13.6))/([tmB]+460))
VmstdA	Dry Gas Meter Volume Sampled, dscf - Sample A	vmstdA: [VmA]*[YA]*(([tstd]+460)/[pstd])*(([pbA]+([deltaha]/13.6))/([tmA]+460))
Vmstd	Dry Gas Meter Volume Sampled, dscf	vmstd: IIf([vm]>0,FormatNumber([Vm]*[Y]*((Min([tstdhdr])+459.67)/Min([pstdhdr]))*(([pb]+([deltah]/13.6))/([tm]+460)),3),0)
Vlc	Total Moisture Liquid collected, g	Vlc: Min([vlc])
VlcA	Total Moisture Liquid collected, g - Sample A	VlcA: VlcComA
VlcB	Total Moisture Liquid collected, g - Sample B	VlcB: VlcComB
PercI	Percent Isokinetic of Sampling Rate, %	PercI: Iif(len([vs])>0,FormatNumber((144*100*Min([PstdHDR])*(460+[ts])*[Vmstd])/((60*3.14159265358979/4)*(460+Min([tstdHDR]))*[Ps]*[Vs]*[Mfd]*[NetRunTime]*([Dn]^2)),1,-1),"")

Stack Gas

FieldID	FieldDesc	FieldCalcs

PercH20	Moisture Content of Stack Gas, %	PercH20: IIf(Val([vmstd])+Val([vwstd])>0,FormatNumber((100*Val([Vwstd]))/(Val([Vwstd])+Val([Vmstd])),2,-1),0)
PercH20sat	Moisture Saturation at Stack Gas Temperature, %	PercH20sat: IIf(Val([ps])>0,FormatNumber(IIf([ts]<213,(10^(6.6911-(3144/([ts]+390.86))))*100/[Ps],100),2),0)
Mfd	Dry Mole Fraction	Mfd: 1-(IIf(Val([PercH20])>Val([PercH20sat]),[PercH20sat],[PercH20])/100)
PercCO2	Carbon Dioxide, %	PercCO2: Min(Nz([PercCO2HDR],0))
PercO2	Oxygen, %	PercO2: Min(Nz([PercO2HDR],0))
PercCOplusN2	Carbon Monoxide & Nitrogen, %	PercC0plusN2: 100-[Perc02]-[PercC02]
Fo	Fuel Factor	Fo: FormatNumber(IIf([percco2]>0,(20.9-[PercO2])/[PercCO2],0),2,-1)
Md	Dry Molecular Weight, lb/lb-Mole	Md: Format((0.44*[PercC02])+(0.32*[Perc02])+(0.28*(100-[PercC02]-[Perc02])),"#.00")
Ms	Wet Molecular weight, lb/lb-Mole	Ms: Format(([Md]*[Mfd])+18*((IIf(Val([PercH20])>Val([PercH20sat]),[PercH20sat],[PercH20]))/100),"#.00")
Pg	Flue Gas Static Pressure, inches of H2O	Pg: Min([PgHDR])
Ps	Absolute Flue Gas Pressure, inches of Mercury	Ps: Format([Pb]+([Pg]/13.6),"#.00")
VwstdB	Volume of Water Vapor, scf - Sample B	VwstdB: FormatNumber([VlcB]*((460+[tstd])*21.85*0.002201)/([Pstd]*18.0),2)
VwstdA	Volume of Water Vapor, scf - Sample A	VwstdA: FormatNumber([VlcA]*((460+[tstd])*21.85*0.002201)/([Pstd]*18.0),2)
Vwstd	Volume of Water Vapor, standard cubic feet	Vwstd: FormatNumber([Vlc]*((460+Min([tstdHDR]))*21.85*0.002201)/(Min([PstdHDR])*18.0),2)
MMBtuHr	MMBtu/hr	MMBtuHr: IIf([fd]=0,"",CDbl((60*([Qsd]/[Fd])*((20.9-[PercO2])/20.9))))
tsA	Average Stack Gas Temperature, °F	ts: Nz([tsHDR],0)
ts	Average Stack Gas Temperature, °F	ts: Avg([stacktemp])
DeltaPavg	Average Velocity Head, inches of H2O	DeltaPavg: Avg([velocity]^0.5)^2

Vs	Average Stack Gas Velocity, feet/second	Vs: IIf(Val([ps])*Val([Ms])>0,FormatNumber(85.49*[Cp]*((460+[ts])*[DeltaPavg]/([Ps]*[Ms]))^0.5,2,-1),"")
Dstk	Round Duct Diameter, inches	Dstk: Min([DuctDiam])
Dwdth	Rectangular Duct Width, inches	Dwdth: Min([DuctWidth])
Dlngth	Rectangular Duct Length, inches	Dlngth: Min([DuctLength])
As	Stack Cross-Sectional Area, square feet	As: FormatNumber(IIf([dwdth]>0,[dwdth]*[dlngth],3.14159*Min([DuctDiam])^2/4)/144,3,-1)
Qsd	Dry Volumetric Flow Rate, dry scfm	Qsd: IIf(len([vs])>0,FormatNumber((60*[Mfd]*(Min([tstdHDR])+460)*[Ps]*[Vs]*[As])/(([ts]+460)*Min([PstdHDR])),1),"")
Qaw	Actual Wet Volumetric Flue Gas Flow Rate,	Qaw: IIf(len([vs])>0,FormatNumber(60*[Vs]*[As],1),"")

Method Description	Compound
CARB Method 428 - Dioxin, Furan, PCB	1,2,3,4,7,8,9-HpCDF
CARB Method 428 - Dioxin, Furan, PCB	1,2,3,4,7,8-HxCDD
CARB Method 428 - Dioxin, Furan, PCB	1,2,3,7,8,9-HxCDD
CARB Method 428 - Dioxin, Furan, PCB	1,2,3,4,6,7,8-HpCDD
CARB Method 428 - Dioxin, Furan, PCB	OCDD
CARB Method 428 - Dioxin, Furan, PCB	2,3,7,8-TCDF
CARB Method 428 - Dioxin, Furan, PCB	1,2,3,7,8-PeCDF
CARB Method 428 - Dioxin, Furan, PCB	2,3,4,7,8-PeCDF
CARB Method 428 - Dioxin, Furan, PCB	1,2,3,4,7,8-HxCDF
CARB Method 428 - Dioxin, Furan, PCB	1,2,3,6,7,8-HxCDF
CARB Method 428 - Dioxin, Furan, PCB	Total Furans
CARB Method 428 - Dioxin, Furan, PCB	2,3,7,8-TCDD
CARB Method 428 - Dioxin, Furan, PCB	Total Dioxins
CARB Method 428 - Dioxin, Furan, PCB	Other HxCDF
CARB Method 428 - Dioxin, Furan, PCB	OCDF
CARB Method 428 - Dioxin, Furan, PCB	Other TCDD
CARB Method 428 - Dioxin, Furan, PCB	Other PeCDD
CARB Method 428 - Dioxin, Furan, PCB	Other HxCDD
CARB Method 428 - Dioxin, Furan, PCB	Other HpCDD
CARB Method 428 - Dioxin, Furan, PCB	Other TCDF
CARB Method 428 - Dioxin, Furan, PCB	Other PeCDF
CARB Method 428 - Dioxin, Furan, PCB	1,2,3,6,7,8-HxCDD
CARB Method 428 - Dioxin, Furan, PCB	1,2,3,7,8-PeCDD
CARB Method 428 - Dioxin, Furan, PCB	Other Mono-CBs
CARB Method 428 - Dioxin, Furan, PCB	1,2,3,7,8,9-HxCDF
CARB Method 428 - Dioxin, Furan, PCB	2,3,3',4,4',5/2,3,3',4,4',5'-HxCB (PCBs156/157)
CARB Method 428 - Dioxin, Furan, PCB	2,3,4,6,7,8-HxCDF
CARB Method 428 - Dioxin, Furan, PCB	3,4,4',5-TCB (PCB81)
CARB Method 428 - Dioxin, Furan, PCB	2,3,3',4,4'-PeCB (PCB105)
CARB Method 428 - Dioxin, Furan, PCB	3,3',4,4'-TCB (PCB77)
CARB Method 428 - Dioxin, Furan, PCB	2,3,4,4',5-PeCB (PCB114)
CARB Method 428 - Dioxin, Furan, PCB	2,3',4,4',5-PeCB (PCB118)
CARB Method 428 - Dioxin, Furan, PCB	1,2,3,4,6,7,8-HpCDF
CARB Method 428 - Dioxin, Furan, PCB	3,3',4,4',5-PeCB (PCB126)
CARB Method 428 - Dioxin, Furan, PCB	2,3',4,4',5,5'-HxCB (PCB167)
CARB Method 428 - Dioxin, Furan, PCB	Total TEQ
CARB Method 428 - Dioxin, Furan, PCB	2,3,3',4,4',5,5'-HpCB (PCB189)
CARB Method 428 - Dioxin, Furan, PCB	DeCB
CARB Method 428 - Dioxin, Furan, PCB	3,3',4,4',5,5'-HxCB (PCB169)
CARB Method 428 - Dioxin, Furan, PCB	2',3,4,4',5-PeCB (PCB123)
CARB Method 428 - Dioxin, Furan, PCB	Total PCBs
CARB Method 428 - Dioxin, Furan, PCB	Other HpCDF
CARB Method 428 - Dioxin, Furan, PCB	Other Nona-CBs
CARB Method 428 - Dioxin, Furan, PCB	Other Octa-CBs
CARB Method 428 - Dioxin, Furan, PCB	Other Hexa-CBs
CARB Method 428 - Dioxin, Furan, PCB	Other Penta-CBs
CARB Method 428 - Dioxin, Furan, PCB	Other Di-CBs
CARB Method 428 - Dioxin, Furan, PCB	Other Tetra-CBs
CARB Method 428 - Dioxin, Furan, PCB	Other Tri-CBs

Method Description	Compound
CARB Method 428 - Dioxin, Furan, PCB	Other Hepta-CBs
CARB Method 429 - Polycyclic Organic Matter (19	Benzo(k)Fluoranthene*
CARB Method 429 - Polycyclic Organic Matter (19	Anthracene**
CARB Method 429 - Polycyclic Organic Matter (19	Fluoranthene**
CARB Method 429 - Polycyclic Organic Matter (19	Pyrene**
CARB Method 429 - Polycyclic Organic Matter (19	Benzo(a)Anthracene*
CARB Method 429 - Polycyclic Organic Matter (19	Perylene
CARB Method 429 - Polycyclic Organic Matter (19	Benzo(b)Fluoranthene*
CARB Method 429 - Polycyclic Organic Matter (19	Acenaphthylene**
CARB Method 429 - Polycyclic Organic Matter (19	Acenaphthene**
CARB Method 429 - Polycyclic Organic Matter (19	Chrysene*
CARB Method 429 - Polycyclic Organic Matter (19	2-Methylnaphthalene
CARB Method 429 - Polycyclic Organic Matter (19	Benzo(ghi)Perylene**
CARB Method 429 - Polycyclic Organic Matter (19	Total 7*PAH
CARB Method 429 - Polycyclic Organic Matter (19	Total 16*/**PAH
CARB Method 429 - Polycyclic Organic Matter (19	Dibenzo(a,h)Anthracene*
CARB Method 429 - Polycyclic Organic Matter (19	Benzo(a)Pyrene*
CARB Method 429 - Polycyclic Organic Matter (19	Benzo(e)Pyrene
CARB Method 429 - Polycyclic Organic Matter (19	Indeno(1,2,3-cd)Pyrene*
CARB Method 429 - Polycyclic Organic Matter (19	Fluorene**
CARB Method 429 - Polycyclic Organic Matter (19	Phenanthrene**
CARB Method 429 - Polycyclic Organic Matter (19	Naphthalene**
CTM - 027 - Procedure for Collection and Analysis	Ammonia
Custom - Select to enter custom method	Custom
Method 0010 - Modified Method 5 Sampling Trai	Hexachloroethane
Method 0010 - Modified Method 5 Sampling Trai	Pentachloronitrobenzene
Method 0010 - Modified Method 5 Sampling Trai	Pentachlorophenol
Method 0010 - Modified Method 5 Sampling Trai	Hexachlorobenzene
Method 0010 - Modified Method 5 Sampling Trai	2,4,5-Trichlorophenol
Method 0010 - Modified Method 5 Sampling Trai	1,1,2-Trichloroethane
Method 0010 - Modified Method 5 Sampling Trai	2,4,6-Trichlorophenol
Method 0010 - Modified Method 5 Sampling Trai	2-Chloroacetophenone
Method 0010 - Modified Method 5 Sampling Trai	1,2-Dibromo-3-chloropropane
Method 0010 - Modified Method 5 Sampling Trai	Bis(chloromethyl)ether
Method 0010 - Modified Method 5 Sampling Trai	Chlorobenzilate
Method 0010 - Modified Method 5 Sampling Trai	1,4-Dichlorobenzene
Method 0010 - Modified Method 5 Sampling Trai	1,1,2,2-Tetrachloroethane
Method 0010 - Modified Method 5 Sampling Trai	Bromoform
Method 0010 - Modified Method 5 Sampling Trai	Chlorobenzene
Method 0010 - Modified Method 5 Sampling Trai	1,2-Dibromoethane
Method 0010 - Modified Method 5 Sampling Trai	trans-1,3-Dichlorpropene
Method 0010 - Modified Method 5 Sampling Trai	cis-1,3-Dichloropropene
Method 0010 - Modified Method 5 Sampling Trai	Benzyl chloride
Method 0010 - Modified Method 5 Sampling Trai	Tetrachloroethene
Method 0011 - Sampling for Selected Aldehyde a	Propionaldehyde
Method 0011 - Sampling for Selected Aldehyde a	Formaldehyde
Method 0011 - Sampling for Selected Aldehyde a	Isophorone
Method 0011 - Sampling for Selected Aldehyde a	Acetophenone
Method 0011 - Sampling for Selected Aldehyde a	Acetaldehye

Method Description	Compound
Method 0023A - Sampling Method for Polychlorin	1,2,3,4,7,8-HxCDD
Method 0023A - Sampling Method for Polychlorin	1,2,3,6,7,8-HxCDD
Method 0023A - Sampling Method for Polychlorin	1,2,3,7,8,9-HxCDD
Method 0023A - Sampling Method for Polychlorin	1,2,3,4,6,7,8-HpCDD
Method 0023A - Sampling Method for Polychlorin	2,3,3',4,4'-PeCB (PCB105)
Method 0023A - Sampling Method for Polychlorin	3,3',4,4',5,5'-HxCB (PCB169)
Method 0023A - Sampling Method for Polychlorin	2,3,7,8-TCDF
Method 0023A - Sampling Method for Polychlorin	Total TEQ
Method 0023A - Sampling Method for Polychlorin	Total 16*/**PAH
Method 0023A - Sampling Method for Polychlorin	Other PeCDD
Method 0023A - Sampling Method for Polychlorin	3,3',4,4'-TCB (PCB77)
Method 0023A - Sampling Method for Polychlorin	2,3,4,7,8-PeCDF
Method 0023A - Sampling Method for Polychlorin	1,2,3,4,7,8-HxCDF
Method 0023A - Sampling Method for Polychlorin	OCDD
Method 0023A - Sampling Method for Polychlorin	Pyrene**
Method 0023A - Sampling Method for Polychlorin	Total PCBs
Method 0023A - Sampling Method for Polychlorin	3,4,4',5-TCB (PCB81)
Method 0023A - Sampling Method for Polychlorin	Other HxCDD
Method 0023A - Sampling Method for Polychlorin	Total Dioxins
Method 0023A - Sampling Method for Polychlorin	1,2,3,7,8,9-HxCDF
Method 0023A - Sampling Method for Polychlorin	1,2,3,4,6,7,8-HpCDF
Method 0023A - Sampling Method for Polychlorin	1,2,3,4,7,8,9-HpCDF
Method 0023A - Sampling Method for Polychlorin	OCDF
Method 0023A - Sampling Method for Polychlorin	Other TCDD
Method 0023A - Sampling Method for Polychlorin	1,2,3,7,8-PeCDD
Method 0023A - Sampling Method for Polychlorin	Other TCDF
Method 0023A - Sampling Method for Polychlorin	Benzo(a)Pyrene*
Method 0023A - Sampling Method for Polychlorin	Other HxCDF
Method 0023A - Sampling Method for Polychlorin	Other HpCDD
Method 0023A - Sampling Method for Polychlorin	2,3,4,6,7,8-HxCDF
Method 0023A - Sampling Method for Polychlorin	Other HpCDF
Method 0023A - Sampling Method for Polychlorin	1,2,3,7,8-PeCDF
Method 0023A - Sampling Method for Polychlorin	Other PeCDF
Method 0023A - Sampling Method for Polychlorin	1,2,3,6,7,8-HxCDF
Method 0023A - Sampling Method for Polychlorin	2,3,7,8-TCDD
Method 0023A - Sampling Method for Polychlorin	2,3,3',4,4',5,5'-HpCB (PCB189)
Method 0023A - Sampling Method for Polychlorin	Dibenzo(a,h)Anthracene*
Method 0023A - Sampling Method for Polychlorin	2,3,4,4',5-PeCB (PCB114)
Method 0023A - Sampling Method for Polychlorin	2,3',4,4',5-PeCB (PCB118)
Method 0023A - Sampling Method for Polychlorin	2',3,4,4',5-PeCB (PCB123)
Method 0023A - Sampling Method for Polychlorin	3,3',4,4',5-PeCB (PCB126)
Method 0023A - Sampling Method for Polychlorin	2,3,3',4,4',5/2,3,3',4,4',5'-HxCB (PCBs156/157)
Method 0023A - Sampling Method for Polychlorin	Benzo(ghi)Perylene**
Method 0023A - Sampling Method for Polychlorin	DeCB
Method 0023A - Sampling Method for Polychlorin	Other Di-CBs
Method 0023A - Sampling Method for Polychlorin	Other Nona-CBs
Method 0023A - Sampling Method for Polychlorin	Naphthalene**
Method 0023A - Sampling Method for Polychlorin	Other Tri-CBs
Method 0023A - Sampling Method for Polychlorin	Total 7*PAH

Method Description	Compound
Method 0023A - Sampling Method for Polychlorin	Other Penta-CBs
Method 0023A - Sampling Method for Polychlorin	Other Hexa-CBs
Method 0023A - Sampling Method for Polychlorin	Other Hepta-CBs
Method 0023A - Sampling Method for Polychlorin	2,3',4,4',5,5'-HxCB (PCB167)
Method 0023A - Sampling Method for Polychlorin	Other Octa-CBs
Method 0023A - Sampling Method for Polychlorin	Other Tetra-CBs
Method 0023A - Sampling Method for Polychlorin	2-Methylnaphthalene
Method 0023A - Sampling Method for Polychlorin	Acenaphthylene**
Method 0023A - Sampling Method for Polychlorin	Acenaphthene**
Method 0023A - Sampling Method for Polychlorin	Fluorene**
Method 0023A - Sampling Method for Polychlorin	Phenanthrene**
Method 0023A - Sampling Method for Polychlorin	Other Mono-CBs
Method 0023A - Sampling Method for Polychlorin	Fluoranthene**
Method 0023A - Sampling Method for Polychlorin	Benzo(a)Anthracene*
Method 0023A - Sampling Method for Polychlorin	Chrysene*
Method 0023A - Sampling Method for Polychlorin	Benzo(b)Fluoranthene*
Method 0023A - Sampling Method for Polychlorin	Benzo(k)Fluoranthene*
Method 0023A - Sampling Method for Polychlorin	Benzo(e)Pyrene
Method 0023A - Sampling Method for Polychlorin	Indeno(1,2,3-cd)Pyrene*
Method 0023A - Sampling Method for Polychlorin	Perylene
Method 0023A - Sampling Method for Polychlorin	Anthracene**
Method 0023A - Sampling Method for Polychlorin	Total Furans
Method 0061 - Determination of Hexavalent Chro	Chromium
Method 0061 - Determination of Hexavalent Chro	Hexavalent Chromium
Method 1 - 4 - Flowrate / Moisture	Flowrate
Method 1 - 4 - Flowrate / Moisture	% H2O
Method 10 - Carbon Monoxide-NDIR.	Carbon Monoxide
Method 101 - Mercury from Chlor-Alkali Plants (Ai	Mercury
Method 101A - Mercury from Sewage Sludge Incin	Mercury
Method 102 - Mercury from Chlor-Alkali Plants (H	Mercury
Method 103 - Beryllium Screening Method	Beryllium
Method 104 - Beryllium Emissions Determination	Beryllium
Method 108 - Particulate & Gaseous Arsenic emis	Arsenic
Method 12 - Inorganic Lead	Inorganic Lead
Method 13A - Total Fluoride (SPADNS Zirconium L	Total Fluoride
Method 13B - Total Fluoride (Specific Ion Electrod	Total Fluoride
Method 17 - In-Stack Particulate (PM)	Filterable Particulate
Method 17/202 - Combination of Methods 17 and	Inorganic (Aqueous) Condensable Part.
Method 17/202 - Combination of Methods 17 and	Organic Condensable Particulate
Method 17/202 - Combination of Methods 17 and	Total Particulate
Method 17/202 - Combination of Methods 17 and	Filterable Particulate
Method 201A - Filterable PM10/PM2.5 (In stack C	Filterable Particulate
Method 201A - Filterable PM10/PM2.5 (In stack C	Filterable PM2.5
Method 201A - Filterable PM10/PM2.5 (In stack C	Filterable PM10
Method 201A/202 - Total PM10/PM2.5 (filterable	Filterable Particulate
Method 201A/202 - Total PM10/PM2.5 (filterable	Filterable PM2.5
Method 201A/202 - Total PM10/PM2.5 (filterable	Organic Condensable Particulate
Method 201A/202 - Total PM10/PM2.5 (filterable	Inorganic (Aqueous) Condensable Part.
Method 201A/202 - Total PM10/PM2.5 (filterable	Total Particulate

Method Description	Compound
Method 201A/202 - Total PM10/PM2.5 (filterable	Total PM10
Method 201A/202 - Total PM10/PM2.5 (filterable	Total PM2.5
Method 201A/202 - Total PM10/PM2.5 (filterable	Filterable PM10
Method 202 - Condensible Particulate Matter	Inorganic (Aqueous) Condensable Part.
Method 202 - Condensible Particulate Matter	Organic Condensable Particulate
Method 23 - Dioxin and Furan (02/91 FR Copy).	1,2,3,4,7,8,9-HpCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	Acenaphthylene**
Method 23 - Dioxin and Furan (02/91 FR Copy).	Benzo(b)Fluoranthene*
Method 23 - Dioxin and Furan (02/91 FR Copy).	1,2,3,6,7,8-HxCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	Total Furans
Method 23 - Dioxin and Furan (02/91 FR Copy).	Total Dioxins
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other HpCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other HxCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other PeCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other HpCDD
Method 23 - Dioxin and Furan (02/91 FR Copy).	Total 7*PAH
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other TCDD
Method 23 - Dioxin and Furan (02/91 FR Copy).	Benzo(a)Pyrene*
Method 23 - Dioxin and Furan (02/91 FR Copy).	3,3',4,4'-TCB (PCB77)
Method 23 - Dioxin and Furan (02/91 FR Copy).	2,3,4,6,7,8-HxCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other PeCDD
Method 23 - Dioxin and Furan (02/91 FR Copy).	2-Methylnaphthalene
Method 23 - Dioxin and Furan (02/91 FR Copy).	Chrysene*
Method 23 - Dioxin and Furan (02/91 FR Copy).	Benzo(e)Pyrene
Method 23 - Dioxin and Furan (02/91 FR Copy).	Acenaphthene**
Method 23 - Dioxin and Furan (02/91 FR Copy).	Fluorene**
Method 23 - Dioxin and Furan (02/91 FR Copy).	Phenanthrene**
Method 23 - Dioxin and Furan (02/91 FR Copy).	Anthracene**
Method 23 - Dioxin and Furan (02/91 FR Copy).	Fluoranthene**
Method 23 - Dioxin and Furan (02/91 FR Copy).	Indeno(1,2,3-cd)Pyrene*
Method 23 - Dioxin and Furan (02/91 FR Copy).	Benzo(a)Anthracene*
Method 23 - Dioxin and Furan (02/91 FR Copy).	Benzo(ghi)Perylene**
Method 23 - Dioxin and Furan (02/91 FR Copy).	Total 16*/**PAH
Method 23 - Dioxin and Furan (02/91 FR Copy).	Benzo(k)Fluoranthene*
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other HxCDD
Method 23 - Dioxin and Furan (02/91 FR Copy).	1,2,3,4,6,7,8-HpCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	Perylene
Method 23 - Dioxin and Furan (02/91 FR Copy).	1,2,3,4,7,8-HxCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	Dibenzo(a,h)Anthracene*
Method 23 - Dioxin and Furan (02/91 FR Copy).	Pyrene**
Method 23 - Dioxin and Furan (02/91 FR Copy).	2,3,4,4',5-PeCB (PCB114)
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other Hepta-CBs
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other Hexa-CBs
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other Penta-CBs
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other Tetra-CBs
Method 23 - Dioxin and Furan (02/91 FR Copy).	OCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	2,3,4,7,8-PeCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	3,4,4',5-TCB (PCB81)
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other Octa-CBs

Method Description	Compound
Method 23 - Dioxin and Furan (02/91 FR Copy).	3,3',4,4',5,5'-HxCB (PCB169)
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other Tri-CBs
Method 23 - Dioxin and Furan (02/91 FR Copy).	2,3',4,4',5-PeCB (PCB118)
Method 23 - Dioxin and Furan (02/91 FR Copy).	3,3',4,4',5-PeCB (PCB126)
Method 23 - Dioxin and Furan (02/91 FR Copy).	2,3,3',4,4'-PeCB (PCB105)
Method 23 - Dioxin and Furan (02/91 FR Copy).	2,3',4,4',5,5'-HxCB (PCB167)
Method 23 - Dioxin and Furan (02/91 FR Copy).	2',3,4,4',5-PeCB (PCB123)
Method 23 - Dioxin and Furan (02/91 FR Copy).	2,3,3',4,4',5,5'-HpCB (PCB189)
Method 23 - Dioxin and Furan (02/91 FR Copy).	2,3,3',4,4',5/2,3,3',4,4',5'-HxCB (PCBs156/157)
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other TCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	OCDD
Method 23 - Dioxin and Furan (02/91 FR Copy).	1,2,3,7,8-PeCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other Mono-CBs
Method 23 - Dioxin and Furan (02/91 FR Copy).	2,3,7,8-TCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other Nona-CBs
Method 23 - Dioxin and Furan (02/91 FR Copy).	1,2,3,4,6,7,8-HpCDD
Method 23 - Dioxin and Furan (02/91 FR Copy).	1,2,3,7,8,9-HxCDD
Method 23 - Dioxin and Furan (02/91 FR Copy).	1,2,3,6,7,8-HxCDD
Method 23 - Dioxin and Furan (02/91 FR Copy).	1,2,3,4,7,8-HxCDD
Method 23 - Dioxin and Furan (02/91 FR Copy).	2,3,7,8-TCDD
Method 23 - Dioxin and Furan (02/91 FR Copy).	1,2,3,7,8,9-HxCDF
Method 23 - Dioxin and Furan (02/91 FR Copy).	DeCB
Method 23 - Dioxin and Furan (02/91 FR Copy).	Other Di-CBs
Method 23 - Dioxin and Furan (02/91 FR Copy).	Naphthalene**
Method 23 - Dioxin and Furan (02/91 FR Copy).	Total TEQ
Method 23 - Dioxin and Furan (02/91 FR Copy).	Total PCBs
Method 23 - Dioxin and Furan (02/91 FR Copy).	1,2,3,7,8-PeCDD
Method 25A - Gaseous Organic Concentration (Fl	Total organic compounds (TOC) as Ethane
Method 25A - Gaseous Organic Concentration (Fl	Total organic compounds (TOC) as Propane
Method 25A - Gaseous Organic Concentration (Fl	Total organic compounds (TOC) as Carbon
Method 25A - Gaseous Organic Concentration (Fl	Total organic compounds (TOC) as Methane
Method 25A - Gaseous Organic Concentration (Fl	Total organic compounds (TOC)
Method 25B - Gaseous Organic Concentration (In	Total organic compounds (TOC) as Propane
Method 25B - Gaseous Organic Concentration (In	Total organic compounds (TOC) as Methane
Method 25B - Gaseous Organic Concentration (In	Total organic compounds (TOC) as Ethane
Method 25B - Gaseous Organic Concentration (In	Total organic compounds (TOC) as Carbon
Method 25B - Gaseous Organic Concentration (In	Total organic compounds (TOC)
Method 26 - Hydrogen Chloride, Halides, Halogen	Hydrogen Fluoride
Method 26 - Hydrogen Chloride, Halides, Halogen	Hydrogen Chloride
Method 26 - Hydrogen Chloride, Halides, Halogen	Filterable Particulate
Method 26A - Hydrogen Halide & Halogen-Isokin	Hydrogen Chloride
Method 26A - Hydrogen Halide & Halogen-Isokin	Filterable Particulate
Method 26A - Hydrogen Halide & Halogen-Isokin	Total Chloride
Method 26A - Hydrogen Halide & Halogen-Isokin	Hydrogen Bromide
Method 26A - Hydrogen Halide & Halogen-Isokin	Hydrogen Fluoride
Method 26A - Hydrogen Halide & Halogen-Isokin	Bromine
Method 26A - Hydrogen Halide & Halogen-Isokin	Chlorine
Method 29 - Metals Emissions from Stationary So	Silver Front Half
Method 29 - Metals Emissions from Stationary So	Arsenic Back Half

Method Description	Compound
Method 29 - Metals Emissions from Stationary So	Lead
Method 29 - Metals Emissions from Stationary So	Zinc Back Half
Method 29 - Metals Emissions from Stationary So	Zinc Front Half
Method 29 - Metals Emissions from Stationary So	Thallium Back Half
Method 29 - Metals Emissions from Stationary So	Thallium Front Half
Method 29 - Metals Emissions from Stationary So	Chromium Back Half
Method 29 - Metals Emissions from Stationary So	Silver Back Half
Method 29 - Metals Emissions from Stationary So	Nickel Back Half
Method 29 - Metals Emissions from Stationary So	Cobalt Back Half
Method 29 - Metals Emissions from Stationary So	Mercury Back Half
Method 29 - Metals Emissions from Stationary So	Manganese
Method 29 - Metals Emissions from Stationary So	Arsenic
Method 29 - Metals Emissions from Stationary So	Cadmium Back Half
Method 29 - Metals Emissions from Stationary So	Cadmium Front Half
Method 29 - Metals Emissions from Stationary So	Beryllium Back Half
Method 29 - Metals Emissions from Stationary So	Phosphorus (yellow or white)
Method 29 - Metals Emissions from Stationary So	Barium Back Half
Method 29 - Metals Emissions from Stationary So	Barium Front Half
Method 29 - Metals Emissions from Stationary So	Arsenic Front Half
Method 29 - Metals Emissions from Stationary So	Filterable Particulate
Method 29 - Metals Emissions from Stationary So	Cobalt Front Half
Method 29 - Metals Emissions from Stationary So	Magnesium
Method 29 - Metals Emissions from Stationary So	Copper Front Half
Method 29 - Metals Emissions from Stationary So	Antimony Back Half
Method 29 - Metals Emissions from Stationary So	Antimony Front Half
Method 29 - Metals Emissions from Stationary So	Chromium Front Half
Method 29 - Metals Emissions from Stationary So	Copper
Method 29 - Metals Emissions from Stationary So	Beryllium Front Half
Method 29 - Metals Emissions from Stationary So	Barium
Method 29 - Metals Emissions from Stationary So	Cadmium
Method 29 - Metals Emissions from Stationary So	Chromium
Method 29 - Metals Emissions from Stationary So	Cobalt
Method 29 - Metals Emissions from Stationary So	Antimony
Method 29 - Metals Emissions from Stationary So	Zinc
Method 29 - Metals Emissions from Stationary So	Selenium
Method 29 - Metals Emissions from Stationary So	Nickel
Method 29 - Metals Emissions from Stationary So	Selenium Back Half
Method 29 - Metals Emissions from Stationary So	Mercury Front Half
Method 29 - Metals Emissions from Stationary So	Thallium
Method 29 - Metals Emissions from Stationary So	Lead Back Half
Method 29 - Metals Emissions from Stationary So	Magnesium Back Half
Method 29 - Metals Emissions from Stationary So	Beryllium
Method 29 - Metals Emissions from Stationary So	Selenium
Method 29 - Metals Emissions from Stationary So	Mercury
Method 29 - Metals Emissions from Stationary So	Magnesium
Method 29 - Metals Emissions from Stationary So	Manganese Front Half
Method 29 - Metals Emissions from Stationary So	Lead Front Half
Method 29 - Metals Emissions from Stationary So	Magnesium Front Half
Method 29 - Metals Emissions from Stationary So	Nickel Front Half

Method Description	Compound
Method 29 - Metals Emissions from Stationary So	Silver
Method 29 - Metals Emissions from Stationary So	Phosphorus (yellow or white) Back Half
Method 29 - Metals Emissions from Stationary So	Phosphorus (yellow or white) Front Half
Method 29 - Metals Emissions from Stationary So	Selenium Front Half
Method 29 - Metals Emissions from Stationary So	Copper Back Half
Method 29 - Metals Emissions from Stationary So	Manganese Back Half
Method 306 - Chromium Emissions Electroplating	Chromium
Method 306 - Chromium Emissions Electroplating	Hexavalent Chromium
Method 306A - Chromium Emissions Electroplatin	Hexavalent Chromium
Method 306A - Chromium Emissions Electroplatin	Chromium
Method 308 - Methanol Emissions (Appeared in F	Methanol
Method 30B - Method 30B	Mercury
Method 315 - PM and MCEM from Aluminum Pro	Methylene Chloride Extractable Matter (MCEM)
Method 315 - PM and MCEM from Aluminum Pro	Particulate Matter (PM)
Method 316 - Sample & Analysis for Formaldehyd	Formaldehyde
Method 3A CO2 - CO2 - Instrumental	Carbon Dioxide
Method 3A O2 - O2 - Instrumental	Oxygen
Method 5 - Particulate Matter(PM)	Filterable Particulate
Method 5/202 - Combination of Methods 5 and 2	Inorganic (Aqueous) Condensable Part.
Method 5/202 - Combination of Methods 5 and 2	Organic Condensable Particulate
Method 5/202 - Combination of Methods 5 and 2	Filterable Particulate
Method 5/202 - Combination of Methods 5 and 2	Total Particulate
Method 5@320F - Filterable Particulate (filter te	Filterable Particulate @320F
Method 5@320F/202 - Combination of Methods	Total Particulate
Method 5@320F/202 - Combination of Methods	Organic Condensable Particulate
Method 5@320F/202 - Combination of Methods	Inorganic (Aqueous) Condensable Part.
Method 5@320F/202 - Combination of Methods	Filterable Particulate @320F
Method 5A - PM Asphalt Roofing (Particulate Mat	Filterable Particulate
Method 5B - PM Nonsulfuric Acid (Particulate Ma	Nonsulfuric Acid PM
Method 5F - PM Fluid Catalytic Cracking Unit	Nonsulfate PM
Method 6C - SO2 - Instrumental.	Sulfur Dioxide
Method 7E - NOx - Instrumental.	Nitrogen oxides (NOx)
Method 8 - Sulfuric Acid Mist	Sulfur Dioxide
Method 8 - Sulfuric Acid Mist	Sulfur Trioxide as H2SO4
Method 8 - Sulfuric Acid Mist	Sulfur Trioxide
Method 8 - Sulfuric Acid Mist	Sulfuric Acid Mist
Method 8 - Sulfuric Acid Mist	Sulfuric Acid Mist (incl. SO3)
Mod. Method 26A Sub S - Determination of Chlor	Chlorine Dioxide
Mod. Method 26A Sub S - Determination of Chlor	Chlorine
OTM - 29 - Sampling and Analysis for Hydrogen Cy	Hydrogen Cyanide
PST CO to PS4 - Performance Standard 4 for Carbo	Carbon Monoxide
PST CO2 to PS3 - Performance Standard 3 for Carb	Carbon Dioxide
PST NOx to PS2 - Performance Standard 2 for Nitr	Nitrogen oxides (NOx)
PST O2 to PS3 - Performance Standard 3 for Oxyg	Oxygen
PST SO2 to PS2 - Performance Standard 2 for Sulf	Sulfur Dioxide
PST VOC to PS8 - Performance Standard 8 for VOC	Total organic compounds (TOC)

Appendix C: Frequently Asked Questions

FAQs are posted at: https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert-tips-and-frequently-asked-questions

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How can I get the ERT to run on my computer?

Verify you have a version of Microsoft Access® that will run the ERT.

If you have Microsoft Access version 2007:

- Verify that you have at least Service Pack 2 installed.

  Open Microsoft Access, click on the MS circle in the upper left corner of the Access window,

  Click on "Access Options" at the bottom of the window,

  Click on "Resources" in the left column.

  At the bottom of the window just below the text "about Microsoft Office Access 2007" the software (Microsoft Office Access 2007) and the Service Pack level is identified. If Service Pack 2 is installed, the text "SP2 MSO" will be between two sets of numbers that are in parentheses.

  If you do not have Service Pack 2 installed, click on "Check for Updates" and follow the directions to install the updates from Microsoft. Many corporate computers do not allow users to install software and you will need to contact your Information Technology Center for them to update your software.

If you have Microsoft Access version 2010:

- Any Service Pack level is acceptable in order to run the ERT Application.

If you do NOT have Microsoft Access or have an earlier version than 2007:

- You will need to download and install the runtime version of Microsoft Access from the Microsoft Access Download Center EXIT Disclaimer.
- After installing the runtime version of Microsoft Access, download the ERT ZIP file to your hard drive and extract the manual and the database to a folder. Open the program with MS Access.

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2. ***Is there a way I can stop the ERT security warnings?***

If you have Microsoft Access 2007, to avoid these warnings every time you run ERT, make the ERT directory and all subdirectories "Trusted Locations".

- To make the ERT directory a Trusted location, close the ERT application, open Microsoft Access,
- Click on the MS circle in the upper left corner of the Access window,

- Click on "Access Options" at the bottom of the window,
- Click on "Trust Center" in the left column,
- Click on "Trust Center Settings",
- Click on Trusted Locations",
- Click on "Add new location".
- Browse for the location or directory where you saved the ERT application (the file ERT4.accdb). Select this location and click on the box to the left of "Subfolders of this location are also trusted" to enable these locations.
- Click on "OK". Verify that the Path that you selected is one of the trusted locations.
- Click "OK" to close the Trust Center window then the Access Options window.
- Close Access. Reopen the ERT application.

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3. ***Are the ERT calculations correct for the Volume of Water Vapor Collected and for the Dry Gas Meter Volume? I get a different value when I use the EPA Method 5 calculations for those parameters.***

Neither the ERT nor your calculations are incorrect.

In EPA Method 5, options are available in the equations for calculating the volume of gas sample measured by the dry gas meter, corrected to standard conditions ($V_{m(std)}$) and the equation for calculating the volume of water vapor in the gas sample, corrected to standard conditions ($V_{w(std)}$).

In both instances, there are two equations presented in Method 5 for each calculation. The first equation presented in Section 12.3 and 12.4 are ones which present the variables associated with the sampling equipment and test conditions and constants for standard conditions and gas characteristics. The values for these constants are presented in Section 12.1 but are rounded to four significant figures.

The second equation presented in these sections of Method 5 use a single calculated value (K1 and K2) replacing all these constants. The calculation uses four to five significant digits and then rounds the result to four significant figures. When K1 and K2 are calculated with all the constants rounded to four significant figures and the resulting value rounded to four significant figures, the result is a different value than the K1 and K2 presented in Method 5.

The ERT calculations use the procedures used to generate the second equations. Since the ERT allows for different standard temperatures and pressures to accommodate State and local agency rules, the values used are the values used to calculate the K1 and K2 in the method. Prior to rounding, these values may differ at the third to fifth significant digit. But when the policy to round the final results to

two significant digits is followed there is no difference. For emissions limits expressed to three significant digits, the values using the published K1 and K2 do not introduce calculation errors due to multiple rounding.

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4. ***How do I submit my files electronically to EPA?***

- You must first register with the CDX. See the CDX webpage for registration instructions.
- Only files generated by the ERT program can be submitted electronically to EPA via the CDX.
- Detailed instructions for uploading ERT files are included in the CDX/CEDRI Guide and on the CEDRI submission webpage.
- The ERT Submission File will be in the format of a Zip file. This Zip file contains two files: one Zip and one XML file. Your file must be in the proper format for a successful submittal. Please do not change the file name that was generated by the ERT software.

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5. ***How do I submit my files to EPA if I can't use ERT files? (For instance, the test data includes methods not supported by the ERT).***

Only data collected using the test methods listed on the ERT website (http://www.epa.gov/ttn/chief/ert/ert_info.pdf) should be submitted electronically to WebFIRE. If you have used non ERT supported test methods, data should be submitted as described by your state/local agency.

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6. ***How do I submit my ERT files to EPA if the data includes confidential business information (CBI)?***

Sources who claim that some of the information being submitted in their performance tests is confidential business information (CBI) must mail a completed ERT file including the CBI on a compact disk or other commonly used electronic storage media clearly marked as CBI to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. In addition, the same ERT file with the CBI omitted must be submitted to EPA via CDX.

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7. ***My CDX registration has been approved, and my ERT files are in the correct format. I keep getting the message that my submission to CEDRI was not successful. Why is this?***

Recently the CDX Help Desk verified that this is happening because of the java cache on the user's desktop. Complete instructions for clearing the cache can be found on page 2 of the CDX\CEDRI user Guide. (PDF, 81pp 4M).

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8. ***I am already registered to submit TRI-ME (or TSCA, RCRA, CEDRI etc.) data through EPA's CDX. Can I extend my authorization to other data systems?***

At present, three CDX data flows support Electronic Signature Agreement (ESA) reuse functionality: CEDRI, TSCA, and TRI. CEDRI users can re-use TSCA's ESAs – this is already in place and doesn't require any changes on the CDX side. A TSCA user can simply add a CEDRI dataflow to their dataflow list and electronically sign their ESA without a need to go through LexisNexis or paper validation process.

However, CEDRI users cannot reuse TRI's ESAs, because TRI's identity proofing threshold is set at a lower level than that of CEDRI's. CEDRI requires a wet ink signature and a phone call, whereas TRI only requires a wet ink signature. Due to these slightly more stringent requirements, CEDRI users cannot re-use TRI's ESAs.

eGGRT dataflow doesn't currently support ESA reuse, so eGGRT users that register for CEDRI will have to go through standard identity proofing process prior to getting access.

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