ELECTRONIC REPORTING TOOL (ERT)

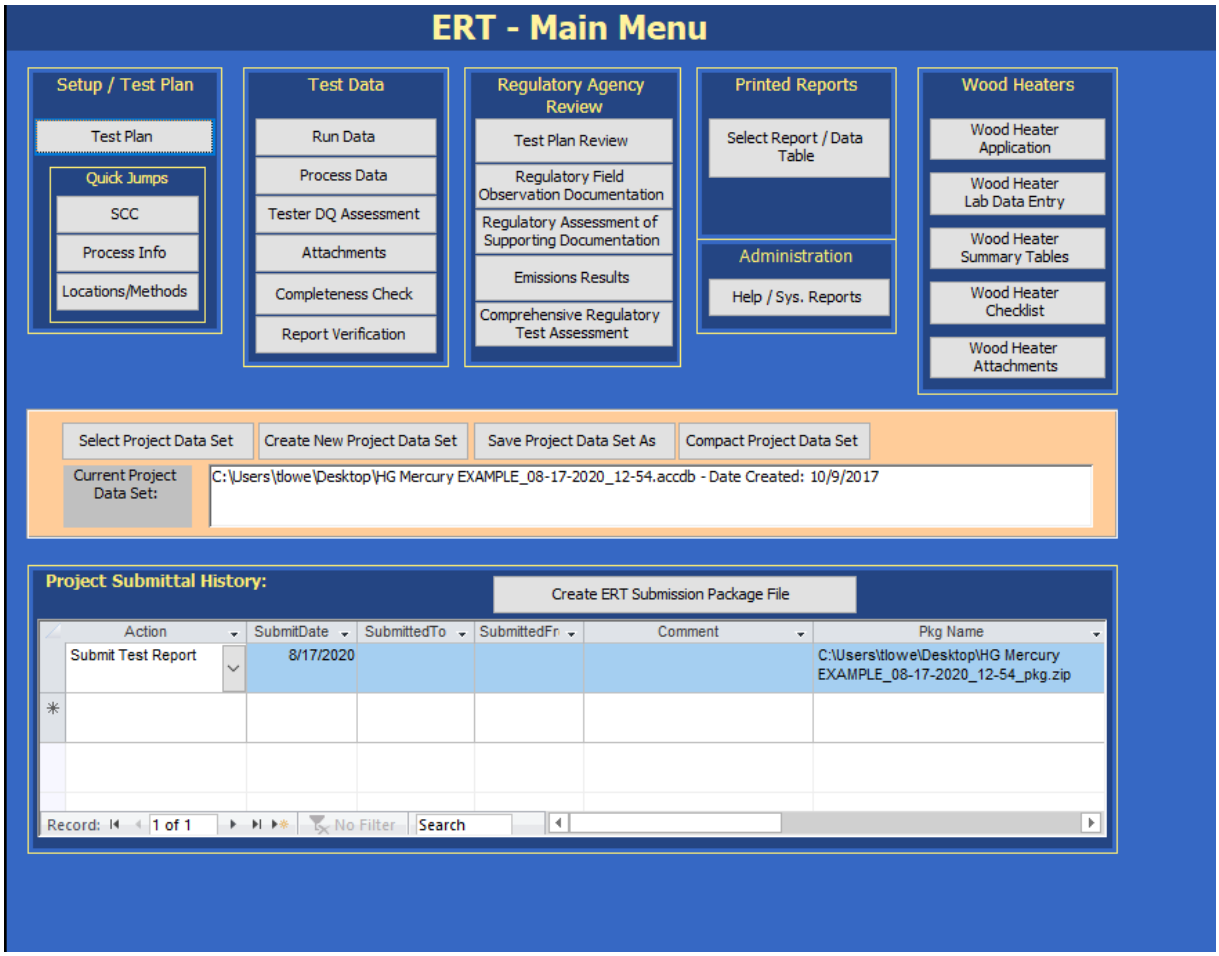
USER'S GUIDE

Version 7
February 2025

Developed by AMEC

For U.S. Environmental Protection Agency

Welcome Page



ERT Main Menu Screenshot

Table of Contents
Part 1 Electronic Reporting Tool User Manual Part 1-

ERT User Manual Stack Testing List of Figures

Part 1-

Table of Contents Part 2 Wood Heater Certification for Compliance Application and Laboratory Test Data Part 2-

ERT USER MANUAL FOR WOOD HEATER CERTIFICATION LIST OF FIGURES **PART 2-**

Chapter 1: Introduction

Thank you for using this version of EPA's Electronic Reporting Tool (ERT). Please keep checking *Electronic Reporting Tool (ERT) Webpage* for the latest version of ERT and the user's manual.

What is the ERT?

The ERT is used to electronically create stationary source sampling test plans and reports which are submitted to regulatory agencies, provide a means for regulatory agencies to give comments on a test plan, to document the test program, to calculate results and to 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 or compatible XML schema to submit compliance tests reports. The ERT allows one to create a compressed submittal package, which consists of the test data and an XML export file. Users can then upload the submission package file to the EPA's Central Data Exchange (CDX)/CEDRI: Compliance and Emissions Data Reporting Interface, https://cdx.epa.gov/. After a processing period, the test reports will be stored in the EPA's WebFIRE database accessible through the WebFIRE Webpage, 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 information required, plus supporting documentation as attachments. The Microsoft Excel import spreadsheet is an optional part of the ERT. You can use it to enter isokinetic, instrumental, sorbent mercury and miscellaneous methods 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 2010, 2013, 2016, 2019, MSOffice 365 or the runtime version of Microsoft Access. The runtime version is available for free from the Microsoft Access Download Center. Before running the ERT for the first time, please refer to Chapter 3: Getting Started 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 can 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 Spreadsheets

The Excel spreadsheet can be used as an option for entering test data into the ERT. There are four template spreadsheets available that are prepared for import. Manual and isokinetic test run data, Method 30B data, instrumental data and miscellaneous test methods data can be added to the appropriate spreadsheet and then imported into the ERT. Users have the option of incorporating these spreadsheets 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):

- Facility/Source 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 the facility or 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.
- Facility/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 and imports into the ERT or directly enters data into the ERT.
  - Enters lab data into the ERT.
  - QA check data entered into the ERT.
  - Attaches supporting documentation.
  - Creates the “ERT Submission Package” file.
  - Submits the “ERT Submission Package” file to Facility
  - Facility/certifier submits the “ERT Submission Package” file to Regulatory Agency or EPA-CDX/CEDRI.
- Regulatory Agency
  - Reviews test report.
- When the ERT files is submitted to CDX/CEDRI, file will have a 60-day processing period in CDX/CEDRI before it is available for public access on WebFIRE.

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 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).

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.

Entering 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 four ERT spreadsheet templates provided on the ERT website may also be incorporated into users' proprietary field data spreadsheets. Users can link cells from their spreadsheets to the cells in the ERT spreadsheet templates. This allows for quicker data entry into the ERT and reduces the likelihood of key punch errors. There are 4 import spreadsheets available:

1. ERT_Manual_Methods_DE_Template-Empty.xltm (Isokinetic or manual methods)
2. ERT_Manual_Methods_DE_30B_Template-Empty.xltm (Method 30B data)
3. ERT_Instrumental_Template-Empty.xltm (Instrumental methods-Method 3A, 6C, 7E, 10 or 25A.)
4. ERT_Miscellaneous Test Methods_template.xltm (All methods that are not isokinetic methods, Methods 1-4 train, Method 30B or the instrumental methods Method 3A, 6C, 7E, 10 or 25A.)

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 (Method 5/26A, Method 29 and Method 5/202), 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 added to 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.

The instrumental test data can be entered by hand or by import of the spreadsheet. If the Instrumental Template is used, the gas cylinder information tab will import the information into the ERT under item 16 of the "***Test Plan***" tab.

The miscellaneous test methods data can be entered by hand or by import of the spreadsheet. You must select in the test plan 2b. at least one unit of measure for Miscellaneous methods before adding the run data. If you try to add a run without at least one unit of measure selected, the run will not be added.

You can also add combined, summed or total emissions if a source or facility as Miscellaneous test methods by using a custom method. For instance, there is a single operating unit with two stacks and each is tested for Method 5 PM and the final number is the sum of the two stack emissions. A custom method named Total PM Method 5 can be added to 2a of the test plan and the appropriate units of measure added to 2b of the test plan and the summed data added to the Miscellaneous Test Method table. A combined location can be added to 1 with a custom method Total PM to sum the emissions.

Chapter 3: Getting Started

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

If you have Microsoft Access version 2010, 2013, 2016, 2019 or Office356, 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. Please download a version that is the **version of MSOffice** you have installed on your computer.

- **MS Access 2010 Runtime.**
- **MS Access 2013 Runtime**.
- **MS Access 2016 Runtime.**
- **MS Access 365 Runtime**.

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

If you have Windows 10 or 11, only 1 Office version can be on the computer. The operating system is incompatible with two versions of the same program. For instance, if a computer has Access 2010 and 2013 on it, they will not work and one will need to be removed.

Downloading and Installing the ERT

The EPA *Electronic Reporting Tool (ERT) Webpage* contains the latest version of the ERT, the spreadsheet templates, 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 version of the program application. 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 ERTv7.accdb file. It is recommended that the ERT program file and the data set files be located on a local drive (e.g., C: or desktop). Some functionality of the ERT is lost across servers or external drivers.

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-PDS.accdb file. See the *Selecting a Project Data Set* section for more information on selecting a PDS.

Starting the ERT

When opening Access, go to File, then go to Options. Once in Options, go to Trust Center, select Trust Center Settings . . ., go to Macro Settings and make sure Enable all macros (not recommended; potentially dangerous code can run) is selected (Figure 1).

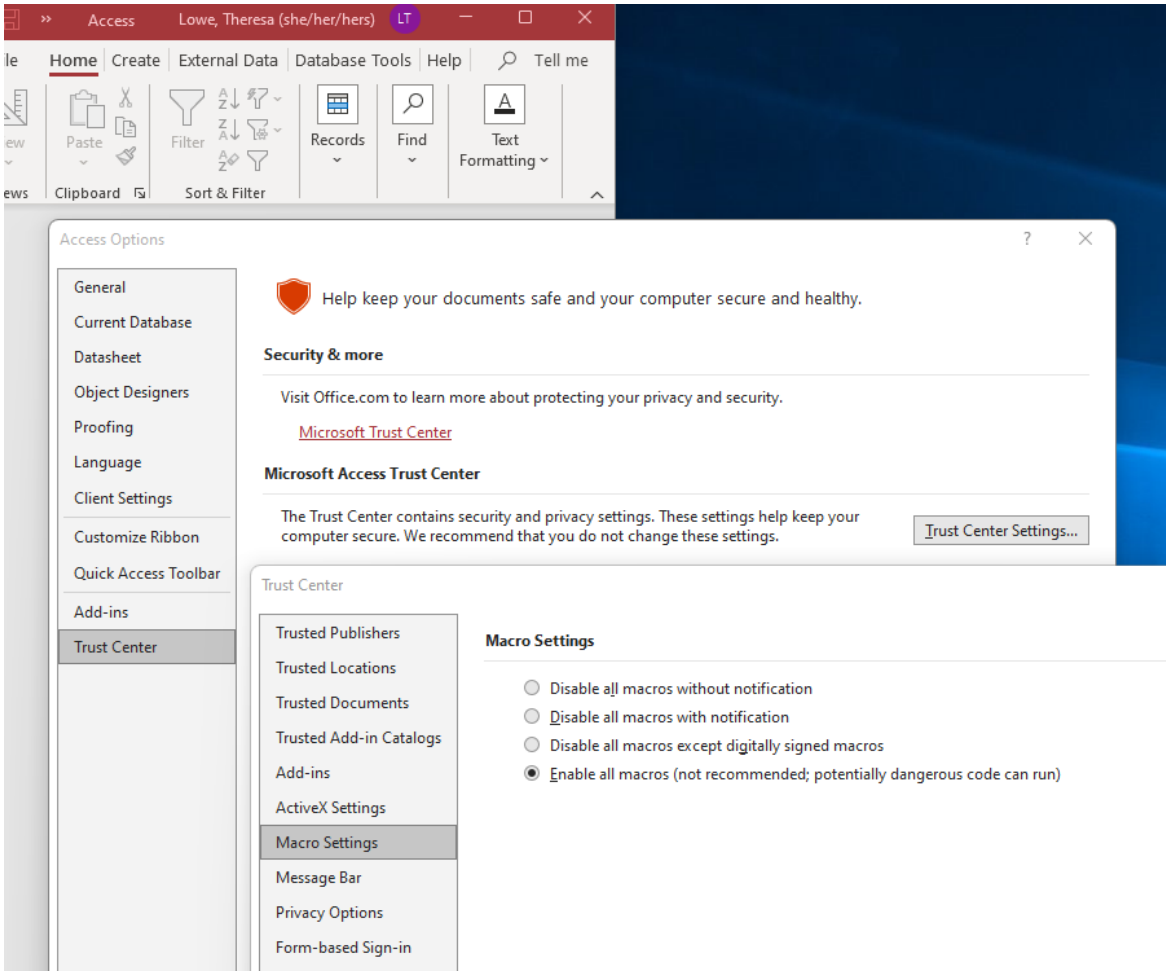


Figure 1. Enable all macros for MSAccess

Before starting the ERT, right click on the file and select Properties. Under General tab Attributes make sure Unblock is checked and select Apply and OK (Table 2). To start the ERT, double click ERTv7.accdb file from the location where you've installed the ERT application. You may need to repeat this step to unblock the project data set.

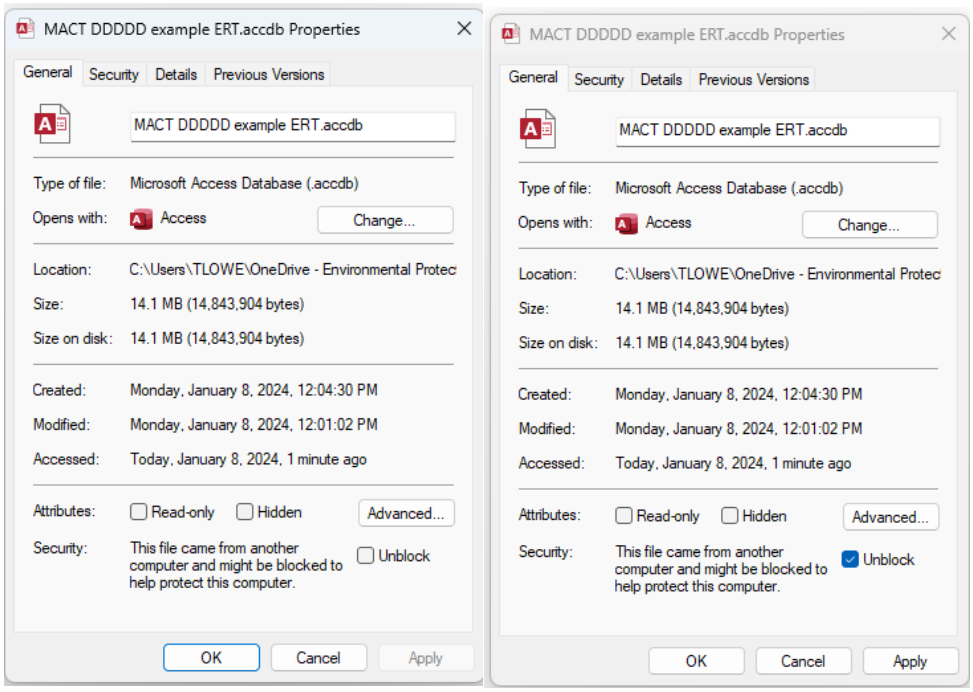


Figure 2. Unblock to enable file

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 3):

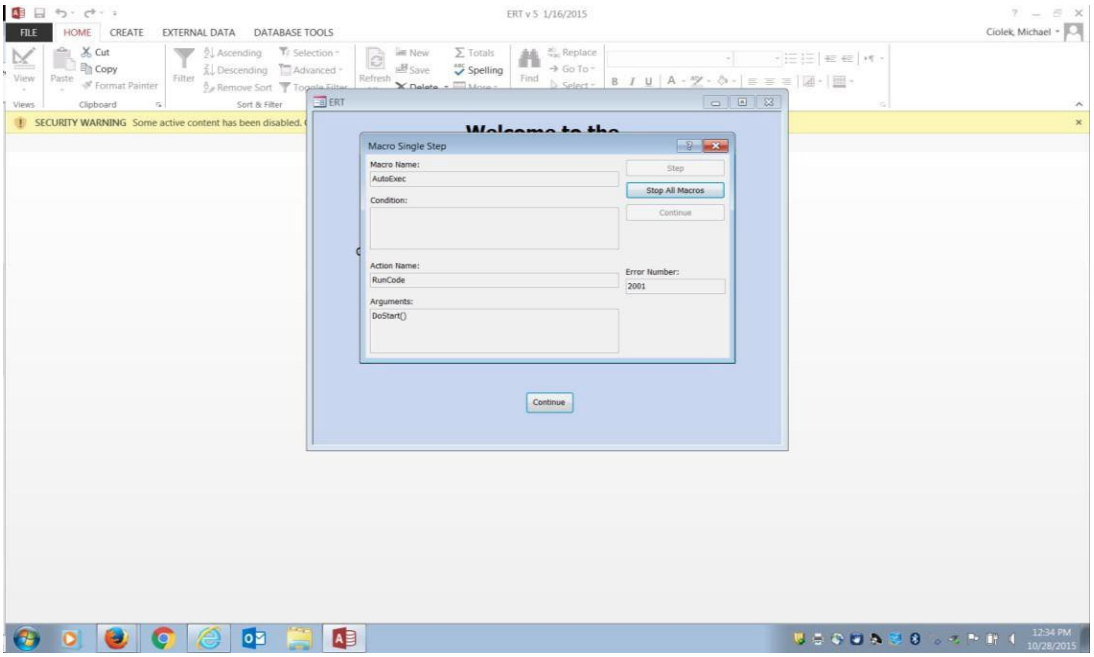


Figure 3 - Security Warning

Select “Stop all Macros” and the red X in the upper right-hand corner of the Macro Single Step box. Once the Macro box is closed, enable all macros in the yellow Security Warning banner. This should enable the program to run. Once continue is selected, the ERT – Main Menu will be displayed (Figure 4).

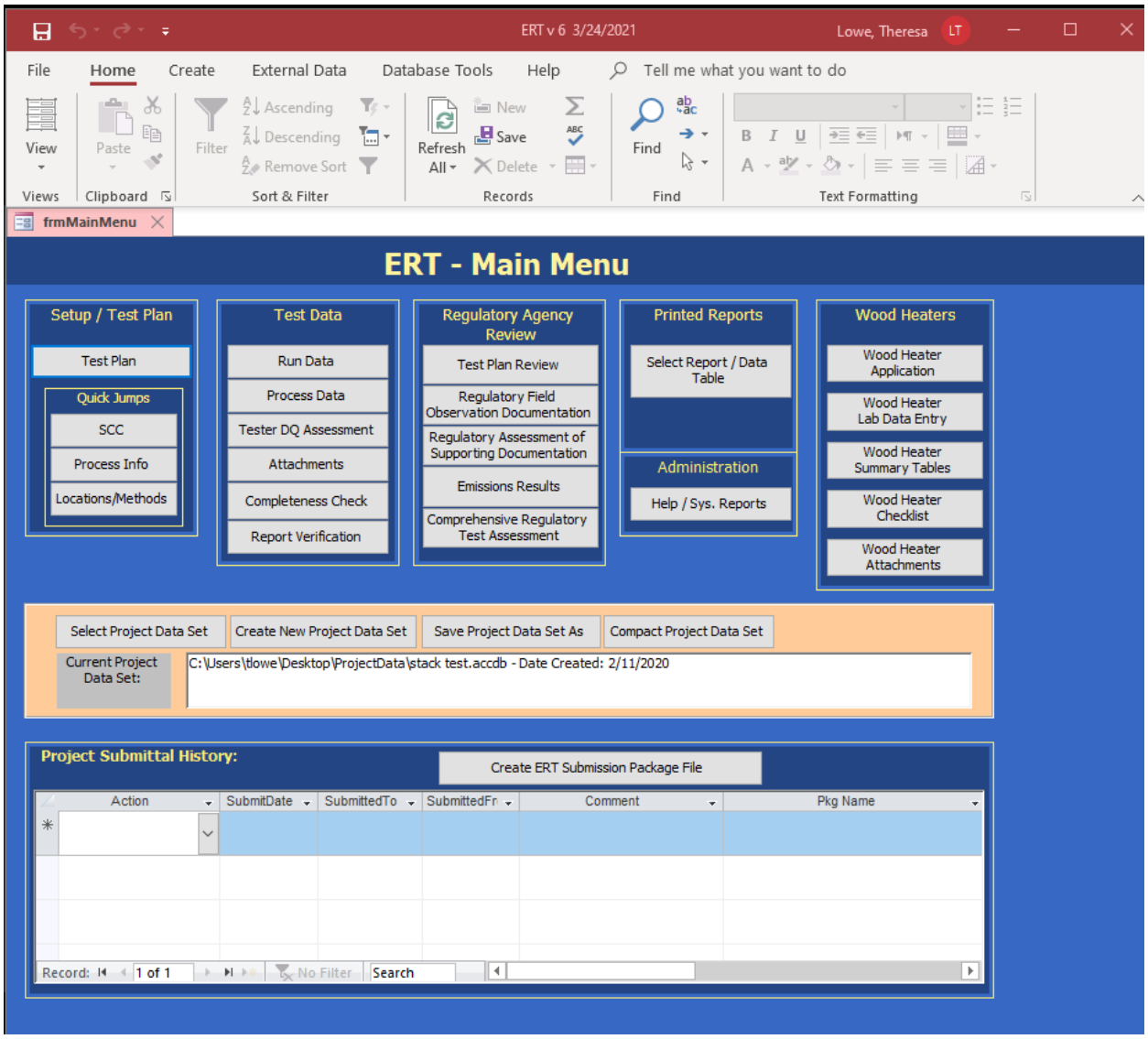


Figure 4 - ERT Main Menu

Project Data Sets

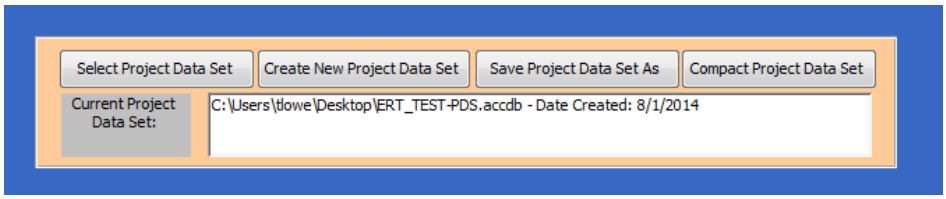


Figure 5 - Project Data Set of the ERT Main Menu

The Project Data Set (PDS) is a Microsoft Access file that contains the information for all the source tests performed at a single emissions source. This includes the test plan, run data, process 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***" (Figure 5). The first time you create a PDS, you will select "**Create New Project Data Set**" (Figure 6). 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.

Create New Project Data Set

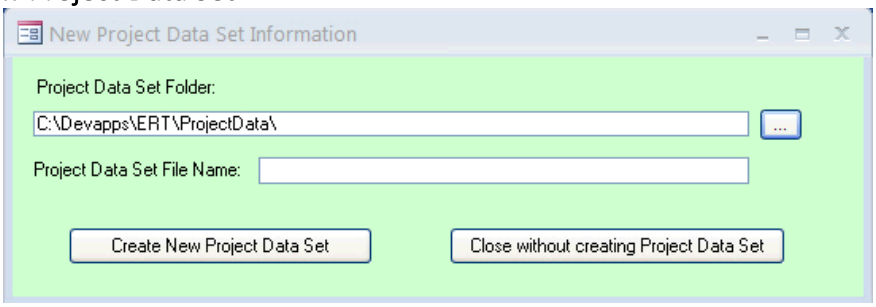


Figure 6 - Creating a New Project Data Set

- 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.

Select 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 7 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**".

Save Project Data Set As

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 can 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. However, the attachments are not deleted and will need to be removed. The new template PDS can then is used as a starting

point for a similar source test. The ERT also can save all of current PDS data into a new PDS.

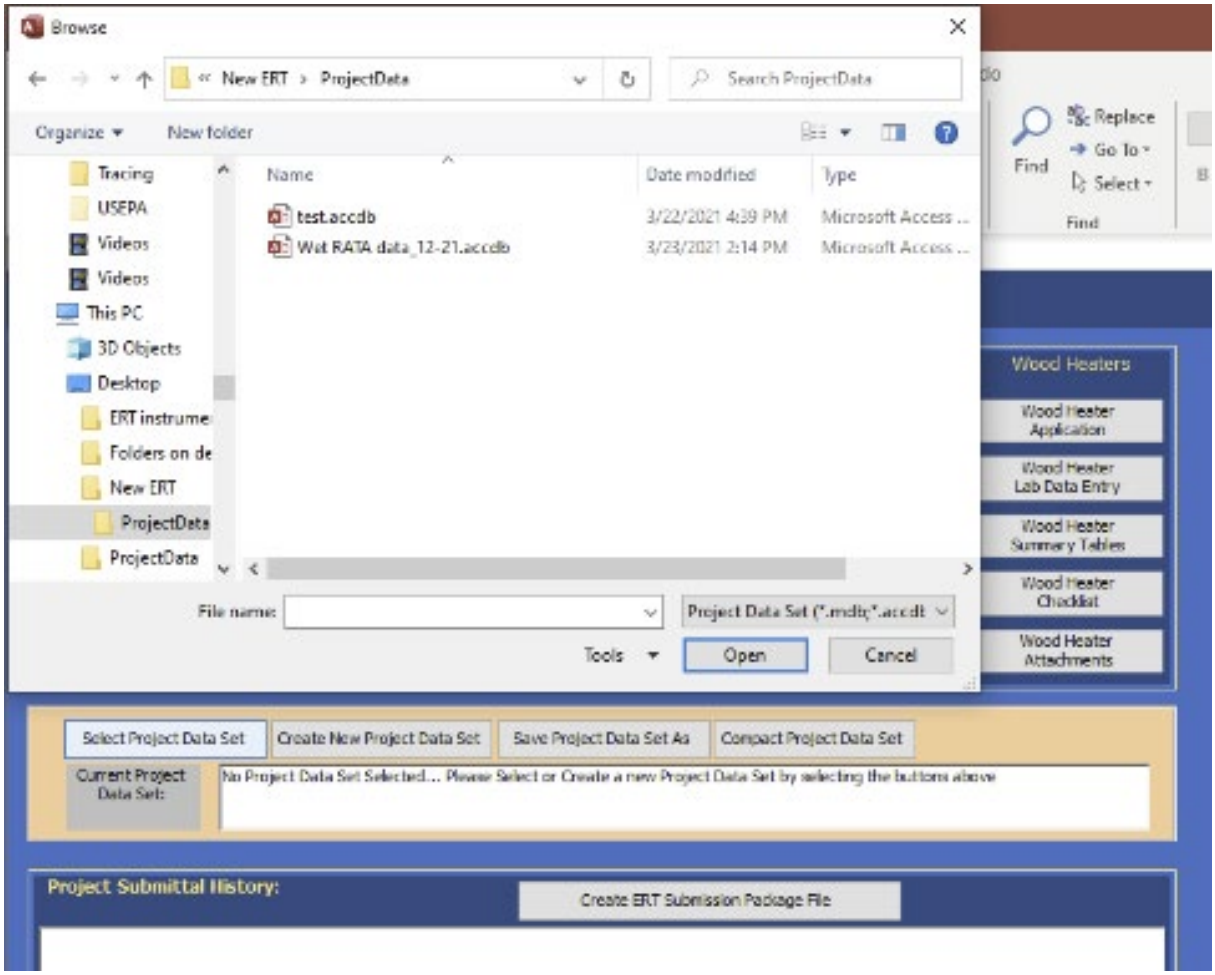


Figure 7 - Select Project Data Set Browse Window

- Click "**Save Project Data Set As**" from the ERT main menu. The window shown in Figure 8 will appear.
- Click "**Yes**" to save the current PDS as a Template (saving test plan data only). PLEASE check the SCC in the template to ensure the SCC has not been retired or changed.
- Click "**No**" to save the current PDS (saving all data).
- Click "**Cancel**" to cancel the operation.

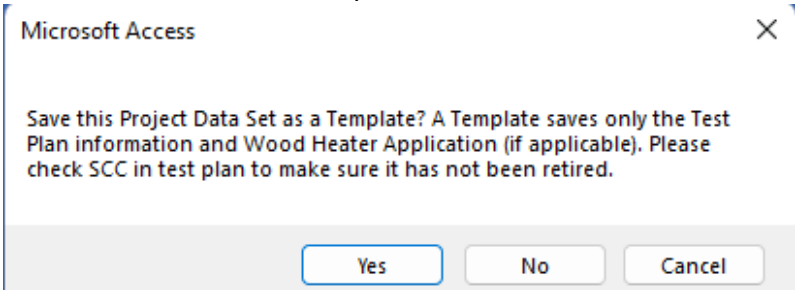


Figure 8 - Save Project Data Set as Template

Chapter 4: Create Test Plan

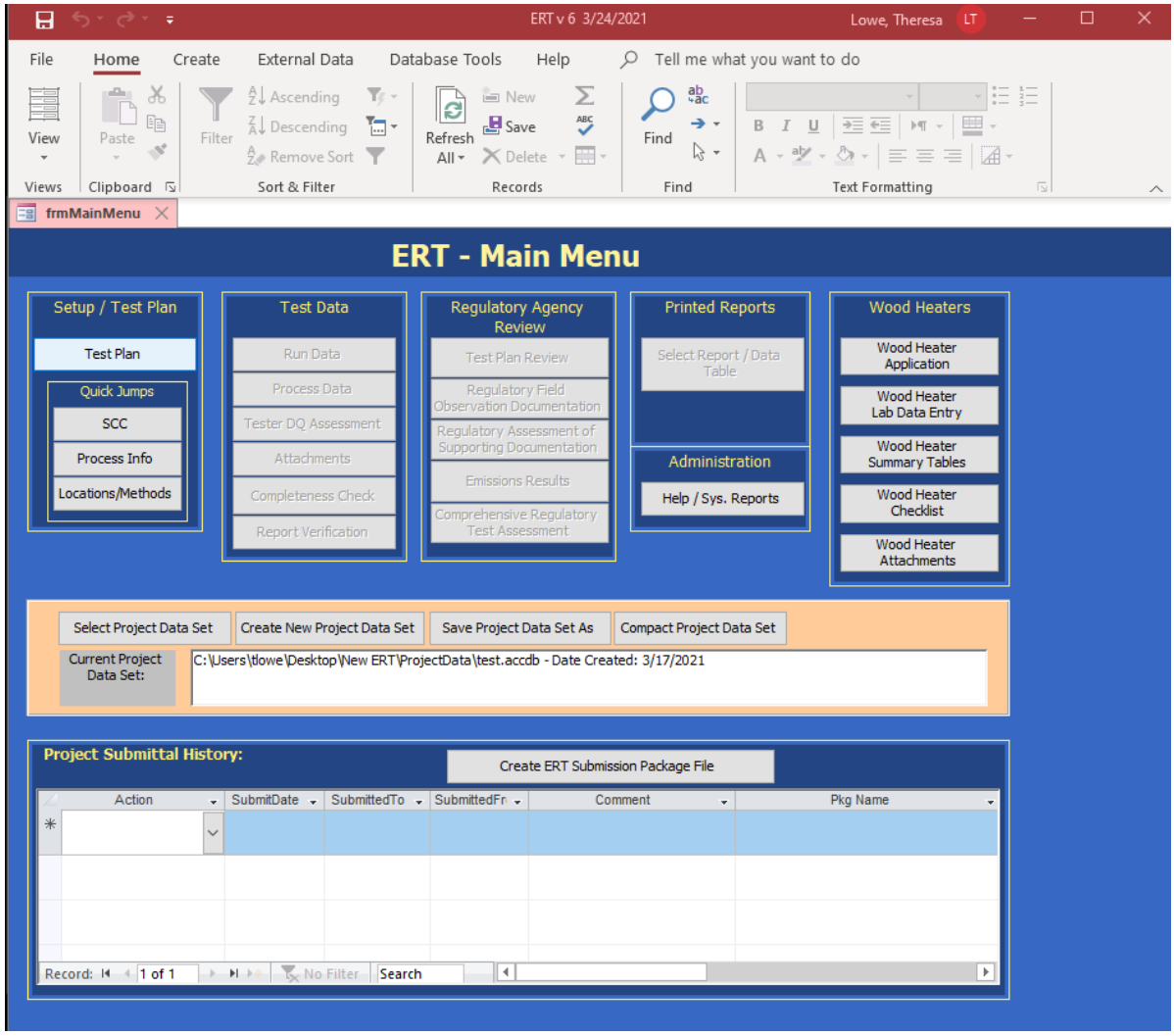


Figure 9 - ERT Main Menu

The ERT Main Menu shows the functional areas (Figure 9).

Test plan information needs to be entered before the rest of the ERT can be accessed

- "Setup / Test Plan" with "Quick Jumps"
- "Test Data"
- "Regulatory Agency Review"
- "Printed Reports"
- "Administration"
- "Wood Heaters"
- "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" button and follow the file select dialog instructions.

Navigating and Using the Tool

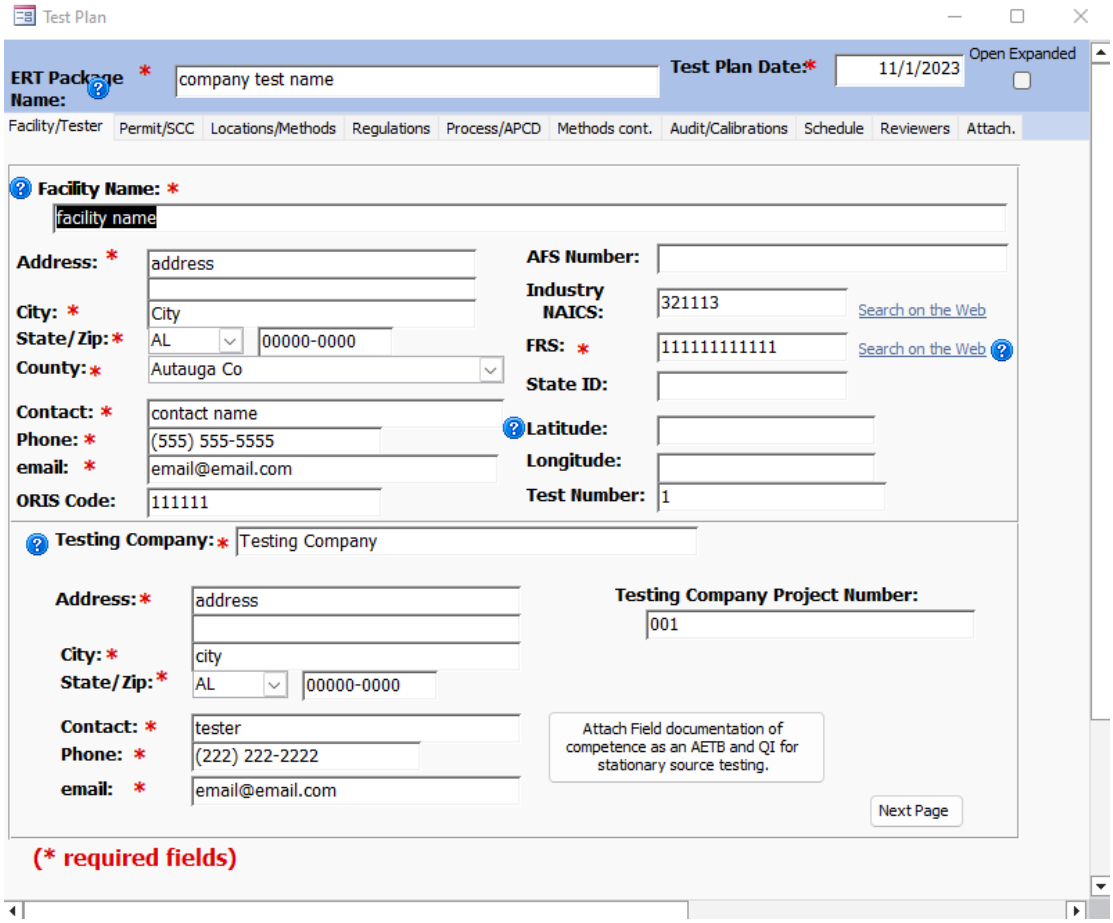


Figure 10 - Test Plan Facility/Tester Tab

Data Entry Process

To begin the data entry process, click "**Test Plan**" in the "***Setup / Test Plan***" column on the ERT main menu. The screen shown in Figure 10 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 typically required by the EPA to be submitted (see any applicable standard for direction). However, a state air agency may require/request that it be sent to them. Keep in mind, these fields should be filled in before starting to enter field data collected by stack testing.]

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**”).

You must complete the red asterisk data fields in the test plan to be able to submit the ERT file to CDX/CEDRI.

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.

Test Plan Tabs

Facility/Tester Tab

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.
Email: *	A working email address of the contact which can be used to assist the reviewers.
ORIS code:	A unique identifier issued by the EIA or EPA's Clean Air Market Division (CAMD) that can be used to identify these facilities in those data sets.
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.
Test Number:	In Part 63 Subpart UUUUU Appendix E, a test number is a unique number utilized to ensure that the same number must match throughout the report (sections 19-31) and on all attached pdfs.
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.
Email: *	A work email address through which the contact can assist the reviewers.
Project Number:	The assigned project number for the testing project by the test company (optional).

* indicate required fields. (If claiming CBI for any red asterisk enter "CBI" in text fields or "9"'s for numbered fields, and email@email.com for email address.)

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

Permit/SCC Tab

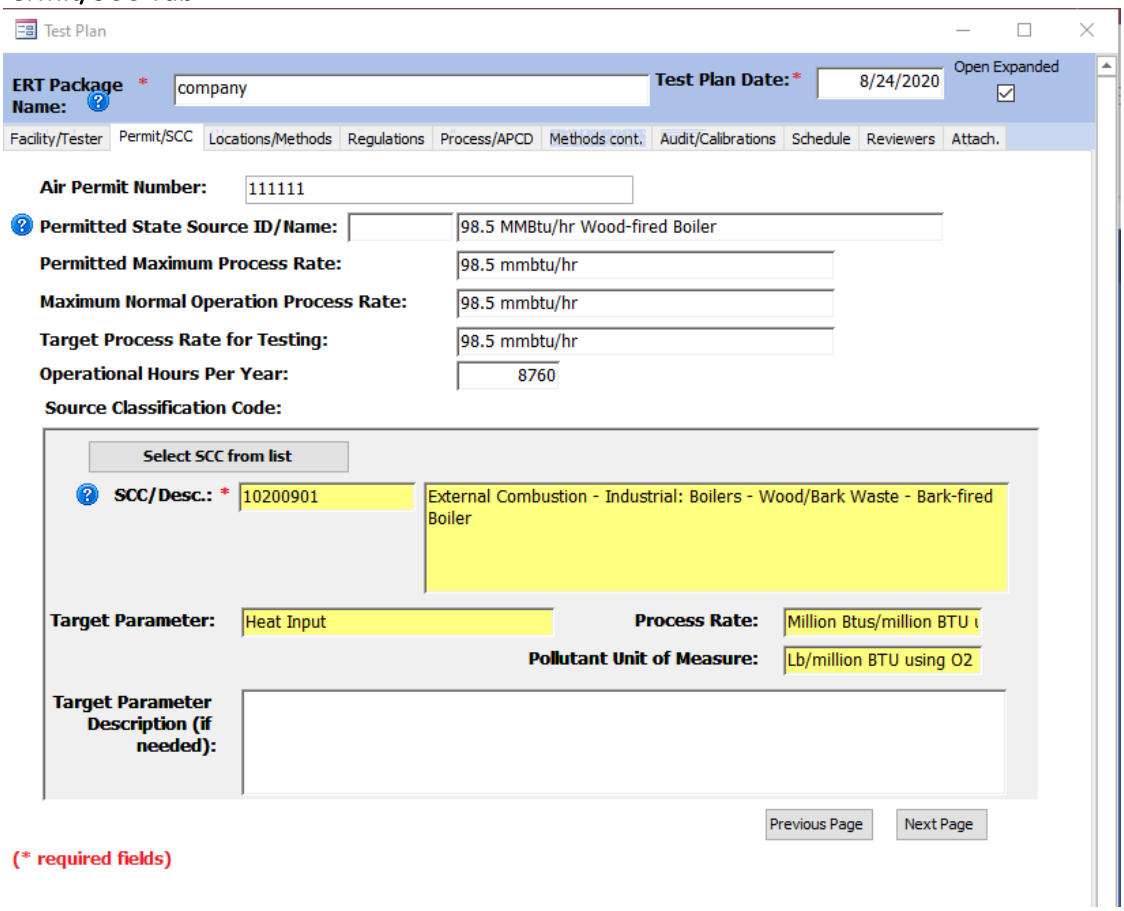


Figure 11 - Test Plan Permit/SCC Tab

The "***Permit/SCC***" tab screen (Figure 11) 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 (Figure 12). 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 on this tab 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 12 - Selecting SCC) and cannot be edited from the yellow highlighted field.
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 "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.

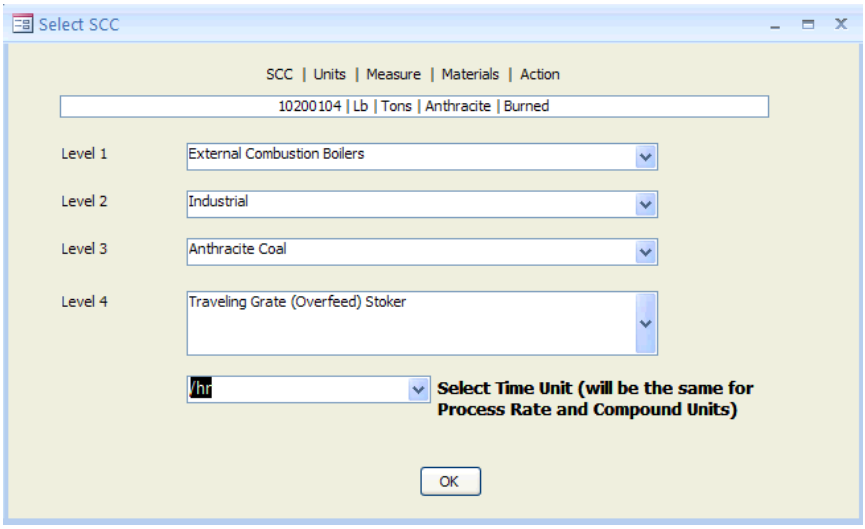


Figure 12 - Selecting SCC

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

While many SCCs 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 13 shows a short list of SCCs where there are four SCCs with established units for the process rate and four SCCs 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 13- SCC selection menu with no established process units

When a user selects one of the SCCs where there is no established set of units for the process rate, the selection of one of these SCCs will initiate a sub menu shown in Figure 14 which allows the user to establish a set of units for documenting the process rate variable to associate with the measured emissions.

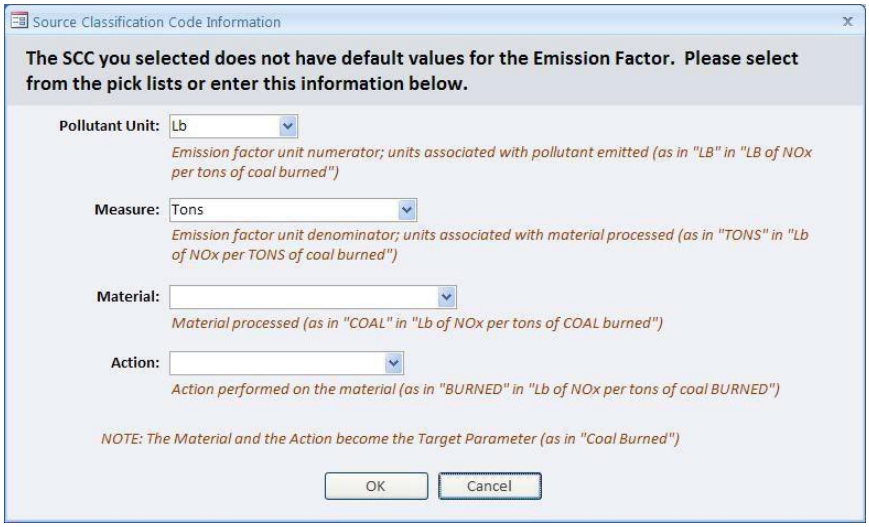


Figure 14 - Source Classification Code information when no units are available

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 2b).
- 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.

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 Tab

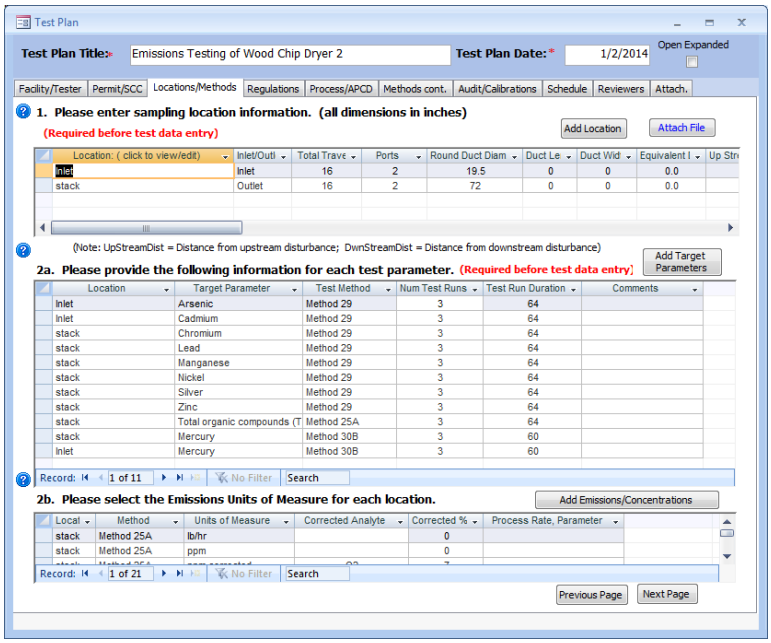


Figure 15 - Test Plan Location/Methods Tab

You can input sampling locations and sampling methods using the Location/Methods tab (Figure 15).

1. Please enter sampling location information (all dimensions in inches): Section 1 is where sampling location information is entered. For existing test locations, you can click in the first cell of the 1. Location (click to view/edit) column which will open the "*Test Location Information"* 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 required to calculate the sum or average of these multiple stacks can enter a combined location and provide the resulting information as combined or total method in the Miscellaneous Method table as described in the discussion of section 2.

When you click "**Add Location**," you'll see a window like that shown in Figure 16 - Test Location Information. Enter a unique location name. Then select either inlet or outlet. All dimensions should be entered in inches. If a "***Round Duct Diam***" is entered, the "***Duct Length***" and "***Duct Width***" fields will be inactivated. If "***Duct Length***" and "***Duct Width***" values are entered, the"***Equivalent Diameter***" will be calculated automatically.

Enter the "***Up Stream Distance from Disturbance***" (Distance A- Fig 1-1, Reference Method 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 RM 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.

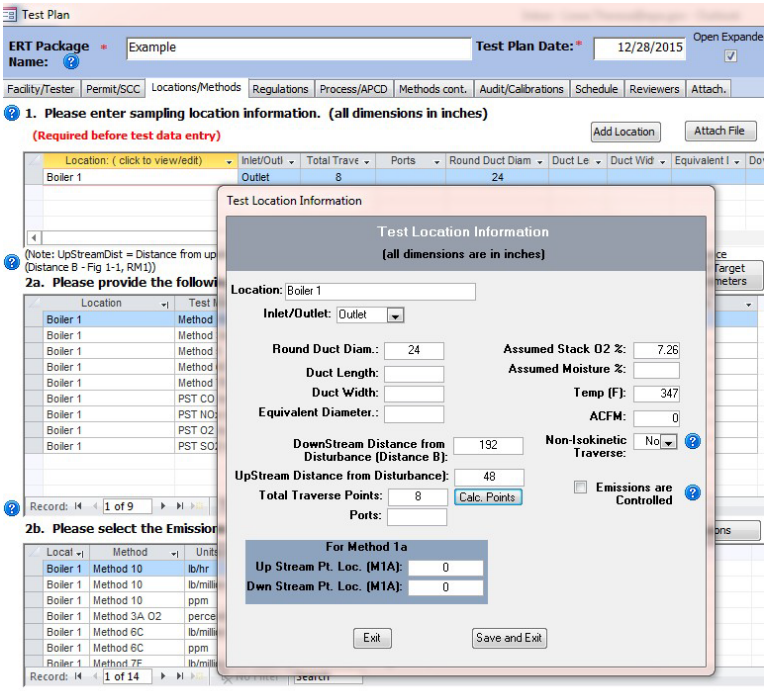


Figure 16 - Test Location Information Panel

Enter the values for percent oxygen, percent moisture, stack temperature and 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 3A, 6C, 7E, 10 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 (in inches). 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 StreamDistance 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 O_2 %:	Anticipated oxygen content of the stack gas in percent
Assumed Moisture %:	Anticipated moisture content of the stack gas in percent
Temp (F):	Anticipated temperature of the stack gas in degrees Fahrenheit
ACFM:	Anticipated flow rate of the stack gas in 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:	Check box for Controlled device was present.
Up Stream Port Location:	For Method 1a only. Location of disturbance upstream measured in inches.
Down Stream Port Location	or 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 17 – Add Target Parameters. Once there, you'll see Figure 18 – Select Method and Compounds for Location. You can either select a method directly from the drop-down list or click "**[select method by compound]**".

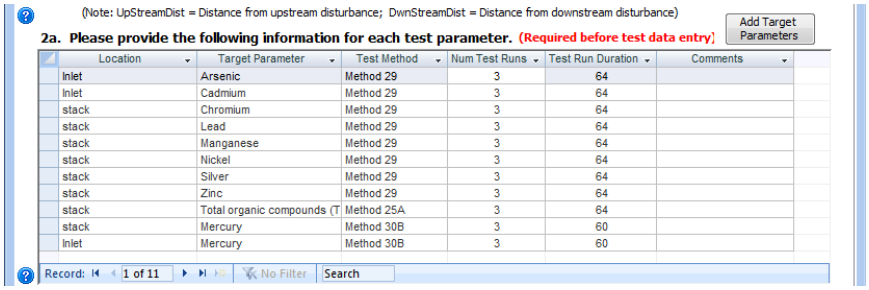


Figure 17 - Add Target Parameters

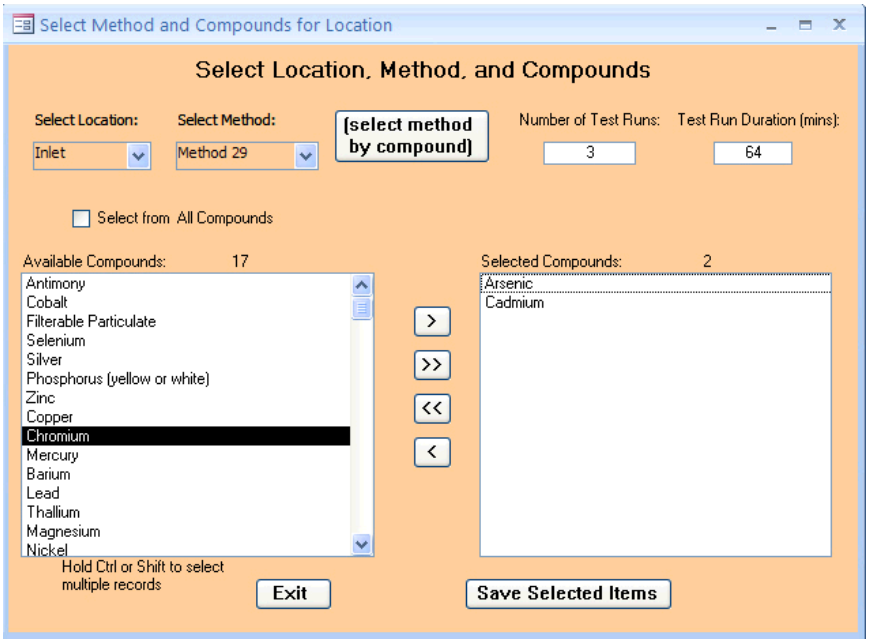


Figure 18 - Select Location, Method and Compounds

Once the method has been selected "***Available Compounds***" box will automatically populate, as in 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.

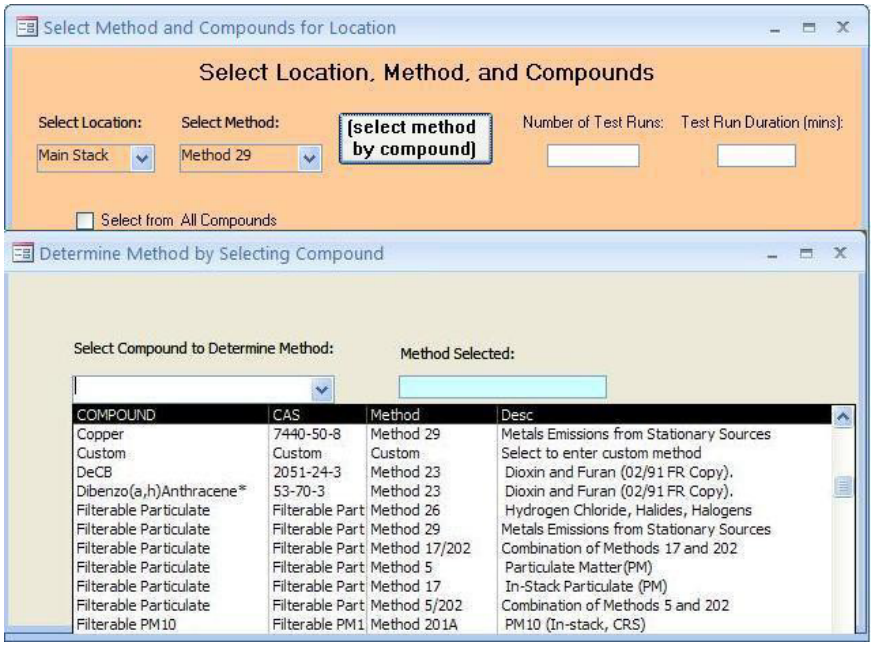


Figure 19 - Determine Method by Selecting Compound

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 19 – Determine Method by Selecting 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.

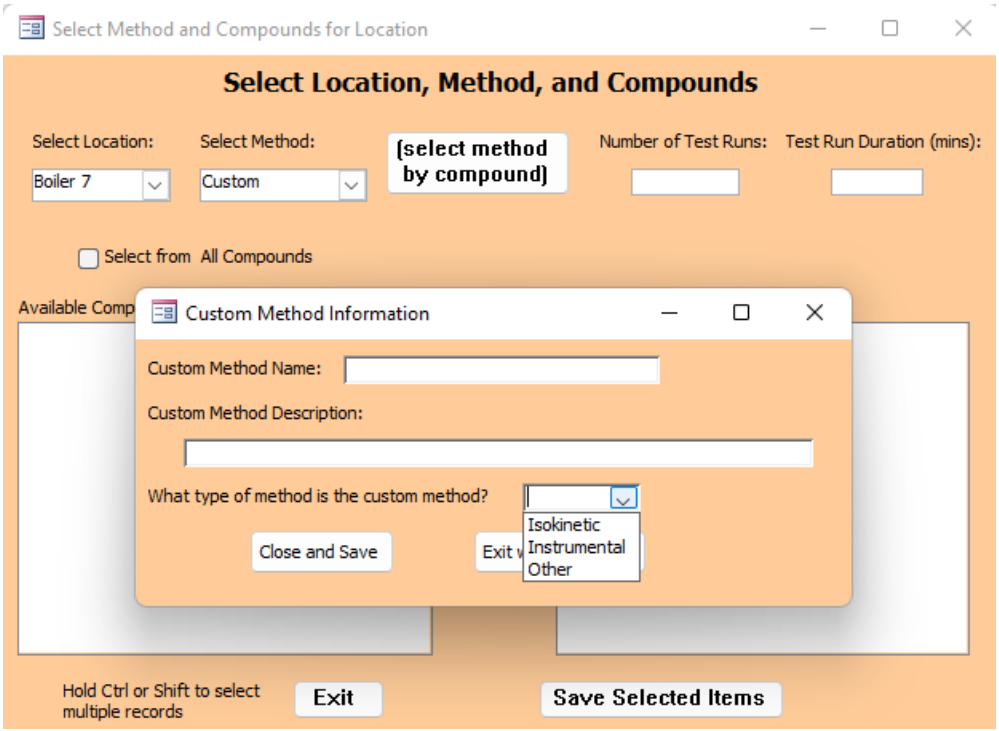


Figure 20 - Custom Method Information

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 20 – Custom Method Information, will open. When you choose a custom method, you must enter a unique "***Custom Method Name***". The "***Custom Method Description***" is optional. Select "*Isokinetic,*" "Instrumental", or "Other" to the required question of "***What type of method is the custom method?*** Click on "**Close and Save**" to save the new method and return to the **Select Method and Compounds for Location** form, or "**Exit without Saving**" to return to the "**Select Method and Compounds for Location**" 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.

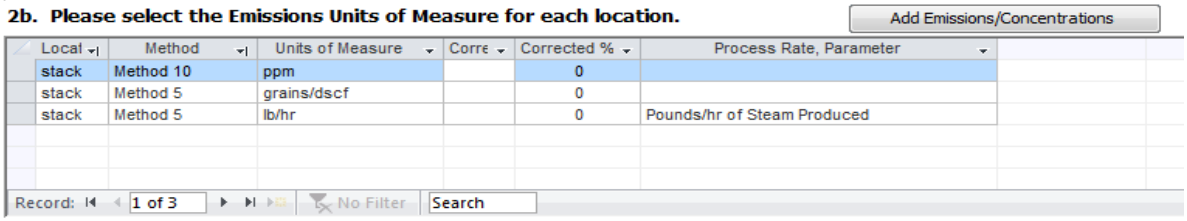


Figure 21 - Add Emissions/Concentrations

- ***2b. Please select the Emissions Units of Measure for each location:*** Section 2b is for entering the units for reporting of the emissions. 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 21 – Add Emissions/Concentrations**.** 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 Emissions/Concentrations Screen will populate. The process rate parameter should only be associated with an emission rate (i.e., lb/hr, lb/min, lb/sec) and the time units (i.e., hr, min, sec) should be the same for both the emissions rate and the process rate. The process rate will need to be added to Section 6a before being able to select it in 2b.

You **must** select at least one unit of measure for Miscellaneous methods before adding a run. If you try to add a run without any unit of measure selected, the run will not be added. You can add missing units of measure in the Method Setup Tab of the Test Data - Run Data area after you have at least one unit of measure selected in 2b for the Miscellaneous methods.

You can also add combined, summed or total emissions of a source or facility as Miscellaneous test methods by using a custom method. For instance, there is a single operating unit with two stacks and each is tested for Method 5 PM. The final emissions value is the sum of the two stack emissions. A custom method of Total PM Method 5 can be added to 2a of the test plan and the appropriate units of measure added to 2b. of the test plan and the summed data added to the Miscellaneous Test Method table.

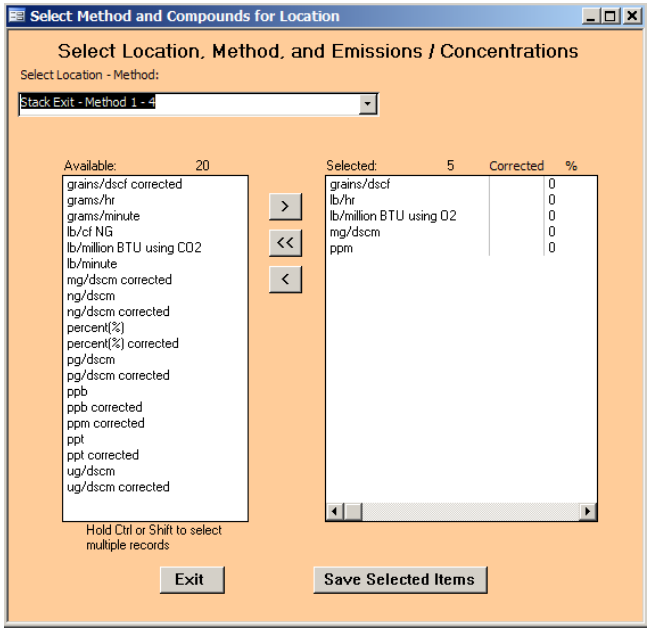


Figure 22 - Select Emissions/Concentrations

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 as in Figure 22 – Select Emissions/Concentrations. 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 beingcorrected. If you are correcting to O_2 or CO_2 you must include the uncorrected concentration. 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 p31.

For the Miscellaneous methods, do NOT select lb/mmBTU using O2 or CO2. Please select lb/mmBTU.

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 unit of measure 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 Tab

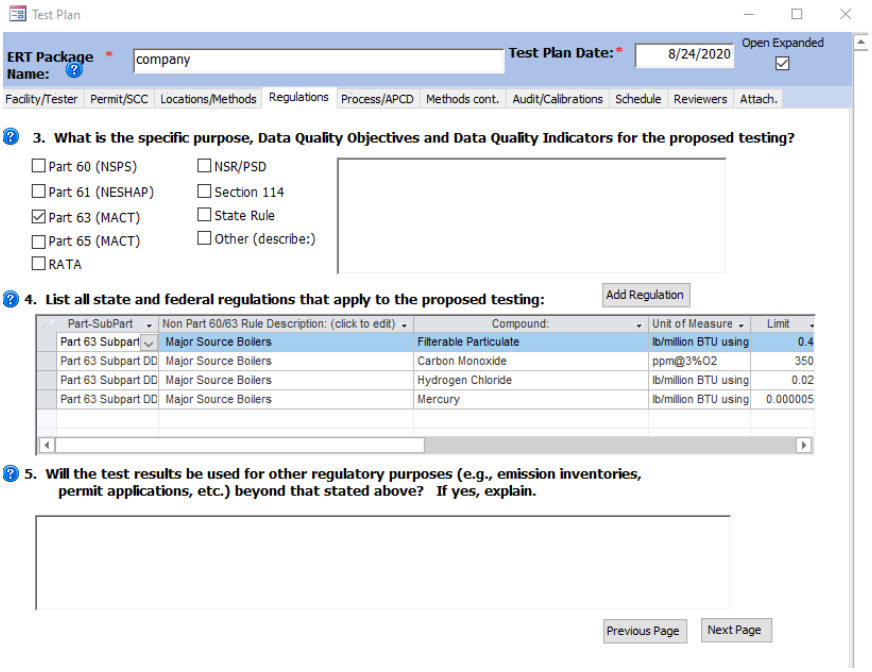


Figure 23 - Test Plan Regulation Tab

The Regulations screen shown in Figure 23 - 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 (Part 60 NSPS, Part 61 NESHAP, Part 63 MACT, Part 65 MACT, RATA, NSR/PSD, SIP, Section 114, State Rule, and Other - describe). 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 23 - Test Plan Regulation Tab for entering a new regulation data. The Regulation Screen will open as in Figure 24. Double click on a Non Part 60-63 Rule 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, 62 and 63.

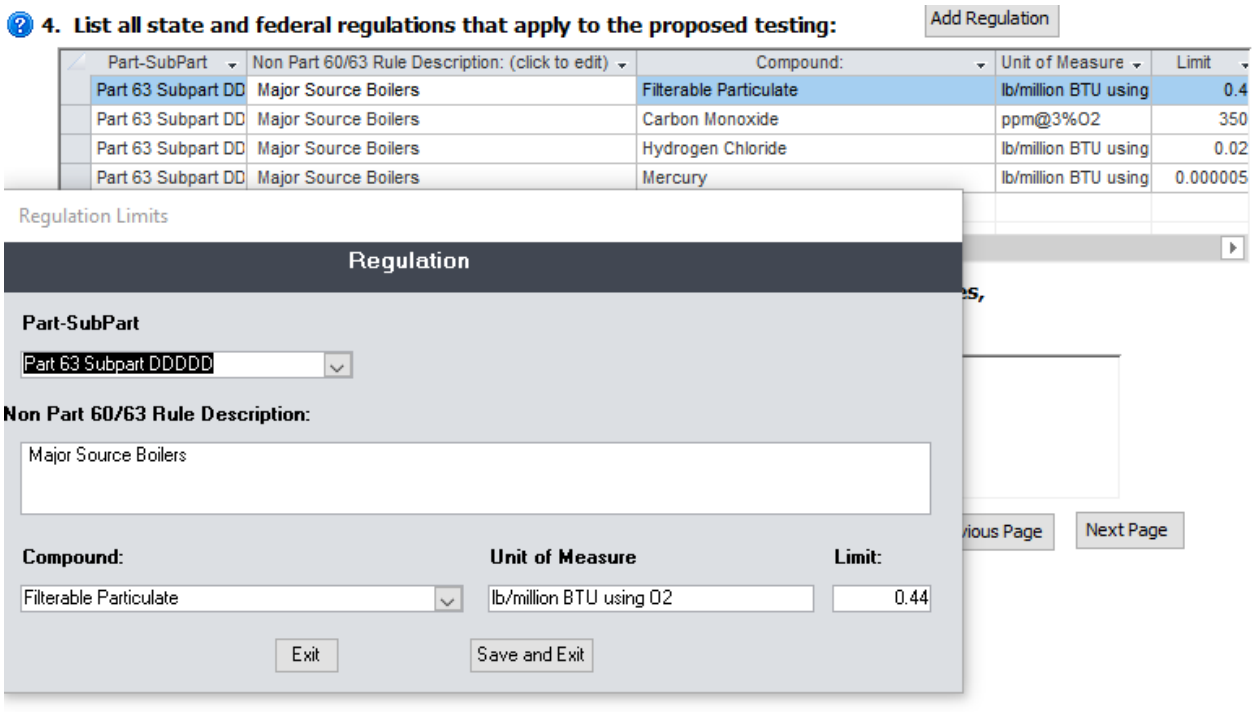


Figure 24 - Regulation Limits

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, etc.) 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 Tab

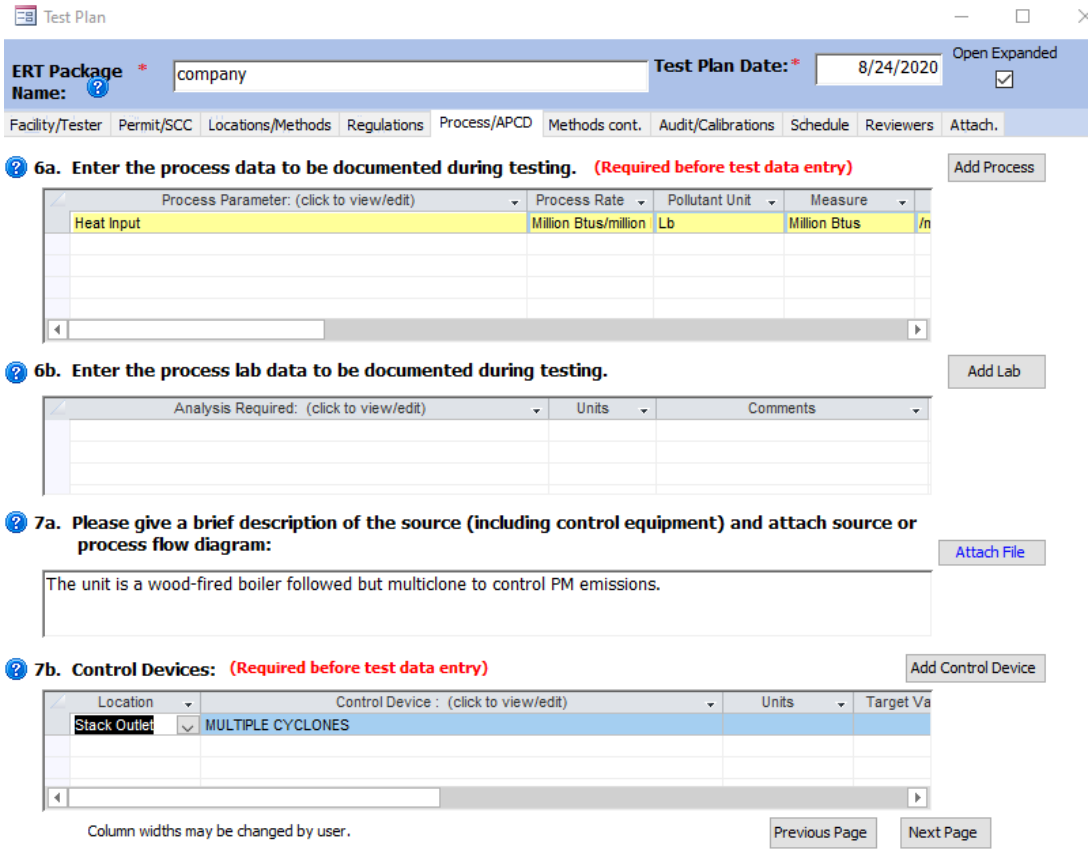


Figure 25 - Test Plan Process/APCD Tab

The Process/APCD is to enter process and Air Pollution Control Device (APCD) data (Figure 25).

- ***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 measurable 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 26. This menu is identical to the menu used to populate the SCC activity parameter when no default parameter was established for that SCC.

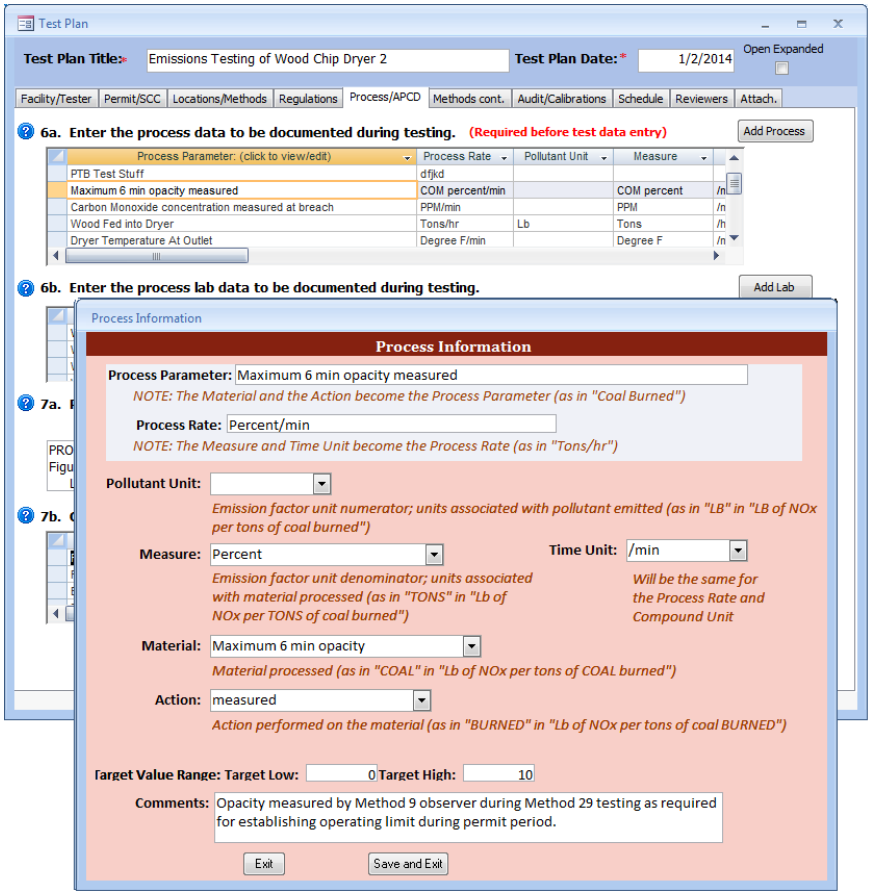


Figure 26 – Add Process Information

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 25. 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 (e.g., 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 e.g., lb 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). 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 27 – Process Lab Information. Clicking in the "***Analysis Required***" field of an existing parameter will also open the form.

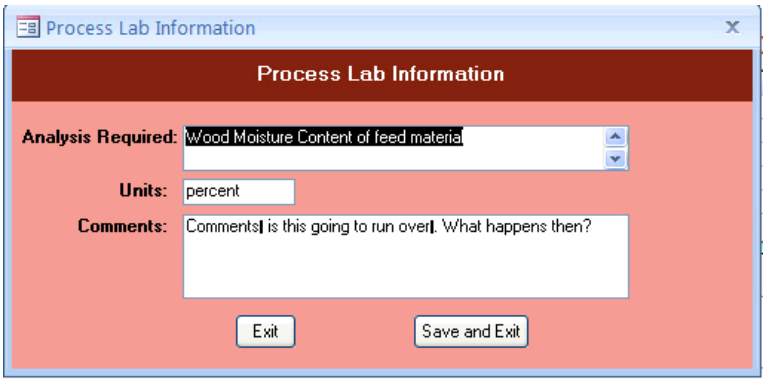


Figure 27 - Process Lab Information

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 28).

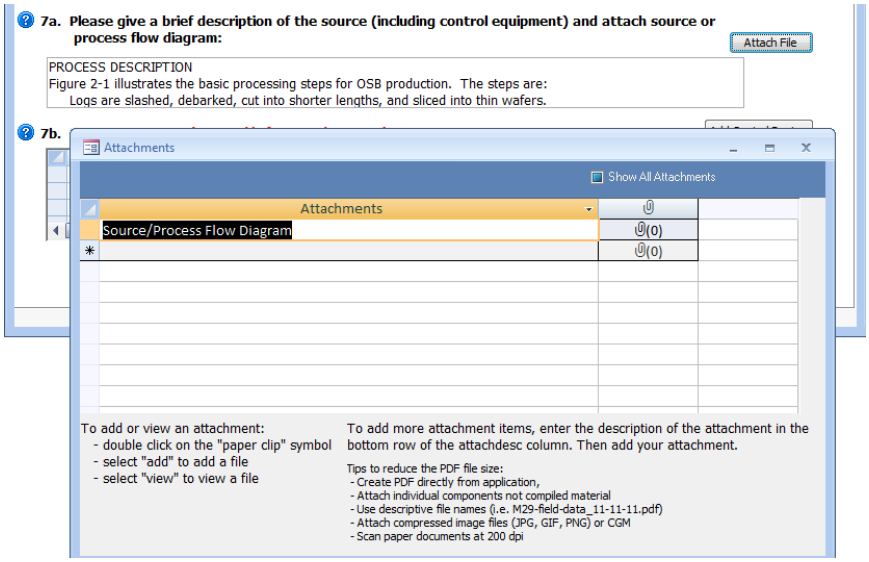


Figure 28 - Attachments - Source/Process Flow Diagram

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 28. 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. You MUST enter a control device. If no control device exists, you must select "Uncontrolled" (first selection in the dropdown list). 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 ensure 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 29.

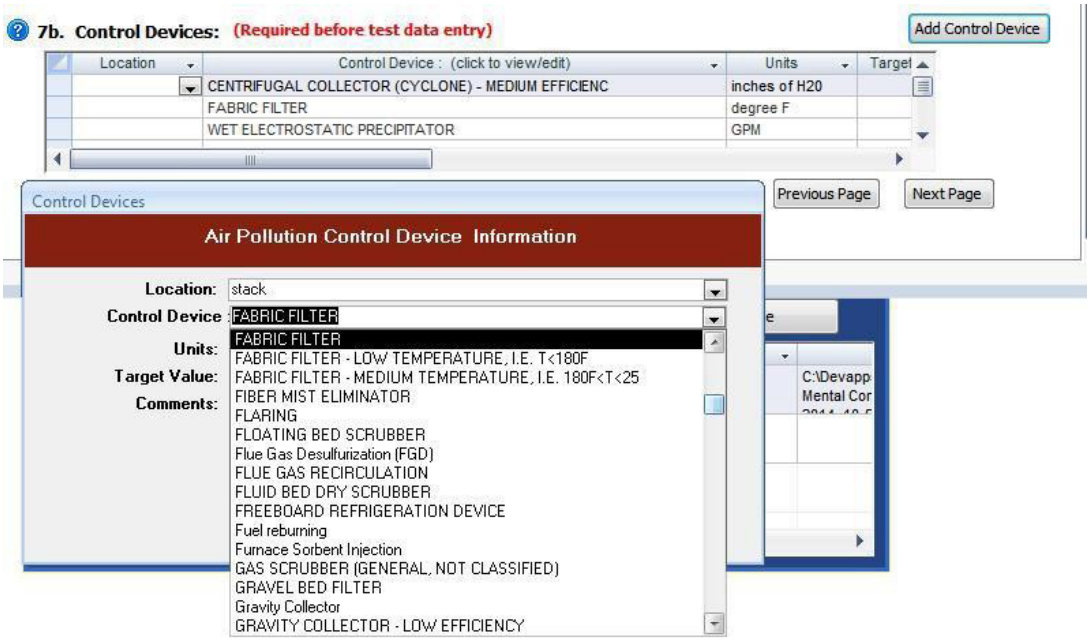


Figure 29 - Control Devices

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 Tab

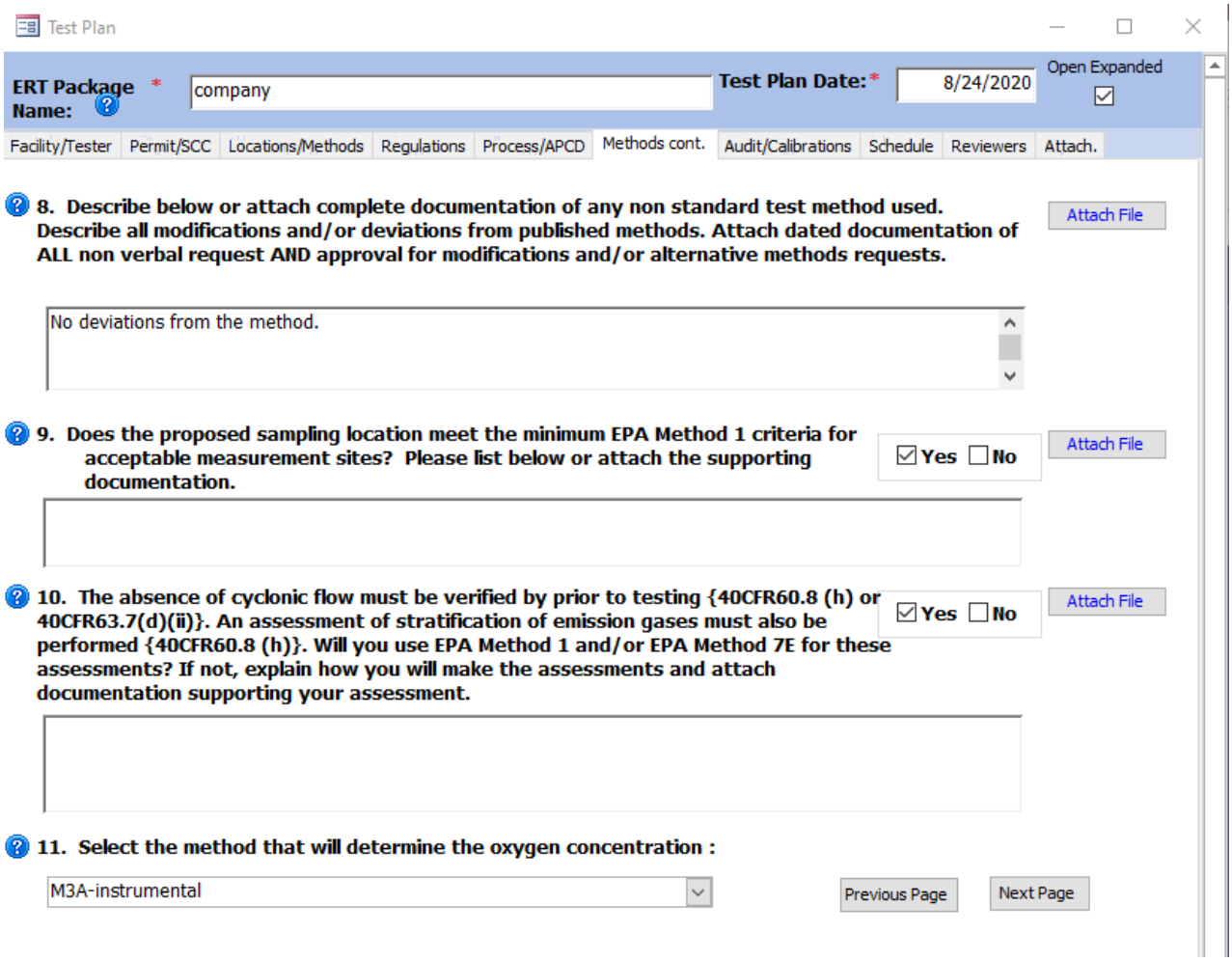


Figure 30 - Test Plan Methods cont. Tab

Methods Continued screen is the continuation of the "***Locations/Methods***" screen (Figure 30).

- ***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:

<u>Method 2:</u>	
M2- assign 29.0 Mol. Wt:	Ambient air, assign a molecular weight of 29.0 (per Method 2).
<u>Method 3:</u>	
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 – CO_2 or O_2 and stoichiometric calc:	Using CO_2, O_2, or stoichiometric calculation
M3A:	Instrumental
M3B:	Using Orsat emission rate correction factors

Audit/Calibrations Tab

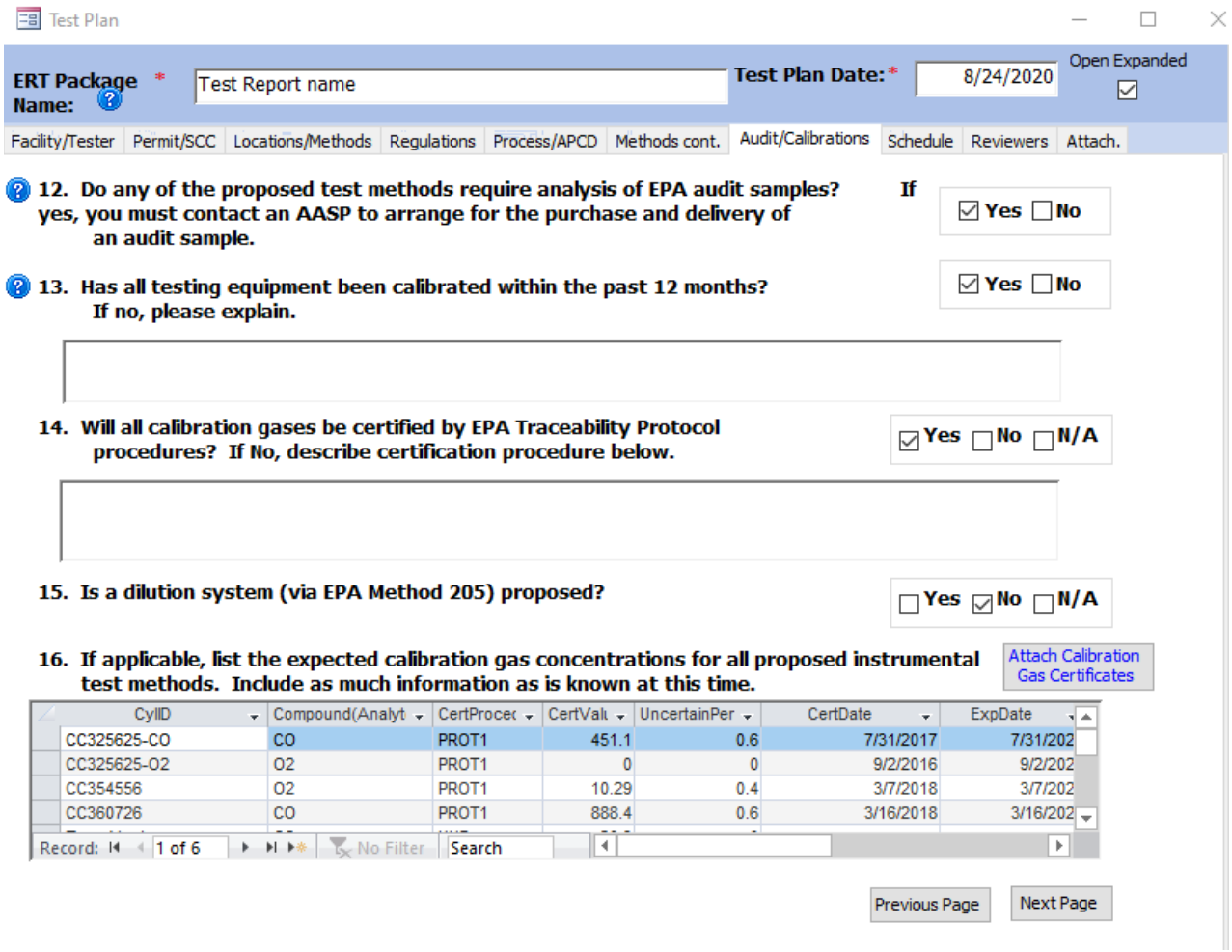


Figure 31 - Test Plan Audit/Calibrations Tab

The "***Audit/Calibrations***" screen (Figure 31) 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 intend 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 Tab

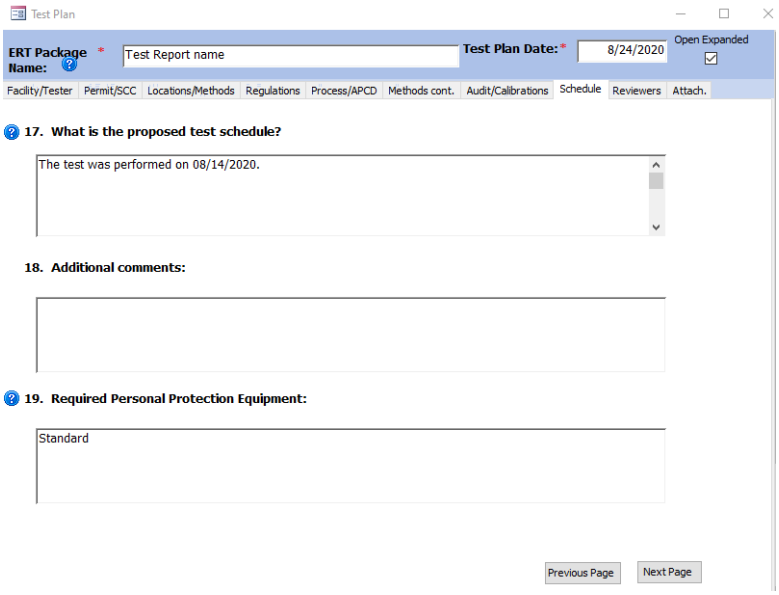


Figure 32 – Test Plan Schedule Tab

The Schedule screen (Figure 32) 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 updates.
- ***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 Tab

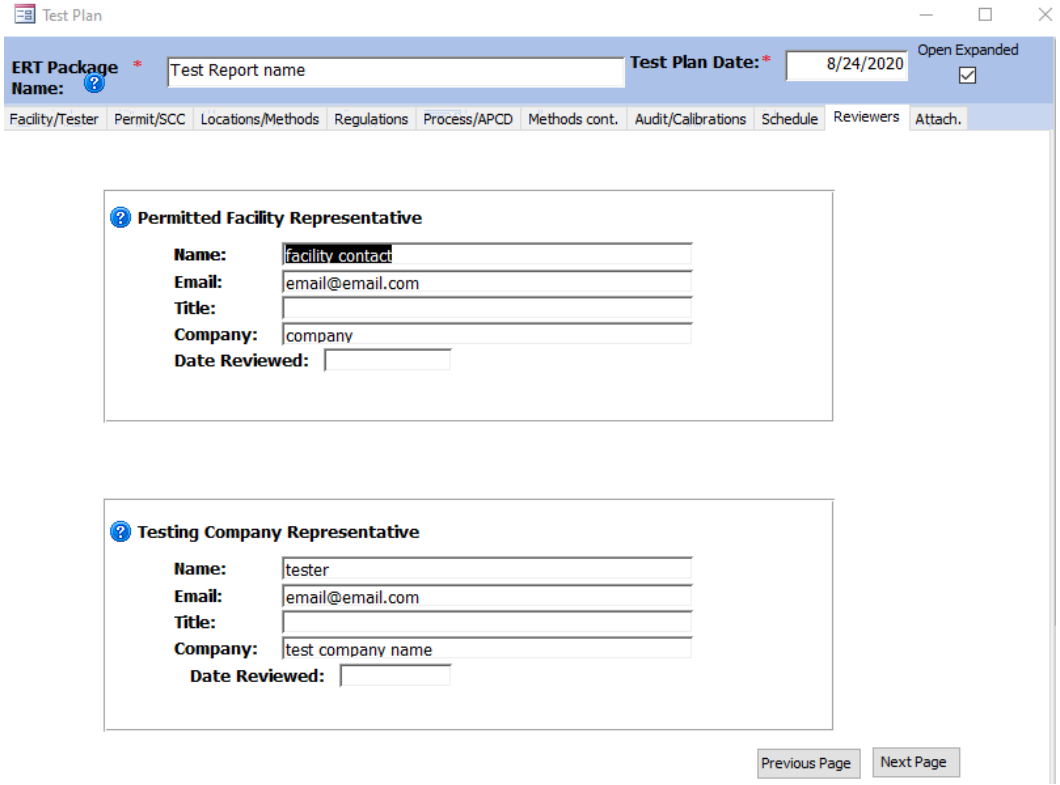


Figure 33 - Test Plan Reviewers Tab

The "***Reviewers"*** screen (Figure 33) 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 Tab

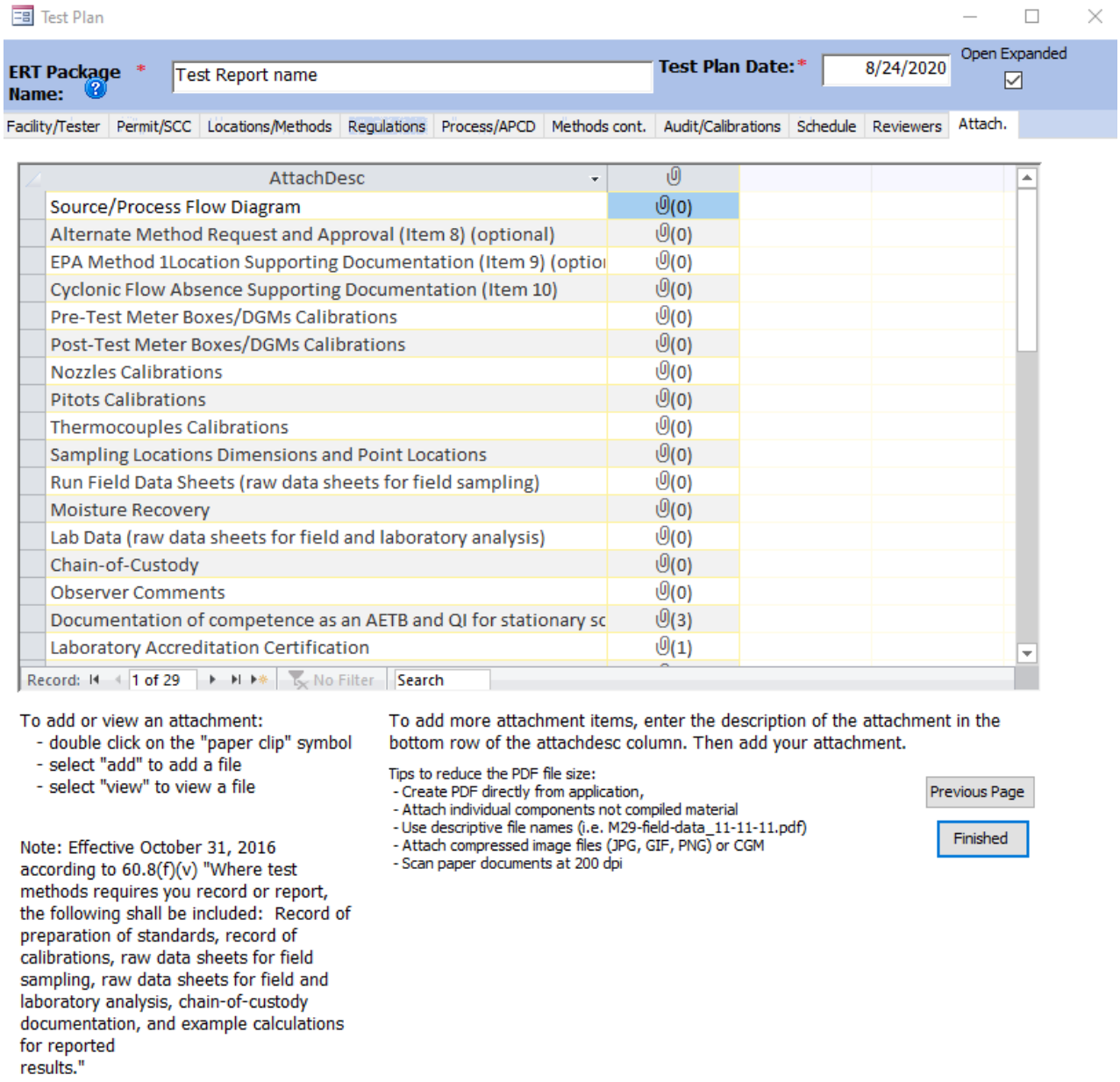


Figure 34- Test Plan Attachments Tab

The Attachments screen (Figure 34) 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 35 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.)

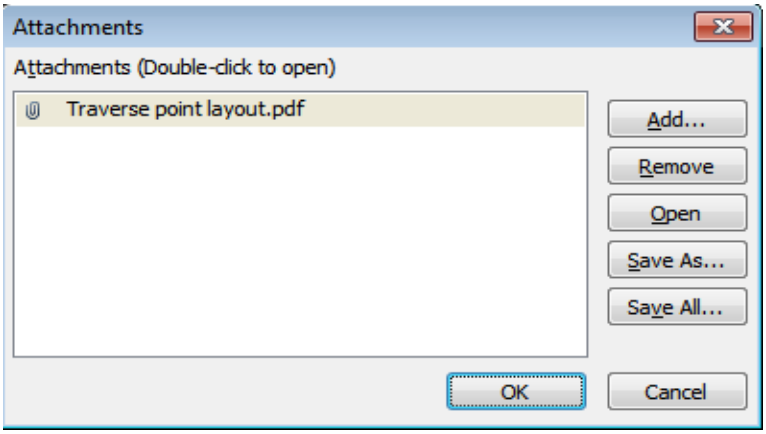


Figure 35 - Attachments Options

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 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, 5 and 6. 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, 5 or 6 file type which has an .accdb extension. If you create a new

PDS, you will see the paper clips. If the existing ERT version 3 PDS is extensive, 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 a 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

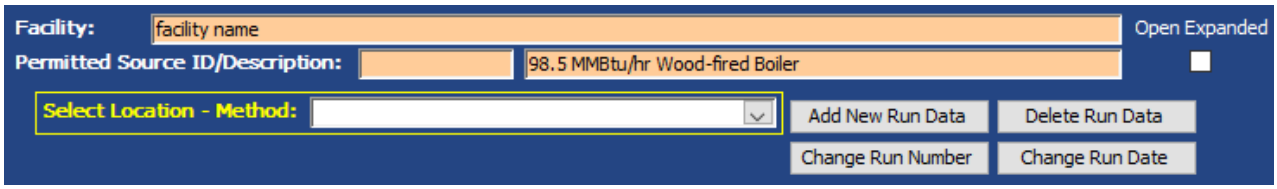


Figure 36 - Run Data Details

The ERT separates methods into five basic categories – single train isokinetic/manual methods, paired train manual methods, instrumental methods, miscellaneous methods and performance specifications. Currently, only the paired sampling train for mercury by Method 30B can be documented in the ERT. For each method category, you can enter the data manually or you can import data from a spreadsheet template.

Add New Run Data - Spreadsheet Import

Only one sample location data set can be imported at a time.
There are 4 import spreadsheets available:

1. ERT_Manual_Methods_DE_Template-Empty.xltm (Isokinetic or manual methods)
2. ERT_Manual_Methods_DE_30B_Template-Empty.xltm (Method 30B data)
3. ERT_Instrumental_Template-Empty.xltm (Instrumental methods-Method 3A, 6C, 7E, 10 or 25A.)
4. ERT_Miscellaneous_Test_Methods_template.xltm (All methods that are not isokinetic methods, Methods 1-4 train, Method 30B or the instrumental methods, Method 3A, 6C, 7E, 10 or 25A.)

DO NOT DELETE COLUMNS FROM TEMPLATE OR FROM ERT.
If you have your field data organized in a spreadsheet format consistent with the ERT data entry template, importing 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 36.
- Click on the "**Add New Run Data**" button to add data.

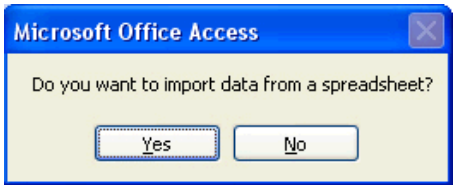


Figure 37 - Import from Spreadsheet Option Dialog

This brings up a spreadsheet option dialog. "Do you want to import data from a spreadsheet (Figure 37)? Click "**Yes**" button to import the data from a spreadsheet. Click the "**No**" button to manually add data directly into the ERT.

Once “Yes” is selected, an Import Field Run Data form opens.

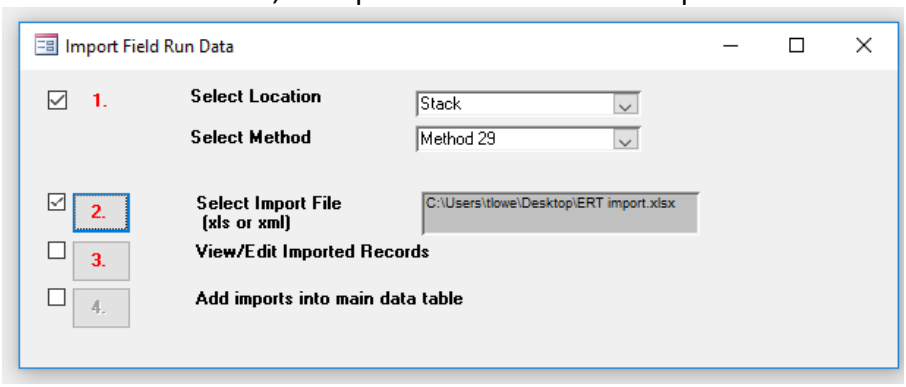


Figure 38- Import Field Run Data Window

- **Step 1:** Select the ***location*** and the ***method*** from the drop-down lists, as in Figure 38. A 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 38.
- **Step 3:** Click the # ***3*** to view the imported data. You will see two tables as in Figure 39 - **View Imported Data Windows**. One table is the header data 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.

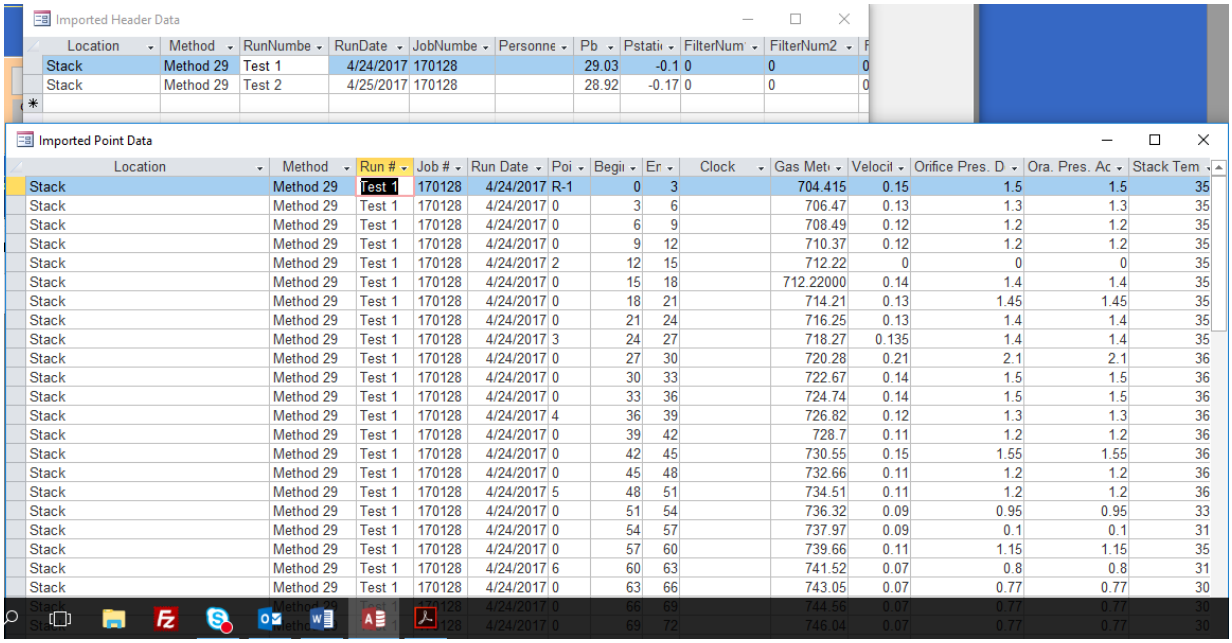


Figure 39- View Imported Data Windows

- **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

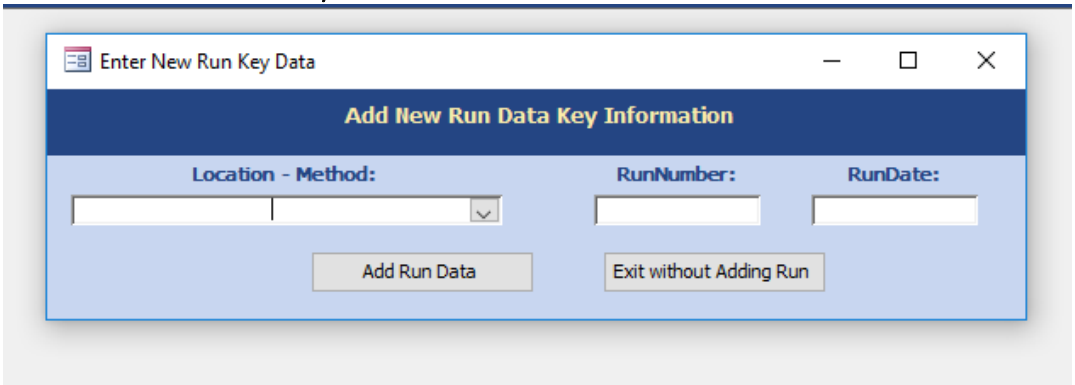


Figure 40 - Enter New Run Key Data Window

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 36 - Run Data Details).
- Click "**No**" from the import from spreadsheet option dialog (see Figure 37 - 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 (Figure 40).
- 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.
- 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, an "***Instrumental Method***" or ***"Miscellaneous Method"*** data run depending on the method selected.
- Once the location, method, run number and date have been entered, you must find the run under the drop-down list called "***Select Location – Method:***" (highlighted in yellow) to enter data or view that run.
- For both single train and paired train manual or isokinetic methods, you must repeat this process to add runs until all test runs have been added.
- For instrumental methods, add the first run following the above instructions. Once the first run is complete, additional runs should be added. To add the additional runs, go to the "***ITM Run Results***" tab of the "***Run Data Details***" screen. Select the "Add New Run" button located in the lower right corner of the form. Adding runs from the "***ITM Run Results***" tab using this button will copy a significant amount of calibration, Analyzer, Operating Parameters and test setup information to the created the additional runs. The post-test bias data will be copied to the pre-test bias check of the new run.

Select Run Data

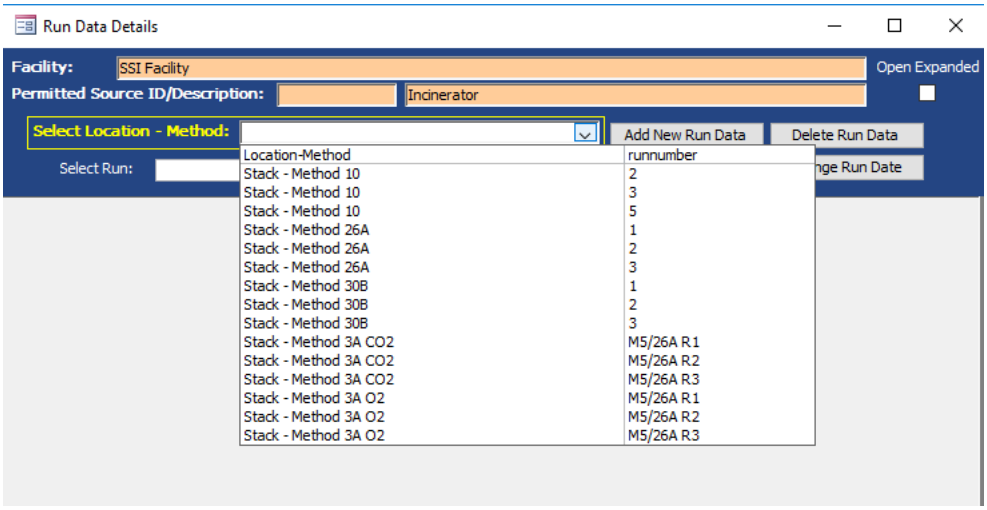


Figure 41 - Select Run Data

To view the data for the different runs when you are on the Run Data Detail screens:

- Select the "***Location – Method – Run***" from the list (Figure 41).
- Click on the dropdown list button to scroll through runs of selected locations and methods. The "***Method Setup***" tab will be the same for all runs of the same method. 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.
    - In addition to changing the run number, changes in the run data details entered in the tabs below the run identifier are presented.

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

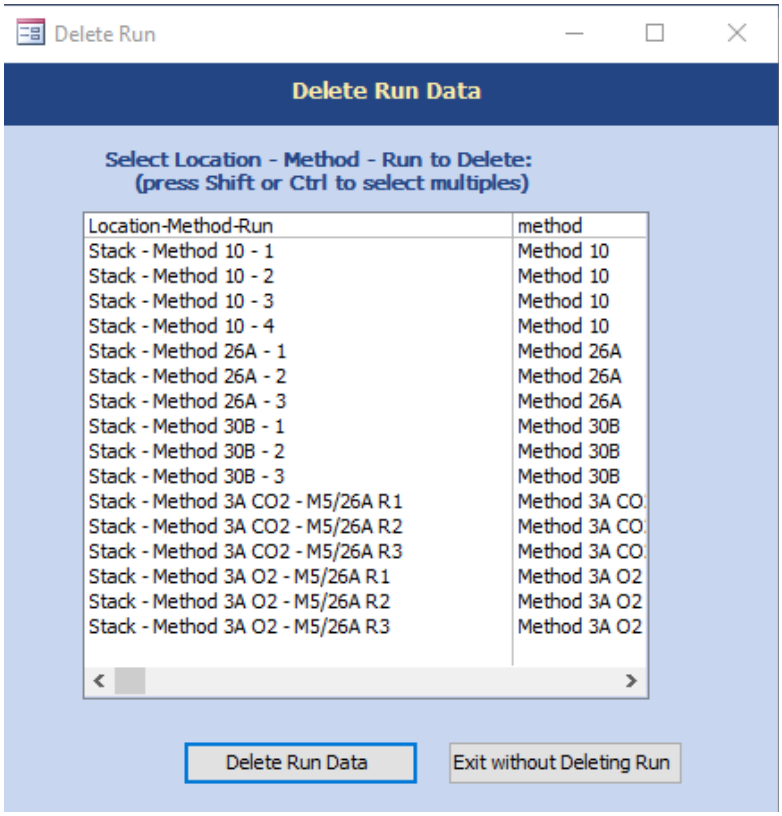


Figure 42 - Delete Run Window

Deleting the run data will delete all header, point and lab data for the selected run.

- Click the "**Delete Run Data**" button from the "***Run Data Details Screen***". The list of location-method-runs contained in the ERT file be displayed (Figure 42).
- Select the "***Location – Method – Run***" that is to be deleted from the list.
- Click the "**Delete Run Data**" button to permanently delete the data and return to the "***Run Data Details***" screen. There will be no warning to confirm the run is to be deleted; if Delete Run Data is selected, the data will be removed.
- Click on "**Exit without Deleting Run**" to keep the data and return to the "***Run Data Details***" screen.

Change Run Number

To change the run number for the selected Location – Method – Run:

- Click the "**Change Run Number**" button from the Run Data Details screen.
- Select the "***Location – Method – Run***" from the list (Figure 43).

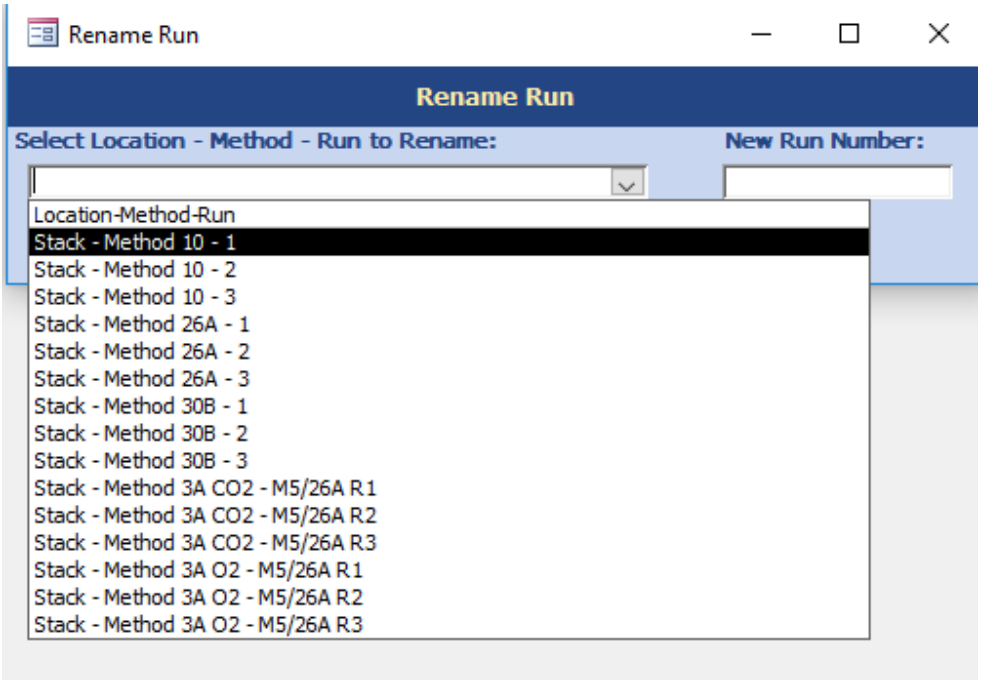


Figure 43 - Rename Run Number

- Enter the new run number (Figure 43).

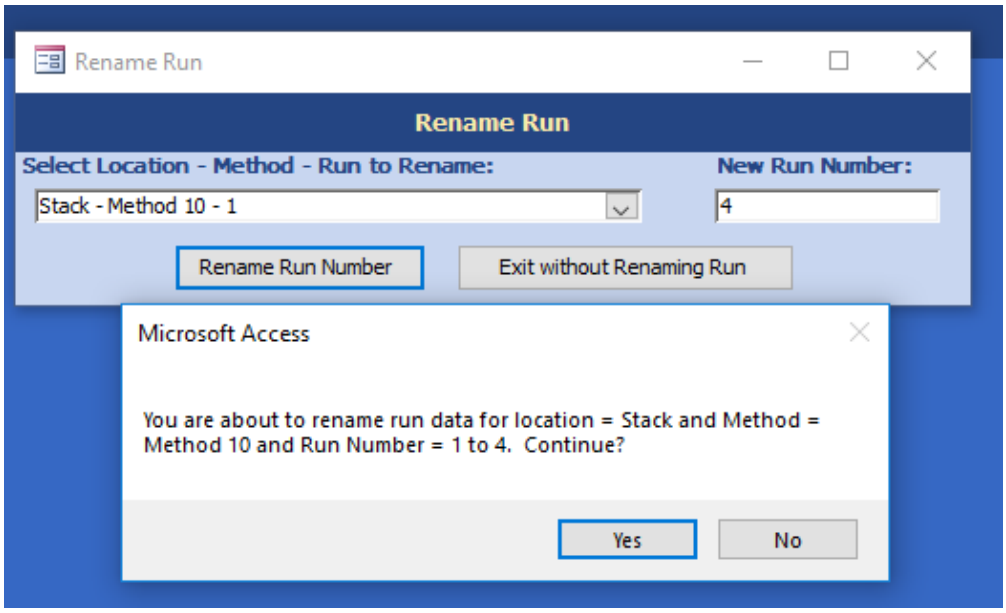


Figure 44 - Confirmation for renaming run number

- Click the "**Change Run Number**" button. You will be prompted to confirm the renaming (Figure 44). Click "**Yes**" on the rename confirmation dialog to change the run number. When the run is successfully renamed, a confirmation box will pop-up "Run was

renamed!" Select "Ok" and return to the "***Run Data Details***" screen. Click "**No**" to return to the "***Run Number***" window without saving.

- Click the "**Exit without Changing Run Number**" to return to the "***Run Data Details***" screen without saving changes.

Change Run Date

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.

Isokinetic/ Measured Method Test Data

Method Setup Tab

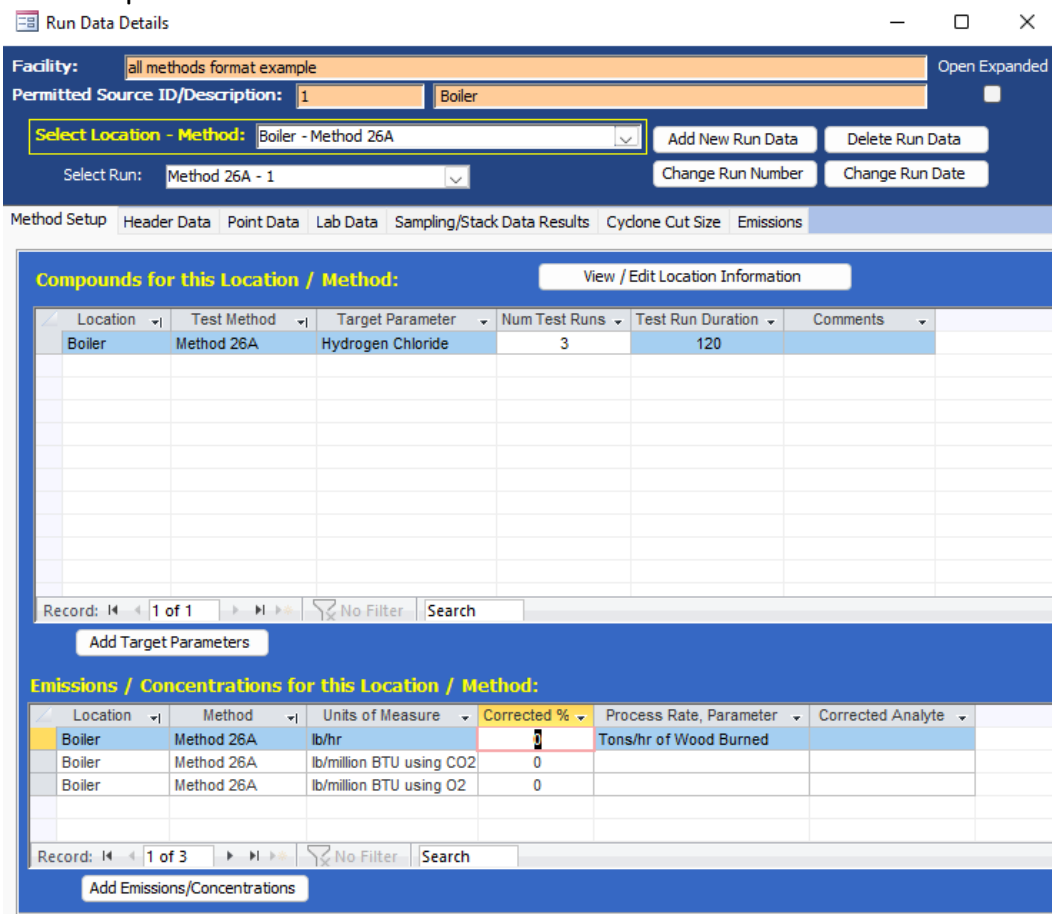


Figure 45 - Run Data Details Screen for Isokinetic/Manual Methods – Method Setup Tab

As stated previously there are four categories of stack test methods in the ERT currently: single train isokinetic/manual methods, paired train manual methods (30B), instrumental methods and miscellaneous methods. Depending on the method selected, the ERT will display different run data details tabs. The first tab is "Method Setup" for each category (Figure 45).

For single train Isokinetic methods, the tabs include:

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

For paired train manual methods, the tabs include:

- "Method Setup"
- "Header Data"
- "Point Data"
- "Sample Data"
- "Sampling/Stack Data Results"
- "Emissions"
- "QA/QC"

For instrumental methods, the tabs include:

- "Method Setup"
- "Calibrations"
- "ITM Run Results"
- "Emissions"

For miscellaneous methods, the tabs include:

- "Method Setup"
- "Sample Data"
- "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.

The Method Setup tab (Figure 45) contains a common set of fields for all four 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
- ***Add Target Parameters:*** Allows you to add target parameters for this run at this location/method.

- ***Add Emissions/Concentrations:*** Allows you to add emissions/concentrations for this run at this location/method.
- ***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 (e.g., 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 dropdown symbol (v) 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 (e.g., tons of material processed/hr and lb of pollutant/hr).

Header Data Tab

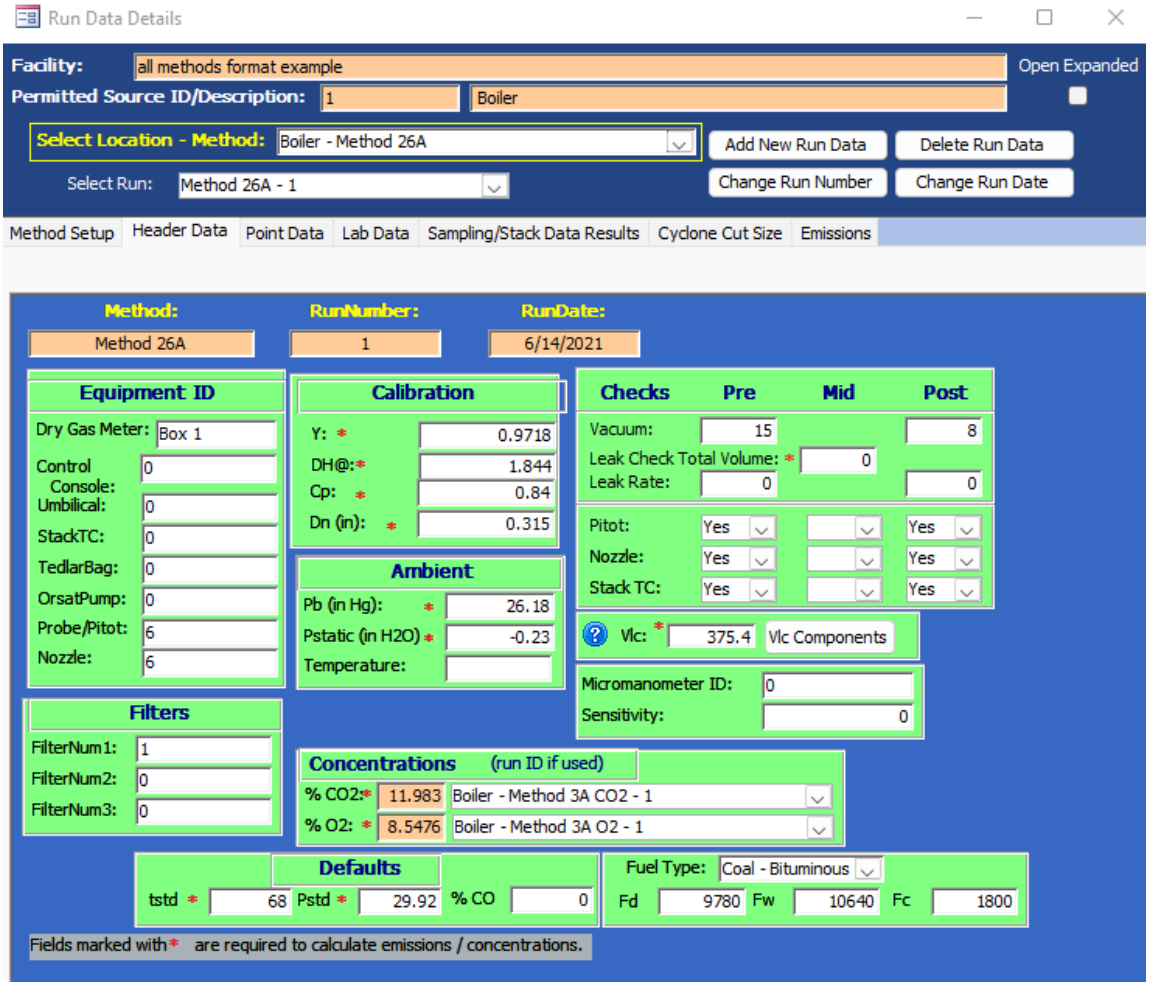


Figure 46 - Single Train Isokinetic Method: Header Data

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 46 shows the layout of the single train or isokinetic train "***Header Data"*** tab.

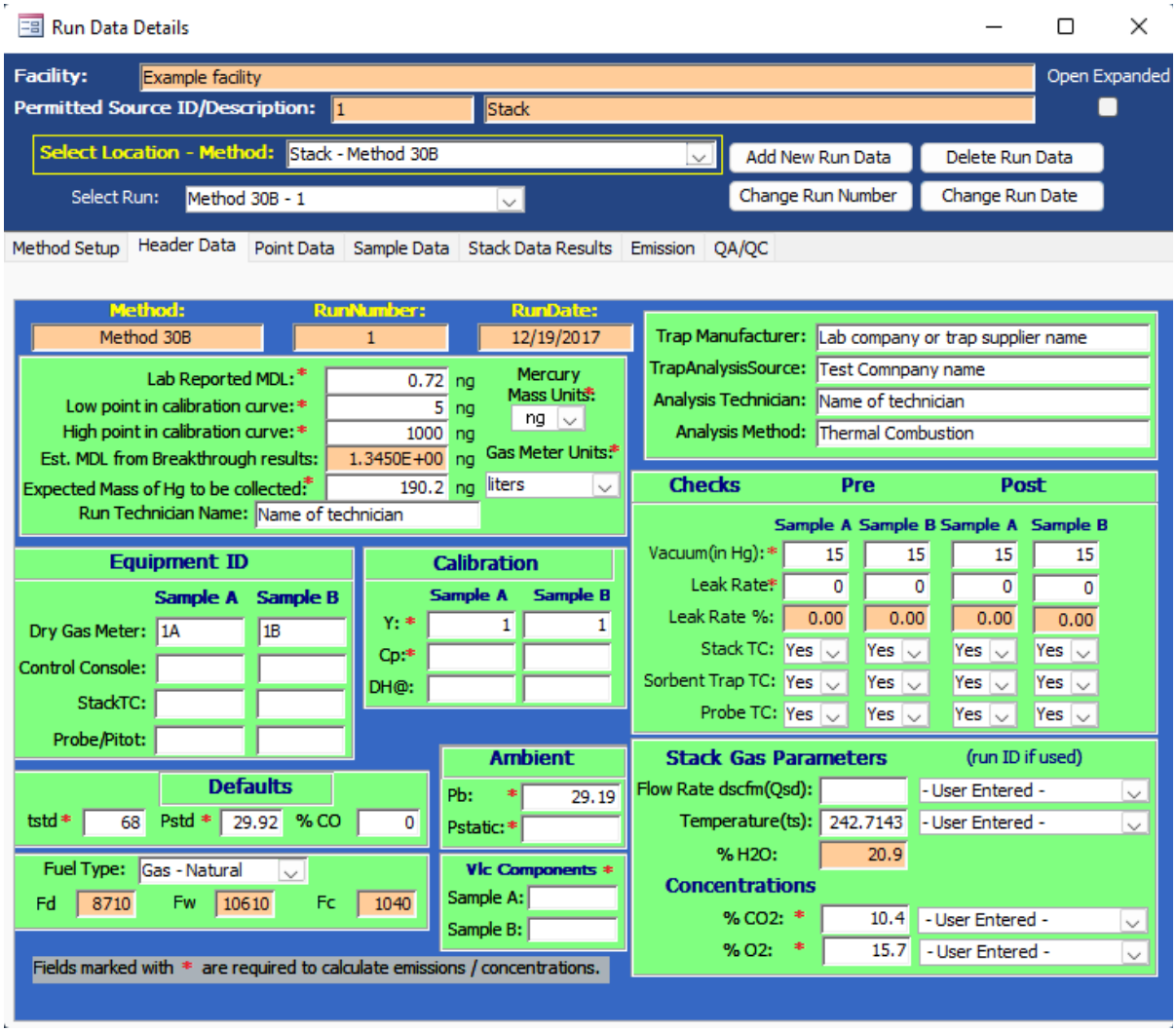


Figure 47- Paired Train Manual Method: Header Data

Figure 47 shows the layout of the paired train "***Header Data"*** tab. Below are descriptions of the fields for both single train and paired train 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 picograms (pg). 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 meter box. 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 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 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 Pitot 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.
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.
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.

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.

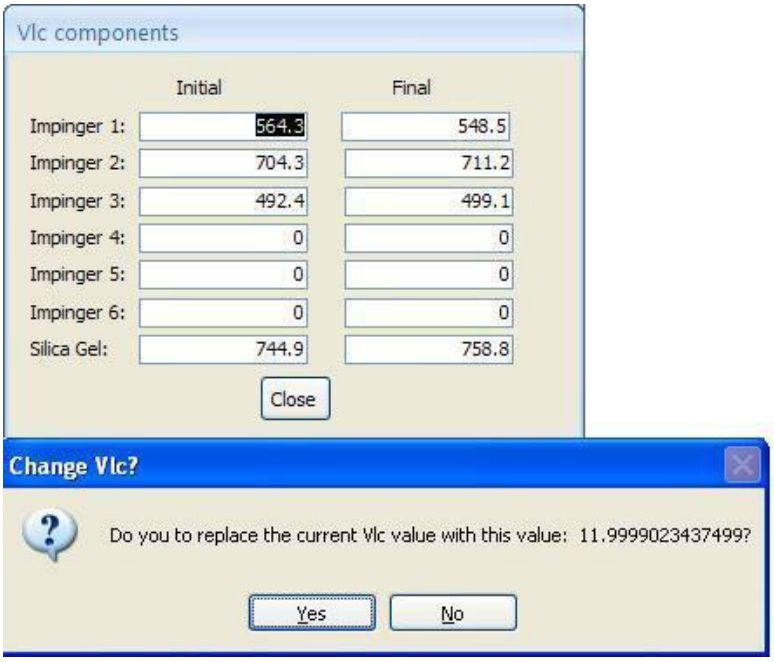


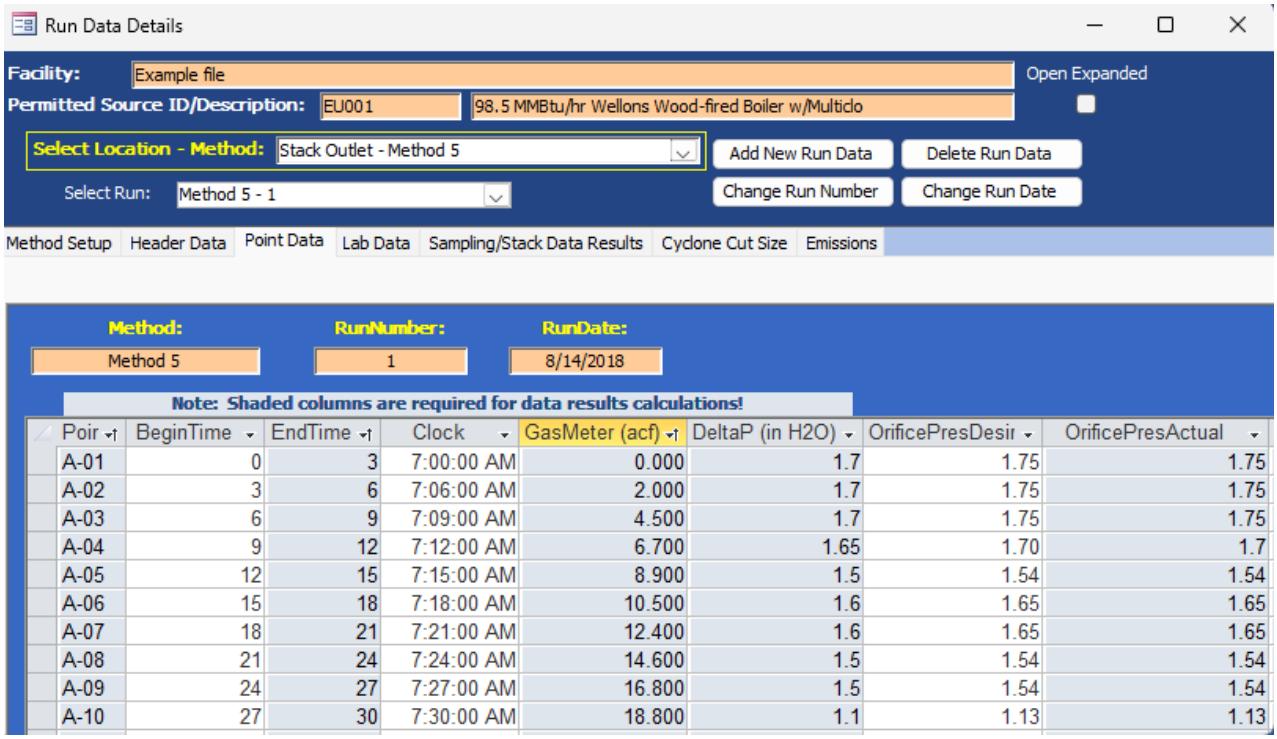
Figure 48- Mass of liquid collected sub menu

Vlc Components: The following parameters refer to “Vlc,” where “Vlc” is the mass of liquid condensate. The “Vlc” is the 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 48 - Mass 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.
Stack Gas Parameters:	This area is only present in the paired train sampling methodology. Information in this area link the flow rate, stack temperature and moisture to a different run like Method 5 or Method 29. These values should be calculated in an isokinetic train. "User entered" can also be used to add the data, if the method utilized is not available in the ERT.
Flow Rate dscm (Qsd):	Flow rate of the stack gas tested in dry standard cubic meters.
Temperature (ts):	Temperature of the stack gas tested in Fahrenheit.
% H2O:	Moisture content of the stack gas tested in percent.
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.
Micromanometer ID:	This area is only present in the single train sampling methodology. This is the identification number of the micromanometer.
Sensitivity:	This is the units of inches of water column.

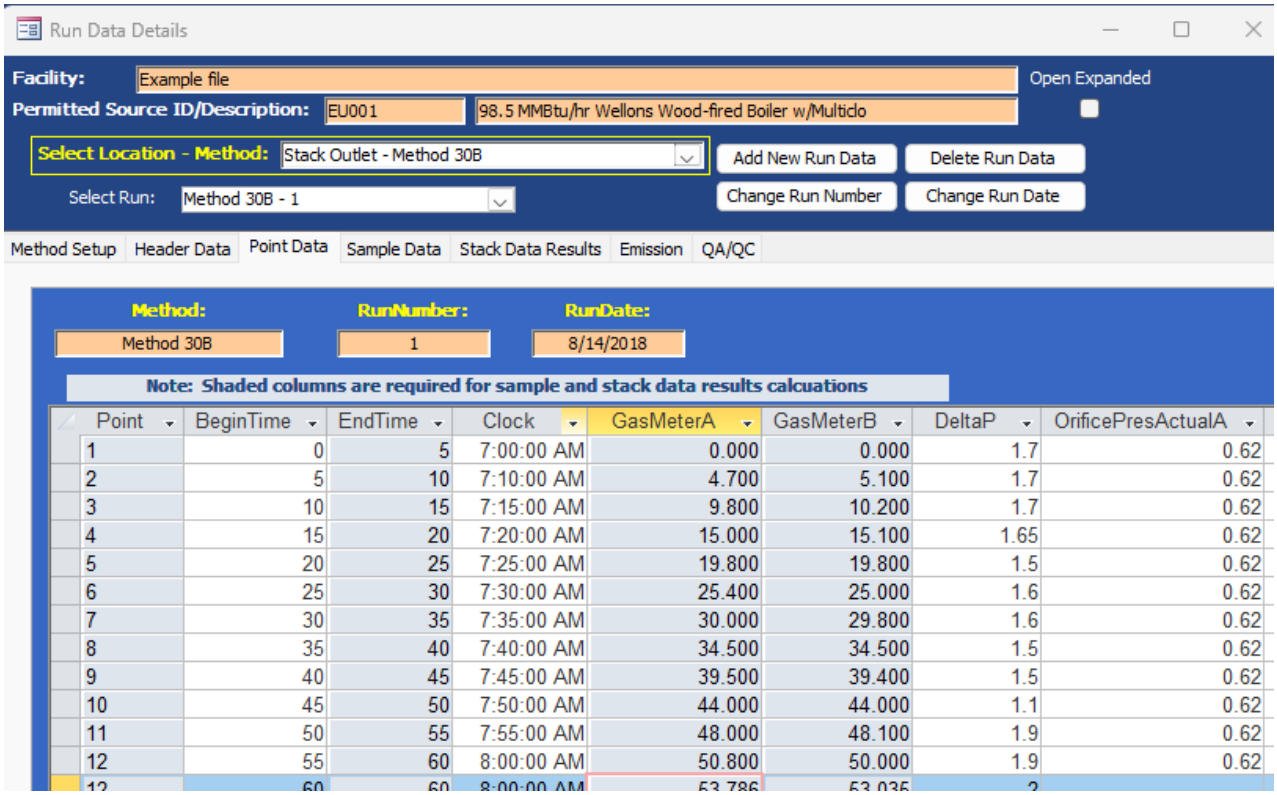
Point Data Tab



Poir	BeginTime	EndTime	Clock	GasMeter (acf)	DeltaP (in H2O)	OrificePresDesir	OrificePresActual
A-01	0	3	7:00:00 AM	0.000	1.7	1.75	1.75
A-02	3	6	7:06:00 AM	2.000	1.7	1.75	1.75
A-03	6	9	7:09:00 AM	4.500	1.7	1.75	1.75
A-04	9	12	7:12:00 AM	6.700	1.65	1.70	1.7
A-05	12	15	7:15:00 AM	8.900	1.5	1.54	1.54
A-06	15	18	7:18:00 AM	10.500	1.6	1.65	1.65
A-07	18	21	7:21:00 AM	12.400	1.6	1.65	1.65
A-08	21	24	7:24:00 AM	14.600	1.5	1.54	1.54
A-09	24	27	7:27:00 AM	16.800	1.5	1.54	1.54
A-10	27	30	7:30:00 AM	18.800	1.1	1.13	1.13

Figure 49 - Isokinetic Method: Single Train 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. 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 in the point data tab (Figure 49 and 50). 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	BeginTime	EndTime	Clock	GasMeterA	GasMeterB	DeltaP	OrificePresActualA
1	0	5	7:00:00 AM	0.000	0.000	1.7	0.62
2	5	10	7:10:00 AM	4.700	5.100	1.7	0.62
3	10	15	7:15:00 AM	9.800	10.200	1.7	0.62
4	15	20	7:20:00 AM	15.000	15.100	1.65	0.62
5	20	25	7:25:00 AM	19.800	19.800	1.5	0.62
6	25	30	7:30:00 AM	25.400	25.000	1.6	0.62
7	30	35	7:35:00 AM	30.000	29.800	1.6	0.62
8	35	40	7:40:00 AM	34.500	34.500	1.5	0.62
9	40	45	7:45:00 AM	39.500	39.400	1.5	0.62
10	45	50	7:50:00 AM	44.000	44.000	1.1	0.62
11	50	55	7:55:00 AM	48.000	48.100	1.9	0.62
12	55	60	8:00:00 AM	50.800	50.000	1.9	0.62
12	60	60	8:00:00 AM	53.786	53.036	2	

Figure 50 - Method 30B 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, in minutes, 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, average square root of 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 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, degrees F. 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 of 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.

Lab Data Tab

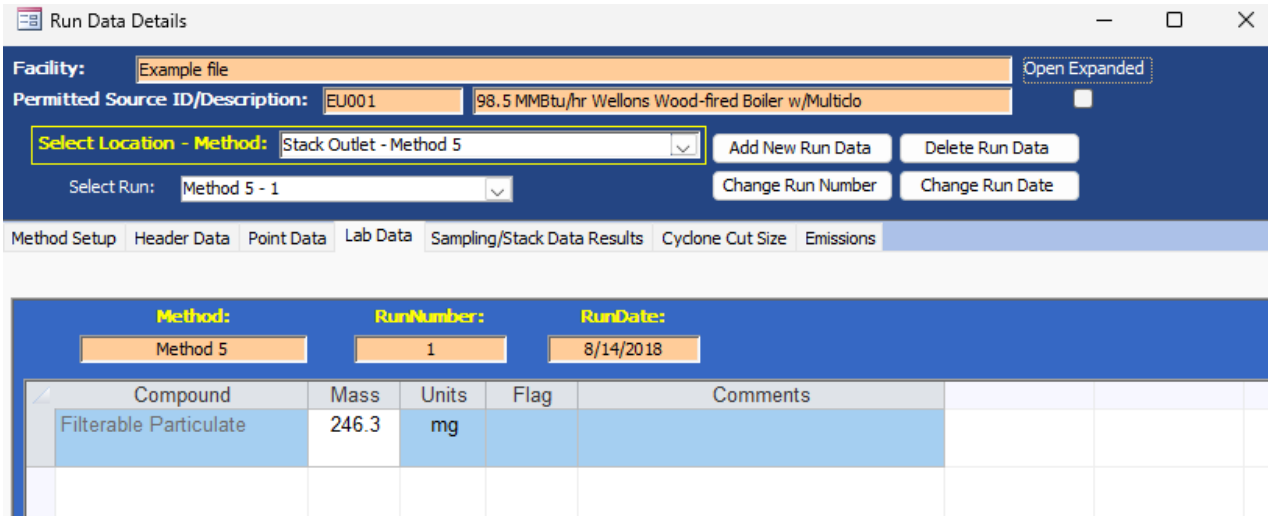


Figure 51 - Isokinetic Method: Lab Data Tab

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 (Figure 51). 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 commas 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.

Sample Data Tab

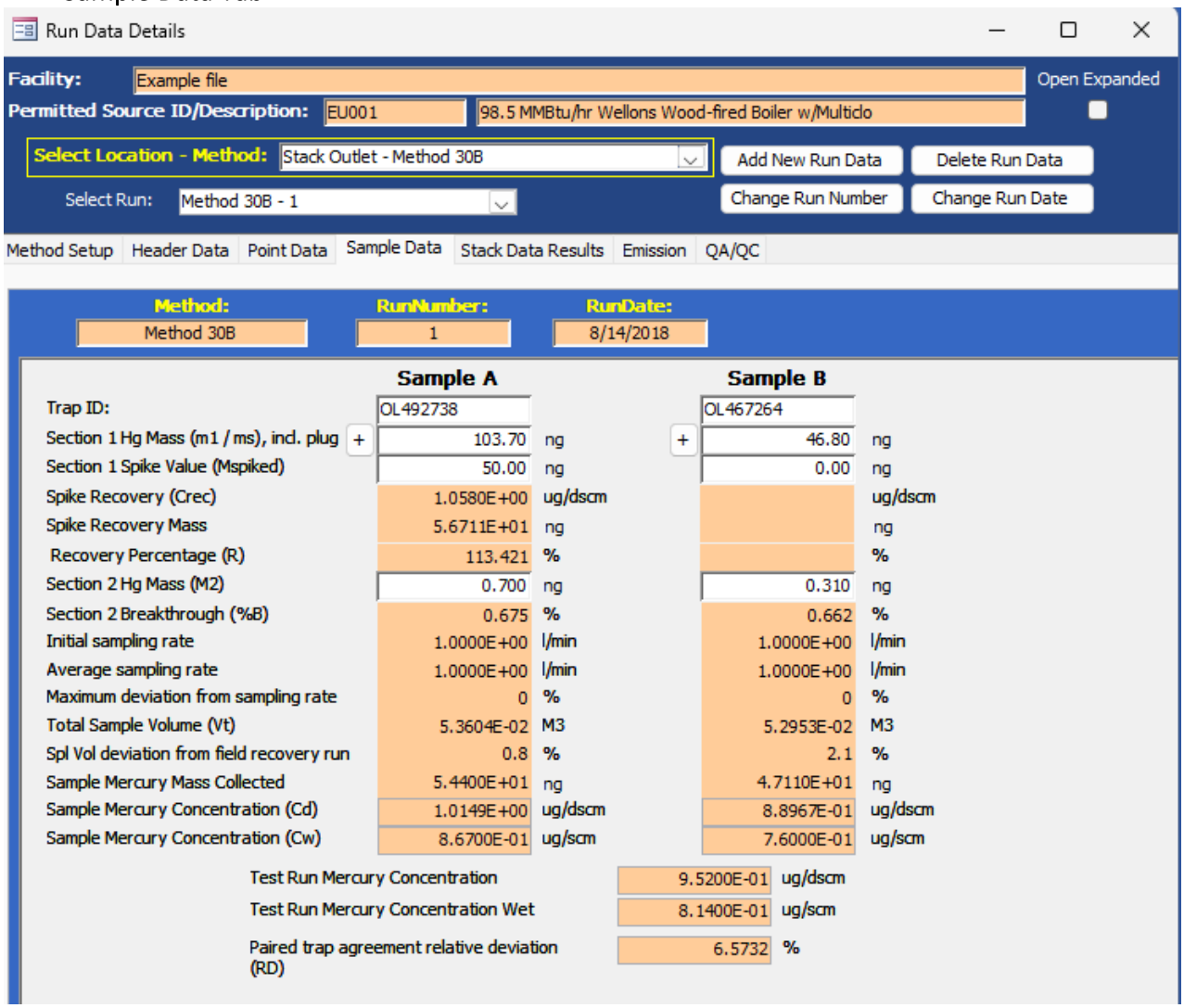


Figure 52 – Method 30B Paired Sample Train: Sample Data Screen

For paired sample trains, the "***Sample Data"*** screen contains only eight fields for the user to provide information (Figure 52). 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 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 Tab

Figure 53- Isokinetic Method: Sampling/Stack Data Results Tab

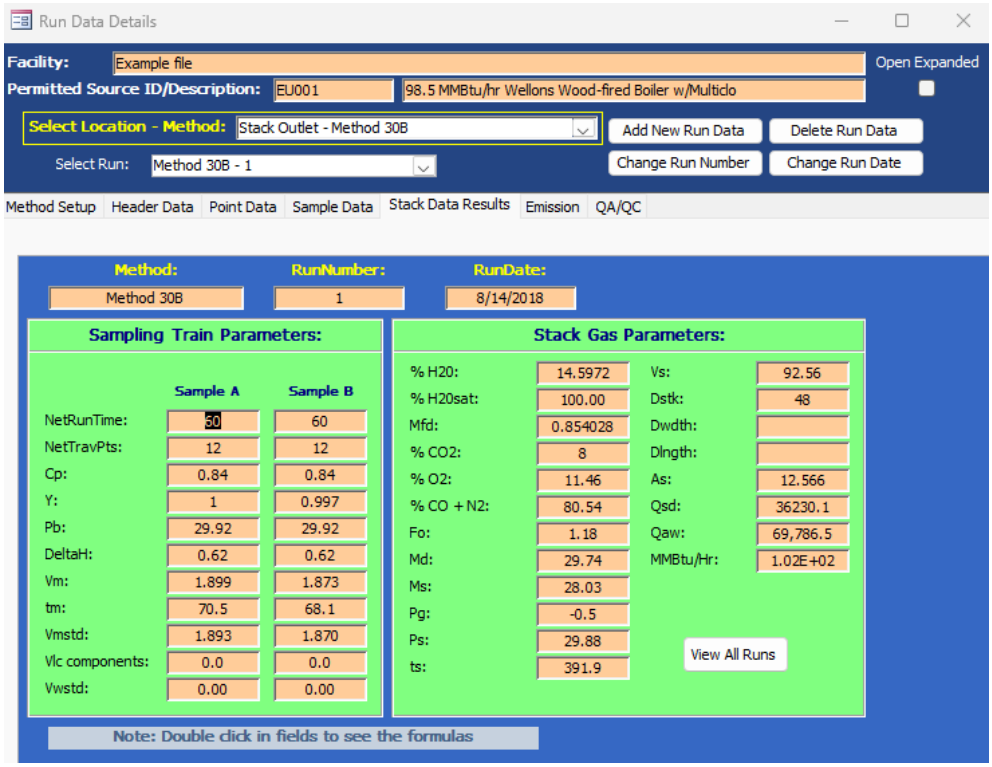


Figure 53- Paired Sampling Trains: Stack Data Results Tab

This tab shows results for a specific run, which were calculated from data in the Header Data and Point Data tabs. Except for the percent isokinetic field at the bottom left of the Sampling/Stack Data Results tab as shown in Figure 53, the data elements displayed are identical. Since the Paired Sampling trains have two independent sampling systems, the paired sampling train Stack Data Results tab has a separate column for each sampling train in the ***Sampling Train Parameters*** area as shown in Figure 54. 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, inches of mercury.
DeltaH:	DGM orifice pressure differential, inches of water.
Vm:	Sample Volume metered, actual cubic feet.
Tm:	Dry gas meter temperature, degrees Fahrenheit.
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, inches of water.
Ps:	Absolute pressure of sampled gas, inches of Hg.
Ts:	Temperature of sampled gas, degrees F.
SqrtDeltaPavg:	Average of the Square root of the pitot tube differential pressure
Vs:	Velocity of gas stream, feet per second.

Dstk: Diameter of exhaust, inches.

Dwdth: Width of exhaust, inches.

Dlngth: Length of exhaust, inches.

As: Area of stack, feet squared.

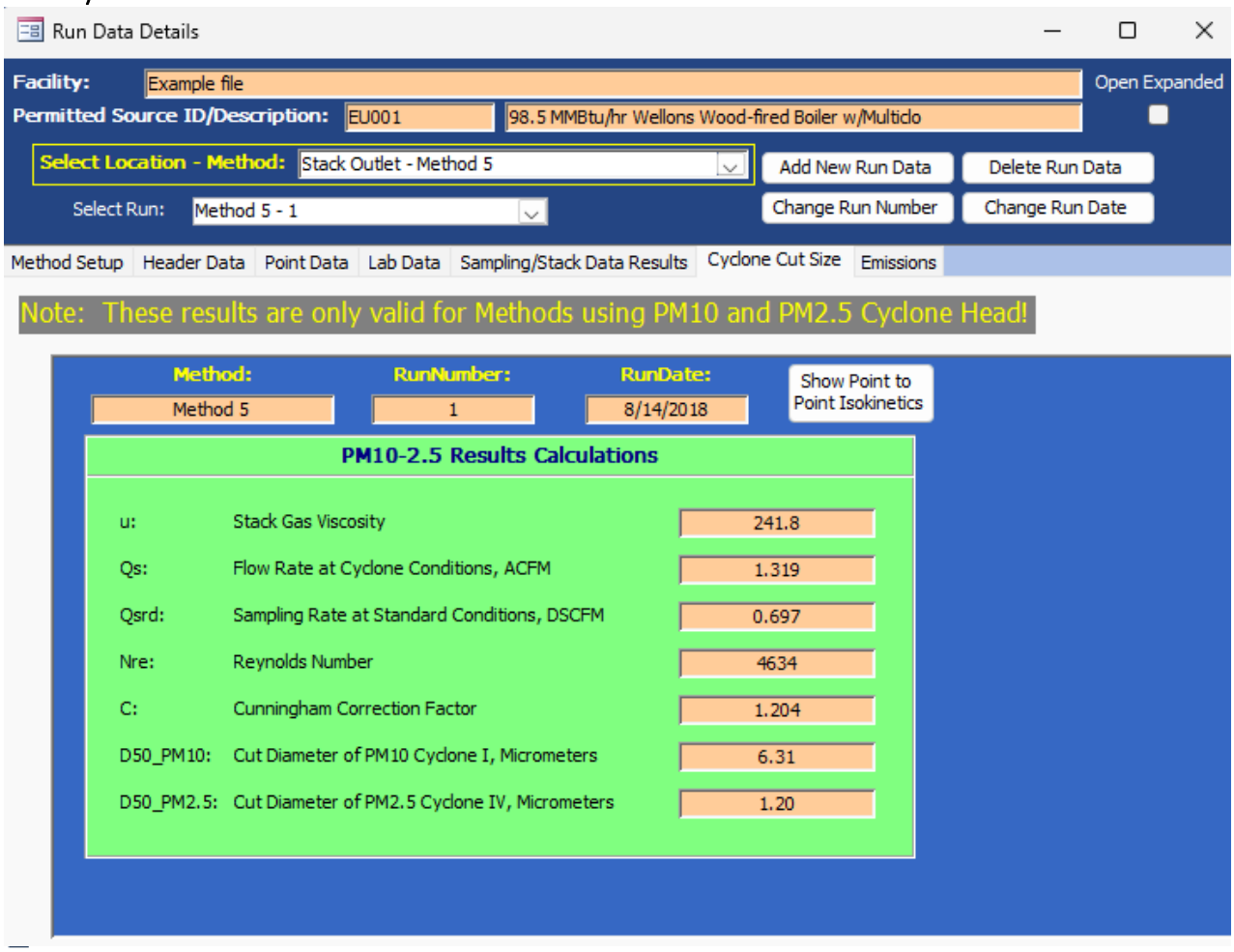
Qsd: Dry volumetric flow rate of exhaust at standard conditions, DSCFM.

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 mass of liquid components (Vlc).

Cyclone Cut Size Tab



Run #	Point	RunTime	GasMeter	Velocity	DeltaP Sqrt	Gas Velocity (ft/s)	Gas Volume (dscf)	Pt. to Pt. Iso. (%)
1	1	5.21	508.067	0.4	0.63	37.59	2.2	100.5
1	2	5.99	510.500	0.46	0.68	40.61	2.7	99.0
1	3	4.43	513.500	0.34	0.58	34.80	1.7	100.9
1	4	3.9	515.400	0.3	0.55	32.85	1.4	101.2
1	5	5.73	517.000	0.44	0.66	39.45	2.5	98.8
1	6	7.16	519.750	0.55	0.74	44.19	3.5	101.2
1	1	6.9	523.700	0.53	0.73	43.55	3.3	99.6
1	2	5.73	527.400	0.44	0.66	39.41	2.4	96.9
1	3	4.56	530.100	0.35	0.59	35.23	1.7	95.7
1	4	3.91	532.000	0.3	0.55	32.97	1.3	91.5
1	5	4.81	533.450	0.37	0.61	36.57	1.9	99.6
1	6	3.52	535.600	0.27	0.52	31.14	1.2	99.5
1			536.940					

Figure 55 - Cylcone Cut Size Tab and Point to Point Isokinetic calculations

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. Select the Show Point to Point Isokinetics Button for the Method 201A point-to-point isokinetic calculations (Figure 55).

Emissions Tab

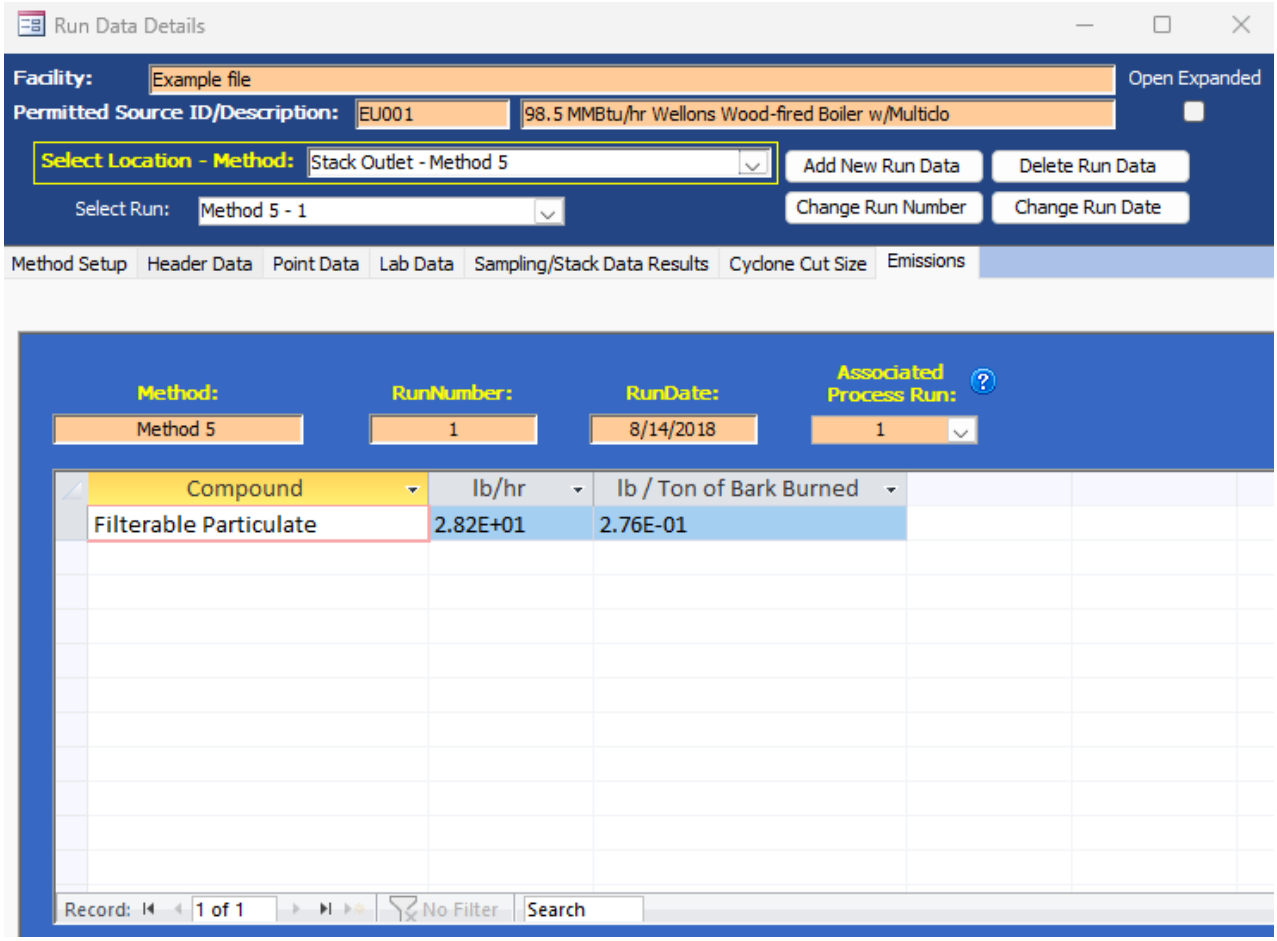


Figure 56 - Emissions Tab

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 44 - 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 56 - Emissions 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.

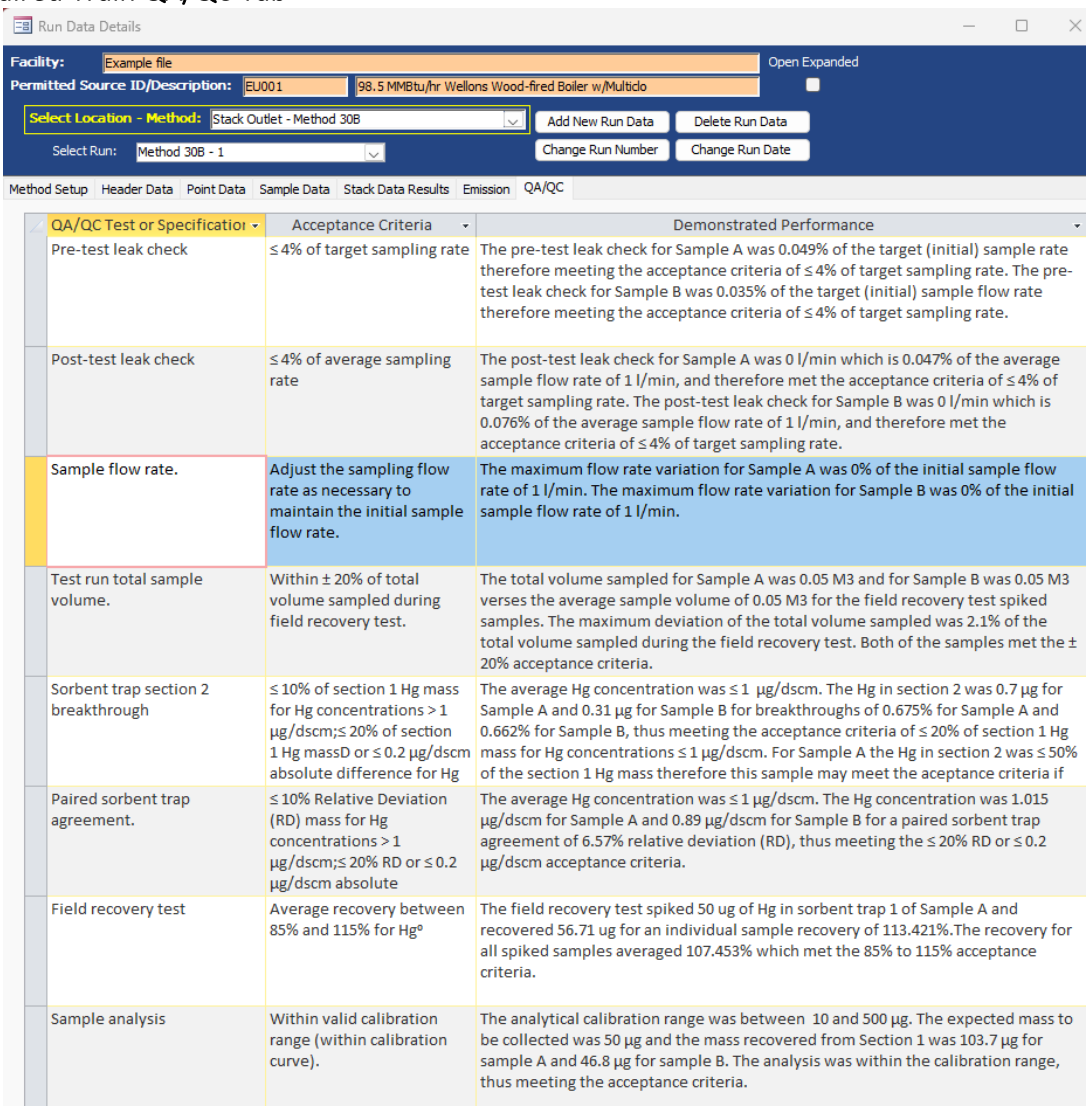
Gr/dscf: Grain per dry standard cubic feet.

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 Tab



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 0.049% 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 0.035% 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 l/min which is 0.047% of the average sample flow rate of 1 l/min, and therefore met the acceptance criteria of ≤ 4% of target sampling rate. The post-test leak check for Sample B was 0 l/min which is 0.076% of the average sample flow rate of 1 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 0% of the initial sample flow rate of 1 l/min. The maximum flow rate variation for Sample B was 0% of the initial sample flow rate of 1 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 0.05 M3 and for Sample B was 0.05 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 2.1% of the total volume sampled during the field recovery test. Both of the samples met 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 absolute difference for Hg	The average Hg concentration was ≤ 1 µg/dscm. The Hg in section 2 was 0.7 µg for Sample A and 0.31 µg for Sample B for breakthroughs of 0.675% for Sample A and 0.662% for Sample B, thus meeting the acceptance criteria of ≤ 20% of section 1 Hg mass for Hg concentrations ≤ 1 µg/dscm. For Sample A the Hg in section 2 was ≤ 50% of the section 1 Hg mass therefore this sample may meet the aceptance criteria if
Paired sorbent trap agreement.	≤ 10% Relative Deviation (RD) mass for Hg concentrations > 1 µg/dscm;≤ 20% RD or ≤ 0.2 µg/dscm absolute	The average Hg concentration was ≤ 1 µg/dscm. The Hg concentration was 1.015 µg/dscm for Sample A and 0.89 µg/dscm for Sample B for a paired sorbent trap agreement of 6.57% relative deviation (RD), thus meeting the ≤ 20% RD or ≤ 0.2 µg/dscm acceptance criteria.
Field recovery test	Average recovery between 85% and 115% for Hg°	The field recovery test spiked 50 ug of Hg in sorbent trap 1 of Sample A and recovered 56.71 ug for an individual sample recovery of 113.421%.The recovery for all spiked samples averaged 107.453% which met the 85% to 115% acceptance criteria.
Sample analysis	Within valid calibration range (within calibration curve).	The analytical calibration range was between 10 and 500 µg. The expected mass to be collected was 50 µg and the mass recovered from Section 1 was 103.7 µg for sample A and 46.8 µg for sample B. The analysis was within the calibration range, thus meeting the acceptance criteria.

Figure 57 - QA/QC Tab

For Method 30B paired sampling trains, there is a QA/QC tab (Figure 57) 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 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

Method Setup Tab

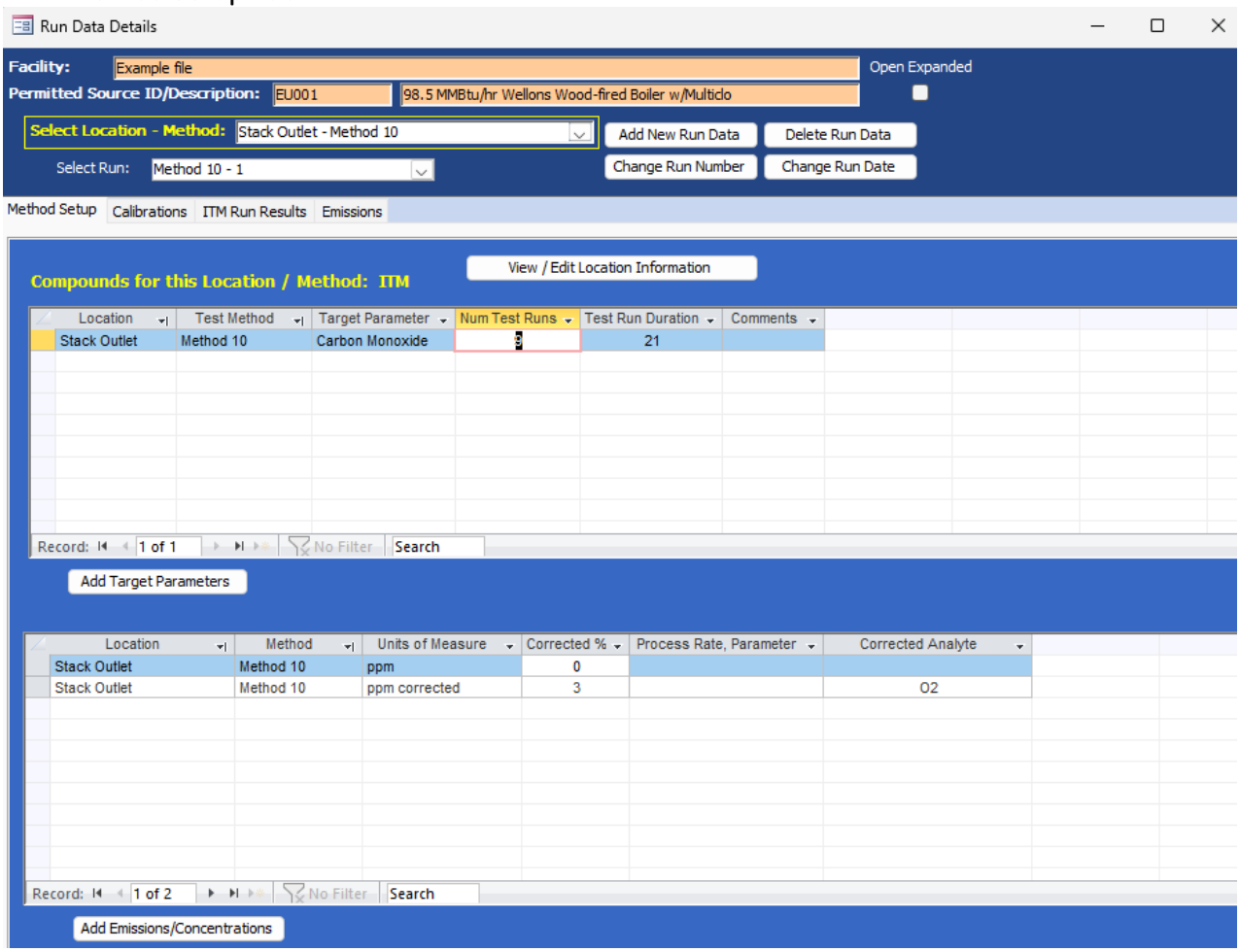


Figure 58 - Run Data Details for Instrumental Methods- Method Setup Tab

As mentioned on page 45, you can enter the instrumental method test data manually or using an import spreadsheet. 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 31 - Test Plan Audit/Calibrations Tab. 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 31). Once unique cylinder identification is provided in the "***CylID***" column, you should ensure 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 if the peach "Add Next Run" button located at the lower right portion of the ITM Run Results Tab. Users can revise these pre-populated fields if needed. In addition, to minimize warning messages, users should enter the specific required information (like units) suggested in the below instructions before entering the majority of the remaining information.

As is the case with the method setup screen for the isokinetic methods, 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 14 - Test Location Information Panel for more information).
- ***Add Target Parameters:*** Allows you to add target parameters for this run at this location/method (see Figure 16 - select Location, Method and Compounds for more information).
- ***Add Emissions/Concentrations:*** Allows you to add emissions/concentrations for this run at this location/method (see Figure 19 - Add Emissions/Concentrations 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 (e.g., 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 (e.g., tons of material processed/hr).

Calibrations Tab

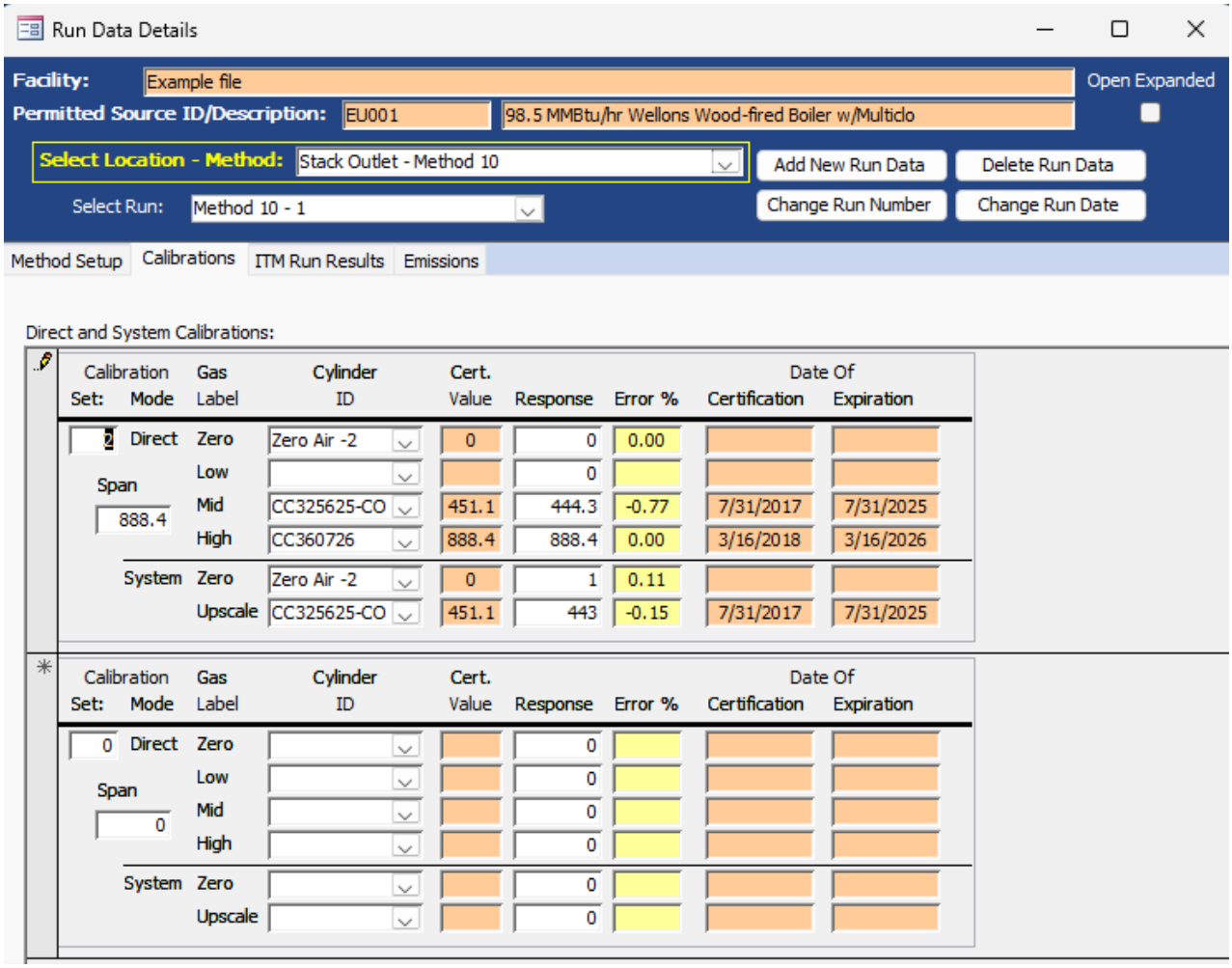


Figure 59 - Calibrations Tab

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 (Figure 59). In addition, you should enter the "***set"*** number that must not be zero 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 thecolumns:

Calibration Set: The number used to associate this set of calibrations with the run data entered in the "ITM Run Results" tab. Should not be "0" and do not duplicate numbers.

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 Tab

Enter the results from the test run. If you are correcting your result to % oxygen or % Carbon dioxide, it would be best to enter those instrumental data first then you can link the data in the subsequent instrumental data. 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 "Add New Run" button on this page, much of the information on this page will be pre-populated on the pages of the new runs (Figure 60). 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 or each run had different calibrations, 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 (Figure 61 - ITM Run Results, stack Parameters and Calibration Set selection). You should associate the test run data with the calibration gas set by selecting the set from the "***Set"*** pick list. Figure 61 - ITM Run Results Tab 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.

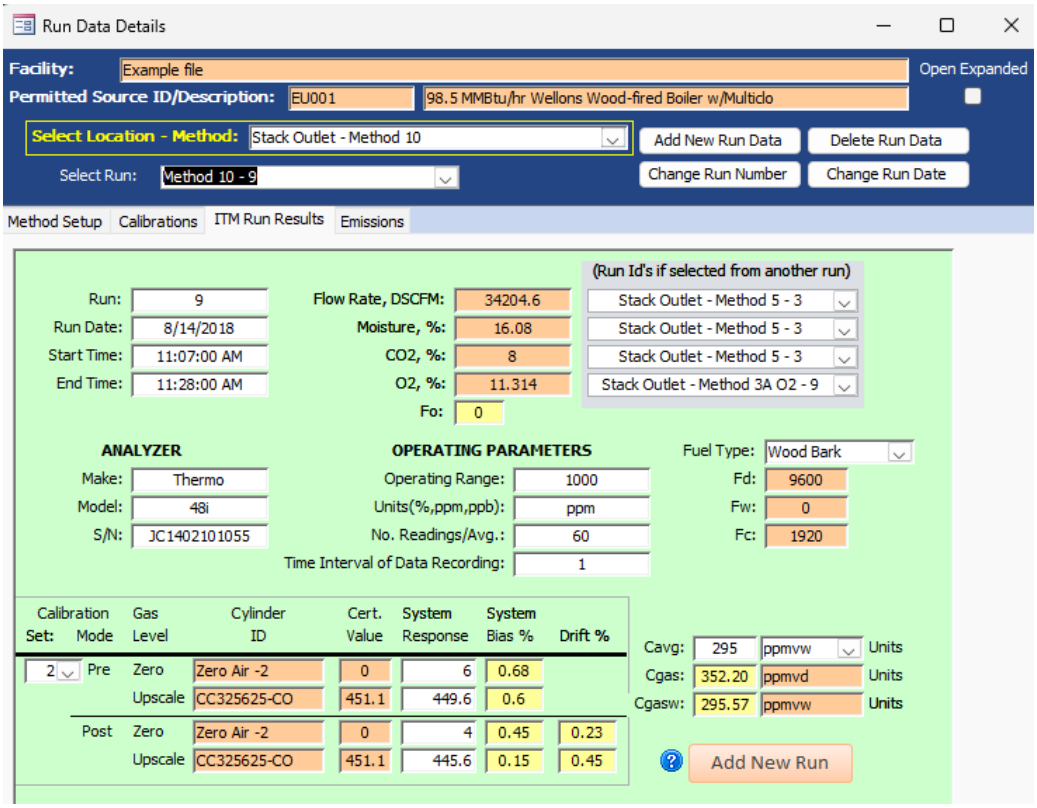


Figure 60 - ITM Run Results Tab

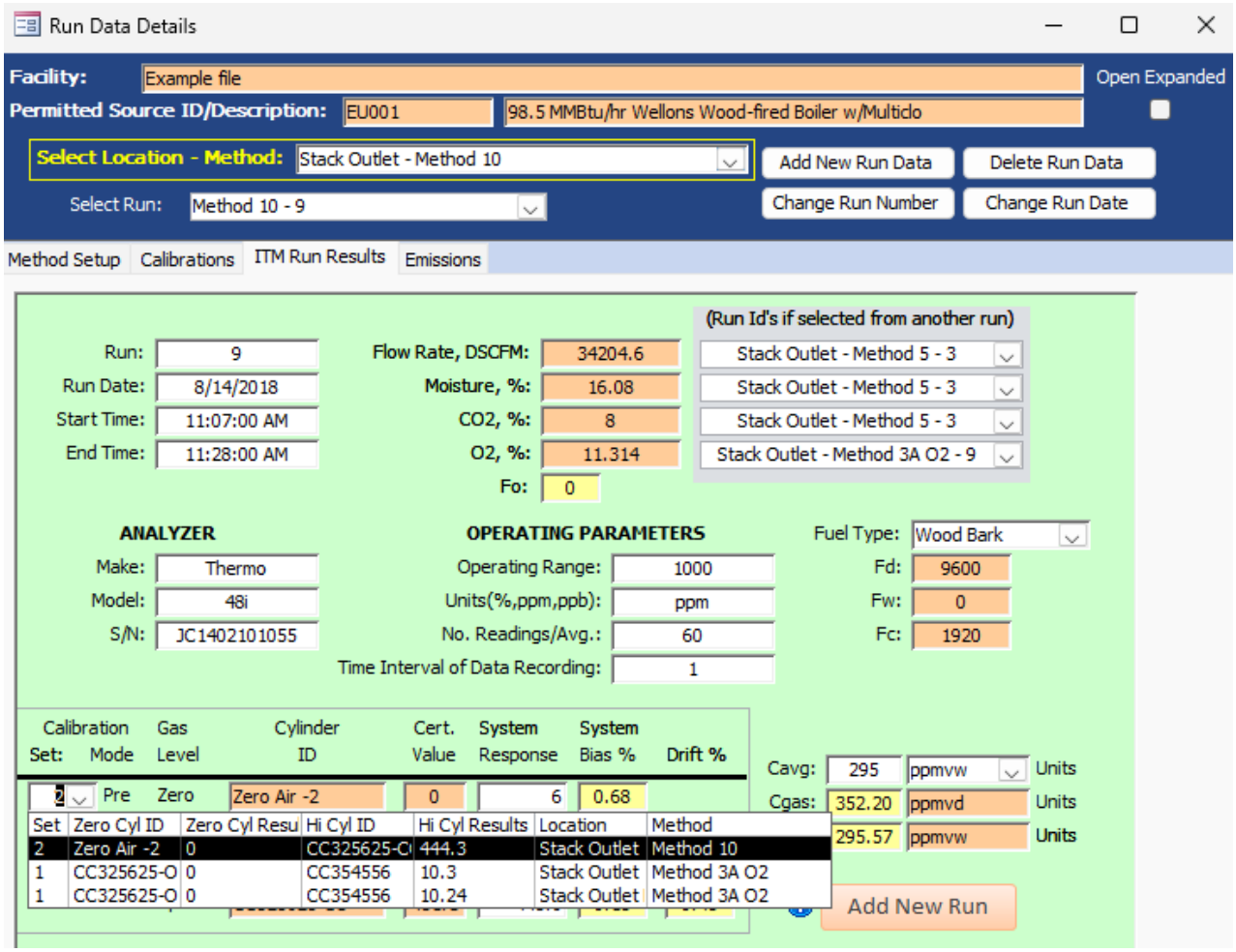


Figure 61 - ITM Run Results, stack parameters and Calibration Set selection

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 Information

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

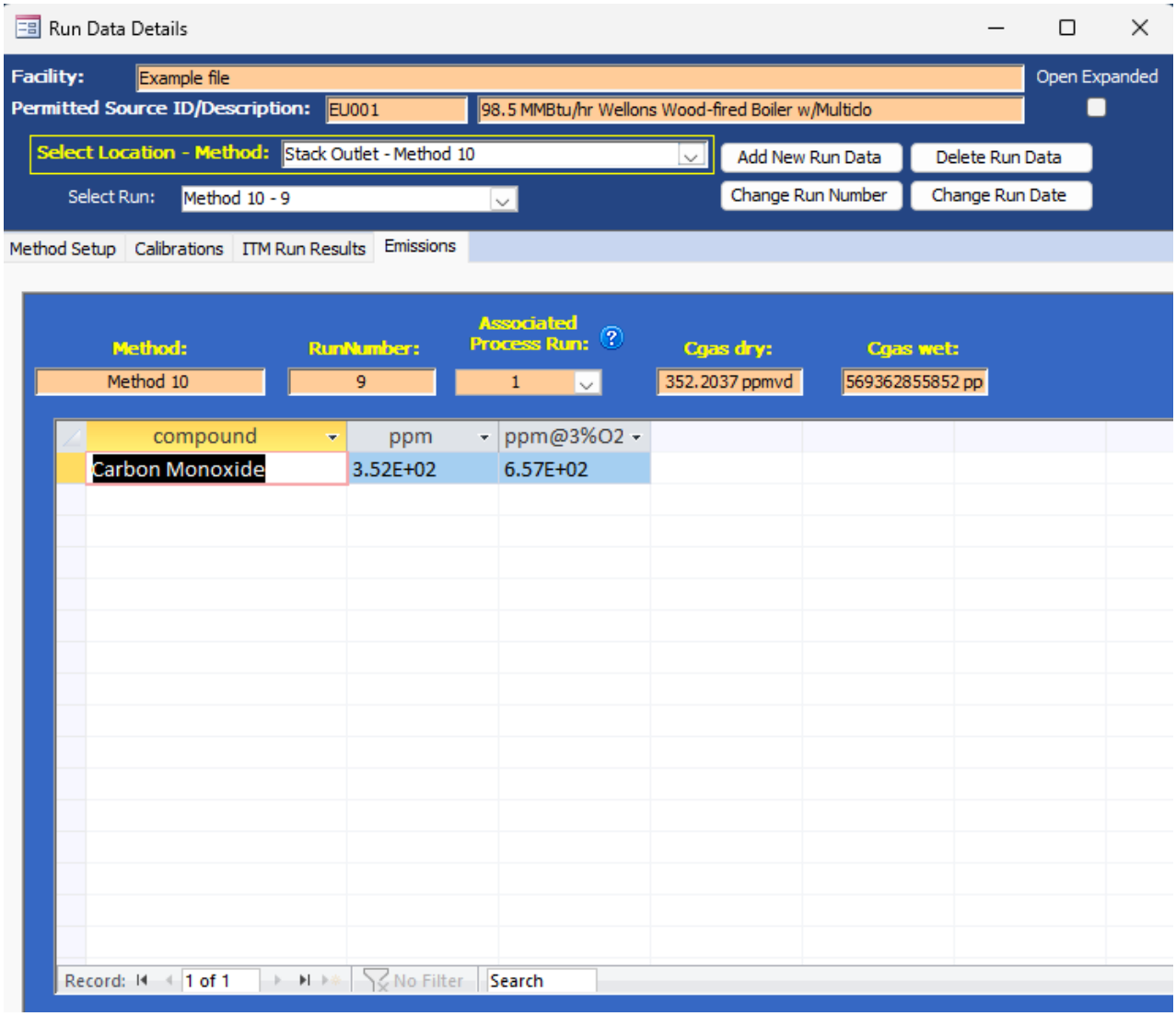


Figure 62 - Emissions Tab

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 58 - Run Data Details for Instrumental Methods- 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 "Emission/ 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.

Miscellaneous Methods Data

Method Setup Tab

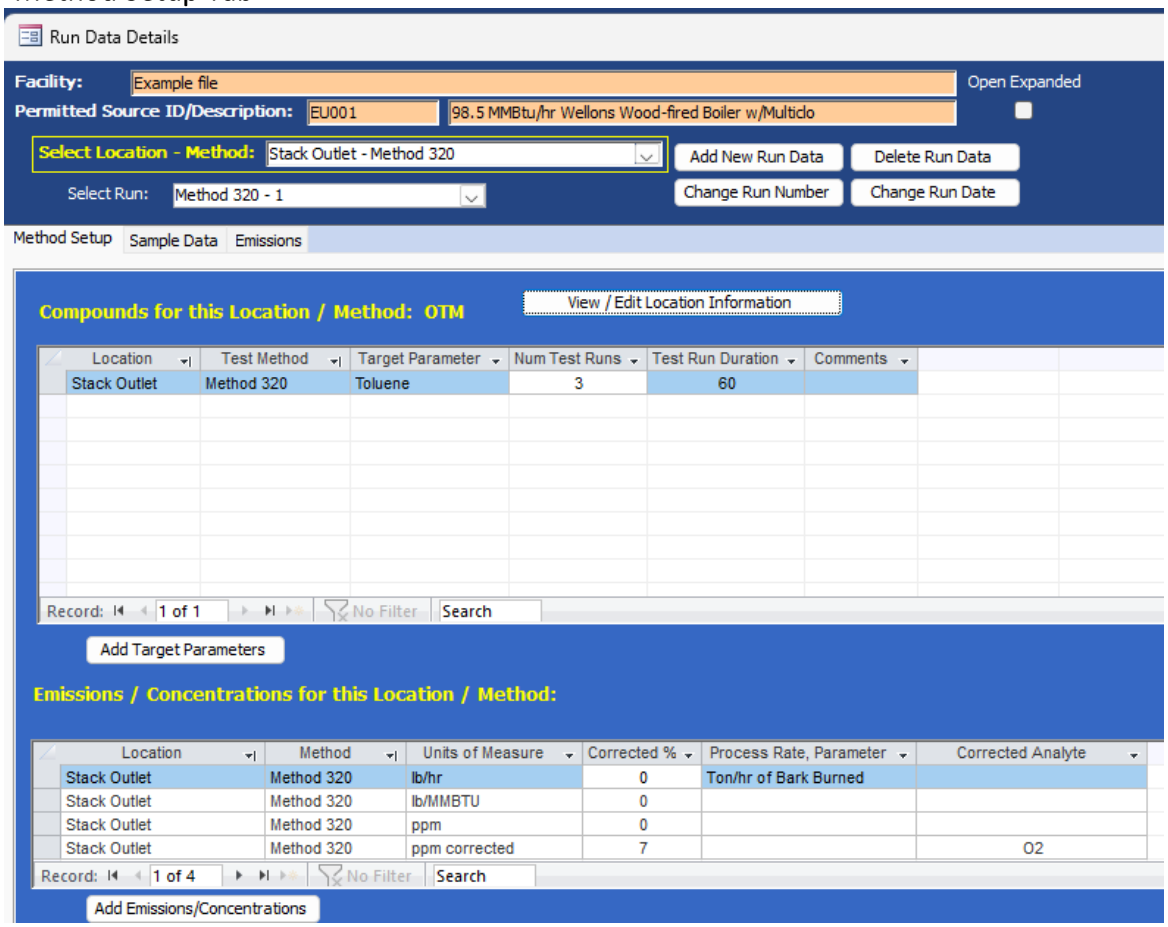


Figure 63 - Run Data Details for Miscellaneous Methods Data- Method Setup Tab

You can enter the miscellaneous methods test data manually or using an import spreadsheet. The procedure is similar to inputting isokinetic data and instrumental methods data with the exception that the tabs in the "***Run Data Details***" screen for Miscellaneous Methods differ from those of the isokinetic and instrumental methods

screens. These tabs include: "***Method Setup***," "***Sample Data***," and "***Emissions***". While the information in the "***Method Setup***" and "***Emissions***" are identical to the isokinetic and instrumental methods screens, the Sample Data tab is a summary tab of measured emissions. The units lb/mmBTU using O_2 or CO_2 **CANNOT** be selected for this summary table; you must use lb/MMBTU or lb/TBTU. If a process rate is to be calculated, pounds per hour will need to be in the test plan and Method Setup tab and Process Rate, Parameter must have a ton/hr, kg/hr or lb/hr selected. The only calculation that will occur is the calculation of the process rate on the Emissions tab. The pollutant will be measured in lb/hr and the Process Rate, Parameter will be in the format of process material and action per hour (example: lb or ton of metal produced/hr).

As is the case with the method setup screen for the isokinetic and instrumental methods, the fields in the Method Setup tab (Figure 63) will be pre-populated based on information entered in the test plan. However, the information 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 16 - Test Location Information Panel for more information).
- ***Add Target Parameters:*** Allows you to add target parameters for this run at this location/method (see Figure 18 - Select Location, Method and Compounds for more information).
- ***Add Emissions/Concentrations:*** Allows you to add emissions/concentrations for this run at this location/method (see Figure 21 - Add Emissions/Concentrations 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 (e.g., 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 (ᵛ) 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 (e.g., tons of material processed/hr).

Sample Data Tab

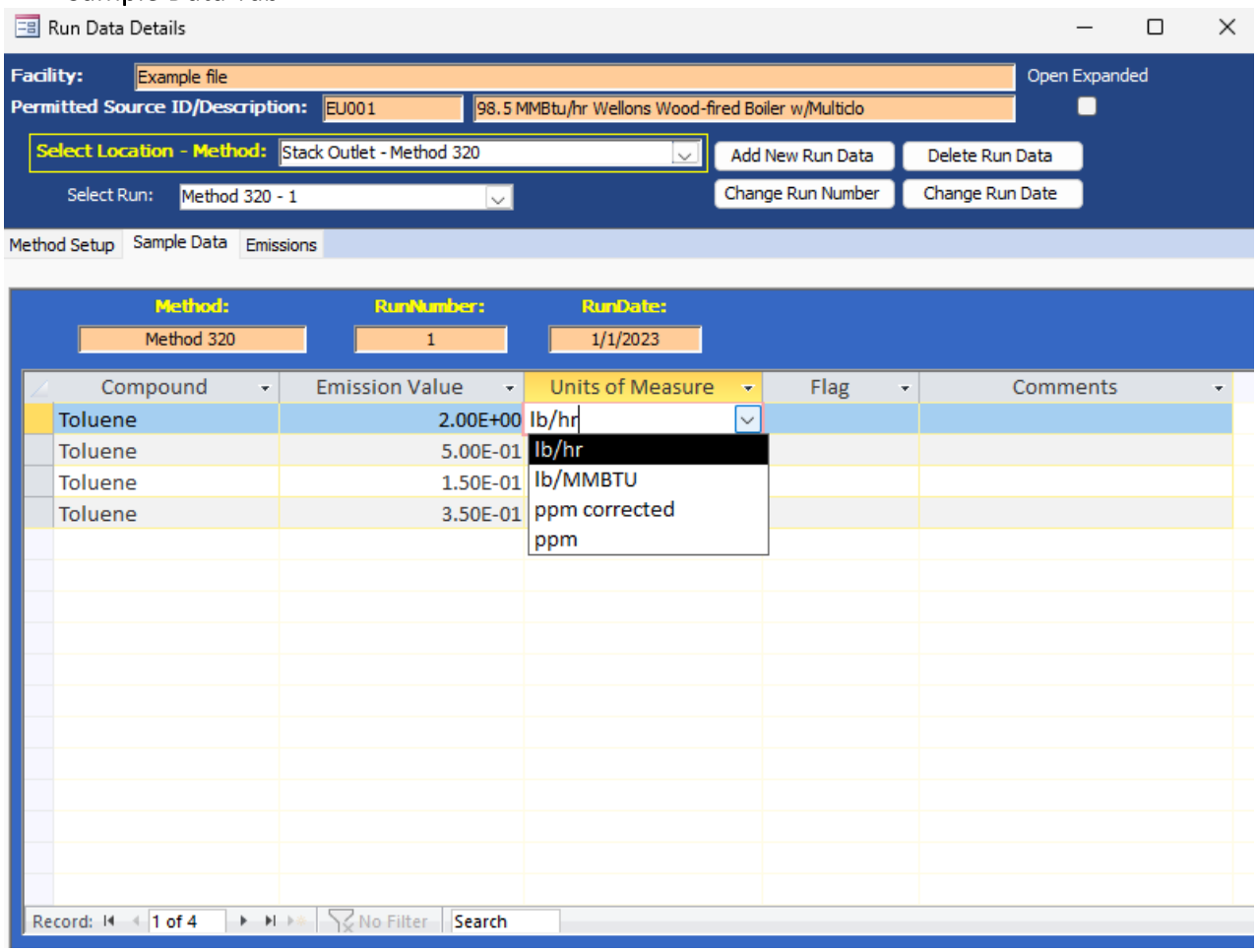


Figure 64 – Sample Data Tab for Miscellaneous Methods Data

The Sample Data tab is a Summary table. The emission value is entered, and the Unit of Measure is selected from the drop-down list in the Units of Measure column that was populated from Item 2b of the Test Plan (Figure 64).

Field descriptions are below:

Method: Method that was used for testing. The method is selected 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. If the method is missing from the list, a custom method can be added.

Run Number: Prefilled, but editable, number of run.

Run Date: Date run was performed.

Compound: Analyte name from Setup window Item 2B selected when method was entered.

Emission Value: The measured or calculated final emission data for the run. This is the final value using the lab results and the sampling data to calculate the value associated with the selected unit of measure.

Unit of Measure: The emission concentration or mass rate unit of measure that is being calculated. These units of measure can be selected from the dropdown list.

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].

Be sure to attach all supporting documentation for the miscellaneous methods data, including field data, lab data, required quality assurance and calculations required by the methods to support your data entered on the table.

Emissions Tab

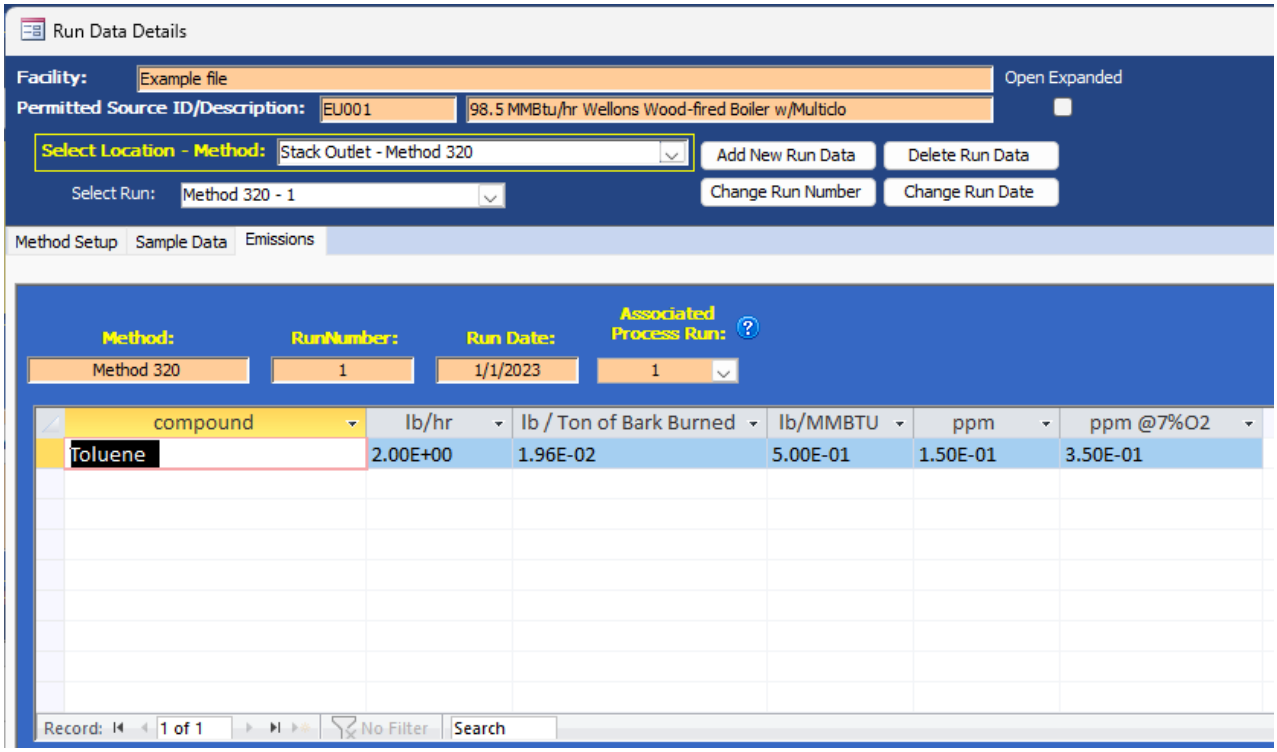


Figure 65 - Emissions Tab

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 63 - Run Data Details for Miscellaneous Methods - Method Setup Tab).

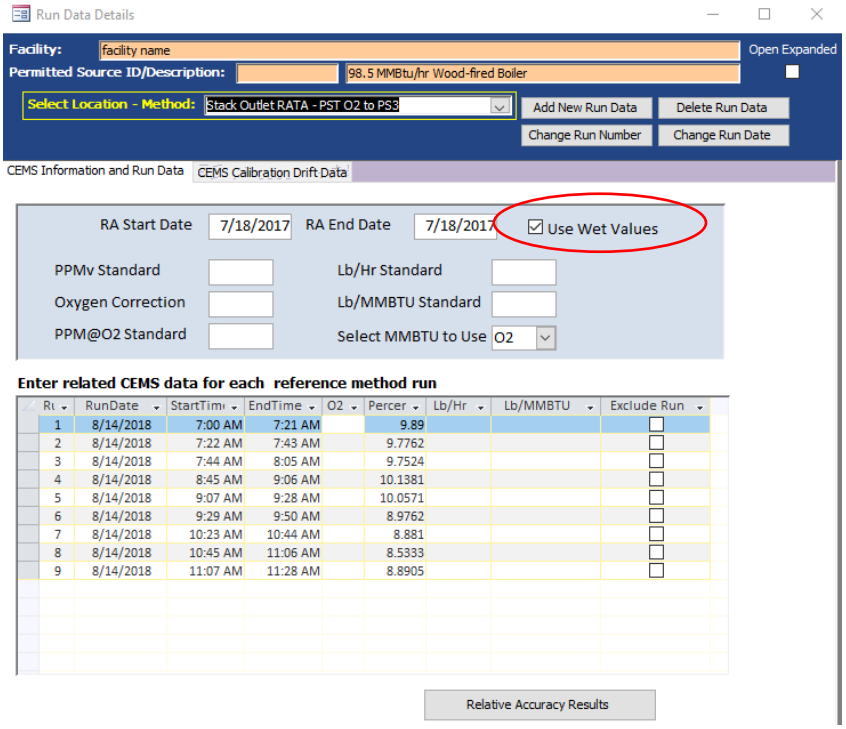
Some of the more common column names are as follows:

Compound:	Analyte name from Setup window.
lb/hr:	Emissions, pounds per hour
lb/Ton of Bark Burned	The pounds per ton of bark burned when calculated using the process rate of Ton of Bark Burned per hour
lb/MMBtu:	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 "Emission/ Concentration" area of the "Method Setup" tab.
ppm	Concentration, parts per million.
ppm@7%O2:	Concentration, pounds per million corrected to 7% O_2.

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 66 - Performance Specification Run Data Details will be displayed.

New feature in version 6 was the ability to use wet values for a RATA. Performance Specification 2 requires the RATAs to be on a dry basis but we recognize the need for wet RATA calculations. To use the wet value, place a check mark in the box to the left of Use Wet Values.



Ri	RunDate	StartTim	EndTime	O2	Percer	Lb/Hr	Lb/MMBTU	Exclude Run
1	8/14/2018	7:00 AM	7:21 AM		9.89			
2	8/14/2018	7:22 AM	7:43 AM		9.7762			
3	8/14/2018	7:44 AM	8:05 AM		9.7524			
4	8/14/2018	8:45 AM	9:06 AM		10.1381			
5	8/14/2018	9:07 AM	9:28 AM		10.0571			
6	8/14/2018	9:29 AM	9:50 AM		8.9762			
7	8/14/2018	10:23 AM	10:44 AM		8.881			
8	8/14/2018	10:45 AM	11:06 AM		8.5333			
9	8/14/2018	11:07 AM	11:28 AM		8.8905			

Figure 66 - 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 data of the Plant CEMS, while the

one labeled “CEMS Calibration Drift Data” is used to document the performance of the seven-day calibration drift evaluation. Figure 66 - Performance Specification Run Data Details is a screen shot of the blank tab for entering plant RATA CEMS information and Figure 67 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 five columns for entry of CEMS data include “O2”, “PPM,” “PPM@O2,” “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 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

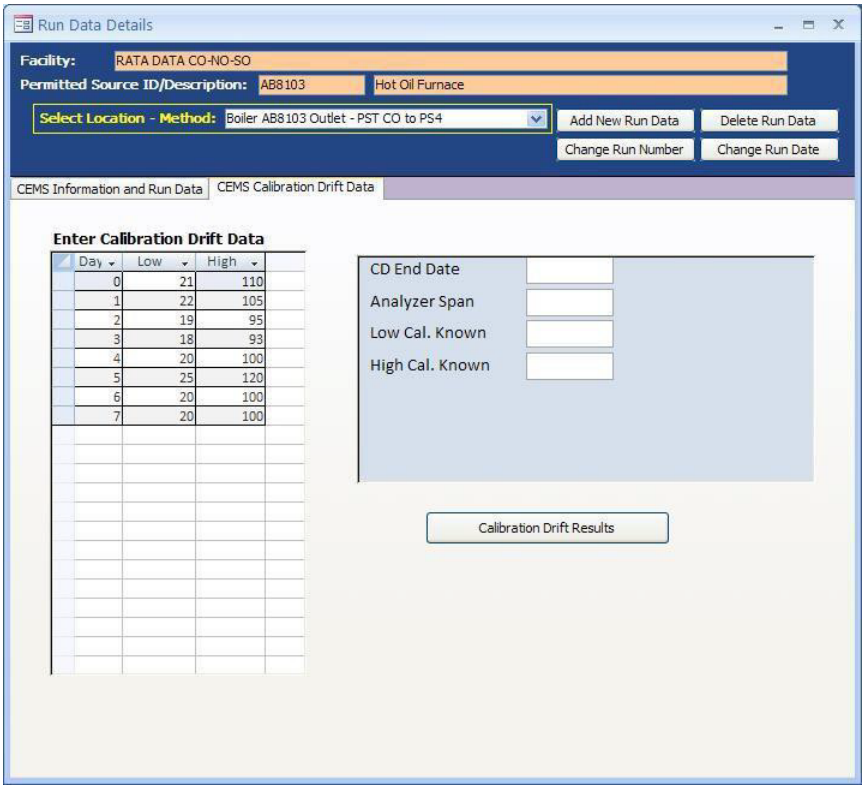


Figure 67 - CEMS Calibration and Drift Data Entry

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 Calibration Drift Data***" are as follows:

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.
CD End Date:	This is the date of the last day for the calibration drift assessment.
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.

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

Relative Accuracy Results — Stack Outlet RATA

Note: Reference values are wet

Facility: facility name

RAStartDate: 7/18/2017

RAEndDate: 7/18/2017

Run	Ref Percent	CEMS Percent	Differences Percent	Ex. Run
1	9.24	9.89	0.65	☐
2	10.10	9.78	-0.33	☐
3	10.10	9.75	-0.35	☐
4	10.54	10.14	-0.40	☐
5	10.44	10.06	-0.38	☐
6	9.73	8.98	-0.75	☐
7	9.44	8.88	-0.56	☐
8	8.93	8.53	-0.40	☐
9	9.54	8.89	-0.65	☐

Sums	88.06	84.89	-3.17
Avg's	9.78	9.43	-0.35
Standard Deviation			0.40
Confidence Coefficient			0.31

Relative Accuracy (< or = to 1% Difference)	**0.35**
Relative Accuracy (< or = to 20% RA)	**6.76**

The RA of the CEMS was be no greater than 20% of the mean value of the reference method (RM) data or the absolute value of the difference between the mean RM value and the mean CEMS value was less than or equal to 1.0 percent O2 or CO2; the specification in paragraph 13.2 of Performance Specification 3 was met.

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

Figure 68 - RATA results report

A “Relative Accuracy Results” report like Figure 68 - 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* and reiterated in the Office of Compliances Clean Air Act National Stack Testing Guidance. 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 68 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 69 - 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.

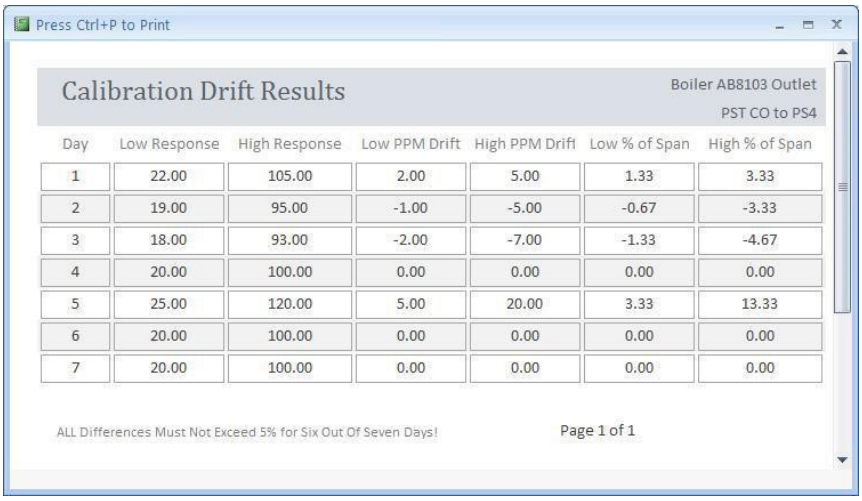


Figure 69 - Calibration Drift Results Report

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

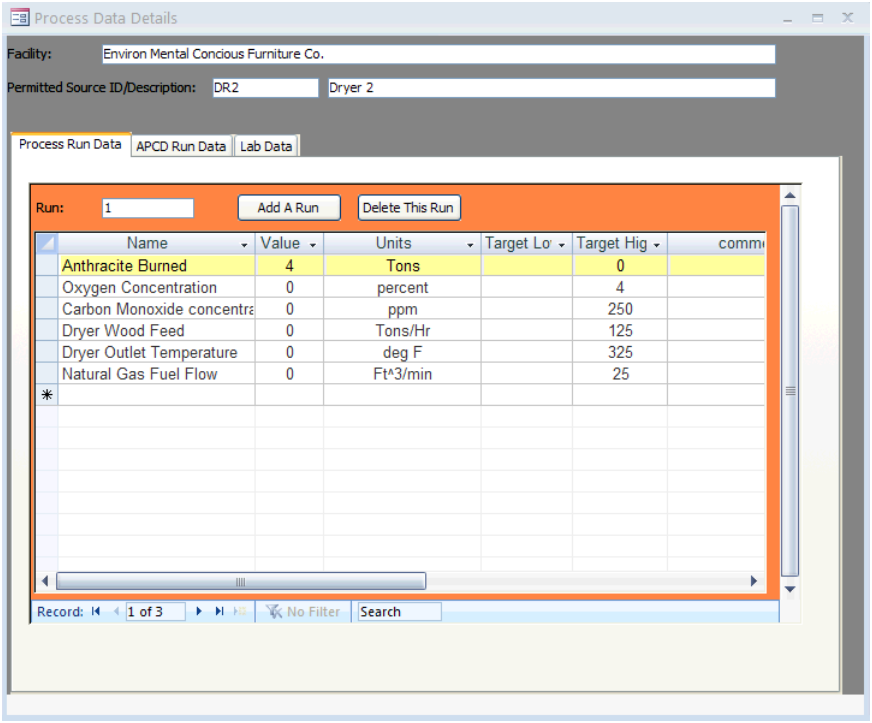


Figure 70 - Process Run Data Tab

This list (Figure 70) was created in the test plan on item 4a. (See Figure 25 - Test Plan Process/APCD Tab 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 71).

Figure 71 - 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

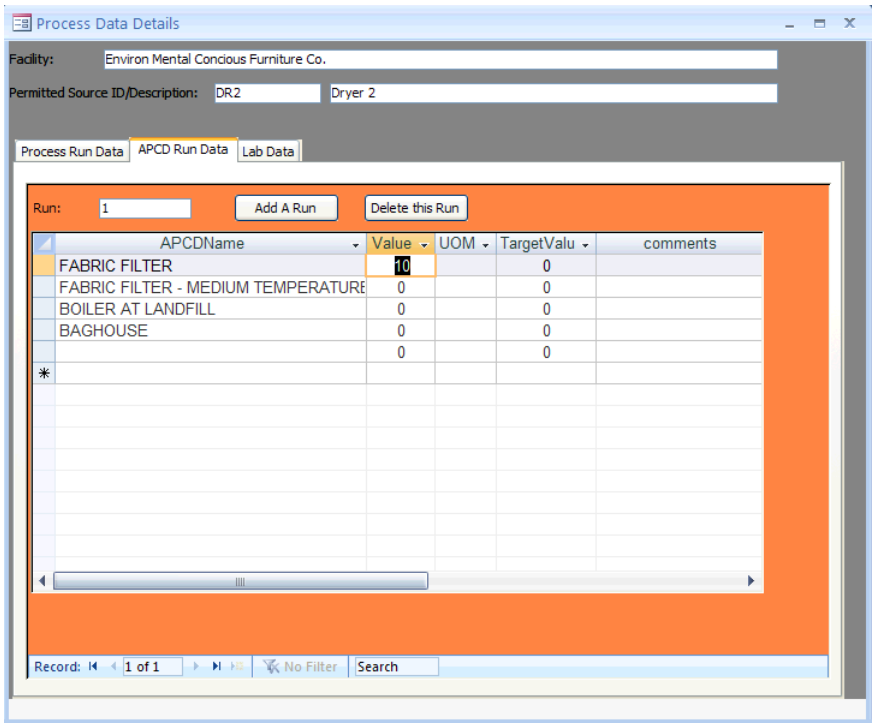


Figure 72 - APCD Run Data Tab

This list (Figure 72) was created in the test plan on item 5b (see Figure 29 - Control Devices - Test Plan Process/APCD Control Devices editing for more information). Using the data from item 5b, the "***APCDName***", "***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

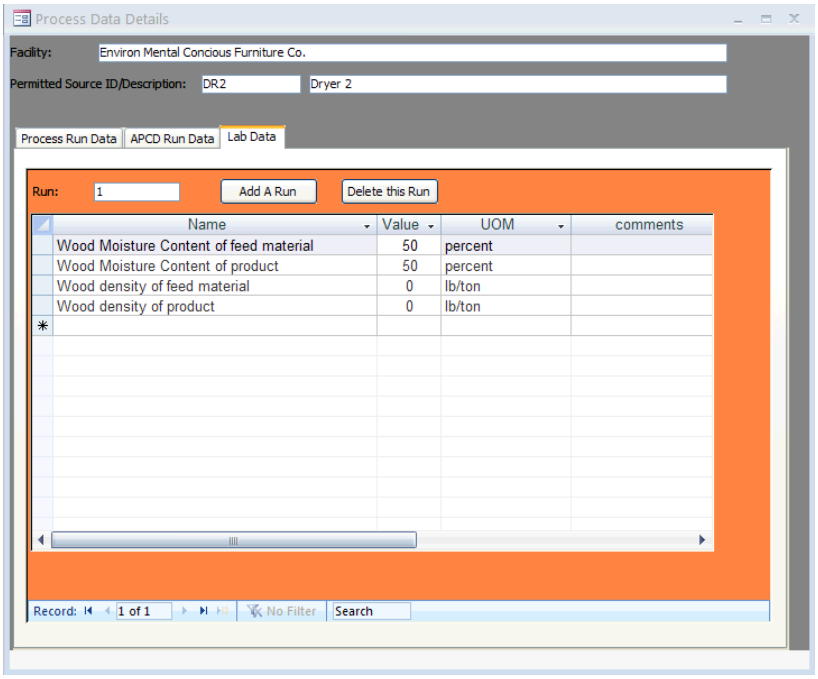


Figure 73 - Lab Data Tab

This list was created during the test plan on item 4b (see Figure 27 - Process Lab Information 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 ensure 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

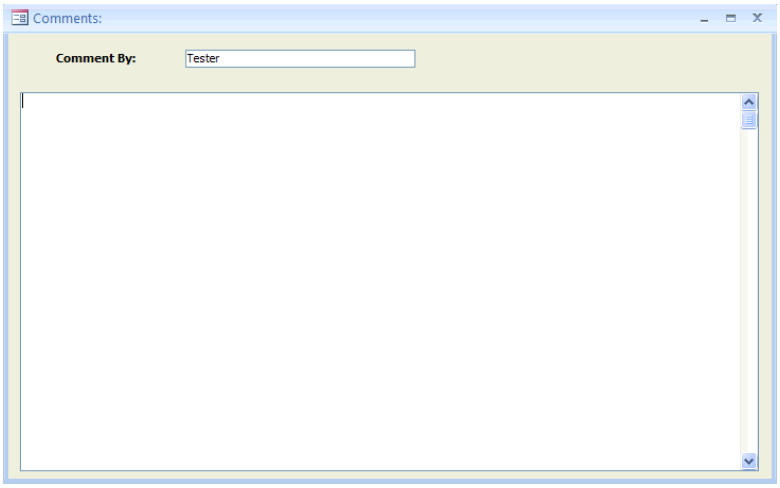


Figure 74- Tester Comments window

Click the "**Tester DQ Assessment**" button in the "***Test Data***" area of the "***ERT Main Menu***" to allow entry of any comments (Figure 74) 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**" button opens a text box (Figure 74) that 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.**

When typing in this comment window, DO NOT use the "/" symbol, use words (e.g., per as in pounds per hour or divided by in an equation). This symbol will cause the file to not be able to be uploaded to CEDRI and give you the following error: ERROR (115): Invalid XML File The ERT XML could not be processes. Please check your ERT file for incomplete data, invalid structure or invalid version.

Attachments

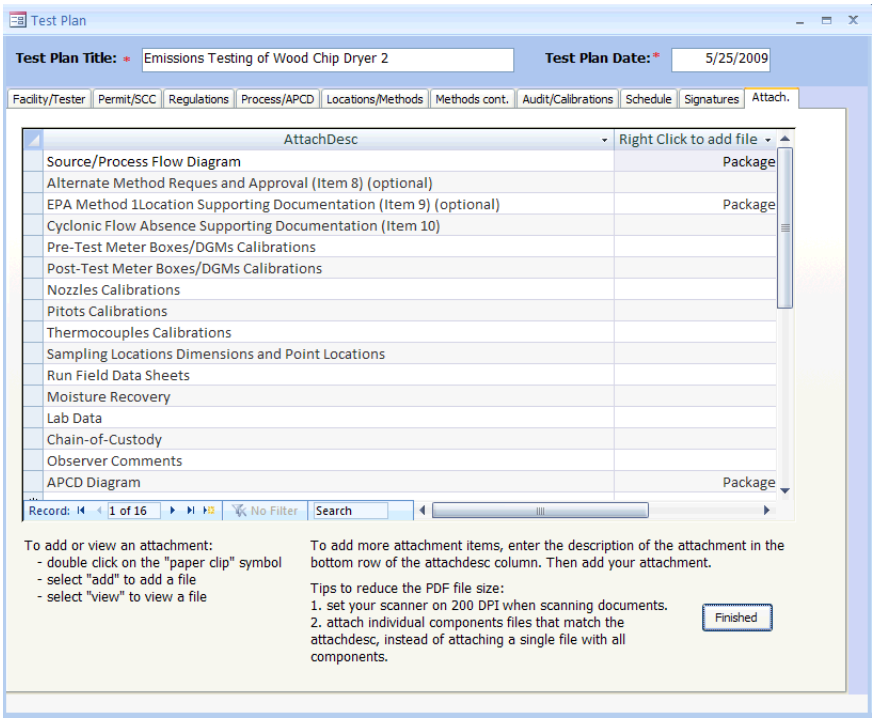


Figure 75 - Attachment Tab

Once the test data have been entered, click "**Attachments**" in the "***Test Data***" area of the "***ERT Main Menu***". This will display the "***Attachments***" tab from the test plan (Figure 75).

All documents to support the test need to be included as attachments here. See Adding an Attachment section 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 in the field for a required or optional piece of documentation or an attachment has been provided for the item.

As shown in Figure 76, 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.

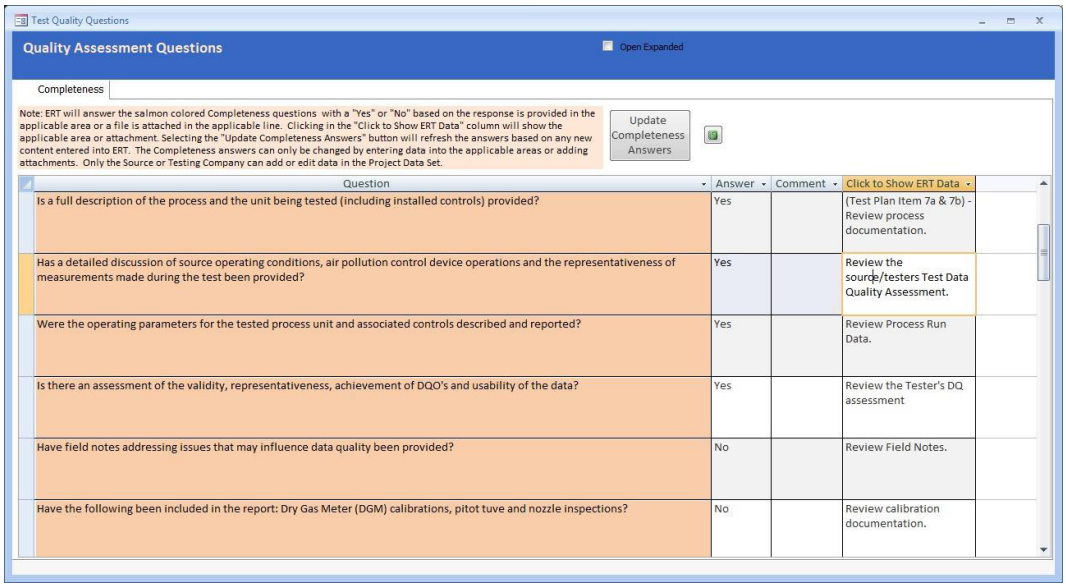


Figure 76 - Completeness Check: Quality Assessment Questions

A more detailed list of questions is available for State/local agencies to use as a check sheet 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

wi

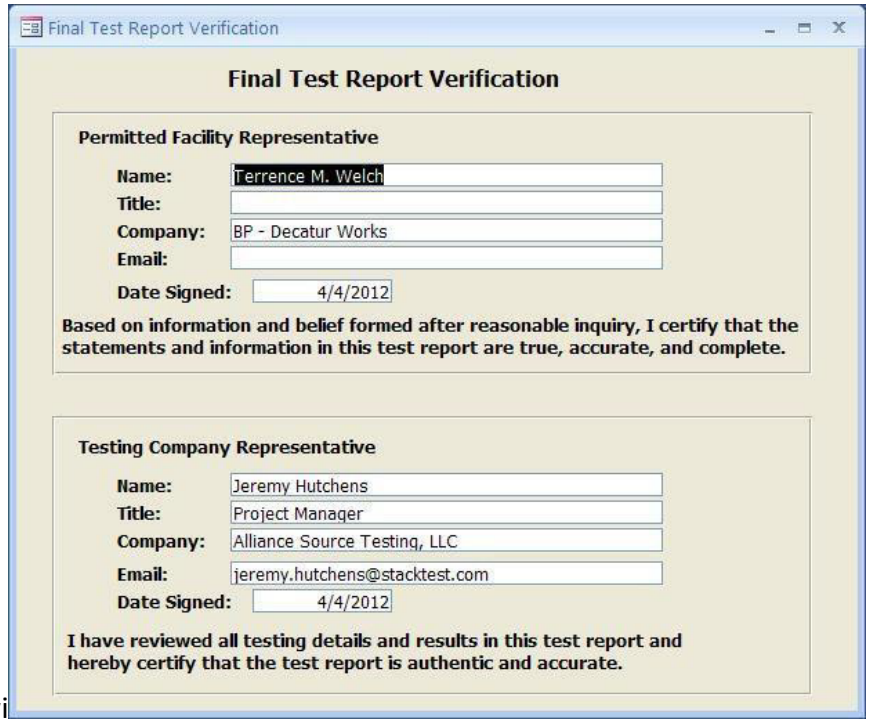


Figure 77 - Final Test Report Verification Window

Click the "**Report Verification"** button (Figure 77) 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 a 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.

Creating an ERT Submission Package File

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.

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

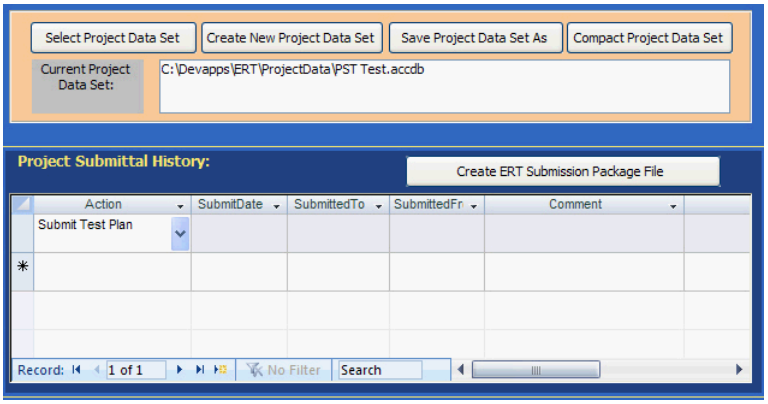


Figure 78 - Project Submittal History Area of the ERT Main Menu

The "***Project Submittal History***" area of the ERT (Figure 78) 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 when a ERT package is created (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 in this area.

If the data set is required to be submitted to CDX/CEDRI, an ERT submission package file must be created. Make sure the ERT project dataset is located on the local drive (either on the C: drive or on the desktop). A submission may have difficulties being created if the file is not on a local drive (Thumb drives and servers have caused issues in the past). 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 79, in which the file preparation menu is activated.

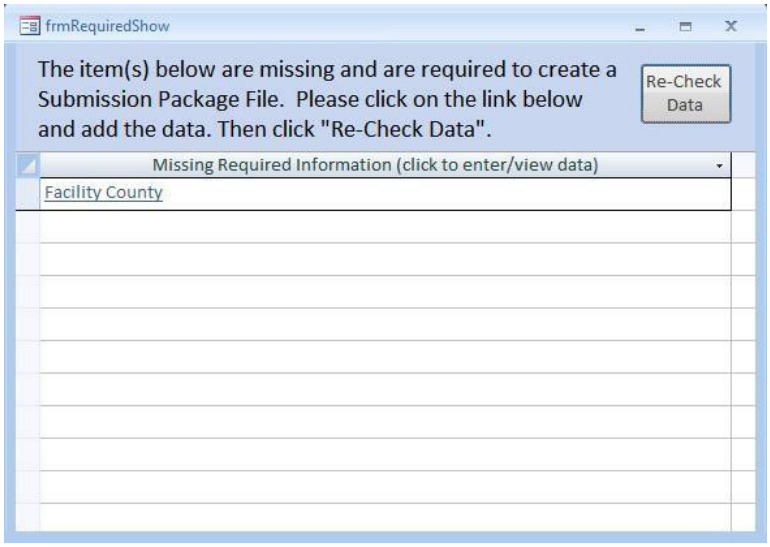


Figure 79 - Missing Items List in ERT

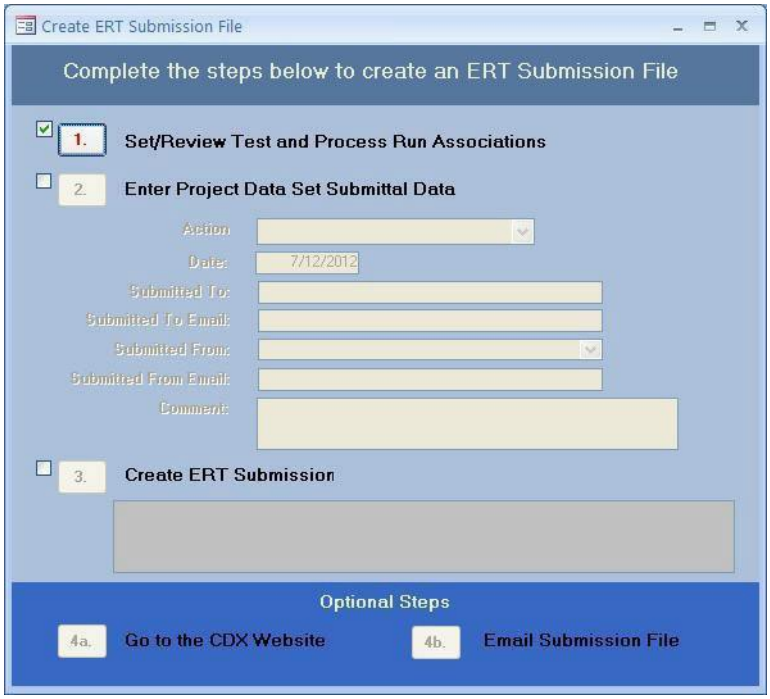


Figure 80 - Create ERT Submission Package File Menu

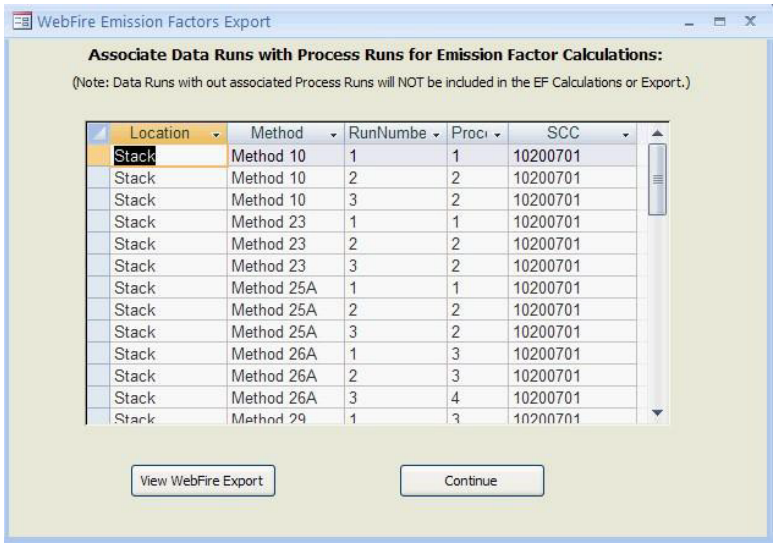


Figure 81 - Associate Reference Method Data Runs with Process Runs

Select 1. Set/Review Test and Process Run Associations of Figure 80 - Create ERT Submission Package File Menu and you will see the above screen**.** This allows you to associate the process data with the test run data (Figure 81). 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, asin Figure 81- Associate Reference Method Data Runs with Process Runs. Click on "**View WebFIRE Export**" to see results in spreadsheet format.

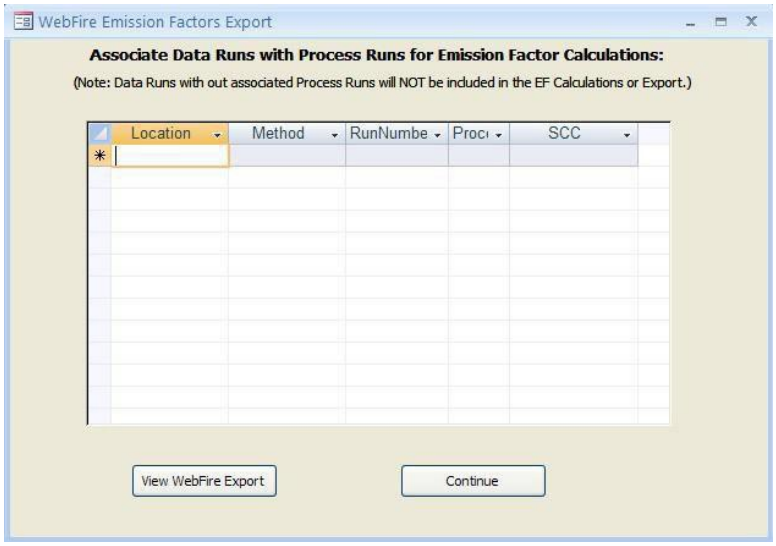


Figure 82 - Blank Associate Data Runs with Process Runs

When submitting a PDS with only test plan data, there will be no run or process data to associate (Figure 82). Click on "**Continue**" button to skip this process and continue to create the submission package file.

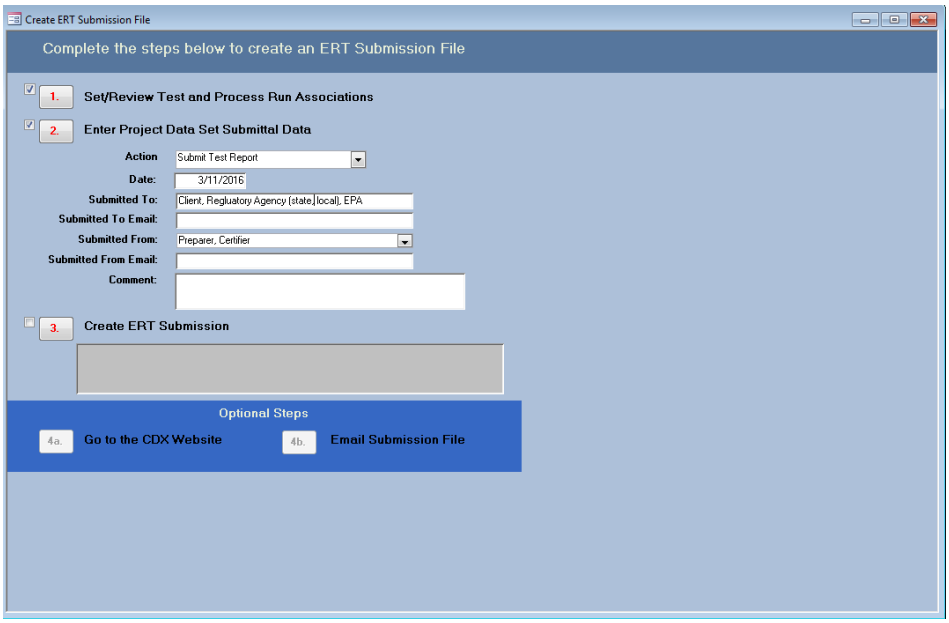


Figure 83 – PDS Submittal Data

Click the number 2 to "***Enter Project Data Set Submittal Data"***. This will activate the fields so that the data can be entered (Figure 83). 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 Report,"
- "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.

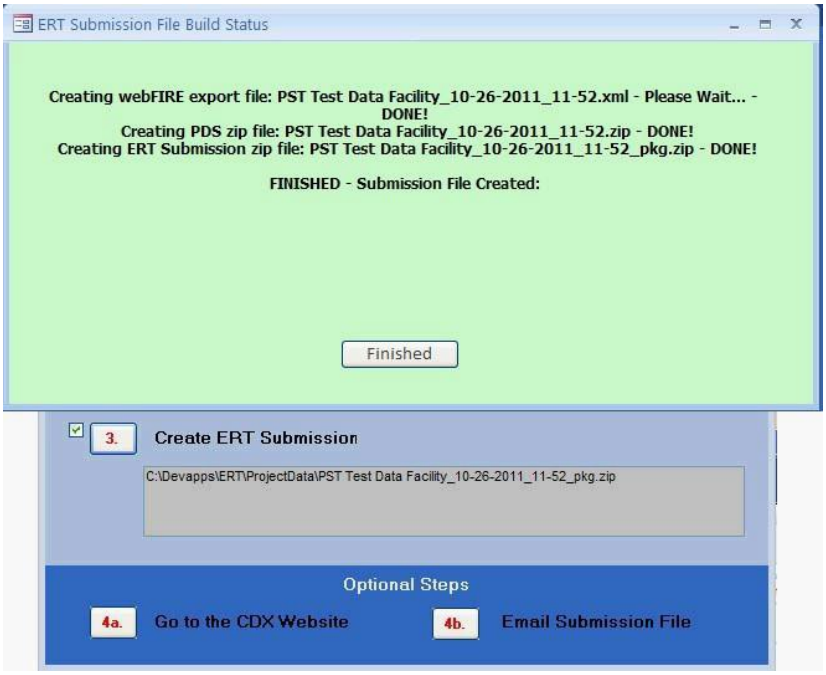


Figure 84 – Notice of Creation of ERT file

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 (Figure 84). 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 6: Accessing Test Plans and Data for Review

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 CEDRI immediately after submission by the regulatory agency or WebFIRE - 60 days after submission to CDX/CEDRI (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 from WebFIRE

1. Go to EPA's WebFIRE webpage:
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.

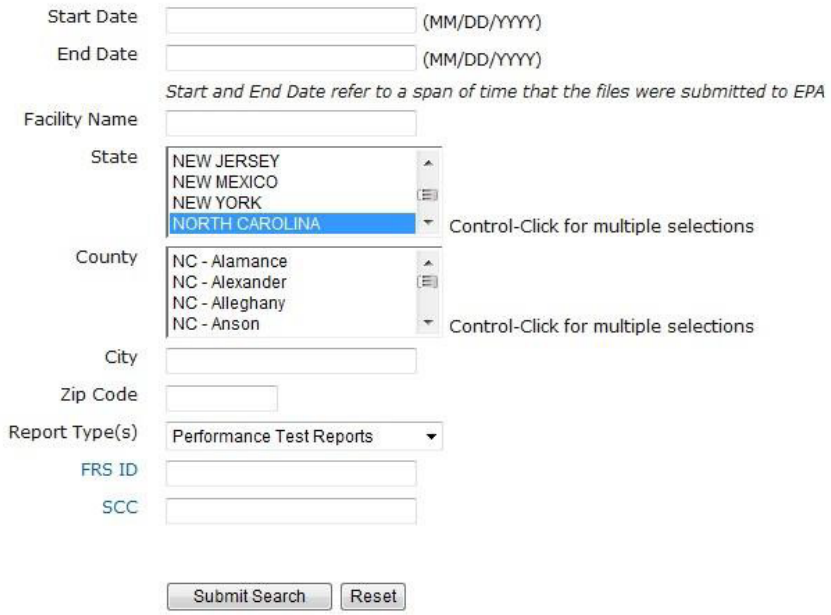


Figure 85 - WebFIRE Seach Engine

4. A page with the available search criteria as shown in Figure 85 will be displayed.
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 86 will be displayed. You can adjust the column widths to see more 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 86 - 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 .accdb). 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.

Chapter 7: Regulatory Agency Review

Test Plan Review

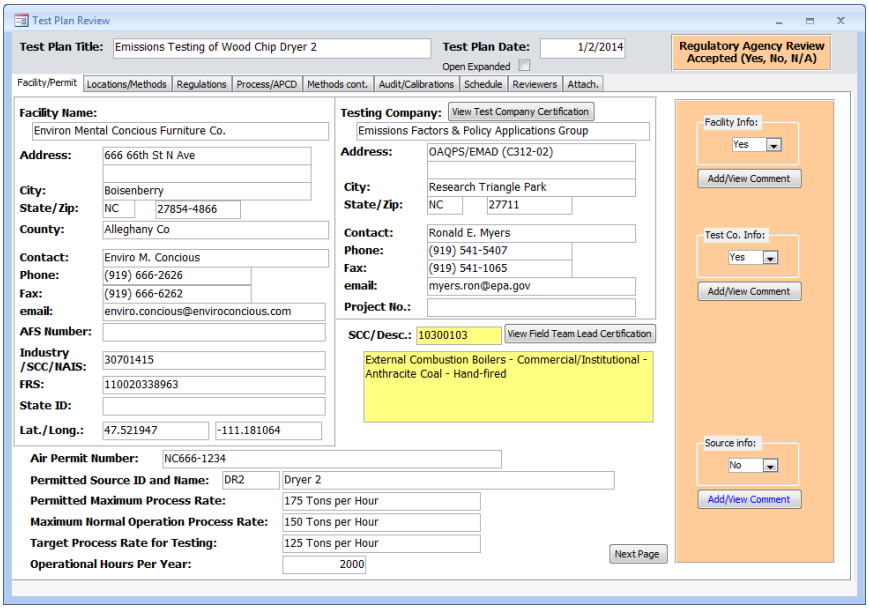


Figure 87 - Test Plan Review Facility /Permit Information

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 (Figure 87) 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

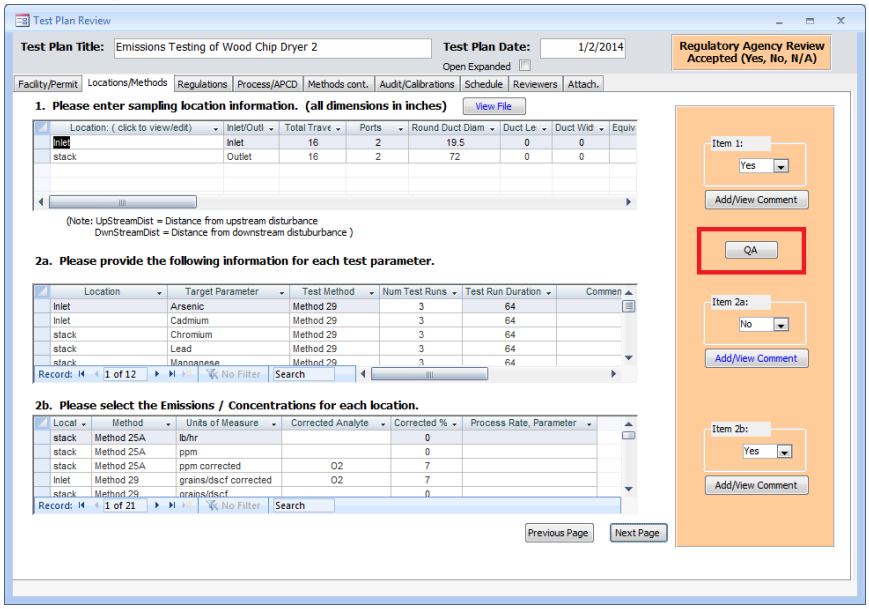


Figure 88 - Test Plan Review Locations/Methods Tab

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** 88 indicates, to open the quality assurance calculations screen. The "***Protocol Evaluation Calculations***" screen will open, Figure 89. There are two sets of results for the calculations depending on the selection of location as "inlet" or "stack."

QA Information

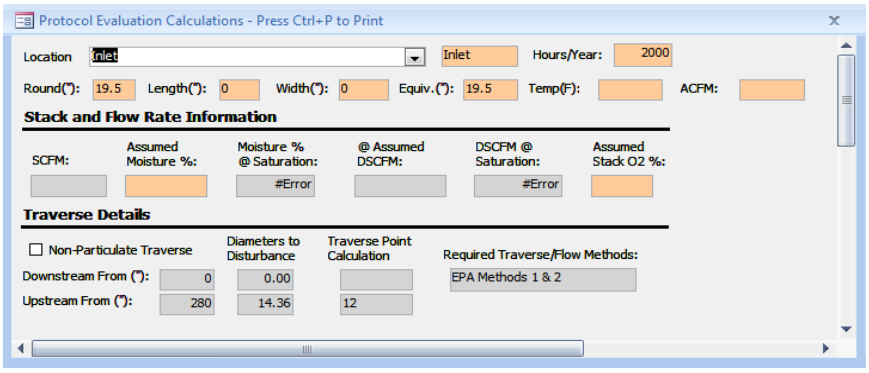


Figure 89 – Location, Stack and Flow Rate Information and Traverse Details

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 if the proposed sampling protocol isacceptable.

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:	Flow rate in dry standard flow rate in cubic feet per minute at assumed percentage moisture.
DSCFM @ Saturation:	Flow rate in dry standard flow rate in cubic feet per minute at saturation percentage moisture.
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 Calculation/Upstream: Calculated number of traverse points from 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.

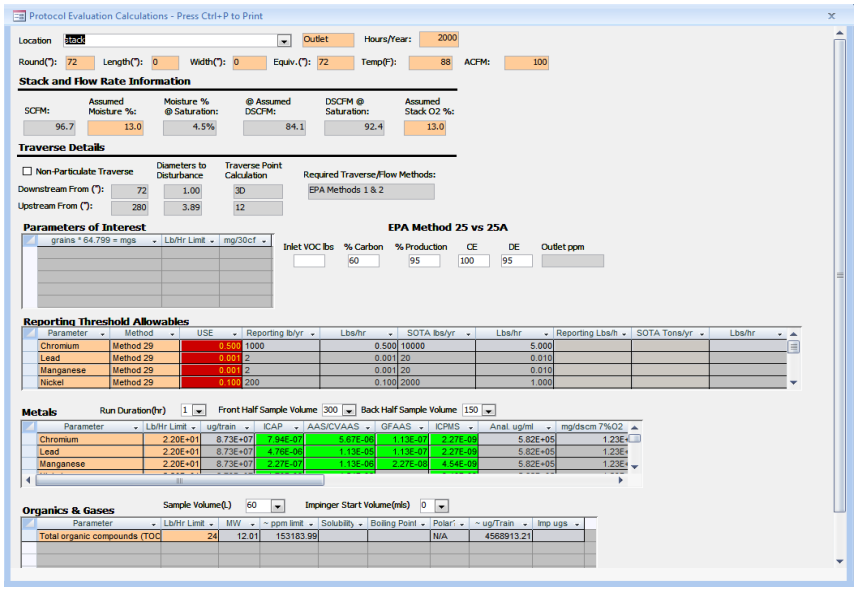


Figure 90 – Complete Protocol Evaluation Calculations Screen Shot

In the "***Protocol Evaluation Calculations"*** screen (Figure 90), select the "***location"*** as "stack". The calculations from the pre-selected data as provided in Item 6 will fill the orange fields. The editable fields have white background. Based on the data entered in the "***Regulations***," "***Locations***," "***Methods***" and "***Concentrations***" areas of the test plan, the calculations will populate the fields with gray background. Use the calculations to determine whether the protocol sampling information is acceptable 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 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 Furnace Atomic 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. I
mp ugs:	The calculated micrograms of the impinger.

Testing Observation and Report Review

The Regulatory Agency Review section in the ERT Main Menu contains four areas of interest. They include:

- Regulatory Field Observation Documentation
- Regulatory Assessment of Supporting Documentation
- Emissions Results
- Comprehensive Regulatory Test Assessment

Regulatory Field Observation Documentation

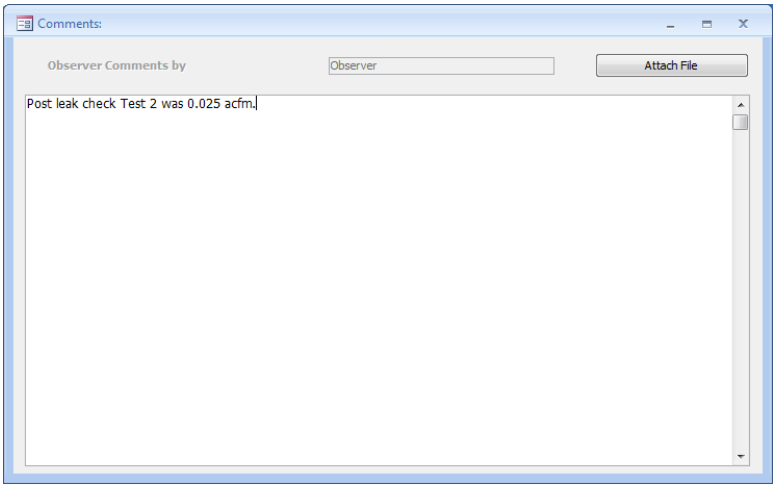


Figure 91 - Regulatory Field Observation Documentation Window

In this area (Figure 91), 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

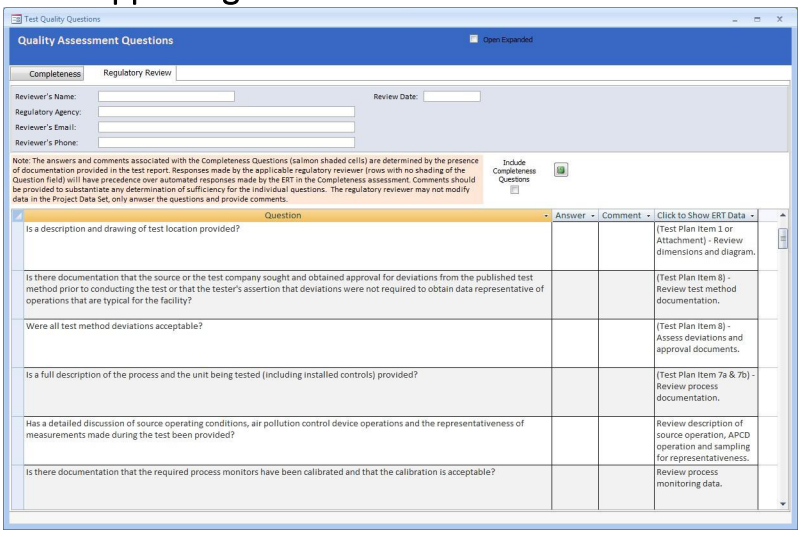


Figure 92 – Regulatory Review of Quality Assessment Questions

The "***Regulatory Assessment of Supporting Documentation***" is an extension of the "***Completeness Check***" questions. The Quality Assessment Questions (QAQ) screen (Figure 92 – Regulatory Review of Quality Assessment Questions**)** provides a check list 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 93). 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.

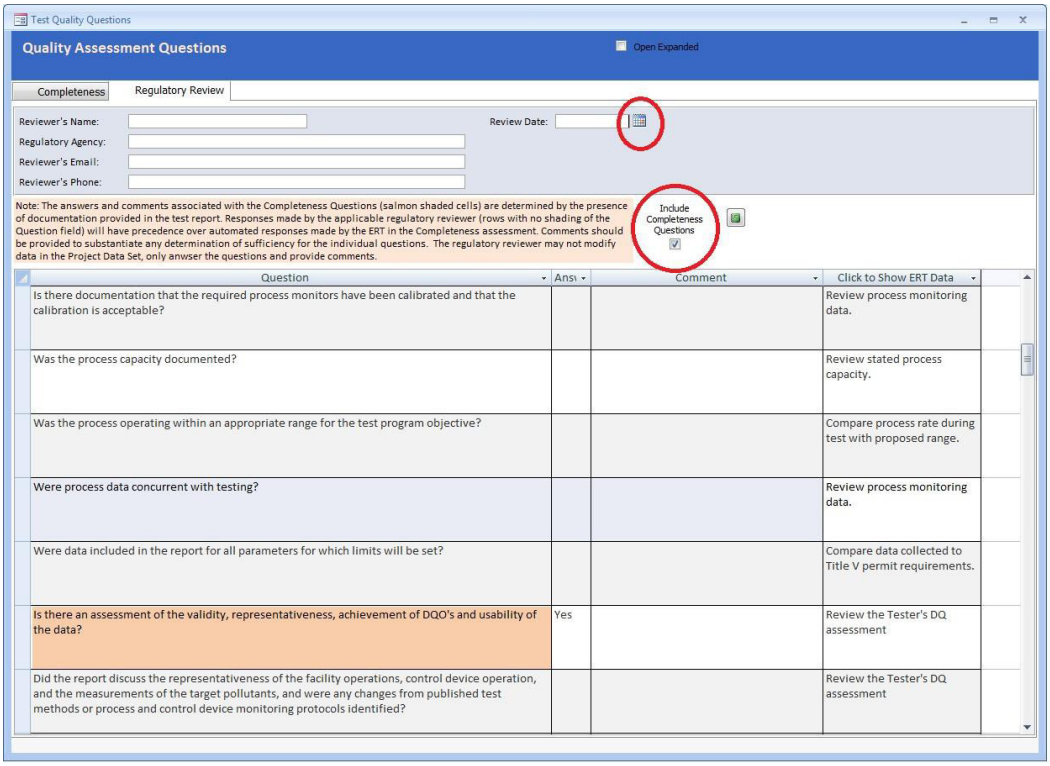


Figure 93 - Completeness and Regulatory Review Quality Assessment Questions

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 the text in the cell.

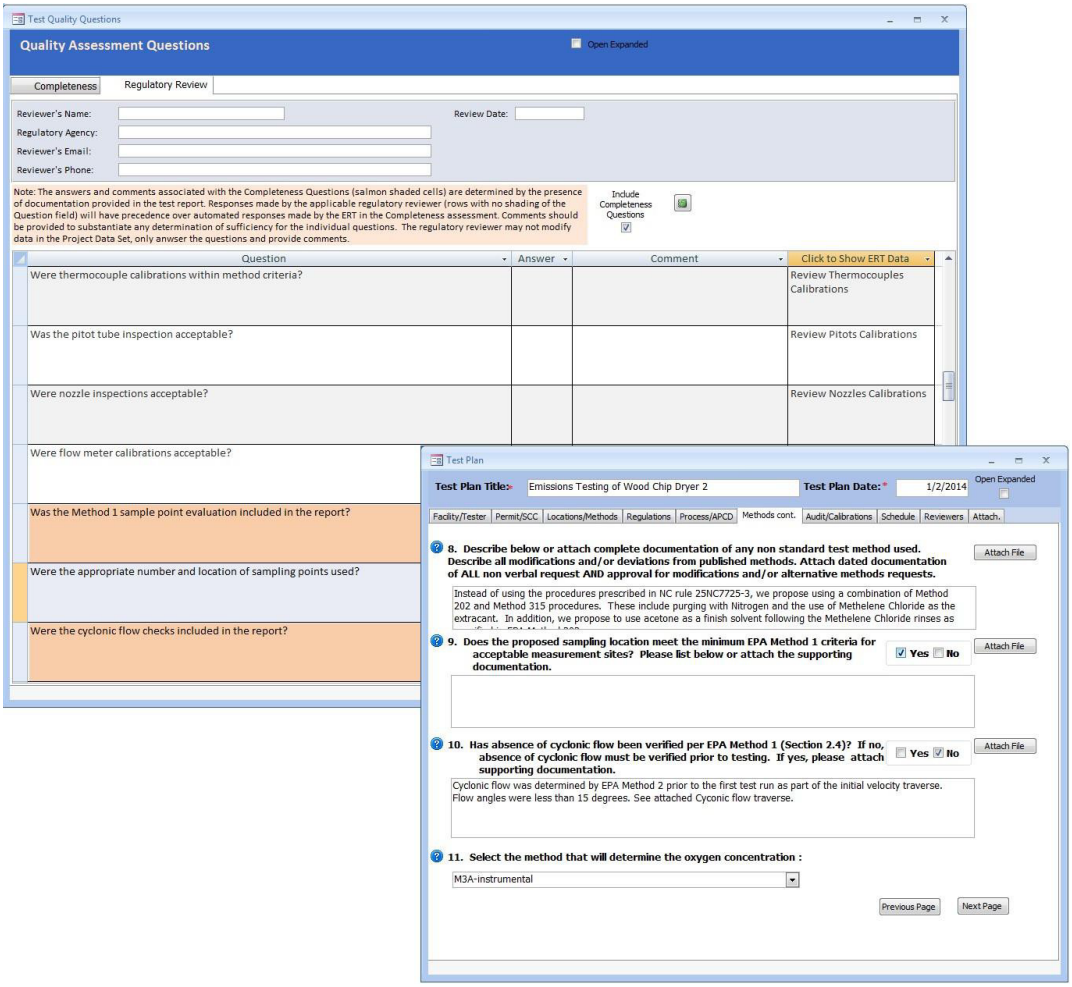


Figure 94 - QAQ's Show Data

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 94 - QAQ's Show Data. 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 95 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 area 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 to be able to open the other window.

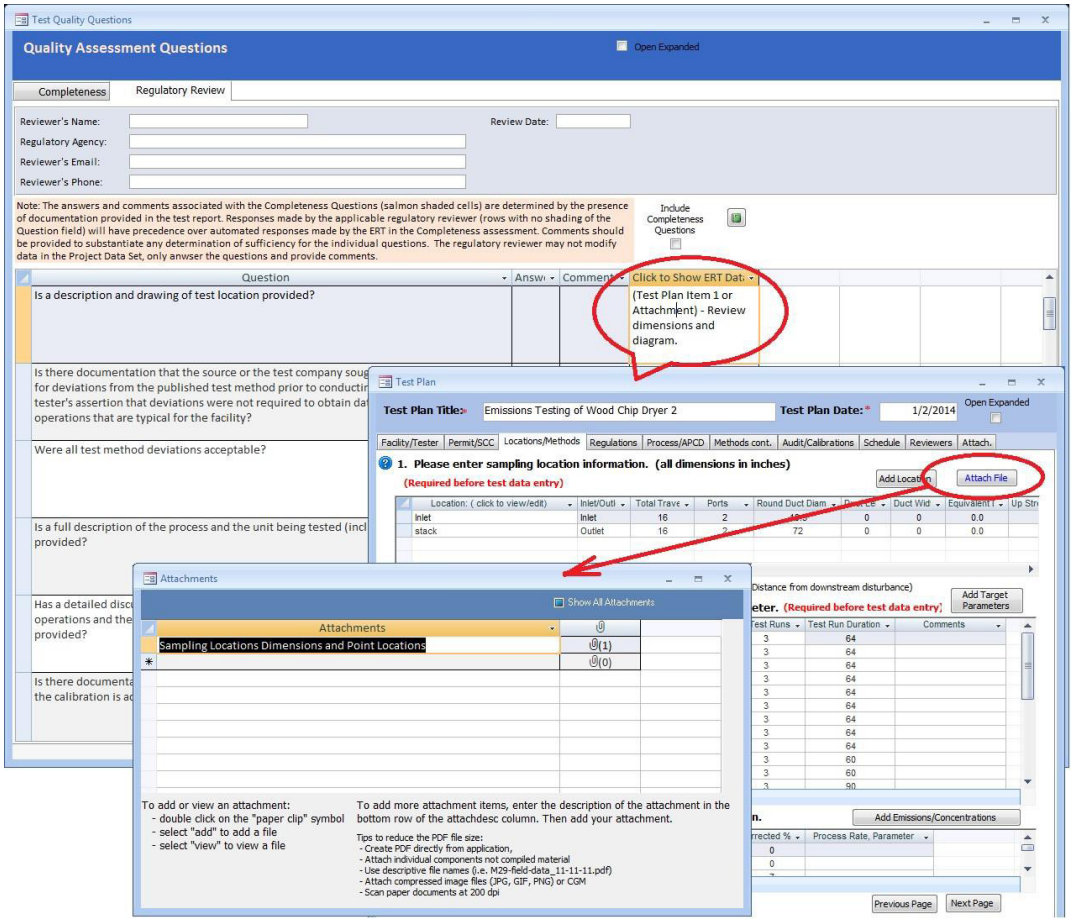


Figure 95 - Cascading Multiple Windows

Emissions Results

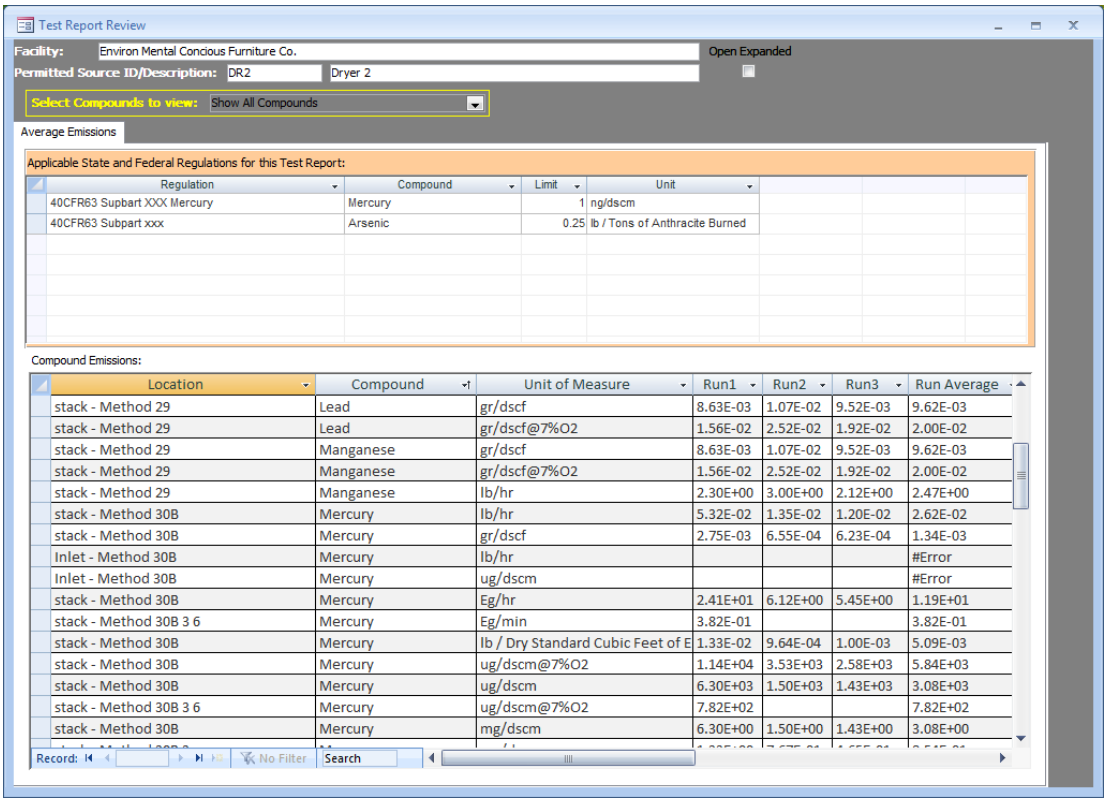


Figure 96 - Test Report Review - Average Emissions

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/or 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 96 - Test Report Review - Average Emissions, 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.

Compound Emissions:

Location:	A unique sampling location name, such as inlet, stack, ESP inlet, scrubber outlet, etc and the Method used.
Compound:	The analyte collected and analyzed.
Unit of Measure:	The emission concentration or mass rate that is being calculated.
Run 1:	Emission results of the compound of interest in the unit of measure for Run 1.
Run 2:	Emission results of the compound of interest in the unit of measure for Run 2.
Run 3:	Emission results of the compound of interest in the unit of measure for Run 3.
Run Average:	Average mission results of the compound of interest in the unit of measure for Run 1, 2 and 3.

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

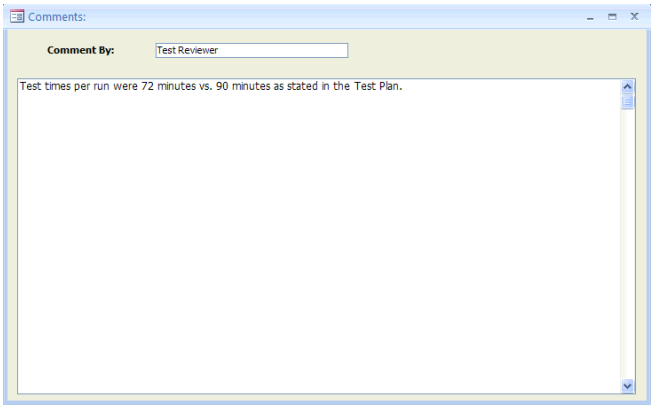


Figure 97 - Test Reviewer Comments

In this area, 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 (Figure 97).

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 98 - Report Selection Menu will open. The type of reports includes:

- Test Plan
- Test Plan Review
- Full Test Report (excludes RATA's)
- 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
- 30B QA/QC (if Method 30B is entered into the file)
- Regulatory Review Questions
- Location – PST (RATA results, if RATA entered into the file)

Another way to access the Relative Accuracy Results is to open 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.

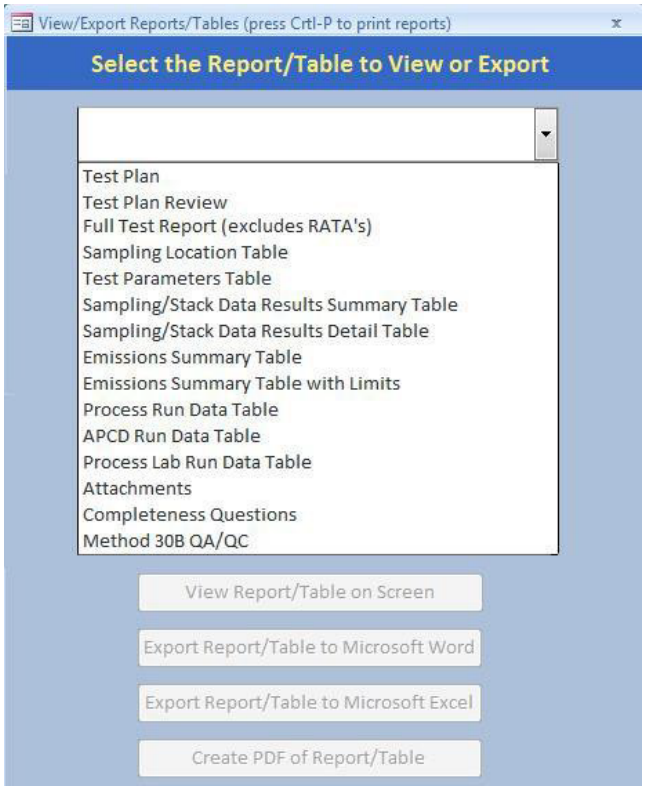


Figure 98 - Report Selection Menu

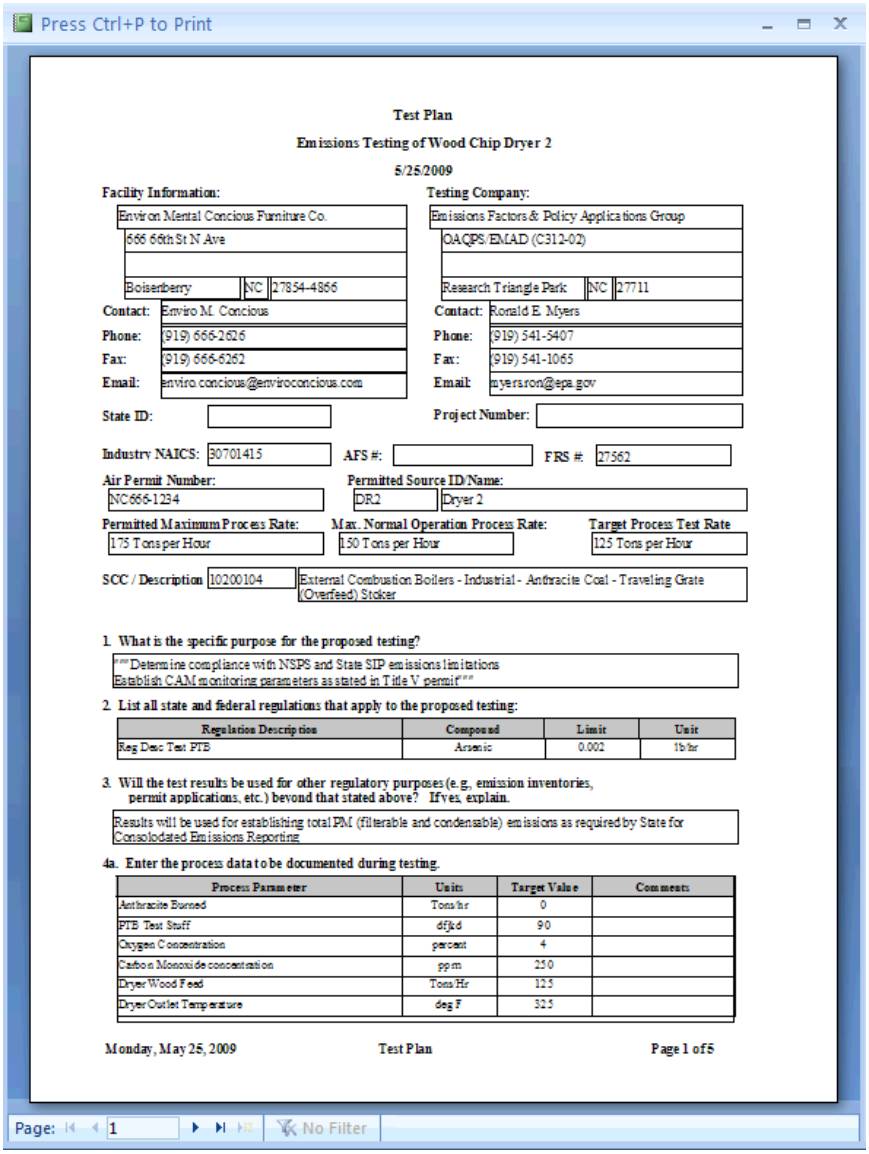


Figure 99 - Test Plan Report Print Preview Screen

The test plan preparer must enter the information in the screens of "***Facility/Tester***" (Figure 10 - Test Plan Facility/Tester Tab); "***Permit/SCC***" (Figure 11 - Test Plan Permit/SCC Tab); "***Locations/Methods***" (Figure 15 - Test Plan Location/Methods Tab); "***Regulations***" (Figure 23 - Test Plan Regulation Tab); "***Process/APCD***" (Figure 25 - Test Plan Process/APCD Tab); "***Methods continued***" (Figure 30 - Test Plan Methods cont. Tab); "***Audit/Calibrations***" (Figure 31 - Test Plan Audit/Calibrations Tab); "***Schedule***" (Figure 32 - Test Plan Schedule Tab); "***Reviewers***" (Figure 33 - Test Plan Reviewers Tab); and "***Attachments***" (Figure 34 - Test Plan Attachments Tab). 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 98 - Report Selection Menu - 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 99 - 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 99** 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

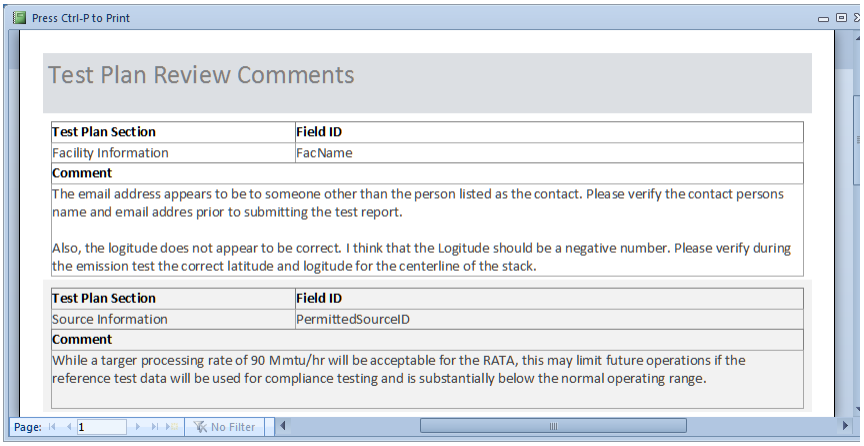


Figure 100 - Test Plan Review Comments

Selecting "***Test Plan Review***" produces a printed report that looks like Figure 99 - Test Plan Review Comments. 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 if a submittal package is created. 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 (excludes RATAs and 201A ISO's and excludes RATAs)

Selecting "***Full Test Report***" will produce a file comprised 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, instrumental and 30B 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); Square Roof of the Average velocity (ionches of water), 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.

Method 201A Point to Point Isokinetic Calcs Table

This report includes a point to point data to calculate the isokinetics. These data elements includes the run number, point number, run time (min), gas meter reading, velocity (inches of water), delta P square root, gas velocity (ft/s), gas volume (dscf), and point to point isokinetics (%).

Sampling/Stack Data Results Detail Table

This report includes the details of all location – methods per run. The report includes for the isokinetic methods: 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 liquid 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); Square root of 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 flue 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; and Fc.

If the report contains method 30B, the data elements included in the report are location-method; run number; test date; run start and finish time; net traversing points – Sample A; net traversing points – Sample B; net run time (minutes); Pitot tube coefficient – Sample A; Pitot tube coefficient – Sample B; dry gas meter calibration factor – Sample A; dry gas meter calibration factor – Sample B; barometric pressure (inches of mercury); average orifice meter differential (inches in water); dry gas meter volume sampled (cubic feet)- Sample A; dry gas meter volume sampled (cubic feet)- Sample B; dry gas meter volume sampled (dscf) - Sample A; dry gas meter volume sampled (dscf) - Sample B; average dry gas meter temperature (degree F); total moisture liquid collected (g) – Sample A; total moisture liquid collected (g) – Sample B; volume of water vapor (standard cubic feet)- Sample A; volume of water vapor (standard cubic feet)- Sample B; 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); Square root of 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 flue 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; and Fc.

If the report contains instrumental methods, the data elements included in the report are location- method; run number; test date; run start and finish time; carbon dioxide (%); oxygen (%); fuel factor; dry volumetric flow rate, dry scfm; F-Factor (dscfm/mmBtu @ $\%O_2$); moisture, (%); analyzer make; analyzer model; analyzer serial number; operating grange; operating units; no. readings/average; calibration set; calibration pre zero cylinder Id; calibration pre zero cylinder instrument response; calibration pre zero cylinder bias; calibration pre zero cylinder drift; calibration pre zero high cylinder Id; calibration pre high cylinder instrument response; calibration pre high cylinder bias; calibration pre high cylinder drift; calibration post zero cylinder Id; calibration post zero cylinder instrument response; calibration post zero cylinder bias; calibration post zero cylinder drift; calibration post zero high cylinder Id; calibration post high cylinder instrument response; calibration post high cylinder bias; calibration post high cylinder drift; C average; C average units; C gas; C gas units; fuel type; Fw; Fc; Cgasw; and Cgasw units.

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.

Attachments

This is a list of attachments contained in the ERT file.

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

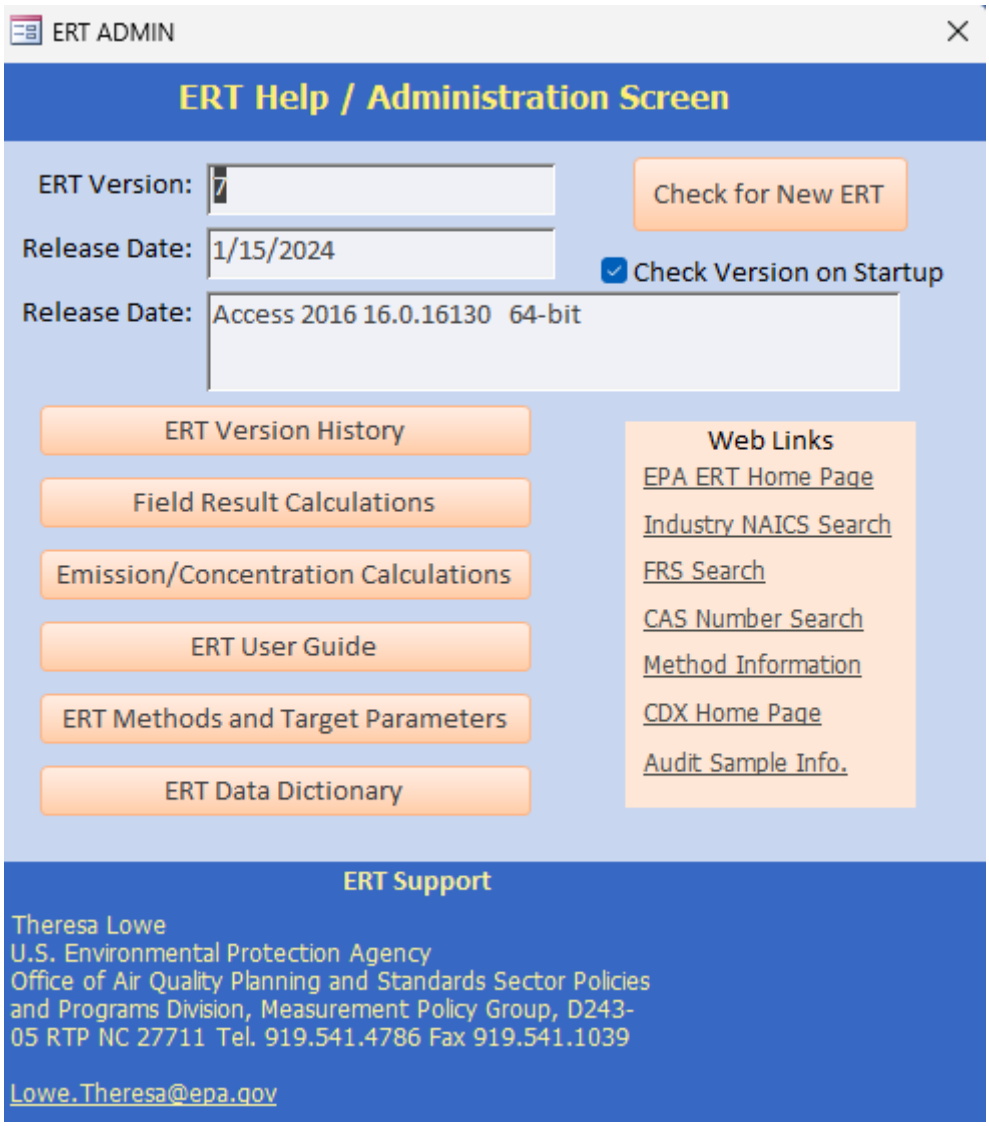


Figure 101 - The ERT Help/Administration Screen

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 101 - The ERT Help/Administration Screen. 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
ERT Data Dictionary	

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 Determination for RATAs

The numerous, interrelated and complex calculations and decisions criteria for Performance Specifications 2, 3 and 4 for O_2, CO, NO_x and SO_x preclude a simple listing of all the equations and logic statement 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 access 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 are using.

ERT Emission/Concentration Calculations

Units of Measure	Calculations and Conversion Formulas used in ERT
grains/dscf	Format(7000*[lb/dscf],'Scientific') AS [gr/dscf]
grains/dscf corrected O2	Format([gr/dscf]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS [gr/dscf@[CorrPerc]%O2]
grains/dscf corrected CO2	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/MMBTU	Pound per million BTUs
lb/million BTU using CO_2	Format([lb/dscf]*[Fc]*100/[PercCO2],'Scientific') AS [lb/mmBtuCO2]
lb/million BTU using O_2	Format([lb/dscf]*[Fd]*20.9/(20.9-[PercO2]),'Scientific') AS [lb/mmBtuO2]
lb/minute	Format([Qsd]*[lb/dscf],'Scientific') AS [lb/min]

Units of Measure	Calculations and Conversion Formulas used in ERT
lb/TBTU	Pound per trillion BTUs
lb/TBTU using CO_2	Format([lb/dscf]*[Fc]*100000000/[PercCO2],'Scientific') AS [lb/TBtuCO2]
lb/TBTU 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/acm	Format([mg/wscm]*(527.67*[Ps])/(29.92*(459.67+[ts])),'Scientific') AS [mg/acm]
mg/acm@160C	Format([mg/wscm]*(527.67*[Ps])/(29.92*(460+320)),'Scientific') AS [mg/acm@160C]
mg/dscm	Format([lb/dscf] * 453.592 * 35.32*10^3,'Scientific') AS [mg/dscm]
mg/dscm corrected O2	Format([mg/dscm]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS [mg/dscm@[CorrPerc]%O2]
mg/dscm corrected CO2	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]
mg/wscm	Format([lb/dscf] * 453.592 * 35.32* 10^3*(1-([PercH2O]/100)), 'Scientific') AS [mg/wscm]
ng/dscm	Format([lb/dscf] * 453.592 * 35.32*10^9,'Scientific') AS [ng/dscm]
ng/dscm corrected O2	Format([ng/dscm]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS[ng/dscm@[CorrPerc]%O2]
ng/dscm corrected CO2	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 CO_2	Format([lb/dscf]*[Fc]*429.922614182135*100/[PercCO2],'Scientific') AS[ng/jouleCO2]
ng/joule using O_2	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 O2	Format([percent(%)]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS [mg/dscm@[CorrPerc]%O2]

percent(%) corrected CO2	Format([percent(%)]*([CorrPerc])/([PercCO2]),'Scientific') AS [percent(%) @[CorrPerc]%CO2]
pg/dscm	Format([lb/dscf] * 453.592 * 35.32*10^12,'Scientific') AS [pg/dscm]
Units of Measure	**Calculations and Conversion Formulas used in ERT**
pg/dscm corrected O2	Format([pg/dscm]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS[pg/dscm@[CorrPerc]%O2]
pg/dscm corrected CO2	Format([pg/dscm]*([CorrPerc]/[PercCO2]),'Scientific') AS [pg/dscm@[CorrPerc]%CO2]
ppb	Format([lb/dscf] * 385.3 / [Fwt] * 10^9,'Scientific') as [ppb]
ppb corrected O2	Format([ppb]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS[ppb@[CorrPerc]%O2]
ppb corrected CO2	Format([ppb]*([CorrPerc]/[PercCO2]),'Scientific') AS [ppb@[CorrPerc]%CO2]
ppm	Format([lb/dscf] * 385.3 / [Fwt] * 10^6,'Scientific') as [ppm]
ppm corrected O2	Format([ppm]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS[ppm@[CorrPerc]%O2]
ppm corrected CO2	Format([ppm]*([CorrPerc]/[PercCO2]),'Scientific') AS [ppm@[CorrPerc]%CO2]
ppt	Format([lb/dscf] * 385.3 / [Fwt] * 10^12,'Scientific') as [ppt]
ppt corrected O2	Format([ppt]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS[ppt@[CorrPerc]%O2]
ppt corrected CO2	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 O2	Format([ug/dscm]*(20.9-[CorrPerc])/(20.9-[PercO2]),'Scientific') AS[ug/dscm@[CorrPerc]%O2]
ug/dscm corrected CO2	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]
ug/wscm	Format([lb/dscf] * 453.592 * 35.32*10^6*(1-(PercH20]/100)),'Scientific') AS [ug/wscm]

Instrumental Test Method (ITM) Run Results

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

Method 30B Sample Data

Field ID	Field Description	ERT Field Calculations
AM3	Section 1 Spike Recovery (Crec)A	SpikeRecovery([AM1],[AVT],[AMS], [BM1],[BVT], [Forms]![frmRunDataDetails Master]![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 = ""ElseSpikeRecovery = 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]![frmRunDataDetails Master]![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 = "" ElseSpikeRecovery = Abs(((M11 / VT1) - (M12 / VT2)) *MassScalar(MMUnits)) End If End Function
SRMA	Section 1 Spike Recovery Mass A	IIf(Nz([AM3],"")="","",ABS[AM3]*[AVT]/ MassScalar([Forms]![frmRunDataDetails Master]![subForm]![subfrmHdrData30B]! [MercuryMassUnits]))
SRMB	Section 1 Spike Recovery Mass B	IIf(Nz([BM3],"")="","",Abs([BM3]*[BVT])/MassScalar([Forms]![frmRunDataDetails Master]![subForm]![subfrmHdrData30B]! [MercuryMassUnits]))
ASRP	Section 1 Recovery Percentage A	IIf(Nz([AM3],"")="","",Round(Abs (([SRMA]/[AMS])*100),3))
BSRP	Section 1 Recovery Percentage B	IIf(Nz([BM3],"")="","",Round(Abs(([SRMB]/[BMS])*100),3))
AB	Section 2 Breakthrough (%B)A	IIf(Nz([AM1])="" OrNz([AM2])="","",Round([AM2]/[AM1]*100,3))
BBP	Section 2 Breakthrough (%B)B	IIf(Nz([BM1])="" OrNz([BM2])="","",Round([BM2]/[BM1]*100,3))
ISRA	Initial Sampling Rate A	[Forms]![frmRunDataDetailsMaster]![subform]![subfrmLabData30B]![InitA]
ISRB	Initial Sampling Rate B	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![InitB]
ASRA	Average Sampling Rate A	Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]! [AvgOfSampleRateA]

ASRB	Average sampling rate B	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]! [AvgOfSampleRateB]
Field ID	**Field Description**	**ERT Field Calculations**
MaxDevA	Maximum deviation from sampling rate A	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![MaxDevA]
MaxDevB	Maximum deviation from sampling rateB	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![MaxDevB]
AV	Total Sample Volume (Vt)A	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![VtA]
BVT	Total Sample Volume (Vt)B	[Forms]![frmRunDataDetailsMaster]![subForm]![subfrmLabData30B]![VtB]
SampDev A	Spl Vol deviation from field recovery run A	Round(100*Abs([AVT][Forms]![frmRunDataDetailsMaster]![subForm]! [subfrmLabData30B]![AvgSpikeVolume])/[AVT],1)
SampDevB	Spl Vol deviation from field recovery run B	Round(100*Abs([BVT]- [Forms]![frmRunDataDetailsMaster]![subForm]! [subfrmLabData30B]![AvgSpikeVolume])/[BVT],1)
SMCA	Sample Mercury Mass Collected A	[AM1]-[AMS]+[AM2]
SMCB	Sample Mercury Mass Collected B	[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	IIf(Nz([CdA])="" Or [CdB])/([CdA]+[CdB]))*100,4)))

RATA Results

Field ID	Field Description	Field Calculations
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	differenceIIf([PPMvStandard]<200, Abs([avgPPMdif])+[ccPPMdif],'')

Sample Train Parameters

Field ID	Field Description	Field Calculations
NetRunTime	Net Run Time, minutes	Max([EndTime])
NetTravPts	Net Traversing Points	Sum(IIf(Len(Trim([velocity]))>0,1,0))
NetTravPtsA	Net Traversing Points-Sample A	Sum(IIf(Len(Trim([StackTempA]))>0,1,0))
NetTravPtsB	Net Traversing Points-Sample B	Sum(IIf(Len(Trim([StackTempB]))>0,1,0))
Dn	Nozzle Diameter, inches	Min([DnHDR])
Cp	Pitot Tube Coefficient	Min([CpHDR])
CpA	Pitot Tube Coefficient – Sample A	Min([CpHDRA])
CpB	Pitot Tube Coefficient – Sample B	Min([CpHDRB])
Y	Dry Gas Meter Calibration Factor	Min([YHDR])

YA	Dry Gas Meter Calibration Factor A	[YHDRA]
YB	Dry Gas Meter Calibration Factor B	[YHDRB]
Pb	Barometric Pressure, inches of Hg	Min([PbHDR])
DeltaH	Average Orifice Meter Differential, inches of water	Avg([OrificePresActual])

Field ID	Field Description	Field Calculations
DeltaHA	Average Orifice Meter A Differential, inches of H_2O	IIf([NetTravPtsA]>0,[OrificePresActualA]/[NetTravPtsA],0)
DeltaHB	Average Orifice Meter B Differential, inches of H_2O	IIf([NetTravPtsB]>0,[OrificePresActualB]/[NetTravPtsB],0)
Vm	Dry Gas Meter Volume Sampled, cubic feet Min([FinalDGM]),"#.000")	Format(Max([gasmeter])-Min([gasmeter])+Min([InitDGM])
VmA	Dry Gas Meter Volume Sampled, cubic feet – Sample A	Format(([MaxGasMeterA]-[MinGasMeterA])*35.315,”#.000”)
VmB	Dry Gas Meter Volume Sampled, cubic feet – Sample B	Format(([MaxGasMeterB]-[MinGasMeterB])*35.315,”#.000”)
tm	Average Dry Gas meter Temperature, °F	Format((Avg(nz([DryGasInlet],0))+Avg(nz([DryGasOutlet],0)))/2,”#.0”)
tmA	Average Dry Gas meter Temperature, °F - Sample A	Format(Avg([DryGasA]),”#.0”)
tmB	Average Dry Gas meter Temperature, °F - Sample B	Format(Avg([DryGasB]) ,”#.0”)
Vmstd	Dry Gas Meter Volume Sampled, dscf	IIf([vm]>0,FormatNumber([Vm]*[Y]*((Min([tstdhdr])+459.67)/ Min([pstdhdr])) *(([pb]+([deltah]/13.6))/([tm]+459.67)),3),0)
VmstdA	Dry Gas Meter Volume Sampled, dscf - Sample A	Format([VmA]*[YA]*(([tstd]+459.67)/[pstd])*(([pbA]+([deltaha]/13.6))/ ([tmA]+459.67)),”#.000”)
VmstdB	Dry Gas Meter Volume Sampled, dscf - Sample B	Format([VmB]*[YB]*(([tstd]+459.67)/[pstd])*(([pbB]+([deltahb]/13.6))/ ([tmB]+459.67)),”#.000”)
Vlc	Total Moisture Liquid Collected, g	FormatNumber(Min([vlc]),1)
VlcA	Total Moisture Liquid Collected, g – Sample A	FormatNumber([VlcComA],1)
VlcB	Total Moisture Liquid Collected, g – Sample B	FormatNumber([VlcComB],1)
PercI	Percent Isokinetic of Sampling Rate, %	Iif(len([vs])>0,FormatNumber((144*100*Min([PstdHDR])*(459.67+[ts]) *[Vmstd])/((60*3.14159265358979/4)*(459.67+Min([tstdHDR]))*[Ps]* [Vs]*[Mfd]* [NetRunTime]*([Dn]^2)),1,-1),"")

Stack Gas

Field ID	Field Description	Field Calculations
PercH2O	Moisture Content of Stack Gas, %	IIf(Val([vmstd])+Val([vwstd])>0,FormatNumber((100*Val ([Vwstd]))/(Val([Vws td])+Val([Vmstd])),2,-1),0)
PercH2Osat	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	Format(1-(IIf(Val([PercH20])>Val([PercH20sat]),[PercH20sat], [PercH20])/100),2)
PercCO2	Carbon Dioxide, %	Min(Nz([PercCO2HDR],0))
PercO2	Oxygen, %	Min(Nz([PercO2HDR],0))
PercCOplus N2	Carbon Monoxide & Nitrogen, %	100-[PercO2]-[PercCO2]
Fo	Fuel Factor	FormatNumber(IIf([percco2]>0,(20.9-[PercO2])/[PercCO2],0),2,-1)
Md	Dry Molecular Weight, lb/lb-Mole	Format((0.44*[PercCO2])+(0.32*[PercO2])+(0.28*(100-[PercCO2]-[PercO2])),"#.00")
Ms	Wet Molecular Weight, lb/lb-mole	Format(([Md]*[Mfd])+18.015*((IIf(Val([PercH2O)>Val([PercH2Osat]), [PercH2Osat],[PercH2O]))/100),"#.00")
Pg	Flue Gas Static Pressure, inches of water	Min([PgHDR])
Ps	Absolute Flue Gas Pressure, inches of water	Format([Pb]+([Pg]/13.6,”#.00”)
Vwstd	Volume of Water Vapor, standard cubic feet	FormatNumber([Vlc]*((459.67+Min([tstdHDR]))*21.85/453.59)/ (Min([PstdHDR])*18.015),2)
VwstdA	Volume of Water Vapor, standard cubic feet Sample A	FormatNumber([VlcA]*((459.67+Min([tstd]))*21.85/453.59)/ ([Pstd])*18.015),2)
VwstdB	Volume of Water Vapor, standard cubic feet Sample B	FormatNumber([VlcB]*((459.67+Min([tstd]))*21.85/453.59)/ ([Pstd])*18.015),2)
ts	Average Stack Gas Temperature, °F	Format(Avg([stacktemp]),”#.0”)

tsA	Average Stack Gas Temperature, °F Sample A	Format(Nz([tsHDR],0),"#.0"
Field ID	**Field Description**	**Field Calculations**
tsB	Average Stack Gas Temperature, °F Sample B	Nz([tsHDR],0)
DeltaPavg	Average Velocity Head, inches of water	FormatNumber((Avg([velocity]^0.5)^2),3)
SqrtDeltaPavg	Square Root of Average Velocity Head, inches of water	Format(([DeltaPavg]^0.5),"#.000")
Vs	Average Stack Gas Velocity, feet/second	IIf(Val([ps])*Val([Ms])>0,FormatNumber(85.49*[Cp]*((459.67+[ts])*[DeltaPavg]/([Ps]*[Ms]))^0.5,2,-1),"")
Dstk	Round Duct Diameter, inches	Min([DuctDiam])
Dwdth	Rectangular Duct Width, inches	Min([DuctWidth])
Dlngth	Rectangular Duct Length, inches	Min([DuctLength])
As	Stack Cross-Sectional Area, square feet	FormatNumber(IIf([dwdth]>0,[dwdth]*dlength,3.14159*min([DuctDiam])^2/4/144,3,-1)
Qsd	Dry Volumetric Flow Rate, dry scfm	IIf(len([vs])>0,FormatNumber((60*[Mfd]*(Min([tstdHDR])+459.67)*[Ps]*[Vs]*As])/(([ts]+459.67)*Min([PstdHDR])),1),"")
Qaw	Actual Wet Volumetric Flue Gas Flow Rate, acfm	IIf(len([vs])>0,FormatNumber(60*[Vs]*[As],1),"")

Appendix B: Methods

ERT version 7 has a Miscellaneous method table that now allows all methods that are not isokinetic, instrumental or Method 30B, to be entered as summary data for each run into the ERT. The method list below are the methods included in the ERT. If there is a method that is used but not on this list, a custom method must be entered into the ERT and select the appropriate compounds. If a compound is missing in the ERT, it can also be added under Custom selection.

ASTM D6348 - Determination of Gaseous Compounds by Extractive Direct Interface FTIR – add custom compounds
ASTM D6784 - Elemental, Oxidized, Particle-Bound and Total Mercury - Ontario Hydro Method
CARB Method 428 - Dioxin and Furans (28 D/F), PCB (23 PCBs)
CARB Method 429 - Polycyclic Organic Matter (19 Compounds)
CSA B415.1-10 - Testing of Solid fuel burning heating appliances (Efficiency and CO)
CTM - 027 - Procedure for Collection and Analysis of Ammonia in Stationary Sources
CTM – 039 – Measurement of PM 2.5 and PM 10 Emissions by Dilution Sampling (Constant Sampling Rate Procedures)
Custom - Select to enter custom method
Destruction Efficiency – Destruction Efficiency (e.g., Ethylene oxide, THC as propane, NMOC as propane, chlorobenzene, Tetrachloroethylene (Perchloroethylene), Naphthalene, Total organic compounds (TOC) as propane)
Destruction Removal Efficiency – Destruction Removal Efficiency (e.g., Ethylene oxide, THC as propane, NMOC as propane, Chlorobenzene, Tetrachloroethylene (Perchloroethylene), Naphthalene, Total organic compounds (TOC) as propane)
Method 1 - 4 - Flowrate / Moisture
Method 3A CO2 - CO2 - Instrumental
Method 3A O2 - O2 - Instrumental
Method 3B – Carbon Dioxide, Oxygen - Orsat
Method 3C – Carbon Dioxide, Methane, Nitrogen, Oxygen- TCD
Method 5 - Particulate Matter (PM)
Method 5/202 - Combination of Methods 5 and 2
Method 5@320F - Filterable Particulate (filter temperature of 320F)
Method 5@320F/202 - Combination of Methods 5 @320F and 202
Method 5A - PM Asphalt Roofing (Particulate Matter)
Method 5B - PM Nonsulfuric Acid (Particulate Matter)
Method 5F - PM Fluid Catalytic Cracking Unit
Method 6 – Sulfur Dioxide (SO2)
Method 6A – Sulfur Dioxide, Carbon Dioxide
Method 6B - Sulfur Dioxide, Carbon Dioxide – Long term integrated
Method 6C - SO2 - Instrumental.
Method 7 – Nitrogen Oxides (NOx)
Method 7A – Nitrogen Oxides - Ion Chromatographic Method
Method 7B - Nitrogen Oxides – Ultraviolet Spectrophotometry
Method 7C – Nitrogen Oxides – Colorimetric Method

Appendix B: Methods (Continued)

Method 7D – Nitrogen Oxides – Ion Chromatographic
Method 7E - NOx - Instrumental.
Method 8 - Sulfuric Acid Mist
Method 9 – Visual Opacity
Method 10 - Carbon Monoxide-NDIR.
Method 10A – Carbon Monoxide in Certifying Continuous Emission Monitoring Systems
Method 10B – Carbon Monoxide from Stationary Sources
Method 11 – Hydrogen Sulfide Content in Fuel
Method 12 - Inorganic Lead
Method 13A - Total Fluoride (SPADNS Zirconium Lake)
Method 13B - Total Fluoride (Specific Ion Electrode)
Method 14 - Fluoride for Primary Aluminum Plants (Adobe format)
Method 14A - Total Fluoride Emissions from Selected Sources at Primary Aluminum Plants
Method 15 - Hydrogen Sulfide, Carbonyl Sulfide, and Carbon Disulfide
Method 15A - Total Reduced Sulfur (TRS Alt.)
Method 16 - Sulfur (Semicontinuous Determination)
Method 16A - Total Reduced Sulfur (Impinger)
Method 16B - Total Reduced Sulfur (GC Analysis)
Method 16C - Total Reduced Sulfur (Continuous)
Method 17 - In-Stack Particulate (PM)
Method 17/202 - Combination of Methods 17 and 202
Method 18 – VOC by GC
Method 22 – Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares (report in ERT only if required by regulation)
Method 23 - Dioxins and Furans).
Method 25 – Gaseous Nonmethane Organic Emissions
Method 25A - Gaseous Organic Concentration (Flame Ionization)
Method 25B - Gaseous Organic Concentration (Infrared Analyzer)
Method 25C – NMOC in Landfill Gases
Method 26 - Hydrogen Chloride, Halides, Halogens
Method 26A - Hydrogen Halide & Halogen-Isokinetic
Mod. Method 26A Subpart S - Determination of Chlorine and Chlorine Dioxide
Method 29 - Metals Emissions from Stationary Sources
Method 30B - Method 30B Determination of Total vapor phase mercury emissions using carbon sorbent traps
Method 101 - Mercury from Chlor-Alkali Plants (Air)
Method 101A - Mercury from Sewage Sludge Incinerators
Method 102 - Mercury from Chlor-Alkali Plants (Hydrogen Streams)
Method 103 - Beryllium Screening Method
Method 104 - Beryllium Emissions Determination
Method 105 - Mercury in Wastewater Treatment Plant Sewage Sludge

Appendix B: Methods (Continued)

Method 106 - Determination of Vinyl Chloride
Method 107 - Vinyl Chloride content of Inprocess Wastewater Samples
Method 107A - Vinyl Choride Content of Solvents
Method 108 - Particulate & Gaseous Arsenic emissions
Method 108A - Determination of Arsenic Content in Ore Samples from Nonferrous Smelters
Method 108B – Arsenic Content in Ore Samples from Nonferrous Smelters
Method 108C - Arsenic Content in Ore Samples from Nonferrous Smelters – Molybdenum Blue Photometric Procedure
Method 111 - Polonium – 210 Emissions
Method 114 – Radionuclide Emissions
Method 115 – Radon-222 Emissions
Method 201A - Filterable PM10/PM2.5 (In stack CRS)
Method 201A/202 - Total PM10/PM2.5 (filterable and condensable)
Method 202 - Condensable Particulate Matter
Method 303 – By-product Coke Oven Batteries
Method 306 - Chromium Emissions Electroplating/Anodizing
Method 306A - Chromium Emissions Electroplating/Anodizing(Mason Jar Method)
Method 308 - Methanol Emissions
Method 310A - Residual Hexane.
Method 310C - Residual N-Hexane in EDPM Rubber.
Method 312A - Styrene in SBR Latex (GC).
Method 312B - Styrene in SBR Latex by Capillary Gc.
Method 312C - Styrene in SBR Latex Produced by Emulsion Polymerization.
Method 313A - Residual Hydrocarbon in Rubber Crumb.
Method 315 - PM and MCEM from Aluminum Production Facilities
Method 316 - Sample & Analysis for Formaldehyde emissions in the Mineral Wool & Wool Fiberglass Industries.
Method 318 - Extractive FTIR Method for Measurement of Emissions from the Mineral Wool and Wool Fiberglass Industries Industries.
Method 320 - Vapor Phase Organic & Inorganic Emissions by Extractive FTIR.
Method 321 - Gaseous HCl Emissions at Portland Cement Kilns by FTIR.
Method 323 – Formaldehyde Measurement using Derivatization
Method 326 – Determination of Isocyanates in Stationary Source Emissions
NCASI DI/MEOH-94.03 - Methanol in Process Liquids and Wastewaters by GC/FID
NCASI CI/WP-98.01 - Method for Wood Product Mills to Measure Formaldehyde, Methanol and Phenol
NCASI DI/HAPS-99.01 - Selected HAPS in Condensates
NCASI IM/CAN/WP99.02 - Sampling Method for Selected HAPSs and Other Compounds
NCASI ISS/FP A105.01 - Sampling Method for Selected Aldehydes, Ketones and Polar Compounds
OTM 10 - Optical Remote Sensing for Emission Characterization from Non-Point Sources

OTM 14 - Method for Measuring Isocyanates in Stationary Source Emissions

OTM 17 - Determination of Metal Concentration in CES Xact CEMS Stilling Chamber Using Filters and
and Solid Sorbents with X-Ray Fluorescence
OTM 19 - Determination of Metal Concentration in Emissions from Stationary Sources (Instrumental Analyzer Procedure)
OTM 26 - VOC Measurements for the Wood Products Industry
OTM 27 – Determination of PM10 and PM 2.5 Emissions from Stationary Sources (Constant Sampling Rate Procedure)
OTM 29 - Sampling and Analysis for Hydrogen Cyanide Emissions from Stationary Sources
OTM 32 - Determination of Emissions from Open Sources by Plume Profiling
OTM 33 - Geospatial Measurement of Air Pollution, Remote Emissions Quantification
OTM 33a- Geospatial Measurement of Air Pollution, Remote Emissions Quantification-Direct Assessment
OTM 35 - Measurement of PM and Heavy metals from Arc Welding Processes
OTM 36 - Method for Determination of Filterable PM 2.5 from moisture saturated and or drop laden stationary source gas s
OTM 37 - Measurement of direct PM 2.5 and PM10 emissions at low concentrations by dilution sampling
OTM 40 - Determination of Hydrogen chloride emissions from coal-fired combustion sources using sorbent traps
OTM 45 - Measurement of Selected Per- and Polyfluorinated Alkyl Substances from Stationary Sources
OTM 46 – Measurement of Polychorinated Dibenzo-p-Dioxins, Polychlorinated Dibenzofurans, Polychlorinated
Biphenyls and Polycyclic Aromatic Hydrocarbons (Use Method 23 as of March, 2023)
OTM 47- Measurement of Ethylene Oxide emissions from stationary sources by cavity ring-down spectroscopy
OTM-50 - Sampling and Analysis of Volatile Fluorinated Compounds Canisters
PST CO to PS4 - Performance Standard 4 for Carbon Monoxide
PST CO2 to PS3 - Performance Standard 3 for Carbon Dioxide
PST Hg to PS12B – Performance Standard 12B for Mercury
PST NOx to PS2 - Performance Standard 2 for Nitrogen Oxides
PST O2 to PS3 - Performance Standard 3 for Oxygen
PST SO2 to PS2 - Performance Standard 2 for Sulfur Dioxide
PST VOC to PS8 - Performance Standard 8 for VOC CEMS
Removal Efficiency - Removal Efficiency (RE)- (e.g., Ethylene oxide, THC as propane, NMOC as propane)
SW 846 Method 0010 - Modified Method 5 Sampling Train
SW 846 Method 0011 - Sampling for Selected Aldehyde and Ketone Emissions from Stationary Sources
SW 846 Method 0023A - Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated
SW 846 0030 - Volatile Organic Sampling Train
SW 846 0031 - Sampling Method for Volatile Organic Compounds (SMVOC)
SW 846 0040 - Sampling of Principal Organic Hazardous Constituents from Combustion Sources Using Tedlar® Bags
SW 846 0050 - Isokinetic HCl/Cl2 Emission Sampling Train
SW 846 0051 - Midget Impinger HCl/Cl2 Emission Sampling Train
SW 846 0060 - Determination of Metals in Stack Emissions
SW 846 Method 0061 - Determination of Hexavalent Chromium Emissions from Stationary Sources
SW 846 Method 0100 - Sampling for Formaldehyde and Other Carbonyl Compounds in Indoor Air
TO-14A - Volatile Organic Compounds in Ambient Air
TO-15 - Volatile Organic Compounds in Air (canisters/GC/MS)

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

.

1. 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 see Downloading and Installing the ERT in this manual.

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.

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.

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.

In the Dec 7, 2020 version of Method 5, constant values were updated to 5 significant figures. Double check the standard absolute temperature, molecular weight of water, K_1, K_2 and T_{adj} in your calculations and make sure they are the same as in Method 5 Section 12 and 16.

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 ($V_{w(std)}$). The ERT is programmed to use the standard absolute temperature, molecular weight and adjusted temperature, unless otherwise specifiedSince the ERT allows for different standard temperatures and pressures to accommodate State and local agency rules, the values used are the actual standard temperature and pressure values used to calculate the K_1 and K_2 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 K_1 and K_2 do not introduce calculation errors due to multiple rounding. There should be no difference in the ERT values and the Method 5 calculations for volume of water vapor collected and dry gas meter volume.

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.

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).

With the development of the Miscellaneous Methods table, all methods are supported by the ERT.

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 submit the a completed ERT file including the CBI to the CBI Office. The preferred method to receive CBI is for it to be transmitted electronically using email attachments, File Transfer Protocol, or other online file sharing services. Electronic submissions must be transmitted directly to the OAQPS CBI Office at the email address oaqpscbi@epa.gov, and as described above, should include clear CBI markings and be flagged to the attention of the Group Leader, Measurement Policy Group. If assistance is needed with submitting large electronic files that exceed the file size limit for email attachments, and if you do not have your own file sharing service, please email oaqpscbi@epa.gov to request a file transfer link. If you cannot transmit the file electronically, you may send CBI information through the postal service to the following address: OAQPS Document Control Officer (C404-02), OAQPS, U.S. Environmental Protection Agency, 109 T.W. Alexander Drive, P.O. Box 12055, Research Triangle Park, North Carolina 27711, Attention Group Leader, WebFIRE Administrator. The mailed CBI material should be double wrapped and clearly marked. Any CBI markings should not show through the outer envelope. In addition, the same ERT file with the CBI omitted must be submitted to EPA via CDX.

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, 81pp4M).

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.

Appendix D: SCC Tree

SCC	scc1_desc	scc3_desc	scc6_desc
101XXXXX	External Combustion Boilers	Electric Generation	AnthraciteCoal,Pulverized
			Anthracite Coal
			Bituminous Coal, Pulverized
			Bituminous Coal
			Subbituminous Coal, Pulverized
			Subbituminous Coal
			Pulverized Lignite
			Lignite
			Residual Oil - Grade 6
			Residual Oil
			Distillate Oil - Grades 1 and 2
			Distillate Oil - Grade 4
			Natural Gas
			Petroleum Refinery Gas
			Petroleum Coke
			Wood/Bark Waste
			Liquified Petroleum Gas (LPG)
			Bagasse
			Solid Waste
			Biomass Solids
			Liquid Waste
			Biomass Liquids
			Geothermal Power Plants
			Methanol
			Hydrogen
			Coal-based Synfuel
			Waste Coal
			Other Oil
102XXXXX	External Combustion Boilers	Industrial	Anthracite Coal
			Bituminous Coal
			Subbituminous Coal
			Lignite
			Residual Oil
			Distillate Oil - Grades 1 and 2
			Natural Gas
			Process Gas
			Petroleum Coke
			Wood/Bark Waste
			Liquified Petroleum Gas (LPG)
			Bagasse

SCC	scc1_desc	scc3_desc	scc6_desc
102XXXXX	External Combustion Boilers	Industrial	Solid Waste
			Liquid Waste
			Tire-derived Fuel
			Methanol
			Gasoline
			Kiln-dried biomass
			Wood Residuals
103XXXXX	External Combustion Boilers	Commercial/Institutional	Anthracite Coal
			Bituminous Coal
			Subbituminous Coal
			Lignite
			Residual Oil - Grade 6
			Residual Oil
			Distillate Oil - Grades 1 and 2
			Distillate Oil
			Natural Gas
			Process Gas
			Landfill Gas
			Wood/Bark Waste
			Liquified Petroleum Gas (LPG)
			Biomass
			Solid Waste
			Liquid Waste
105XXXXX	External Combustion	Space Heaters	Industrial
			Commercial/Institutional
201XXXXX	Internal Combustion Engines	Electric Generation	Distillate Oil (Diesel)
			Natural Gas
			Gasified Coal
			Process Gas
			Landfill Gas
			Kerosene/Naphtha (Jet Fuel)
			Liquid Waste
			Equipment Leaks
			Wastewater, Aggregate
			Flares
202XXXXX	Internal Combustion Engines	Industrial	Distillate Oil (Diesel)
			Natural Gas
			Diesel
			Dual Fuel (Oil/Gas)
			Dual Fuel
			All Fuels
			Residual/Crude Oil

SCC	scc1_desc	scc3_desc	scc6_desc
202XXXXX	Internal Combustion Engines	Industrial	Process Gas
			Kerosene/Naphtha (Jet Fuel)
			Liquified Petroleum Gas (LPG)
			Methanol
			Gasoline
			Equipment Leaks
			Wastewater, Aggregate
203XXXXX	Internal Combustion Engines	Commercial/Institutional	Distillate Oil (Diesel)
			Natural Gas
			Gasoline
			Diesel
			Digester Gas
			Landfill Gas
			Kerosene/Naphtha (Jet Fuel)
			Liquified Petroleum Gas (LPG)
			Equipment Leaks
			Wastewater, Aggregate
204XXXXX	Internal Combustion Engines	Engine Testing	Aircraft Engine Testing
			Rocket Engine Testing
			Turbine
			Reciprocating Engine
			Equipment Leaks
			Wastewater, Aggregate
260XXXXX		Off-highway 2-stroke Gasoline Engines	Industrial Equipment
265XXXXX		Off-highway 4-stroke Gasoline Engines	Industrial Equipment
270XXXXX		Off-highway Diesel Engines	Industrial Equipment
273XXXXX		Off-highway LPG-fueled Engines	Industrial Equipment
285XXXXX		Railroad Equipment	Diesel
288XXXXXX		Fugitive Emissions	Other Not Classified
301XXXXX			Chemical Manufacturing
301XXXXX	Industrial Processes	Chemical Manufacturing	Adipic Acid
			Ammonia Production
			Carbon Black Production
			Charcoal Manufacturing
			Chlorine
			Chloro-alkali Production
			Cleaning Chemicals
			Explosives (Trinitrotoluene)
			Hydrochloric Acid
			Nitric Acid
			Paint Manufacture

SCC	scc1_desc	scc3_desc	scc6_desc
			Varnish Manufacturing
			Phosphoric Acid
301XXXXX	Industrial Processes	Chemical Manufacturing	Plastics Production
			Phthalic Anhydride
			Printing Ink Manufacture
			Sodium Carbonate
			Sulfuric Acid
			Synthetic Organic Fiber
			Cellulosic Fiber Production
			Synthetic Rubber (Manufacturing Only)
			Ammonium Nitrate Production
			Normal Superphosphates
			Triple Superphosphate
			Ammonium Phosphates
			Terephthalic Acid/Dimethyl Terephthalate
			Elemental Sulfur Production
			Pesticides
			Aniline/Ethanolamines
			Inorganic Pigments
			Chromic Acid Manufacturing
			Sodium Bicarbonate
			Hydrogen Cyanide
			Urea Production
			Nitrocellulose
			Lead Alkyl Manufacturing (Electrolytic Process)
			Organic Fertilizer
			Butyl rubber production
			Epichlorohydrin Elastomer Production
			Adhesives
			Animal Adhesives
			Casein
			Ethylene Propylene Rubber Production
			HypalonTM Production
			Neoprene Production
			Nitrile Butadiene Rubber Production
			Polybutadiene Rubber Production
			Polysulfide Rubber Production
			Styrene Butadiene Rubber and Latex Production
			Pharmaceutical Production
			Polyether Polyols Production
			Acrylonitrile Butadiene Styrene Resin Production
			Methyl Methacrylate Butadiene Styrene Resin Production

SCC	scc1_desc	scc3_desc	scc6_desc
			Polyethylene Terephthalate Resin Production
			Polystyrene Resin Production
301XXXXX	Industrial Processes	Chemical Manufacturing	Styrene Acrylonitrile Resin Production
			Maleic Anhydride Copolymers Production
			Alkyd Resin Production
			Inorganic Chemical Manufacturing (General)
			Hydrogen
			Acetal Resins
			Amino/Phenolic Resin Production
			Polycarbonate Production
			Polyvinyl Chloride and Copolymers Production
			Epoxy Resin Production
			Non-nylon Polyamide Production
			Polypropylene Production
			Polymethyl Methacrylate Production
			Cellophane Manufacturing
			Cellulose Ethers Production
			Polymerized Vinylidene Chloride Production
			Polyvinyl Acetate Emulsions Production
			Polyvinyl Alcohol Production
			Acetone/Ketone Production
			Maleic Anhydride
			Asbestos Chemical
			Elemental Phosphorous
			Boric Acid
			Potassium Chloride
			Aluminum Sulfate Manufacturing
			Formaldahyde, Acrolein, Acetaldehyde, Butyraldehyde
			Organic Dyes/Pigments
			Chloroprene
			Chlorine Derivatives
			Brominated Organics
			Fluorocarbons/Chlorofluorocarbons
			Chlorinated Paraffins Production
			Ammonium Sulfate
			Organic Acid Manufacturing
			Acetic Anhydride
			Esters Production
			Acetylene Producion
			Hydrazine Production
			Phthalate Plasticizers Production
			Bisphenol A

SCC	scc1_desc	scc3_desc	scc6_desc
			Butadiene
			Cumene
301XXXXX	Industrial Processes	Chemical Manufacturing	Cyclohexane
			Cyclohexanone/Cyclohexanol
			Vinyl Acetate
			Ethyl Benzene
			Ethylene Oxide
			Glycerin (Glycerol)
			Toluene Diisocyanate
			Methyl Methacrylate
			Nitrobenzene
			Butylene, Ethylene, Propylene, Olefin Production
			Phenol
			Propylene Oxide
			Styrene
			Caprolactum (Use 3-01-130 for Ammonium Sulfate By-product Production)
			Linear Alkylbenzene
			Ethylidene Norbornene Production
			Methanol/Alcohol Production
			Ethylene Glycol
			Etherene Production
			Glycol Ethers
			Nitriles, Acrylonitrile, Adiponitrile Production
			Benzene/Toluene/Aromatics/Xylenes
			Inorganic Chemical Manufacturing: Antimony Oxides
			Inorganic Chemical Manufacturing: Fumed Silica
			Inorganic Chemical Manufacturing: Quaternary Ammonium Compounds
			Inorganic Chemical Manufacturing: Sodium Cyanide
			Inorganic Chemical Manufacturing: Uranium Hexafluoride
			Chlorobenzene
			Carbon Tetrachloride
			Allyl Chloride
			Allyl Alcohol
			Epichlorohydrin
			Nitroglycerin Production
			Explosives Manufacture - Pentaerythritol Tetranitrate (PETN)
			Explosives Manufacture - RDX/HMX Production
			General Processes
			Equipment Leaks
			General Processes
			Wastewater Treatment

SCC	scc1_desc	scc3_desc	scc6_desc
			Wastewater, Points of Generation
			Inorganic Chemical Storage: Fixed Roof Tanks
			Inorganic Chemical Storage: Floating Roof Tanks
301XXXXX	Industrial Processes	Chemical Manufacturing	Inorganic Chemical Storage: Pressure Tanks
			Fugitive Emissions
			Fuel Fired Equipment
			Other Not Classified
302XXXXX	Industrial Processes	Food and Agriculture	Alfalfa Dehydration
			Coffee Roasting
			Instant Coffee Products
			Instant Coffee Products
			Cotton Ginning
			Feed and Grain Country Elevators
			Grain Millings
			Feed Manufacture
			Beer Production
			Distilled Spirits
			Wines, Brandy, and Brandy Spirits
			Fish Processing
			Meat Smokehouses
			Starch Manufacturing
			Sugar Cane Refining
			Sugar Beet Processing
			Peanut Processing
			Candy Manufacturing
			Vegetable Oil Processing
			Beef Cattle Feedlots
			Range Cattle
			Dairy Cattle
			Feedlot Cattle
			Silage pile - AFO
			Silage TMR - AFO
			Eggs and Poultry Production
			Broilers
			Layers
			Turkeys
			Swine
			Sheep
			Horses
			Other Livestock
			Cotton Seed Delinting
			Seed Products and Processing

SCC	scc1_desc	scc3_desc	scc6_desc
			Mushroom Growing
			Dairy Products
			Export Grain Elevators
302XXXXX	Industrial Processes	Food and Agriculture	Bakeries
			Tobacco Processing
			Bakers Yeast Manufacturing - Dry Yeast
			Bakers Yeast Manufacturing - Compressed Yeast
			Deep Fat Frying
			Animal/Poultry Rendering
			Carob Kibble
			Cereal
			Vinegar Manufacturing
			Cellulose Food Casing Manufacture
			Ethanol Production
			Biodiesel Production
			Equipment Leaks
			Wastewater, Aggregate
			Wastewater, Points of Generation
			Fugitive Emissions
			Fuel Fired Equipment
			Other Not Specified
303XXXXX	Industrial Processes	Primary Metal Production	Bauxite Ore Processing
			Alumina Electrolytic Reduction
			Aluminum Hydroxide Calcining
			Metallurgical Coke Manufacturing
			Primary Copper Smelting
			Ferroalloy Production
			Lead Production
			Magnesium
			Molybdenum
			Titanium
			Gold Processing
			Barium Ore Processing
			Integrated Iron and Steel Manufacturing
			Taconite Iron Ore Processing
			Metal Mining (General Processes)
			Zinc Production
			Leadbearing Ore Crushing and Grinding
			Alumina Processing - Bayer Process
			Equipment Leaks
			Wastewater, Aggregate
			Wastewater, Aggregate

SCC	scc1_desc	scc3_desc	scc6_desc
			Wastewater, Points of Generation
			Fugitive Emissions
			Fuel Fired Equipment
			Other Not Classified
304XXXXX	Industrial Processes	Secondary Metal Production	Aluminum
			Copper
			Grey Iron Foundries
			Lead
			Lead Battery Manufacture
			Magnesium
			Steel Foundries
			Zinc
			Malleable Iron
			Nickel
			Steel Manufacturing
			Furnace Electrode Manufacture
			Metal Heat Treating
			Lead Cable Coating
			Miscellaneous Casting and Fabricating
			Miscellaneous Casting Fabricating
			Metallic Lead Products
			Equipment Leaks
			Wastewater, Aggregate
			Wastewater, Aggregate
			Wastewater, Points of Generation
			Fugitive Emissions
			Fuel Fired Equipment
			Other Not Classified
305XXXXX	Industrial Processes	Mineral Products	Asphalt Roofing Manufacture
			Asphalt Concrete
			Brick and Structural Clay Products Manufacture
			Calcium Carbide
			Castable Refractory
			Cement Manufacturing (Dry Process)
			Cement Manufacturing (Wet Process)
			Clay Ceramics Manufacture
			Clay and Fly Ash Sintering
			Coal Mining, Cleaning, and Material Handling
			Concrete Batching
			Fiberglass Manufacturing
			Frit Manufacture
			Glass Manufacture

SCC	scc1_desc	scc3_desc	scc6_desc
			Gypsum Manufacture
			Lime Manufacture
			Mineral Wool Manufacturing
305XXXXX	Industrial Processes	Mineral Products	Perlite Manufacturing
			Phosphate Rock
			Stone Quarrying - Processing (See also 305320)
			Salt Mining
			Potash Production
			Magnesium Carbonate
			Magnesium Carbonate
			Construction Sand and Gravel
			Diatomaceous Earth
			Industrial Sand and Gravel
			Lightweight Aggregate Manufacture
			Ceramic Electric Parts
			Asbestos Mining
			Vermiculite
			Feldspar
			Abrasive Grain Processing
			Bonded Abrasives Manufacturing
			Coated Abrasives Manufacturing
			Pulverized Mineral Processing
			Pyrrhotite
			Mining and Quarrying of Nonmetallic Minerals
			Clay processing: Kaolin
			Clay processing: Ball clay
			Clay processing: Fire clay
			Clay processing: Bentonite
			Clay processing: Fullers earth
			Clay processing: Common clay and shale, NEC
			Asphalt Processing (Blowing)
			Talc Processing
			Mica
			Sandspar
			Catalyst Manufacturing
			Bulk Materials Elevators
			Bulk Materials Conveyors
			Bulk Materials Storage Bins
			Bulk Materials Open Stockpiles
			Bulk Materials Unloading Operation
			Bulk Materials Loading Operation
			Bulk Materials Screening/Size Classification

SCC	scc1_desc	scc3_desc	scc6_desc
			Bulk Materials Separation: Cyclones
			Bulk Materials: Grinding/Crushing
			Calcining
305XXXXX	Industrial Processes	Mineral Products	Equipment Leaks
			Wastewater, Aggregate
			Wastewater, Aggregate
			Wastewater, Points of Generation
			Fugitive Emissions
			Fuel Fired Equipment
			Other Not Defined
306XXXXX	Industrial Processes	Petroleum Industry	Process Heater
			Catalytic Cracking Unit
			Blowdown Systems
			Wastewater Treatment
			Vacuum Distillation
			Cooling Towers
			Fugitive Emissions
			Flares
			Sludge Converter
			Asphalt/Bitumen Production
			Fluid Coking Unit
			Coke Handling System
			Petroleum Coke Calcining
			Catalytic Reforming Unit
			Catalytic Hydrotreating Unit
			Hydrogen Generation Unit
			Merox Treating Unit
			Crude Unit Atmospheric Distillation
			Light Ends Fractionation Unit
			Gasoline Blending Unit
			Hydrocracking Unit
			Alkylation Unit
			Sour Gas Treating Unit
			Sulfur Recovery Unit
			Incinerators
			Lube Oil Refining
			Remediation: Soil
			Remediation: Vapor Extract
			Remediation: Air Stripping
			Re-refining of Lube Oils and Greases
			Fugitive Emissions
			Fugitive Dust

SCC	scc1_desc	scc3_desc	scc6_desc
			Other Units/Processes
307XXXXX	Industrial Processes	Pulp and Paper and Wood Products	Sulfate (Kraft) Pulping
			Sulfite Pulping
307XXXXX	Industrial Processes	Pulp and Paper and Wood Products	Neutral Sulfite Semichemical Pulping
			Semi-chemical (non-sulfur)
			Soda
			Neutral Sulfite Semichemical Pulping
			Paper and Paperboard Manufacture
			Pulpboard Manufacture
			Secondary Fiber Pulping
			Paper and Paperboard Manufacture
			Wood Pressure Treating
			Particleboard Manufacture
			Plywood Operations
			Particleboard Manufacture
			Plywood Operations
			Sawmill Operations
			Medium Density Fiberboard (MDF) Manufacture
			Oriented Strandboard (OSB) Manufacture
			Paper Coating and Glazing
			Miscellaneous Paper Processes
			Mechanical Pulping Operations
			Miscellaneous Paper Products
			Hardboard (HB) Manufacture
			Fiberboard (FB) Manufacture
			Laminated Veneer Lumber Manufacture
			I-Joist Manufacture
			Glulam Manufacture
			Laminated Strand Lumber (LSL) Manufacture
			Parallel Strand Lumber (PSL) Manufacture
			Furniture Manufacture
			Miscellaneous Wood Working Operations
			Bulk Handling and Storage - Wood/Bark
			Fugitive Emissions
			Other Not Classified
			Other Not Classified
308XXXXX	Industrial Processes	Rubber and Miscellaneous Plastics Products	Tire Manufacture
			Tire Retreading
			Other Fabricated Plastics
			Fiberglass Resin Products
			Foam Production

			Plastic Products Manufacturing
			Vinyl Floor Tile Manufacturing
			Equipment Leaks
			Wastewater, Aggregate

SCC	scc1_desc	scc3_desc	scc6_desc
308XXXXX	Industrial Processes	Rubber and Miscellaneous Plastics Products	Wastewater, Points of Generation
			Fuel Fired Equipment
			Other Not Specified
309XXXXX	Industrial Processes	Fabricated Metal Products	General Processes
			Abrasive Blasting of Metal Parts
			Abrasive Cleaning of Metal Parts
			Welding
			Electroplating Operations
			Conversion Coating of Metal Products
			Precious Metals Recovery
			Chemical Milling of Metal Products
			Metal Pipe Coating of Metal Parts
			Other Not Classified
			Drum Cleaning/Reclamation
			Machining Operations
			Powder Metallurgy Part Manufacturing (NAICS 332117)
			Metal Deposition Processes
			Resistance Welding
			Brazing
			Soldering
			Oxyfuel Welding
			Thermal Spraying
			Oxyfuel Cutting
			Arc Cutting
			Arc Welding: General: Consummable and Non-consummable Electrode
			Shielded Metal Arc Welding (SMAW)
			Gas Metal Arc Welding (GMAW)
			Flux Cored Arc Welding (FCAW)
			Electrostag Welding (ESW)
			Gas Tungsten Arc Welding (GTAW)
			Plasma Arc Welding (PAW)
			Porcelain Enamel/Ceramic Glaze Spraying
			Equipment Leaks
			Wastewater, Aggregate
			Wastewater, Points of Generation
			Fugitive Emissions
			Fuel Fired Equipment

			Other Not Classified
310XXXXX	Industrial Processes	Oil and Gas Production	Crude Oil Production
			Natural Gas Processing
			Process Heaters
			Liquid Waste Treatment
			Fugitive Emissions
311XXXXX	Industrial Processes	Building Construction	Construction: Building Contractors
			Demolitions/Special Trade Contracts
312XXXXX	Industrial Processes	Machinery, Miscellaneous	Miscellaneous Machinery
313XXXXX	Industrial Processes	Electrical Equipment	Electrical Switch Manufacture
			Light Bulb Manufacture
			Fluorescent Lamp Manufacture
			Fluorescent Lamp Recycling
			Mercury Oxide Battery Manufacture
			Manufacturing - General
			Manufacturing - General Processes
			Semiconductor Manufacturing
			Electrical Windings Reclamation
			Electrical Windings Reclamation
			Equipment Leaks
			Wastewater, Aggregate
			Wastewater, Points of Generation
			Process Heaters
			Other Not Classified
314XXXXX	Industrial Processes	Transportation Equipment	Automobiles/Truck Assembly Operations
			Brake Shoe Debonding
			Auto Body Shredding
			Welding/Soldering Automotive Repair
			Boat Manufacturing
			Equipment Leaks
			Wastewater, Aggregate
			Wastewater, Point of Generation
			Other Not Classified
315XXXXX	Industrial Processes	Photo Equip/Health Care/Labs/Air Condit/SwimPools	Photocopying Equipment Manufacturing
			Health Care - Hospitals
			Health Care - Crematoriums
			Dental Alloy (Mercury Amalgams) Production
			Thermometer Manufacture
			Laboratories
			X-rays
			Commercial Swimming Pools - Chlorination-Chloroform
			Air-conditioning/Refrigeration
316XXXXX	Industrial Processes	Photographic Film Manufacturing	Product Manufacturing - Chemical Preparation

SCC	scc1_desc	scc3_desc	scc6_desc
			Product Manufacturing - Surface Treatments
			Product Manufacturing - Finishing Operations
			Support Activities - Cleaning Operations
			Support Activities - Storage Operations
			Support Activities - Material Transfer Operations
			Support Activities - Separation Processes
			Support Activities - Other Operations
317XXXXX	Industrial Processes	NGTS	Natural Gas Transmission and Storage Facilities
320XXXXX	Industrial Processes	Leather and Leather Products	Other Not Classified
330XXXXX	Industrial Processes	Textile Products	Miscellaneous
			Carpet Operations
			Fabric Finishing
			Fugitive Emissions
360XXXXX	Industrial Processes	Printing and Publishing	Typesetting (Lead Remelting)
			Flexographic
			Rotogravure
			Lithographic
385XXXXX	Industrial Processes	Cooling Tower	Process Cooling
390XXXXX	Industrial Processes	In-process Fuel Use	Anthracite Coal
			Bituminous Coal
			Lignite
			Residual Oil
			Distillate Oil
			Natural Gas
			Process Gas
			Coke
			Wood
			Liquified Petroleum Gas
			Solid Waste
			Liquid Waste
			Fuel Storage - Fixed Roof Tanks
			Fuel Storage - Floating Roof Tanks
			Fuel Storage - Pressure Tanks
399XXXXX	Industrial Processes	Miscellaneous Manufacturing Industries	Process Heater/Furnace
			Paint Stripping: Non-chemical
			Miscellaneous Manufacturing Industries
			Miscellaneous Industrial Processes
401XXXXX	Chemical Evaporation	Organic Solvent Evaporation	Dry Cleaning
			Degreasing
			Cold Solvent Cleaning/Stripping
			Knit Fabric Scouring with Chlorinated Solvent
			Solvent Storage

SCC	scc1_desc	scc3_desc	scc6_desc
			Fugitive Emissions
402XXXXX	Chemical Evaporation	Surface Coating Operations	Surface Coating Application - General
			Coating Oven - General
			Coating Oven Heater
402XXXXX	Chemical Evaporation	Surface Coating Operations	Fabric Coating/Printing
			Fabric Dyeing
			Paper Coating
			Large Appliances
			Magnet Wire Surface Coating
			Automobiles and Light Trucks
			Metal Can Coating
			Metal Coil Coating
			Wood Furniture Surface Coating
			Metal Furniture Operations
			Flatwood: Wood Building Products
			Plastic Parts
			Large Ships
			Aerospace
			Miscellaneous Metal Parts
			Steel Drums
			Glass Mirrors
			Glass Optical Fibers
			Semiconductors
			Fabric Printing
			Fabric Coating, Knife Coating
			Fabric Coating, Roller Coating
			Fabric Coating, Dip Coating
			Fabric Coating, Transfer Coating
			Fabric Coating, Extrusion Coating
			Fabric Coating, Melt Roll Coating
			Fabric Coating, Coagulation Coating
			Fabric Dyeing
			Equipment Leaks
			Wastewater, Aggregate
			Wastewater, Points of Generation
			Fugitive Emissions
			Fuel Fired Equipment
			Miscellaneous
403XXXXX	Chemical Evaporation	Petroleum Product Storage at Refineries	Fixed Roof Tanks (Varying Sizes)
			Floating Roof Tanks (Varying Sizes)
			Variable Vapor Space
			Fugitive Emissions

SCC	scc1_desc	scc3_desc	scc6_desc
			Other Not Classified
404XXXXX	Chemical Evaporation	Petroleum Liquids Storage (non-Refinery)	Bulk Terminals
			Bulk Plants
			Oil and Gas Field Storage and Working Tanks
404XXXXX	Chemical Evaporation	Petroleum Liquids Storage (non-Refinery)	Petroleum Products - Underground Tanks
405XXXXX	Chemical Evaporation	Printing and Publishing	Letter Press
			Flexographic
			Lithographic
			Rotogravure
			Screen Printing
			Digital Printing
406XXXXX	Chemical Evaporation	Transportation and Marketing of Petroleum Products	Tank Cars and Trucks
			Marine Vessels
			Gasoline Retail Operations - Stage I
			Filling Vehicle Gas Tanks - Stage II
			Pipeline Petroleum Transport - General - All Products
			Consumer (Corporate) Fleet Refueling - Stage II
			Consumer (Corporate) Fleet Refueling - Stage I
			Fugitive Emissions
407XXXXX	Chemical Evaporation	Organic Chemical Storage	Fixed Roof Tanks - Anhydrides
			Fixed Roof Tanks - Alcohols
			Fixed Roof Tanks - Alkanes
			Fixed Roof Tanks - Alkenes
			Fixed Roof Tanks - Amides
			Fixed Roof Tanks - Amines
			Fixed Roof Tanks - Aromatics
			Fixed Roof Tanks - Carboxylic Acids
			Fixed Roof Tanks - Esters
			Fixed Roof Tanks - Ethers
			Fixed Roof Tanks - Glycol Ethers
			Fixed Roof Tanks - Glycols
			Fixed Roof Tanks - Halogenated Organics
			Fixed Roof Tanks - Isocyanates
			Fixed Roof Tanks - Ketones
			Fixed Roof Tanks - Mercaptans
			Fixed Roof Tanks - Nitriles
			Fixed Roof Tanks - Nitro Compounds
			Fixed Roof Tanks - Phenols
			Fixed Roof Tanks - Miscellaneous
			Floating Roof Tanks - Acid Anhydrides
			Floating Roof Tanks - Alcohols
			Floating Roof Tanks - Aldehydes

SCC	scc1_desc	scc3_desc	scc6_desc
			Floating Roof Tanks - Alkanes
			Floating Roof Tanks - Alkenes
			Floating Roof Tanks - Amides
			Floating Roof Tanks - Amines
407XXXXX	Chemical Evaporation	Organic Chemical Storage	Floating Roof Tanks - Aromatics
			Floating Roof Tanks - Carboxylic Acids
			Floating Roof Tanks - Esters
			Floating Roof Tanks - Ethers
			Floating Roof Tanks - Glycol Ethers
			Floating Roof Tanks - Glycols
			Floating Roof Tanks - Halogenated Organics
			Floating Roof Tanks - Ketones
			Floating Roof Tanks - Mercaptans
			Floating Roof Tanks - Nitriles
			Floating Roof Tanks - Phenols
			Floating Roof Tanks - Miscellaneous
			Underground Storage Tanks
			Pressure Tanks - Anhydrides
			Pressure Tanks - Alcohols
			Pressure Tanks - Aldehydes
			Pressure Tanks - Alkanes
			Pressure Tanks - Alkenes
			Pressure Tanks - Alkynes
			Pressure Tanks - Amines
			Pressure Tanks - Aromatics
			Pressure Tanks - Ethers
			Pressure Tanks - Ethers
			Pressure Tanks - Halogenated Organics
			Pressure Tanks - Halogenated Organics
			Pressure Tanks - Isocyanates
			Pressure Tanks - Ketones
			Pressure Tanks - Mercaptans (Thiols)
			Pressure Tanks - Phenols
			Pressure Tanks - Miscellaneous
			Miscellaneous Chemicals
40xxxxx	Chemical Evaporation	Organic Chemical Transportation	Equipment Leaks
			Organic Chemicals
410xxxxx	Chemical Evaporation	Dry Cleaning	Petroleum Solvent - Industrial
			Petroleum Solvent - Commercial
			Petroleum Solvent - Equipment Leaks
			Petroleum Solvent - Wastewater, Aggregate
			Petroleum Solvent - Wastewater, Aggregate

			Petroleum Solvent - Wastewater, Points of Generation
411xxxxx	Chemical Evaporation	Aerosol Cans	Filling Facilities
425xxxxx	Chemical Evaporation	unknown	unknown
490xxxxx	Chemical Evaporation	Organic Solvent Evaporation	Solvent Extraction Process
SCC	scc1_desc	scc3_desc	scc6_desc
490xxxxx	Chemical Evaporation	Organic Solvent Evaporation	Waste Solvent Recovery Operations
			Rail Car Cleaning
			Tank Truck Cleaning
			Air Stripping Tower
			Freon Recovery/Recycling Operations
			Fuel Fired Equipment
			Miscellaneous Volatile Organic Compound Evaporation
			Municipal Waste Incineration
			Open Burning Dump
			Hospital/Medical/Infectious Waste Incineration (HMIWI)
501XXXXX	Waste Disposal	Solid Waste Disposal - Government	Municipal Solid Waste Landfill
			Landfill Dump
			Municipal Solid Waste Landfill
			Other Incineration
			Fire Fighting
			Publicly Owned Treatment Works
			Sewage Sludge Incineration
			Equipment Leaks
			Auxillary Fuel/No Emissions
502XXXXX	Waste Disposal	Solid Waste Disposal - Commercial/Institutional	Open Burning
			Incineration: Special Purpose
			Asbestos Removal
			Equipment Leaks
			Auxillary Fuel/No Emissions
503XXXXX	Waste Disposal	Solid Waste Disposal - Industrial	Incineration
			Open Burning
			Municipal Waste Incineration
			Incineration
			Landfill Dump
			Municipal Solid Waste Landfill
			Wastewater Treatment
			Treatment, Storage, Disposal/TSDF
			Asbestos Removal
			Municipal Solid Waste Landfill
			Sewage Sludge Incineration
			Equipment Leaks
			Auxillary Fuel/No Emissions
504XXXXX	Waste Disposal	Site Remediation	General Processes

SCC	scc1_desc	scc3_desc	scc6_desc
			Excavation/Soils Handling
			Stabilization/Solidification
			Capping
			In Situ Venting/Venting of Soils
504XXXXX	Waste Disposal	Site Remediation	Air Stripping of Groundwater
			Thermal Desorption
			Biological Treatment
			Equipment Leaks
			Wastewater, Aggregate
			Wastewater, Aggregate
			Wastewater, Points of Generation
			General Processes
			Incineration
			Hospital/Medical/Infectious Waste Incineration (HMIWI)
			Apartment Complex Incineration
			Municipal Solid Waste Landfill
			Sewage Sludge Incineration
			Wastewater Treatment
507XXXXX	Waste Disposal	Solid Waste Disposal - Institutional	Hospital/Medical/Infectious Waste Incineration (HMIWI)
			Municipal Solid Waste Landfill
			Sewage Sludge Incineration
			Wastewater Treatment

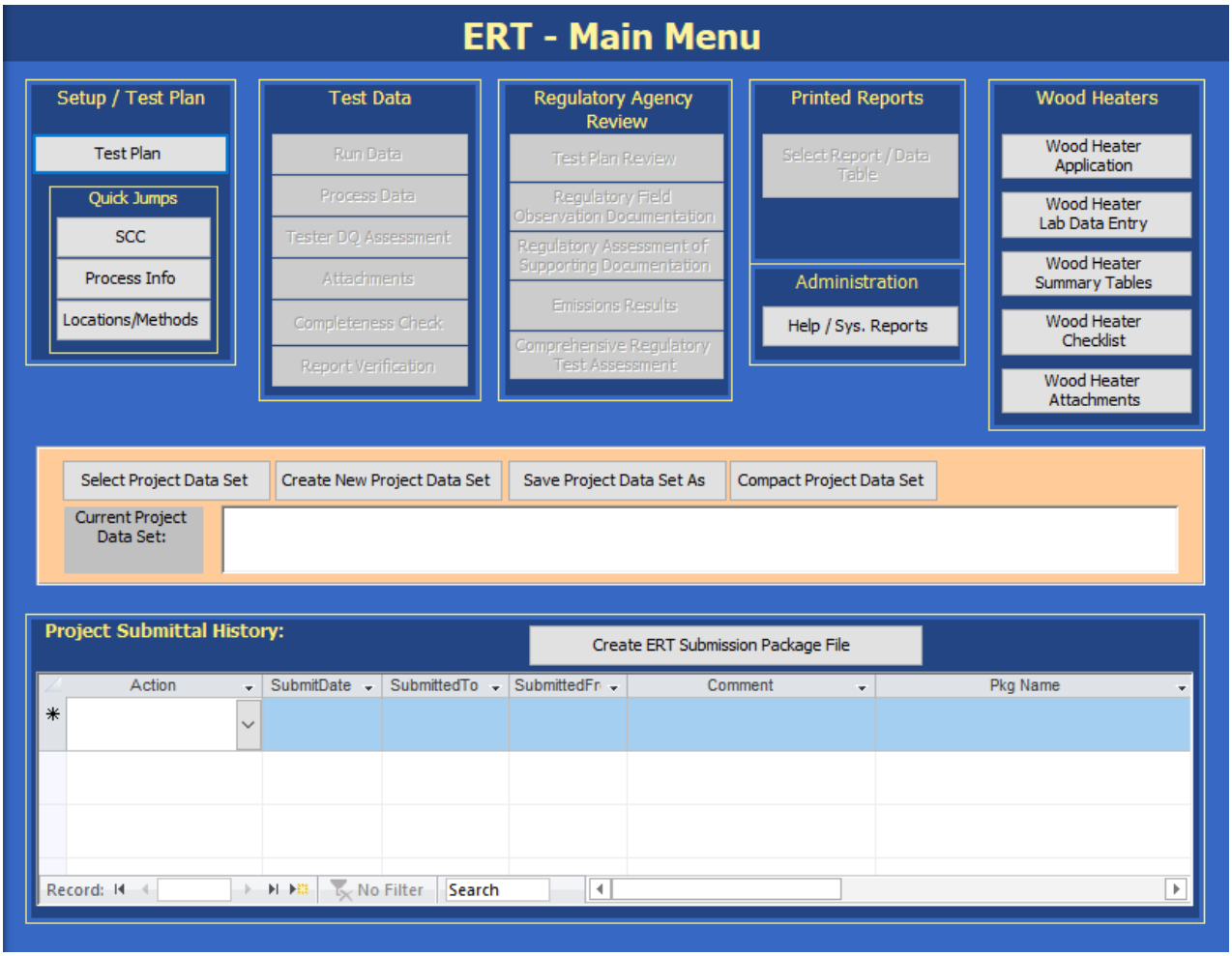
ELECTRONIC REPORTING TOOL (ERT)
USER'S GUIDE FOR
WOOD HEATER CERTIFICATION FOR
COMPLIANCE APPLICATION AND
LABORATORY TEST DATA

Version 7

February, 2025

Developed by Wood

For U.S. Environmental Protection Agency



ERT Main Menu Screenshot

Table of Contents Part 2 -

ERT USER MANUAL FOR WOOD HEATER CERTIFICATION LIST OF FIGURES **PART 2-**

Chapter 1: Introduction

Thank you for using this version of EPA's Electronic Reporting Tool (ERT). Please keep checking *Electronic Reporting Tool (ERT) Webpage* for the latest version of ERT and the user's manual.

What is the ERT?

The ERT is a Microsoft Access application used to electronically create wood heater certification for compliance application package, calculate results and submit (or resubmit) the test results as an electronic report to the EPA. Additionally, the ERT provides a means for individuals to review and comment on the submitted certification for compliance application package. Users can then send the application package file to the EPA via email to WoodHeaterReports@epa.gov.

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 information required, plus any attachments. The Microsoft Excel spreadsheet upload is an optional part of the ERT. You can use the completed spreadsheet template to import data into the ERT for ASTM Method 2515.

ERT Application

The ERT Application is a Microsoft Access Database. To run the ERT, you must have Microsoft Access 2010, 2013, 2016 or the runtime version of Microsoft Access. The runtime version is available for free from the Microsoft Access Download Center. Before running the ERT for the first time, please refer to Chapter 2: Getting Started 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 wood heater application, wood heater lab data, wood heater summary tables, wood heater checklist and wood heater attachments. This is the file that will be exchanged between the manufacturer, laboratory, third party reviewer, and the EPA. Each PDS contains information for test reports from one wood heater firebox design. 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 test data for ASTM 2515-11 into the ERT. There is a template spreadsheet available that is prepared for import. Test data can be added to 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):

- Manufacturer
  - Creates a project data set and begins providing information in the wood heater application about the wood heater being tested.
  - Emails the ERT PDS to laboratory for Lab data entry to be completed.
- Laboratory Testing Company
  - Creates the test report containing data and supporting documentation for ASTM E2515-11 and CSA B415.1-10
- Third party reviewer
  - Reviews test report and completes the wood heater checklist to ensure the application package is complete.
  - Sends the certification for compliance application package to the manufacturer for completion.
- Manufacturer
  - Submits the completed certification for compliance application package to EPA at WoodHeaterReports@epa.gov.
- EPA
  - Reviews the completed certification for compliance application.

Chapter 2: Getting Started

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

If you have Microsoft Access version 2010, 2013, 2016, or 2019: 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. Please download a version that is the version of office you have installed on your computer.

- **MS Access 2010 Runtime.**
- **MS Access 2013 Runtime**.
- **MS Access 2016 Runtime.**

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

If you have Windows 10 or 11, only 1 Office version can be on the computer. The operating system is incompatible with two versions of the same program. For instance, if a computer has Access 2010 and 2013 on it, they will not work and one version will need to be removed.

Downloading and Installing the ERT

The EPA *Electronic Reporting Tool (ERT) Webpage* 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 ERTv7.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_WHATEST-PDS.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 ERTv7.accdb file from the location where you've installed the ERT application.

When opening Access, go to File, then go to Options. Once in Options, go to Trust Center, select Trust Center Settings . . ., go to Macro Settings and make sure Enable all macros (not recommended; potentially dangerous code can run) is selected (Figure 102).

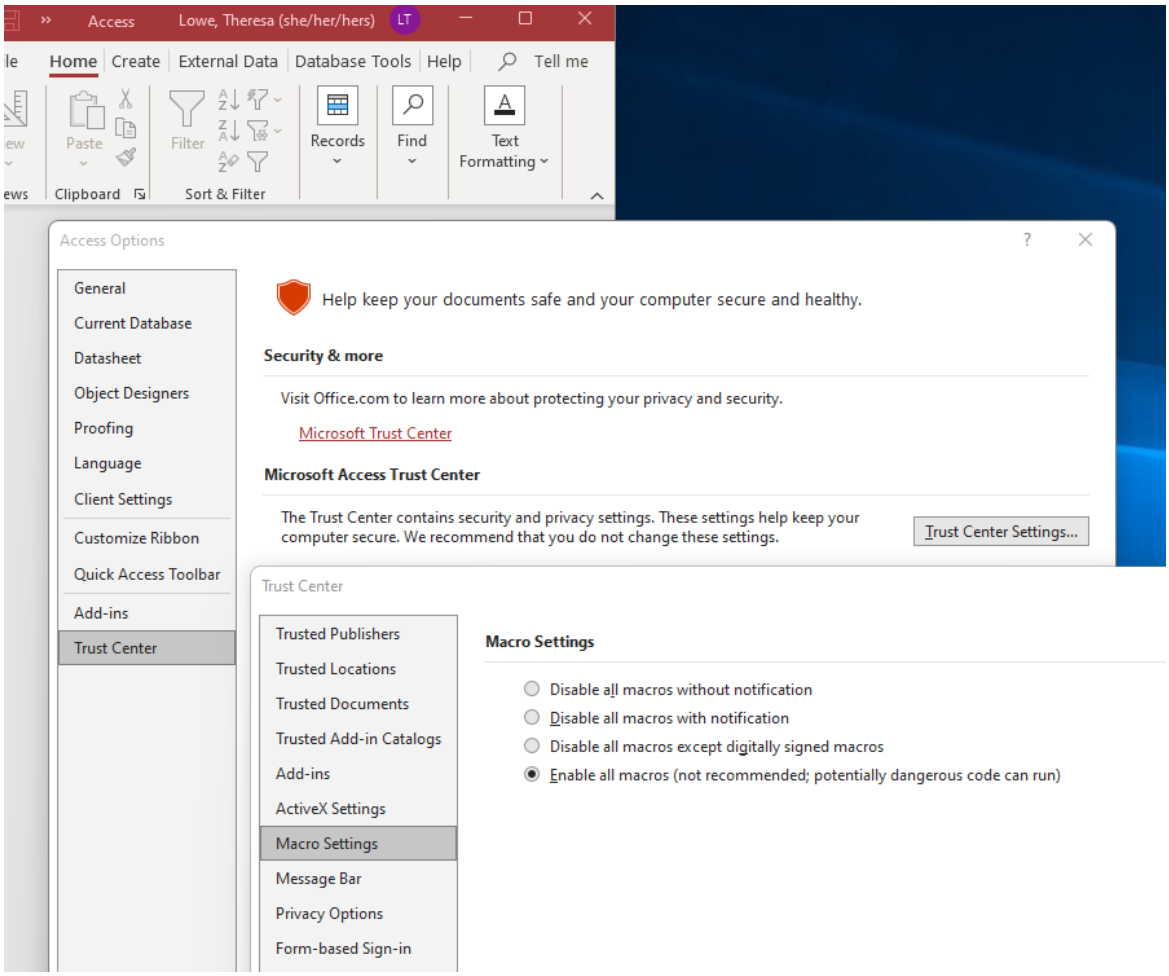


Figure 102. Enable all macros for MSAccess

Before starting the ERT, right click on the file and select Properties. Under General tab Attributes make sure Unblock is checked and select Apply and OK (Table 103). To start the ERT, double click ERTv7.accdb file from the location where you've installed the ERT application. You may need to repeat this step to unblock the project data set.

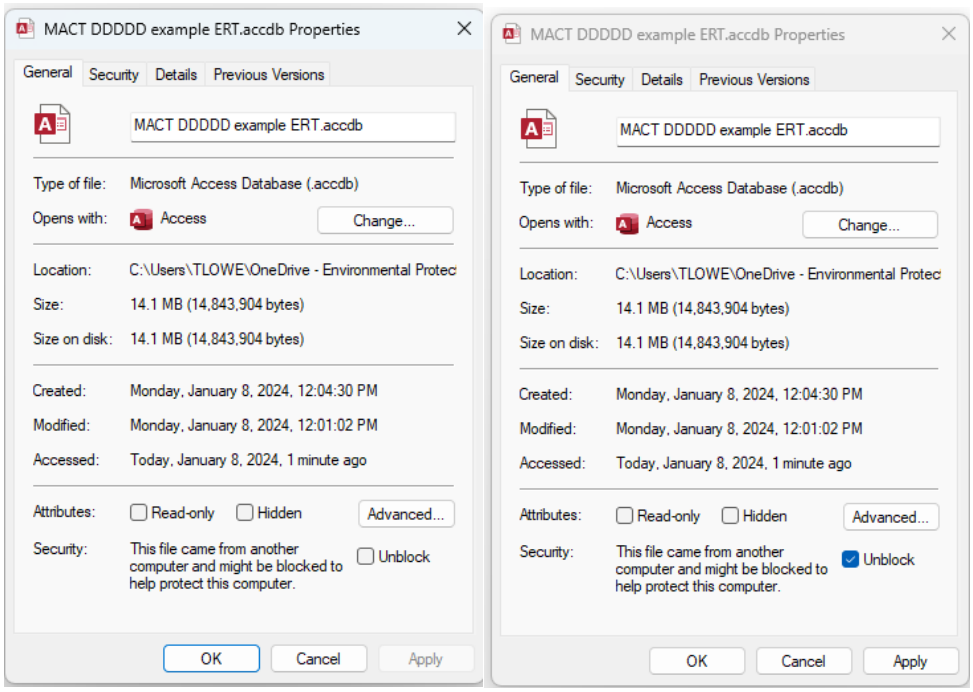


Figure 103. Unblock to enable file

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 104):

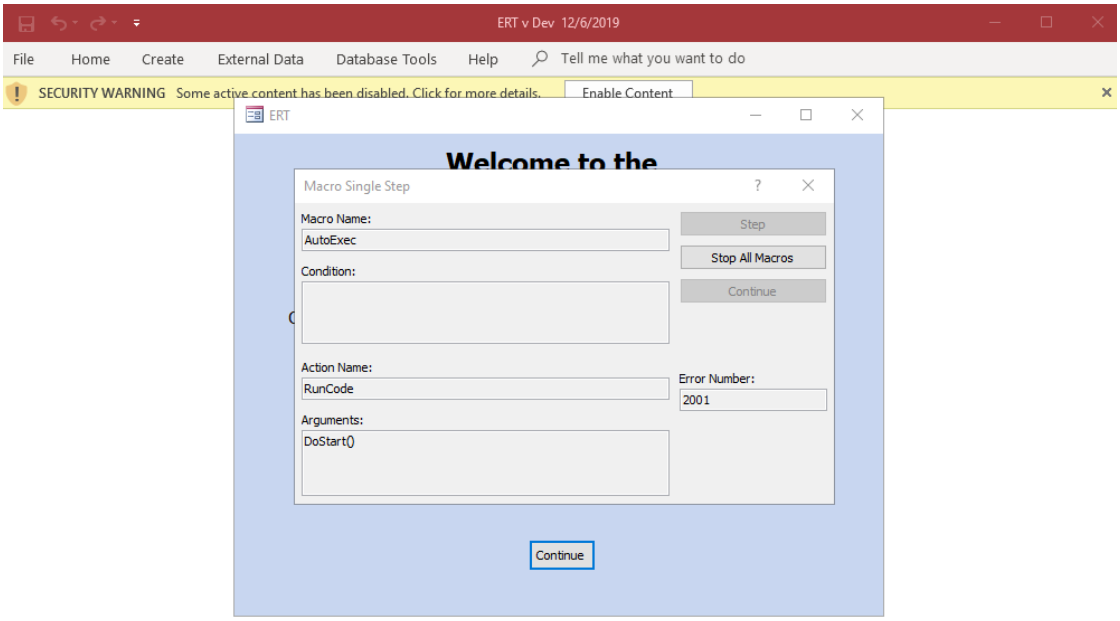


Figure 104 - Security Warning

Select “Stop all Macros” and the red X in the upper right-hand corner of the Macro Single Step box. Once the Macro box is closed, enable all macros in the yellow Security Warning banner. This should enable the program to run. Once continue is selected, the ERT – Main Menu will be displayed (Figure 105).

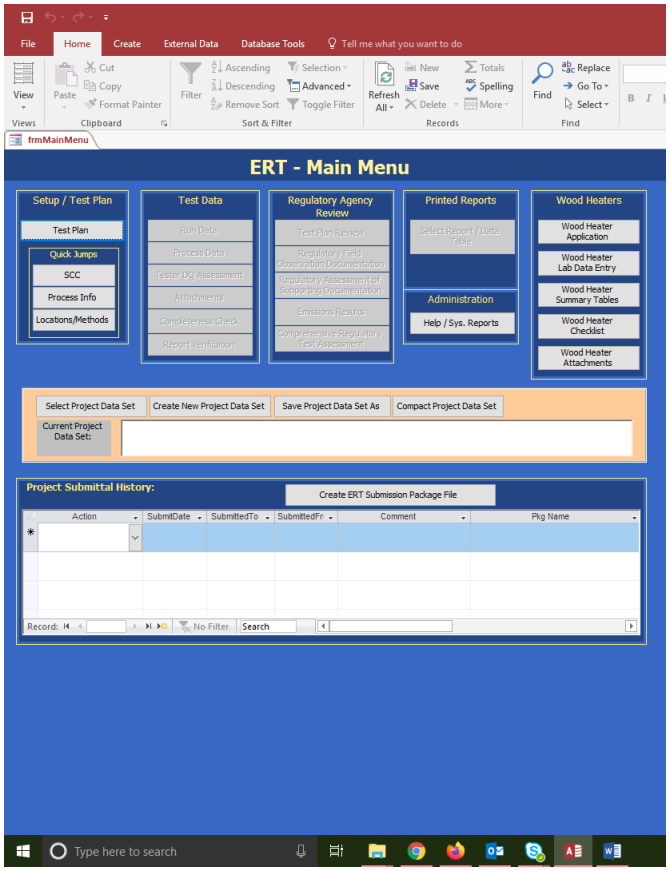


Figure 105 - ERT Main Menu

Project Data Sets

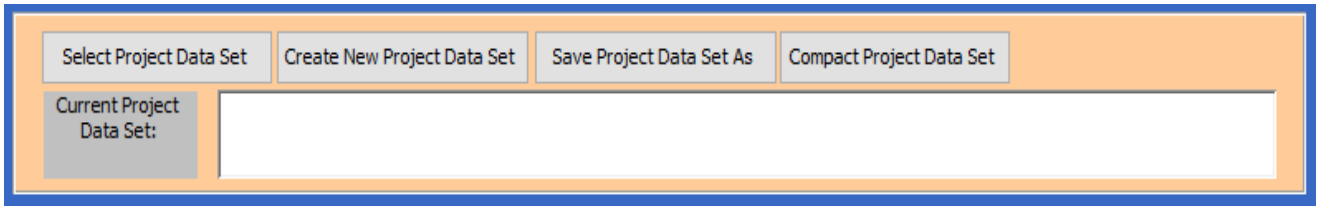


Figure 106 - Project Data Set of the ERT Main Menu

The Project Data Set (PDS) is a Microsoft Access file that contains the information for all the tests performed on a single firebox. This includes the application, run data, test report, test review and any supporting documentation that has been included as attachments. When the PDS is sent to the EPA, the agency can use the ERT to review and approve the PDS.

You can select, create, save as, or compact a PDS from the “***ERT Main Menu***” (Figure 106). The first time you create a PDS, you will select “**Create New Project Data Set**” (Figure 107). Thereafter, you can select the project data set and click on “**Save Project Data Set As**” to save the entire PDS with another name.

Create New Project Data Set

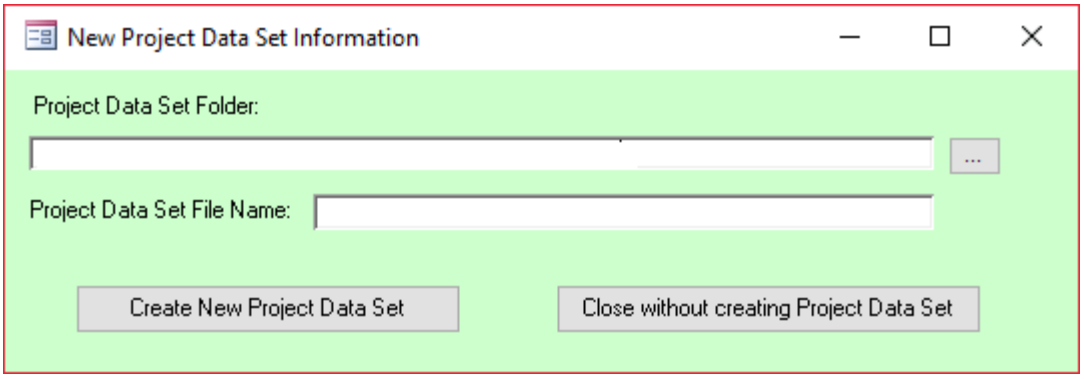


Figure 107 - Creating a Project Data Set

- 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.
- If you receive a "Could not use'C:\(location of file and file name).accdb'; file already in use error, check the folder where you saved the file, and select the project data set as described below.

Select 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 108 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**".

Save Project Data Set As

Tests for similar fireboxes may contain some of the same information. To keep from having to enter the same application information for similar tests, the ERT can save the currently selected PDS as a different name. When "Save Project Data Set As" is selected, a pop-up asks "Save this Project Data Set as a Template? A Template saves only the Test Plan information and Wood heater Application (if applicable)." If "Yes" is selected, a new file name is entered and the PDS will be created saving the Wood Heater Application but deleting all the data in the Wood Heater Lab Data Entry portion of the Wood heater module. If "No" is selected, a new file name will be entered and the PDS will be created with the new name and will contain all the data in the original file.

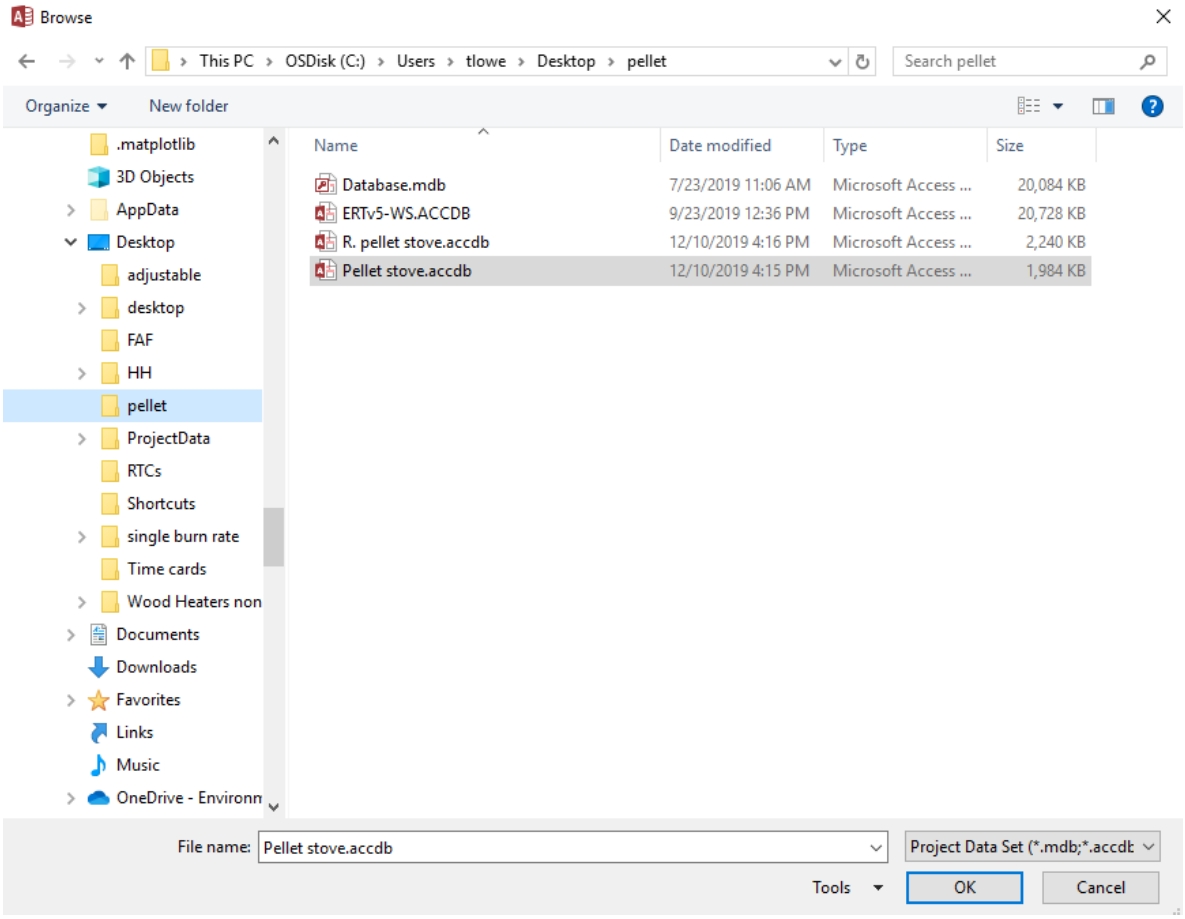


Figure 108 - Select Project Data Set Browse Window

- Click "**Save Project Data Set As**" from the ERT main menu. The window shown in Figure 109 will appear.
- Click "**Yes**" to save the current PDS as a Template. (Saves the Test Plan and Wood Heater Application information only)
- Click "**No**" to save the current PDS (saving all data).
- Click "**Cancel**" to cancel the operation.

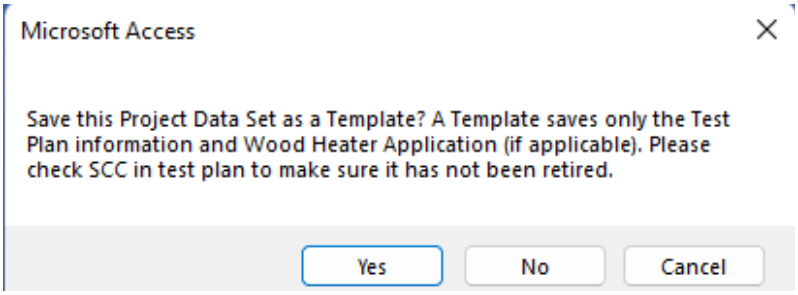


Figure 109 - Save Project Data Set as Template

Chapter 3: Creating a Wood Heater Application

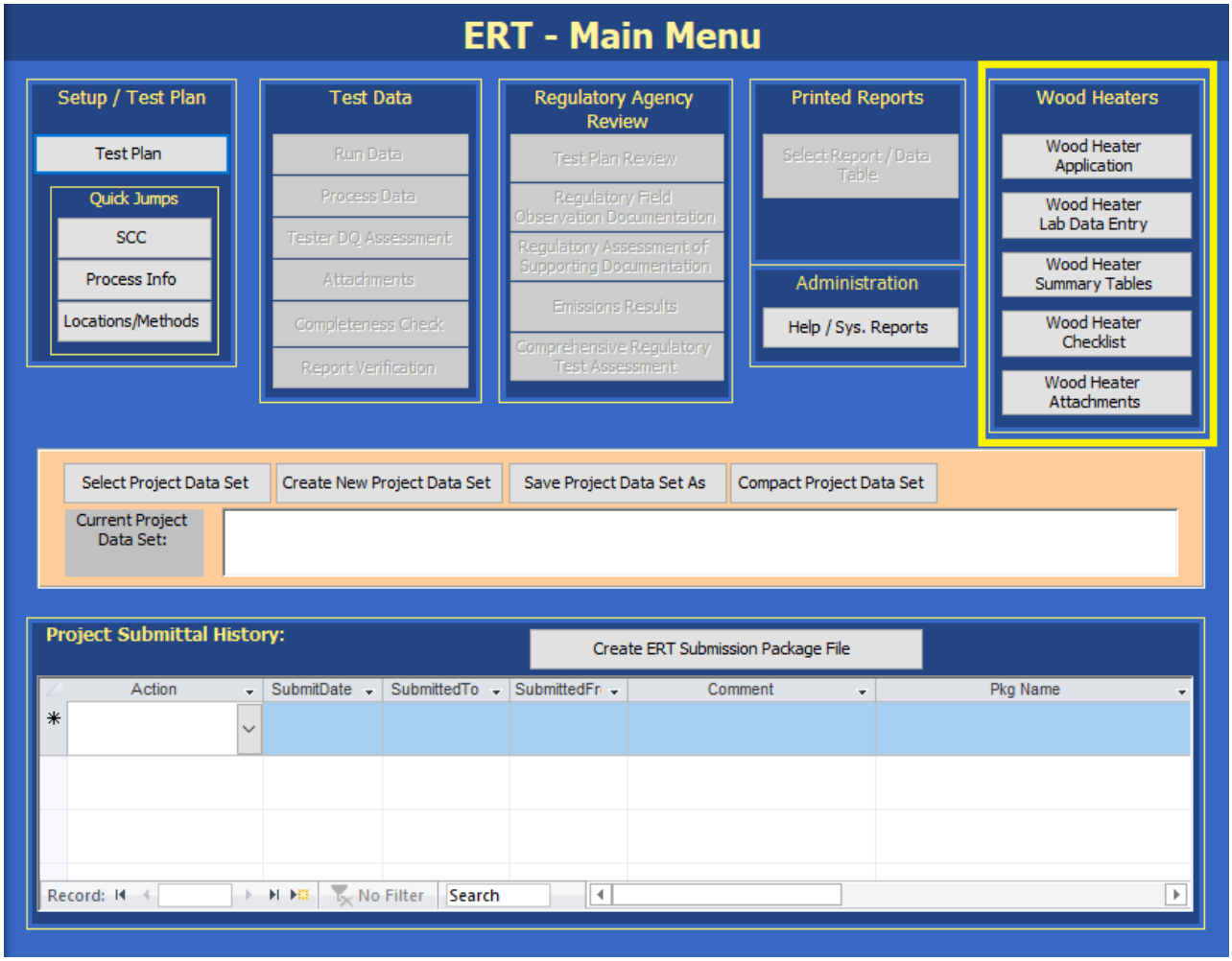


Figure 110 – ERT Main Menu, Wood Heater Section

The different sections of the Wood Heater module are accessed from the corresponding main menu buttons (Figure 110 and 111).

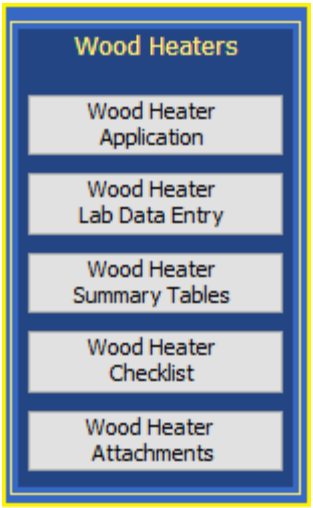


Figure 111 - Wood Heater Module on Main Menu

- *Wood Heater Application* button allows user access to view General Information, Manufacturer Information, EPA-Approved Testing Laboratory, EPA-Approved Third-Party Certifier, Compliance Statements, and authorized party Signatures.
- *Wood Heater Lab Data Entry* provides access to testing method run datasets, both Efficiency (B415.1-10) and PM (E2515-11) data. Test runs can be added or deleted here.
- *Wood Heater Summary Tables* are tables generated to provide a summary of the results.
- *Wood Heater Checklist* button accesses the checklist for Wood Heater Manufacturer Information, General Information, Testing Methods and data used.
- The *Wood Heater Attachments* option allows the user to view the documents that have been added for the wood heater firebox that has

been tested. Warranty, Engineering Drawings, and Manufacturer Statements can be added here. This is an attachment summary of the documents from the Compliance Statements Section of the Wood Heater Application.

Navigating and Using the Tool

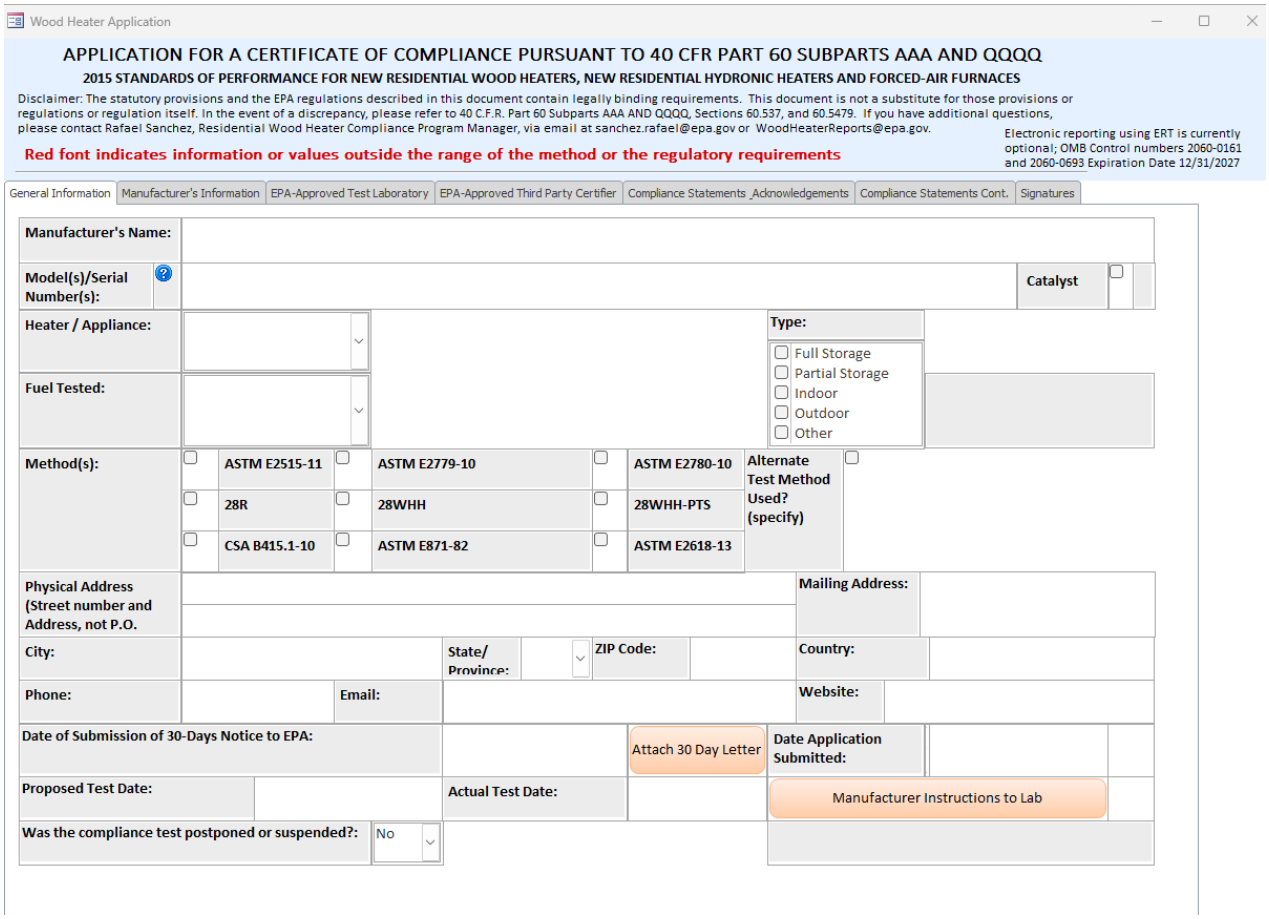


Figure 112- General Information

Data Entry Process

To begin the data entry process, click "**Wood Heater Application**" in the "**Wood Heaters**" column on the ERT main menu. The screen shown in Figure 112 will appear. This screen contains a series of data entry tabs that cover the information required for an Application for a Certification of Compliance.

There are 7 tabs or sections in the Wood Heater Application section: "General Information," "Manufacturer's Information," "EPA-Approved Test Laboratory," "EPA-Approved Third-Party Certifier," "Compliance Statements_Acknowledgements," "Compliance Statements Cont.," and "Signatures."

Screen Navigation

Move from one section to the next 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.

General Information

Enter information about the manufacturer of the wood heater appliance, the appliance and the proposed testing of the appliance. The fields are as follows:

Manufacturer’s Name:	The public or commercial name of the manufacturer (i.e., the full name that commonly appears on invoices, signs, or other business documents).
Model(s)/Serial Number(s):	A list of models and serial numbers that will use the firebox being tested.
Catalyst (check box):	Is a catalyst used during testing and use of the appliance? Check, if answer is yes.
Heater/Appliance (dropdown):	Select from the dropdown list the type of appliance being tested (Adjustable Burn Rate Stove, Pellet Stove, Single Burn Rate Stove, Forced Air Furnace, Hydronic Heater or Other).
Hydronic Heater Type:	If appliance is Hydronic Heater, select one (Full Storage, Partial Storage, Indoor, Outdoor or Other)
Forced Air Furnace Type:	If appliance is Forced Air Furnace, select one (Small, >65,000 BTU/hr heat output or Large, >65,000 BTU/hr heat output)
Fuel Tested (dropdown):	Select from the dropdown list the type of fuel tested (Crib, Pellet, Cordwood, Wood Chips or Other)
Method(s):	Select all appropriated methods used during the testing (CSA 415.1-10 and ASTM E 2515-11 must be selected). If you used an alternative test method, you must attach the Approval letter from the Measurement Technology Group. If you are using a broadly applicable alternative test method, you must attach the appropriate approval letter.
Physical Address:	The address that describes the physical (geographical) location of the front door or main entrance of a manufacturer.
Mailing Address:	The mailing address of a manufacturer.
City:	The city in which the manufacturer resides.
State/Zip:	The two-letter State or Province and mailing zip code in which the manufacturer resides. Use the drop-down menu to select the two-letter postal code for the State/Province.
Country:	The country in which the facility is located.
Phone:	The phone number of the contact or the manufacturer.
Email:	A working email address of the contact which can be used to assist the reviewers.

Website:	Manufacturer's website where tests will be posted according to the regulations
Date of Submission of 30-Days Notice to EPA:	Date of submission of 30-day notice.
Attach 30 Day letter:	Select Attach 30 Day letter to add the letter attachment.
Proposed Test Date:	Date testing is proposed to occur.
Actual Test Date:	Date when testing actually occurred.
Manufacturer Instructions To lab:	Attachment of instructions the Manufacturer provided to the lab for the test.
Was the Compliance test Postponed or suspended:	Select No or Yes. If yes, complete Date of EPA notification
Date of EPA notification:	Date when EPA was notified of test postponement or suspension
Reason for postponement or suspension:	Explanation of why test was postponed or suspended.

Manufacturer's Information

The Manufacturer's Information section of the Wood Heater Application contains information specific to the wood heater manufacturer (Figure 113).

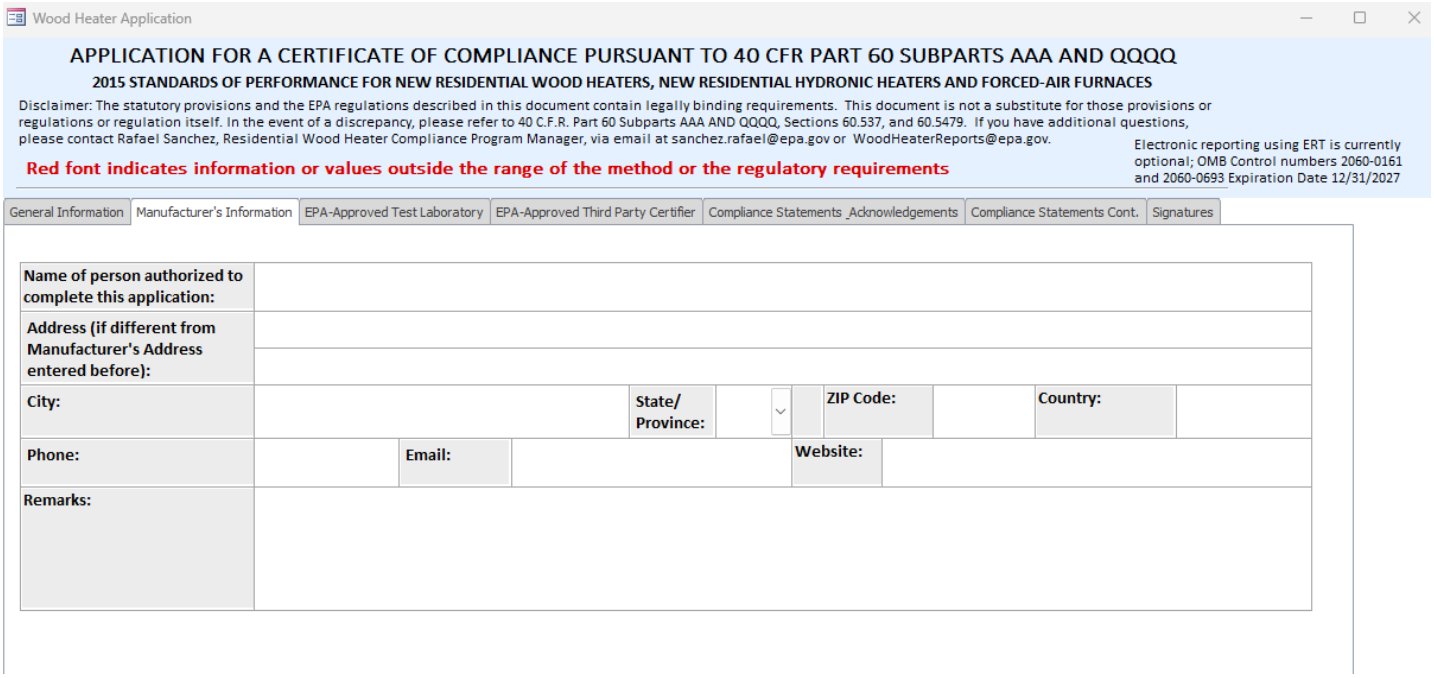


Figure 113 - Wood Heater Application Manufacturer's Information

Name of person authorized To complete the application:	Name of manufacturer's authorized contact
Address:	The address of a manufacturer person authorized to complete application (if different from Manufacturer's Address on General Information Tab.
City:	The city in which the manufacturer resides.
State/Zip:	The two-letter State or Province and mailing zip code in which the manufacturer resides. Use the drop-down menu to select the two-letter postal code for the State/Province.
Country:	The country in which the manufacturer is located.
Phone:	The phone number of the contact of the manufacturer.
Email:	A working email address of the contact which can be used to assist the reviewers.
Website:	Manufacturer's website where tests will be posted according to the regulations
Remarks:	Area for comments by manufacturer.

EPA-Approved Test Laboratory

The EPA-Approved Test Laboratory section of the Wood Heater Application contains information specific to the Approved EPA Test Laboratory. Name of the Laboratory, Authorized party for the compliance testing, and contact information are located here (Figure 114).

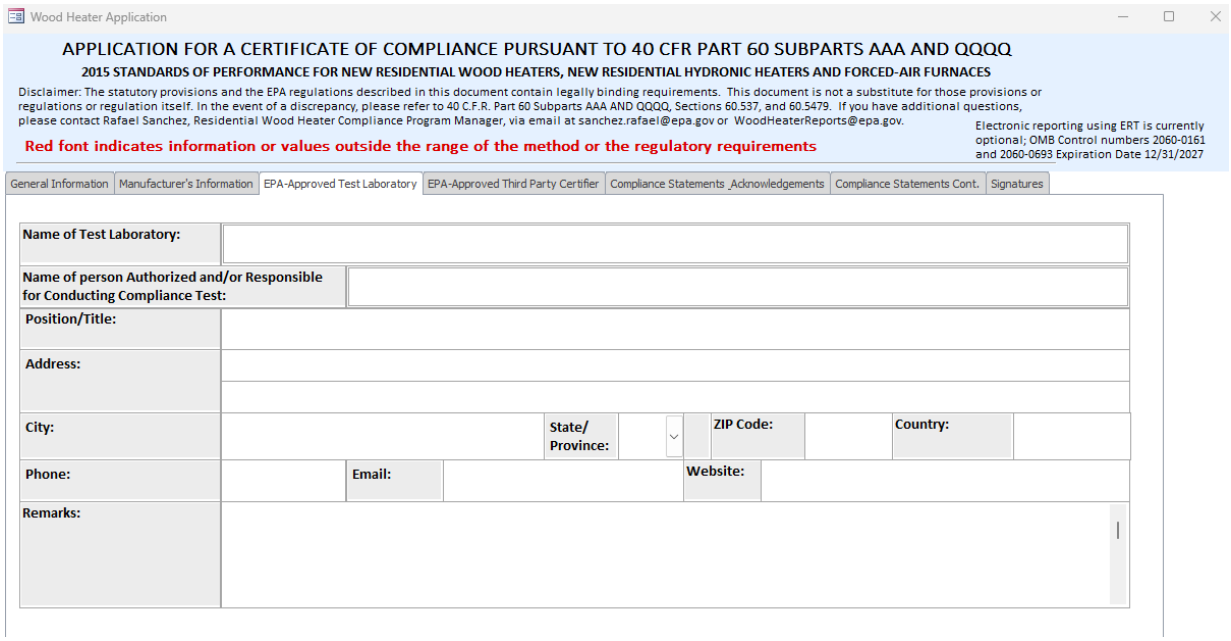


Figure 114 - Wood Heater Application EPA-Approved Test Laboratory

Name of person authorized And/or responsible for Conducting the test:	Name of laboratory's authorized contact.
Position/Title:	Position or title of authorized person conducting the test.
Address:	The address of a laboratory's person authorized to conduct the test.
City:	The city in which the laboratory resides.
State/Zip:	The two-letter State or Province and mailing zip code in which the laboratory resides. Use the drop-down menu to select the two-letter postal code for the State/Province.
Country:	The country in which the laboratory is located.
Phone:	The phone number of the contact of the laboratory.
Email:	A working email address of the contact which can be used to assist the reviewers.

EPA-Approved Third-Party Certifier

The EPA-Approved Third-Party Certifier section of the Wood Heater Application contains information specific to the Approved Third-Party Certifier. The name of the Certifier and information about the authorized party issuing the conformity statement / reviewing the test reports can be found here (Figure 115).

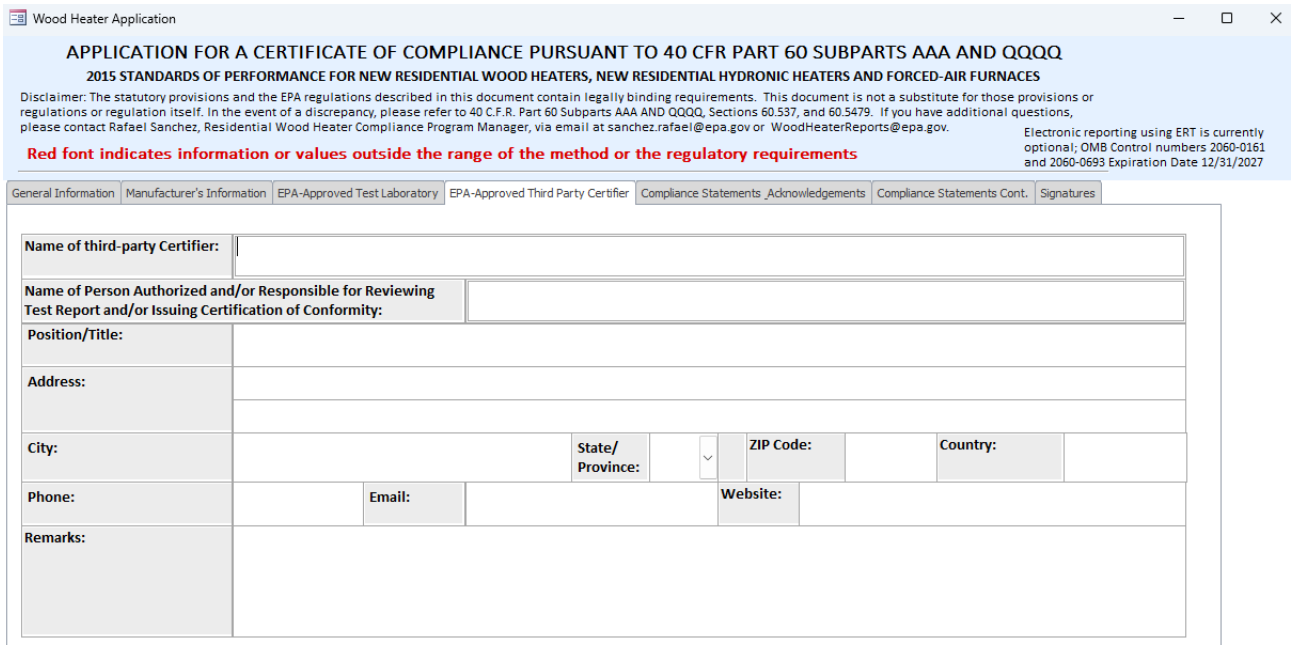


Figure 115 - Wood Heater Application EPA-Approved Third Party Certifier

Name of person authorized And/or responsible for reviewing the test report:	Name of third-party certifier

Position/Title:	Position or title of third-party certifier.
Address:	The address of a third-party certifier.
City:	The city in which the third-party certifier resides.
State/Zip:	The two-letter State or Province and mailing zip code in which the third-party certifier resides. Use the drop-down menu to select the two-letter postal code for the State/Province.
Country:	The country where the third-party certifier is located.
Phone:	The phone number of the third-party certifier.
Email:	A working email address of the third-party certifier.

Compliance Statements Acknowledgements

The Compliance Statements section of the Wood Heater Application provides the manufacturer the location to upload documents related to their product. Each statement of acknowledgement has the option to certify or not certify. Based on the requirements for the statement (Figure 116).

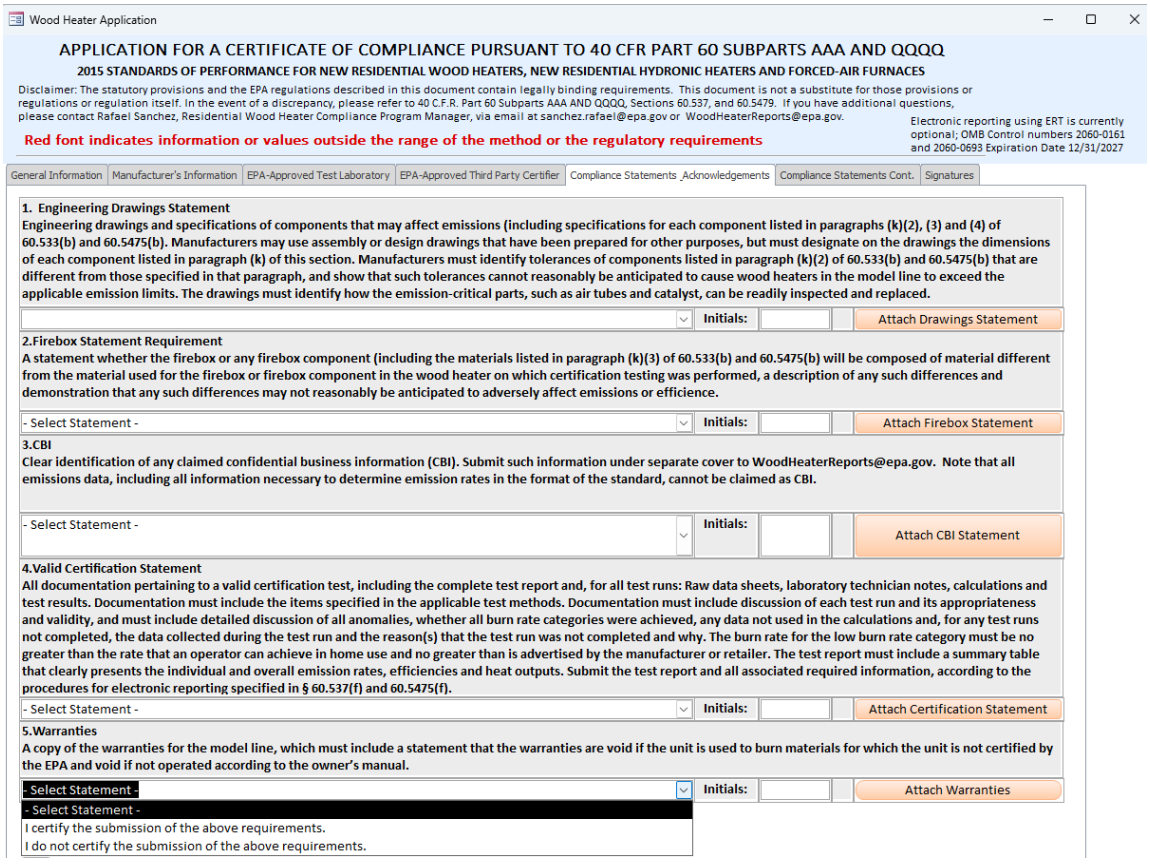


Figure 116 - Wood Heater Application Compliance Statement Acknowledgements

Compliance Statements Cont.

This is a continuation of the Compliance Statement section (Figure 117). The ability to add to the Wood Heater Attachment(s) is/are show cased here (Figure 118).

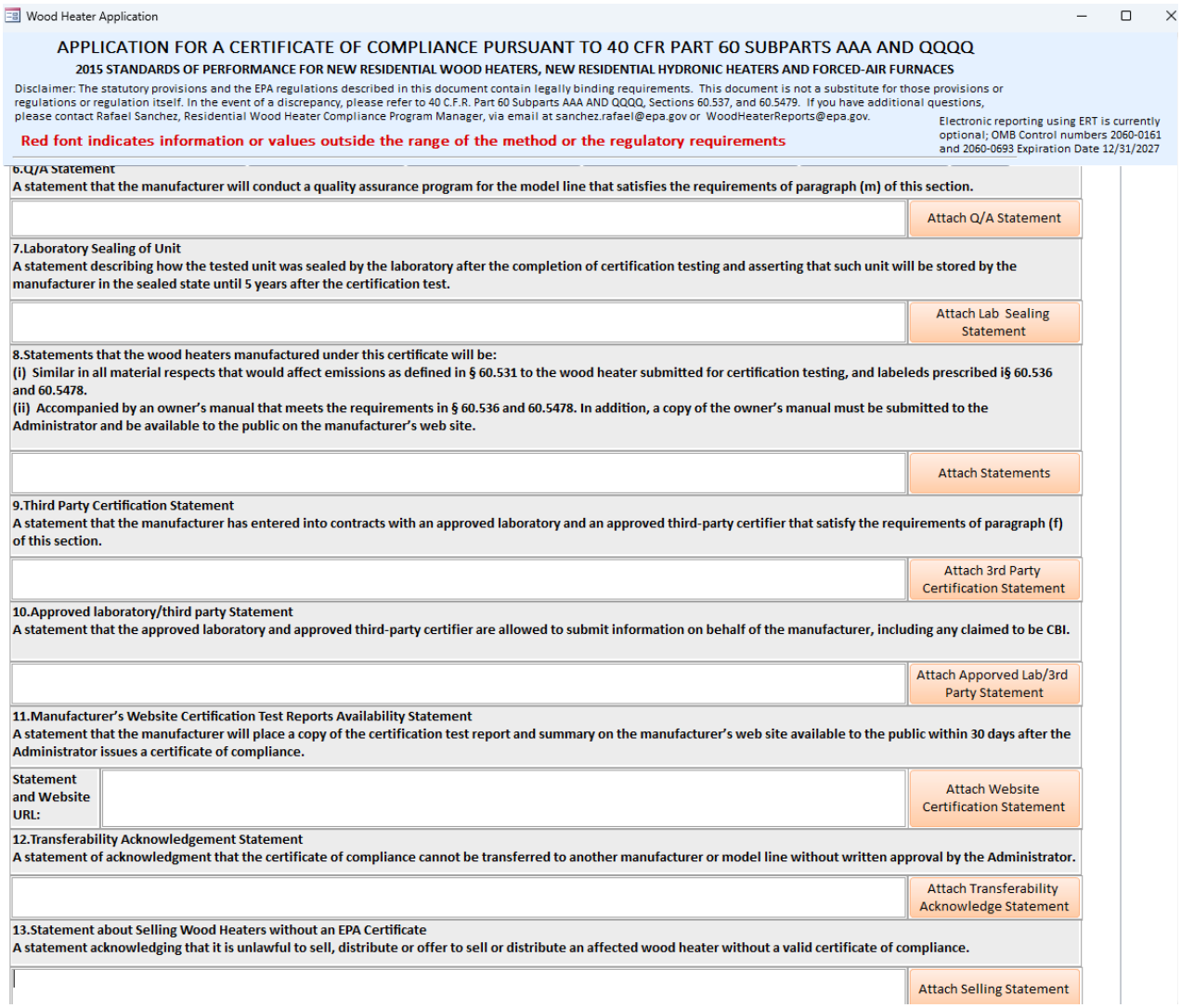


Figure 117 - Wood Heater Application Compliance Statements Cont.

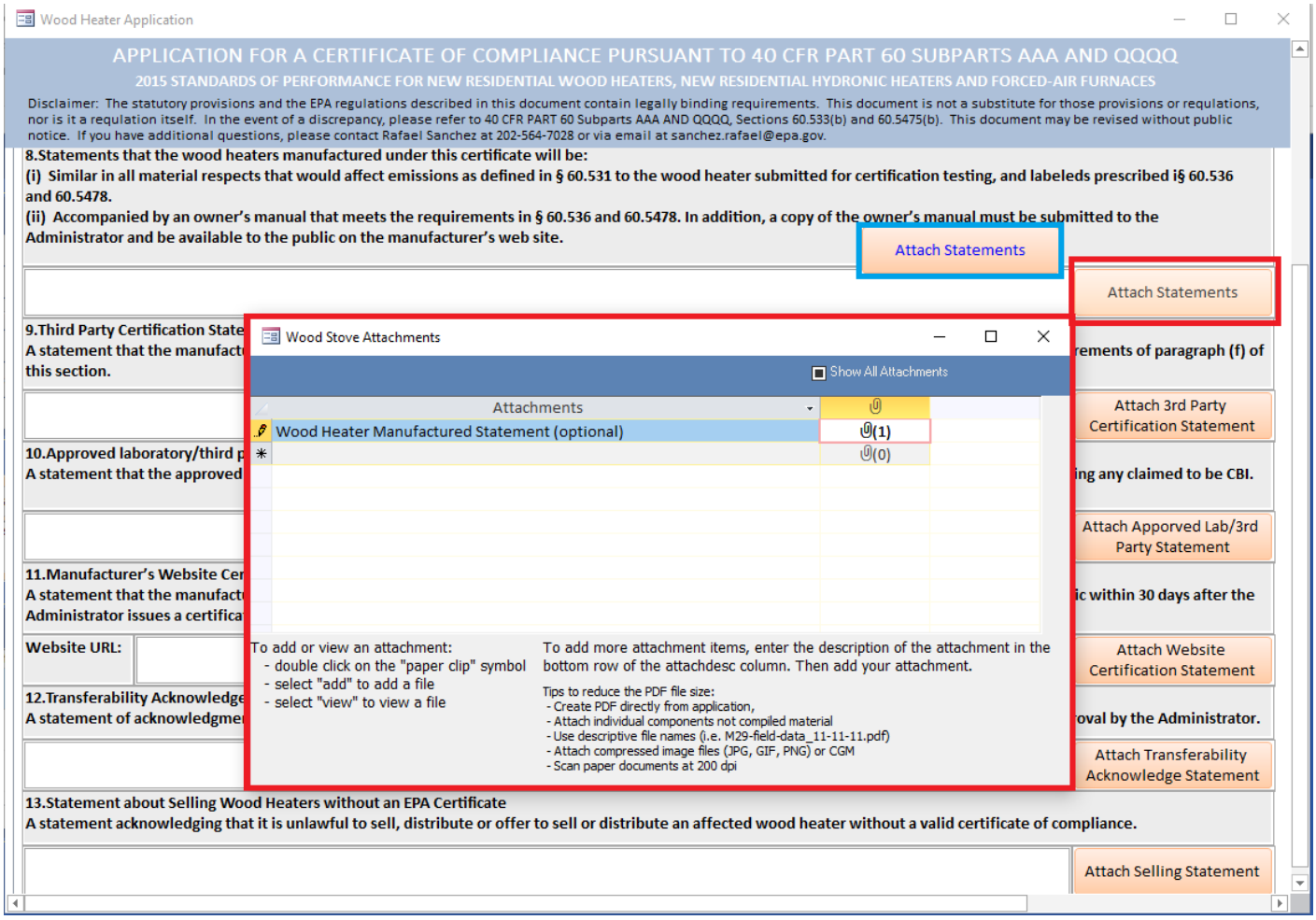


Figure 118 – Attach documents related to each compliance statement.

Signatures

The signature section of the Wood Heater Application. This signature designates the responsible party who certifies the manufacturer complied with the requirements (Figure 119).

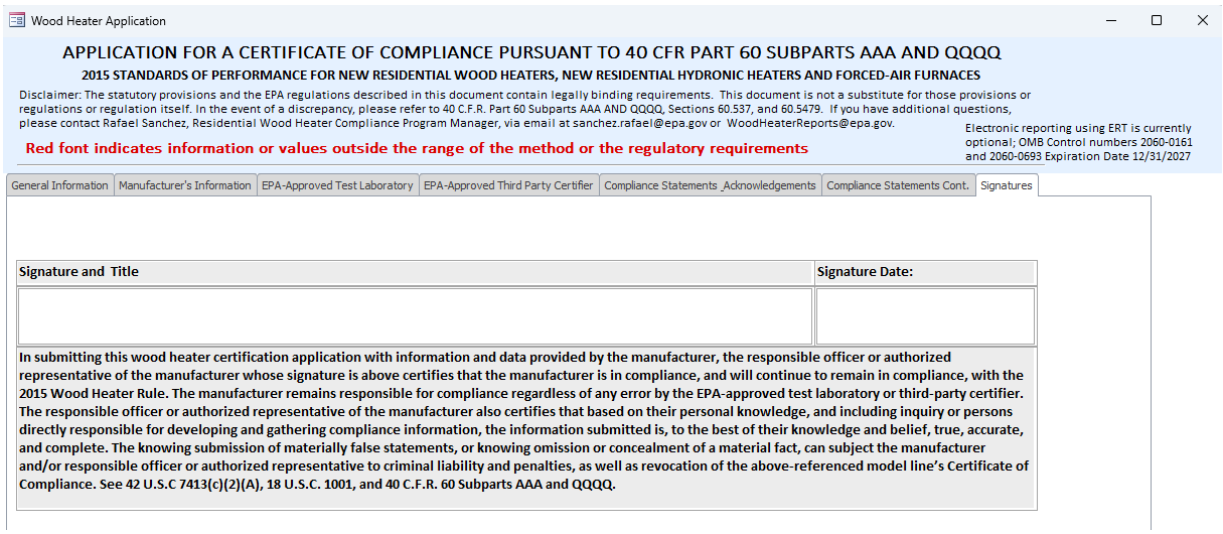


Figure 119 - Wood Heater Application Signatures

Chapter 4: Wood Heater Lab Data Entry

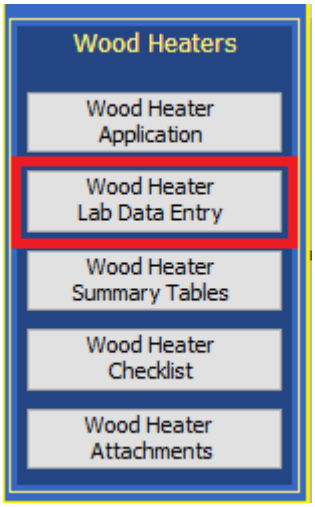


Figure 120 – Wood Heater Lab Data Entry on ERT Main Menu

Run Data

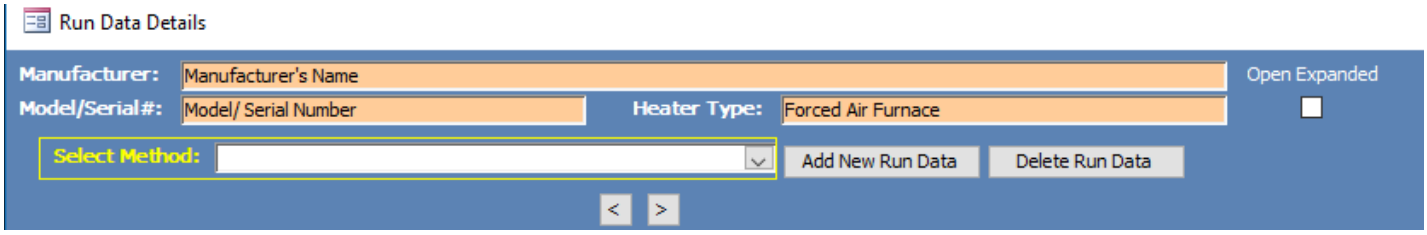


Figure 121 - Run Data Details

The ERT has two methods for the wood heater module in the dropdown of "Select Method": Efficiency Data (B415.1-10) and PM Data (E2515-11) (Figure 121). For the Efficiency Data, the data can be copy and pasted from a spreadsheet to the ERT. For Method 2515-11, the data should be imported from the spreadsheet template into the ERT.

Add New Run Data

Only one run for a method can be added at a time. To begin entering the Efficiency Data (B415.1-10), select the method from the dropdown menu and add a run number and a date the run was conducted, then select Add Run Data (Figure 122 and 123). A box will pop-up and say "Run has been added. Go to the different tabs and add the run data." Select "OK".

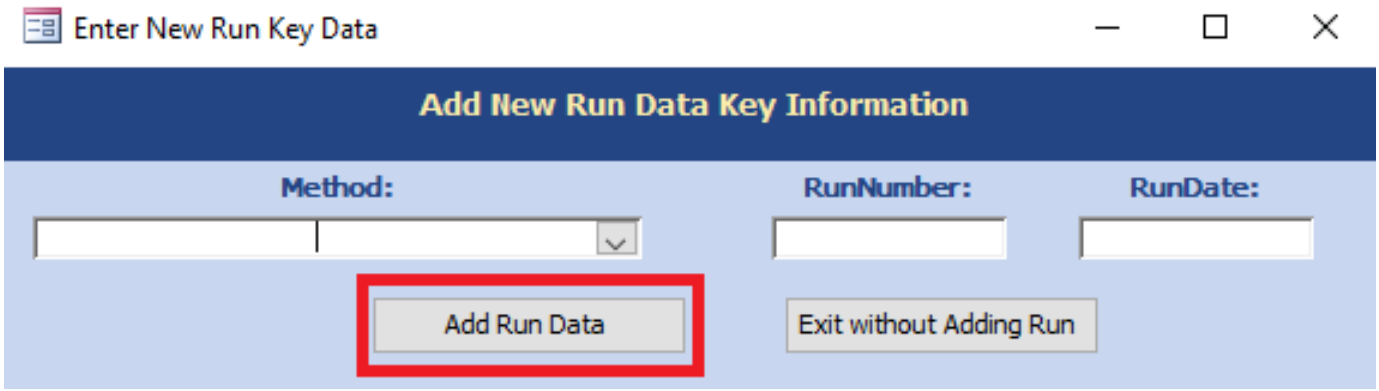


Figure 122 – Add New Run Data

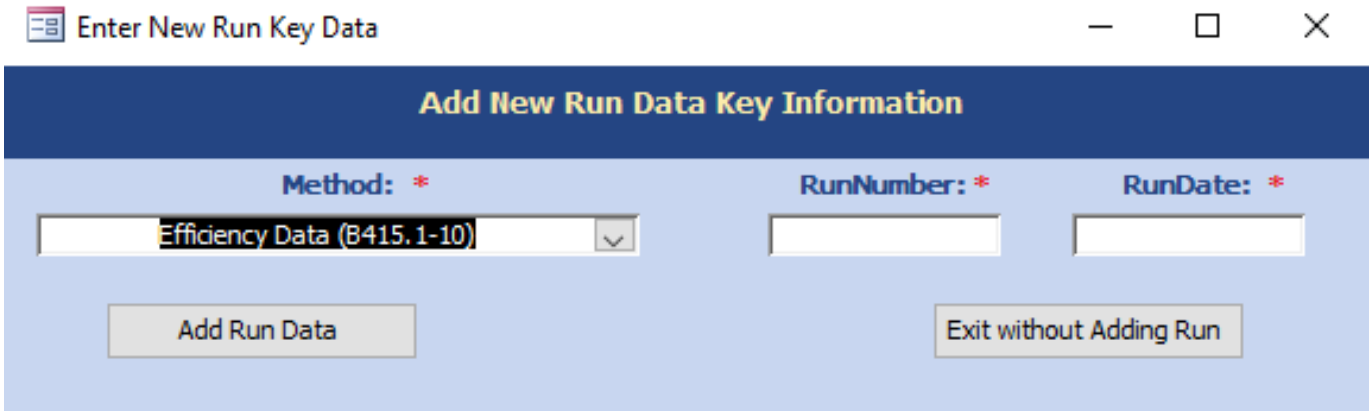


Figure 123 – Add New Run for Efficiency Data (B415.1-10)

Go to the Select Method: drop down and select the run (Figure 124).

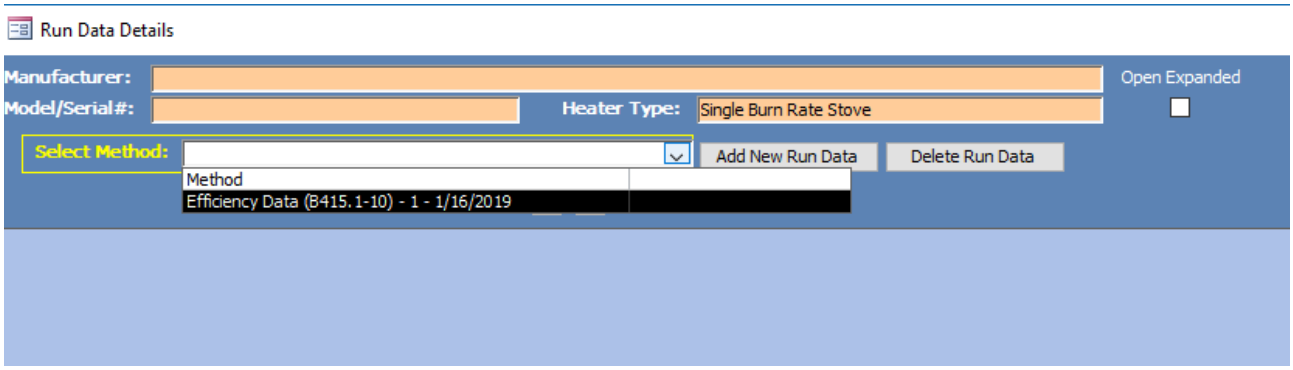


Figure 124 - Select Run Added

This will open a form to the tabs (Header Data and Point Data) to enter the data (Figure 125).

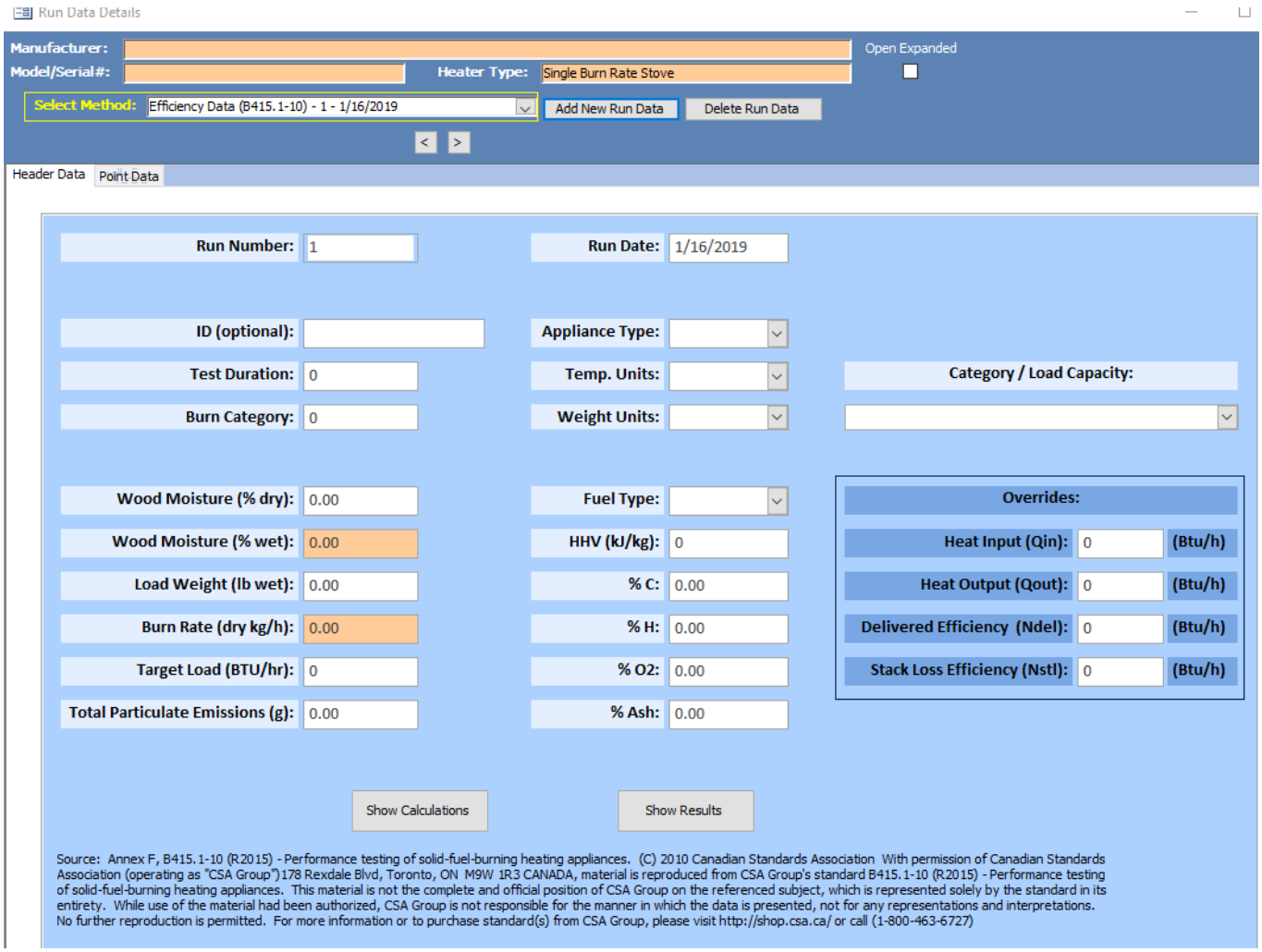


Figure 125 – Method B415.1-10 tabs to be completed.

Add New Run Data – Spreadsheet Import

To begin entering the PM Data (E2515-11), select the method from the dropdown menu and add a run number and a date the run was conducted, then select Import from Spreadsheet (Figure 126).

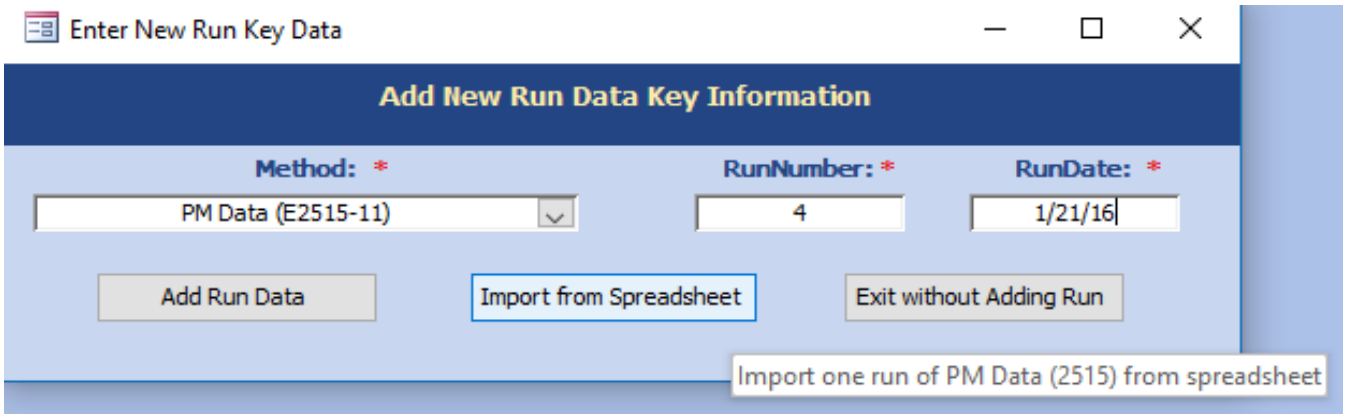


Figure 126 – Add New Run for PM Data (E2515-11)

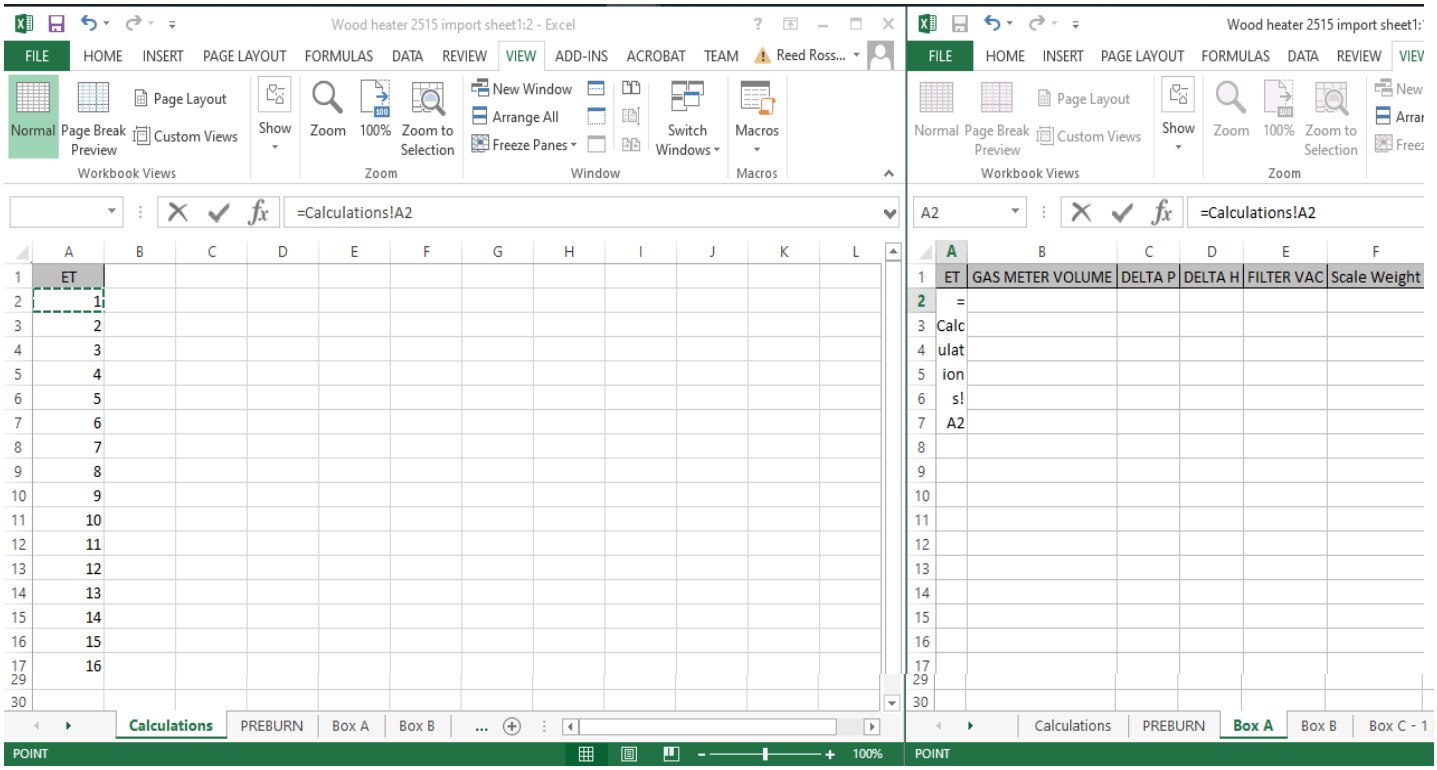


Figure 127 – Import Spreadsheet

The spreadsheet import template is used to import Method 2515 data into the ERT. The spreadsheet import template contains the tables of data that are in the ERT. This data can be linked to the company customized spreadsheets. Company customized spreadsheets can be dragged to the template (like Calculations sheet in Figure 127) and the data can be linked to the specific company data cells. For example, Box A can be completed by linking the first row to the appropriate cell to the company spreadsheet. Then the formula can be dragged down to include the complete elapsed time, as in Figure 128.

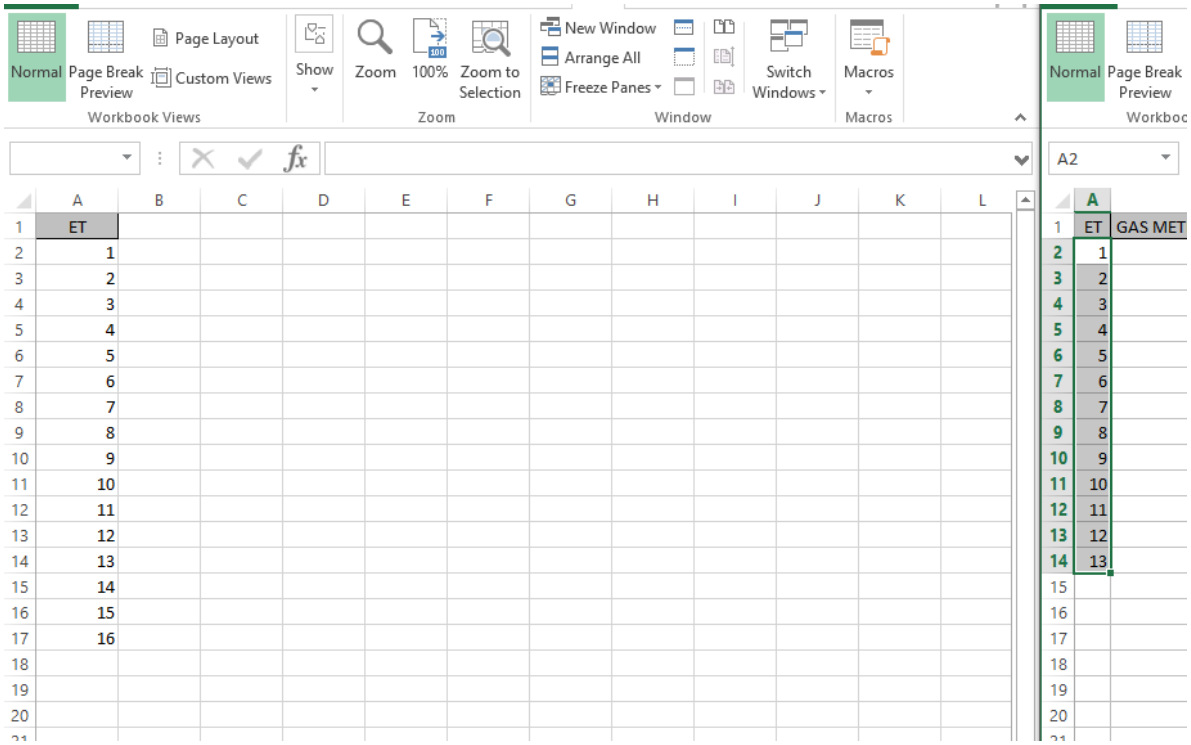


Figure 128 – Linking Data From Different Worksheets in a Workbook

The data for Box A and Box B are pulled from the Calculations sheet in this example. Once the spreadsheet is completed and ready for import, select the file using ing the browse box that opens when "Import from Spreadsheet" button is selected (Figure 126). Once the import is complete, a pop-up box will be displayed as seen in Figure 129.

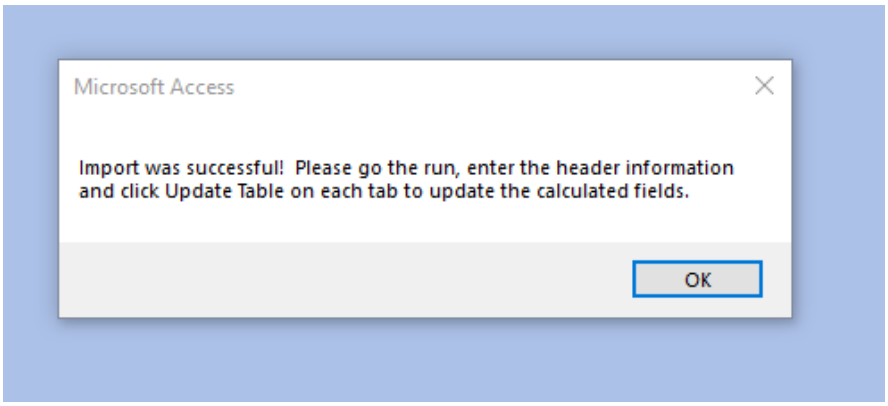


Figure 129 – Import Successful

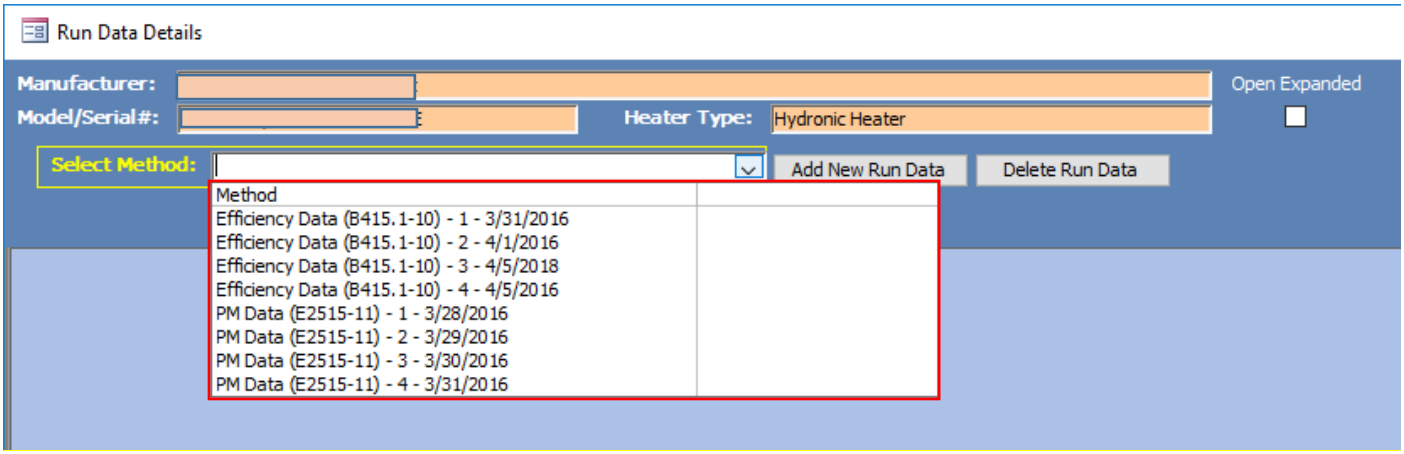


Figure 130 – Select Run Data

To view the data for the different runs when you are on the Run Data Detail screens:

- Select the "***Select Method – Run***" from the list.

This will open a form to the tabs for the selected method and run to enter and edit the data (Figure 130).

Delete Run Data

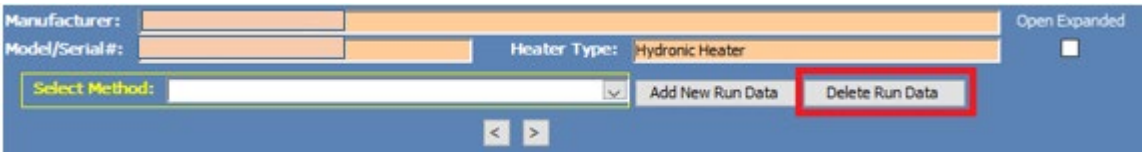


Figure 131 – Delete Run Data Menu

Run data can be deleted using the Delete Run Data button (Figure 131).

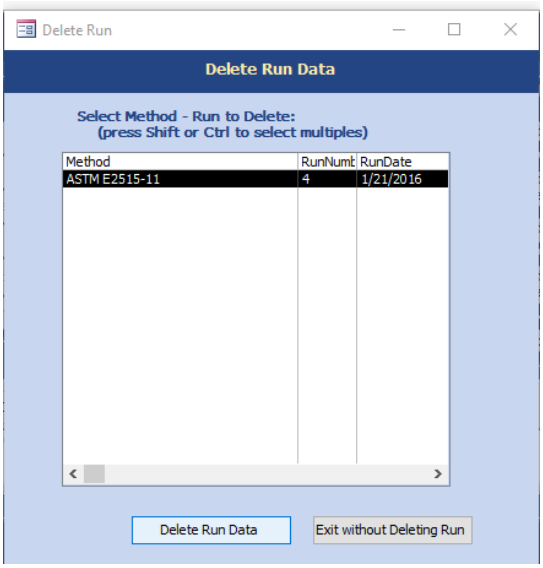


Figure 132 - Delete Run

Deleting the run data will delete all data for the selected run.

- Click the "**Delete Run Data**" button from the "***Run Data Details Screen***" (Figure 132). The list of method-runs contained in the ERT file be displayed.
- Select the "***Method – Run***" that is to be deleted from the list.
- Click the "**Delete Run Data**" button to permanently delete the data and return to the "***Run Data Details***" screen. There will be no warning to confirm the run is to be deleted; if Delete Run Data is selected, the data will be removed (Figure 132).
- Click on "**Exit without Deleting Run**" to keep the data and return to the "***Run Data Details***" screen.

Efficiency Data (B415.1-10)

As stated previously, there are two tabs for the Efficiency Data: Header Data and Point Data.

To access or enter efficiency data:

- Select the Wood Heater Lab Data entry button on the main menu.
- Select the method and run number of the efficiency run or add a new run as described above.
- Header tab is displayed.

Header Data

Enter the Header data for the efficiency testing method (Figure 133). The fields are as follows:

ID (optional):	Identification number or code assigned for test program
Test Duration:	Length of duration of test
Burn Rate Category:	Depending on the appliance type, one of 4 categories ranges of burn rate at which test fuel is consumed in a wood appliance. Measured in kilograms or lbs of wood (dry basis) per hour (kg/hr or lb/hr)
Appliance Type:	Wood burning appliance capable of and intended for space heating or domestic water heating, as defined in the applicable regulation: single burn rate wood stove, adjustable burn rate wood stove, pellet stove, forced air furnace, hydronic heater- full storage, or hydronic heater - partial thermal storage.

Temp. Units: Fahrenheit or Celsius

Weight Units: Pounds (lb) or kilogram – must use lbs on load wt.

Category/Load Capacity: Select appropriate Category for test from dropdown list

Wood Moisture (% dry): The weight of water in wood divided by the weight of the dry wood only (oven-dry weight) expressed as a percentage.

Wood Moisture (% wet): Calculated value - The weight of water in wood divided by the combined weight of the water and the wood (green weight), expressed as a percentage.

Load Weight (lb wet): Weight of wood on scale.

Burn Rate (dry kg/h): Calculated value

Target Load (BTU/hr): Maximum load target value – actual BTU/hr must be within 5% of stated Target Load

Total Particulate Emissions (g): Total PM from Method 2515 that was run concurrent with Method CSA 415.1

Fuel Type: When a fuel type is selected, the HHV (kJ/kg), %C, %H, %O2, and %Ash will be populated. These values can be changed manually if they do not match your values.

Override values: Values that can be entered for Heat Input (Qin Btu/hr), Heat Output (Qout Btu/hr), Delivered Efficiency (Ndel BTU/hr) or Stack Loss Efficiency (Nstl Btu/hr)

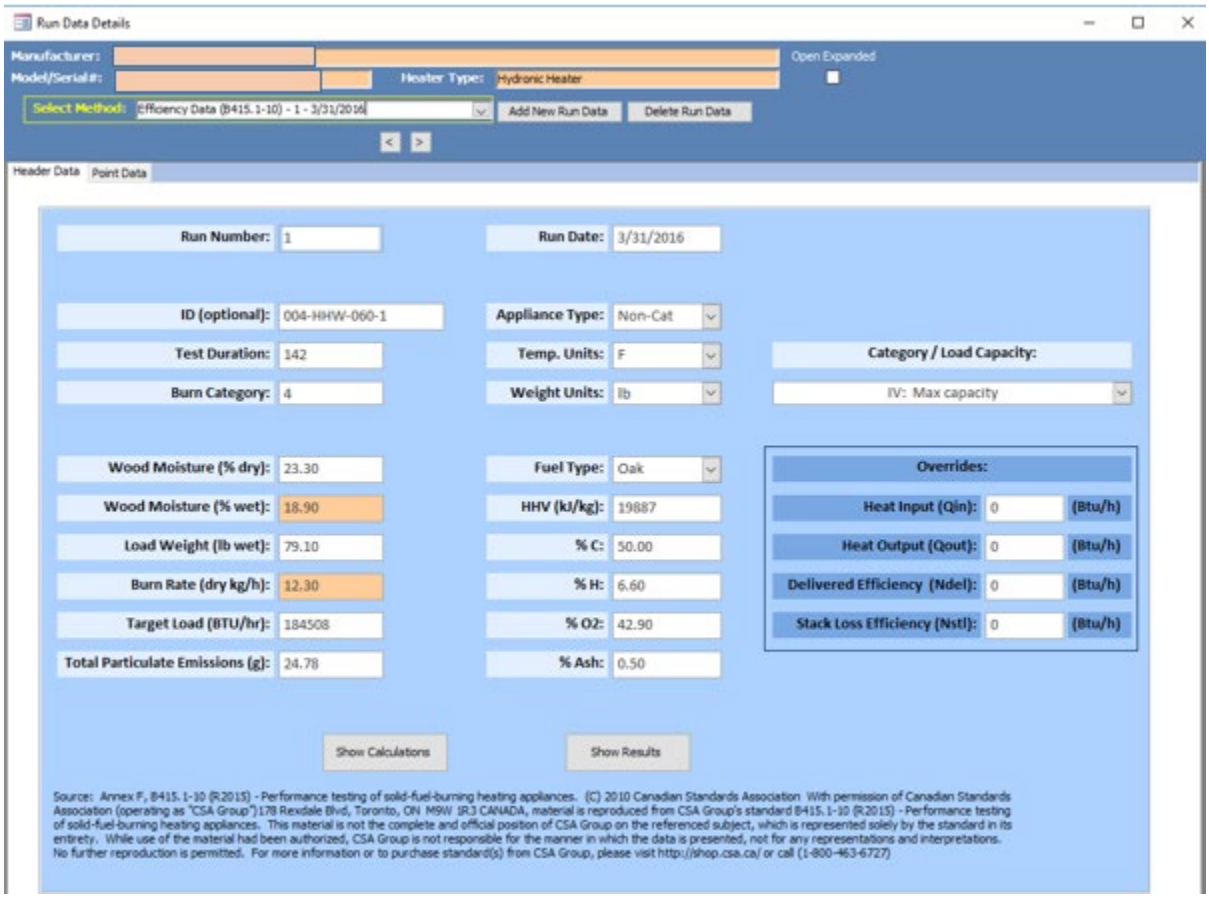
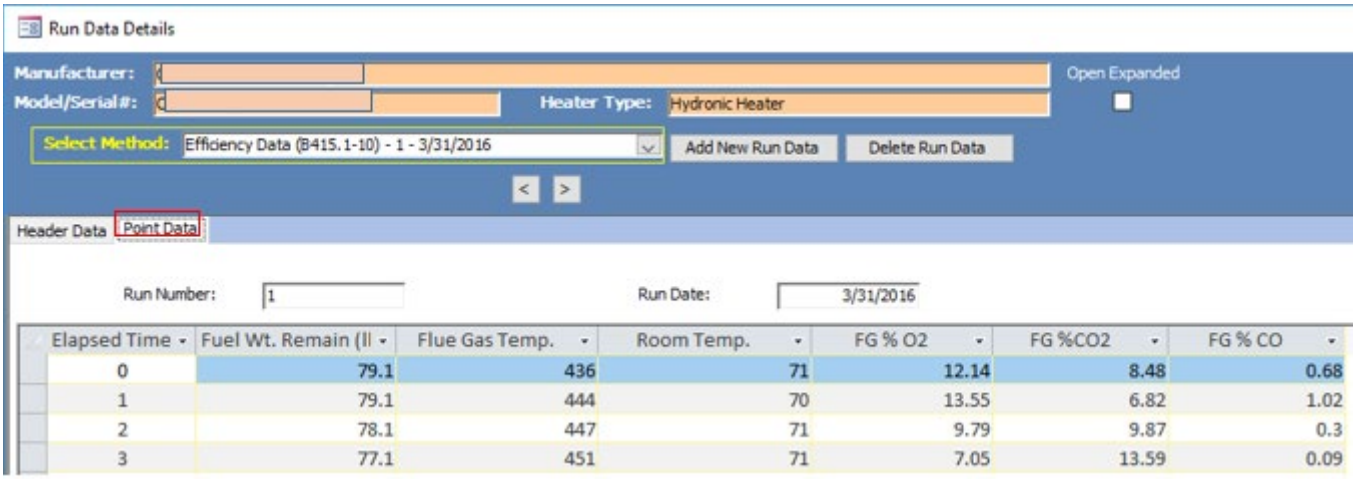


Figure 133 – Efficiency Data (B415.1-10) Header Data

Point Data

Once the header data is completed, select the Point Data Tab (Figure 134). The following data will need to be entered. The columns can be copied from the spreadsheet and pasted to this table in the same manner you copy and paste in excel.

Elapsed Time:	Time of test recorded in minute (recorded at least every 10 minutes)
Fuel Wt. Remaining (in lbs):	Weight of wood on scale.
Flue Gas Temp:	Gas sample temperature taken from chimney during test.
Room Temp:	Air temperature in the test room during test.
FG % O_2:	Percent oxygen in flue gas during test.
FG % CO_2:	Percent carbon dioxide in flue gas during test.
FG % CO:	Percent carbon monoxide in flue gas during test.



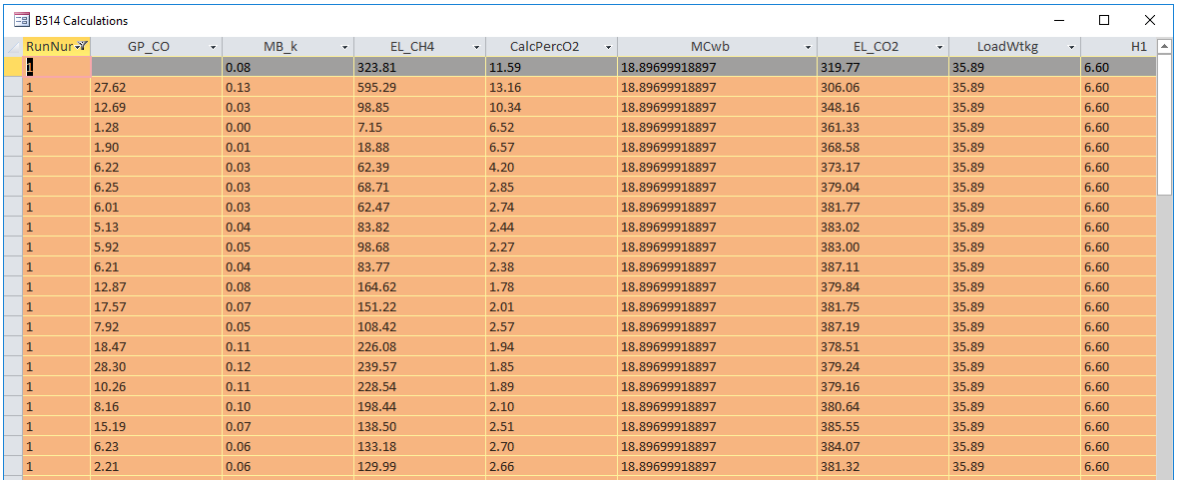
Elapsed Time	Fuel Wt. Remain (ll	Flue Gas Temp.	Room Temp.	FG % O2	FG %CO2	FG % CO
0	79.1	436	71	12.14	8.48	0.68
1	79.1	444	70	13.55	6.82	1.02
2	78.1	447	71	9.79	9.87	0.3
3	77.1	451	71	7.05	13.59	0.09

Figure 134 – Efficiency Data (B415.1-10) Point Data

Show Calculations

Once the point data is completed, go to the Header tab and you can select show calculations or show results (Figure 135, 136 and 137).

Figure 135 – Efficiency Data (B415.1-10) Show Calculations and Show Results Buttons

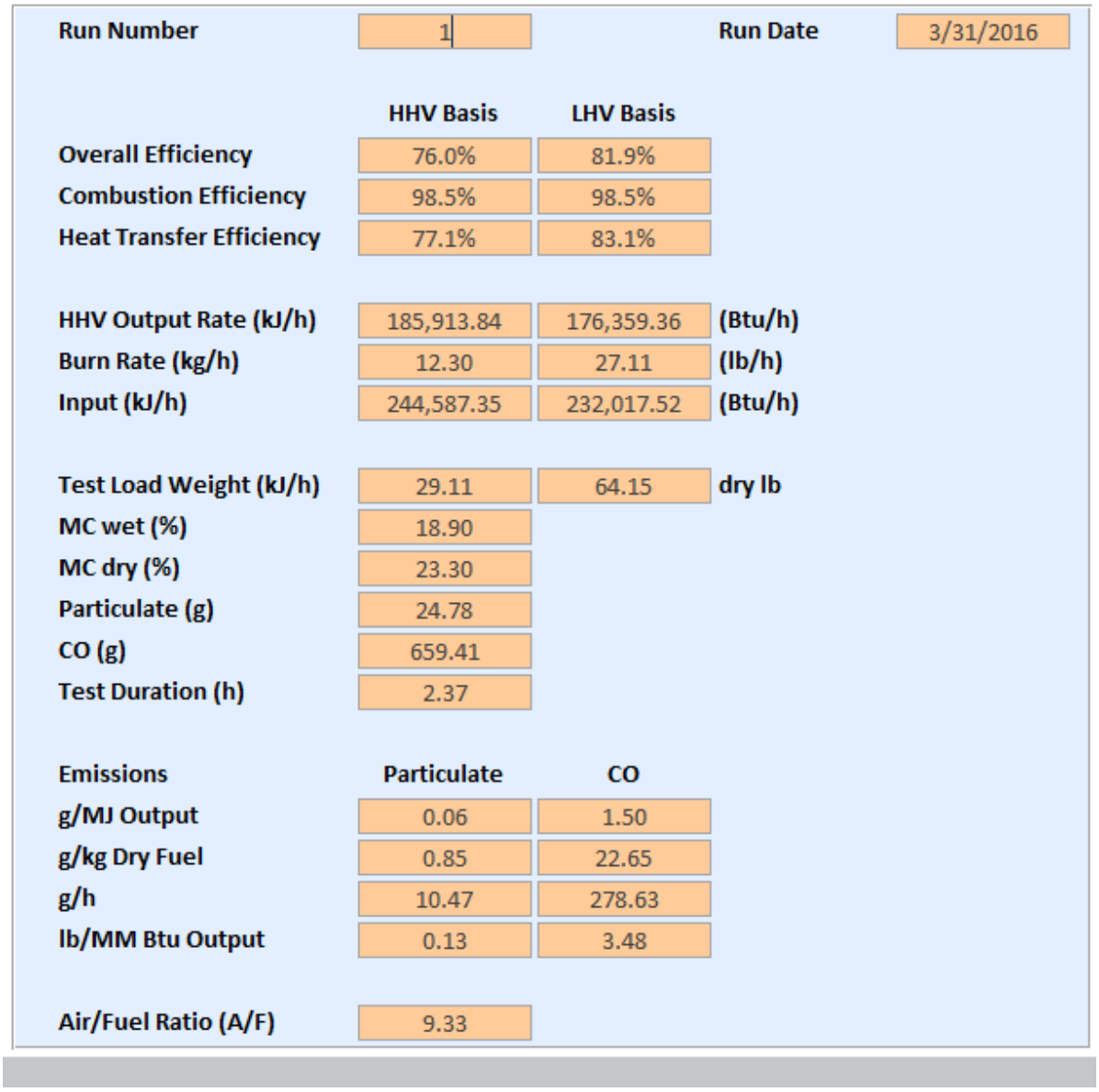


B514 Calculations

RunNur	GP_CO	MB_k	EL_CH4	CalcPercO2	MCwb	EL_CO2	LoadWtkg	H1
1		0.08	323.81	11.59	18.89699918897	319.77	35.89	6.60
1	27.62	0.13	595.29	13.16	18.89699918897	306.06	35.89	6.60
1	12.69	0.03	98.85	10.34	18.89699918897	348.16	35.89	6.60
1	1.28	0.00	7.15	6.52	18.89699918897	361.33	35.89	6.60
1	1.90	0.01	18.88	6.57	18.89699918897	368.58	35.89	6.60
1	6.22	0.03	62.39	4.20	18.89699918897	373.17	35.89	6.60
1	6.25	0.03	68.71	2.85	18.89699918897	379.04	35.89	6.60
1	6.01	0.03	62.47	2.74	18.89699918897	381.77	35.89	6.60
1	5.13	0.04	83.82	2.44	18.89699918897	383.02	35.89	6.60
1	5.92	0.05	98.68	2.27	18.89699918897	383.00	35.89	6.60
1	6.21	0.04	83.77	2.38	18.89699918897	387.11	35.89	6.60
1	12.87	0.08	164.62	1.78	18.89699918897	379.84	35.89	6.60
1	17.57	0.07	151.22	2.01	18.89699918897	381.75	35.89	6.60
1	7.92	0.05	108.42	2.57	18.89699918897	387.19	35.89	6.60
1	18.47	0.11	226.08	1.94	18.89699918897	378.51	35.89	6.60
1	28.30	0.12	239.57	1.85	18.89699918897	379.24	35.89	6.60
1	10.26	0.11	228.54	1.89	18.89699918897	379.16	35.89	6.60
1	8.16	0.10	198.44	2.10	18.89699918897	380.64	35.89	6.60
1	15.19	0.07	138.50	2.51	18.89699918897	385.55	35.89	6.60
1	6.23	0.06	133.18	2.70	18.89699918897	384.07	35.89	6.60
1	2.21	0.06	129.99	2.66	18.89699918897	381.32	35.89	6.60

Figure 136 – Efficiency Data (B415.1-10) Show Calculations

Show Results



Run Number	1	Run Date	3/31/2016
	HHV Basis	LHV Basis	
Overall Efficiency	76.0%	81.9%	
Combustion Efficiency	98.5%	98.5%	
Heat Transfer Efficiency	77.1%	83.1%	
HHV Output Rate (kJ/h)	185,913.84	176,359.36	(Btu/h)
Burn Rate (kg/h)	12.30	27.11	(lb/h)
Input (kJ/h)	244,587.35	232,017.52	(Btu/h)
Test Load Weight (kJ/h)	29.11	64.15	dry lb
MC wet (%)	18.90		
MC dry (%)	23.30		
Particulate (g)	24.78		
CO (g)	659.41		
Test Duration (h)	2.37		
Emissions	Particulate	CO	
g/MJ Output	0.06	1.50	
g/kg Dry Fuel	0.85	22.65	
g/h	10.47	278.63	
lb/MM Btu Output	0.13	3.48	
Air/Fuel Ratio (A/F)	9.33		

Figure 137– Efficiency Data (B415.1-10) Show Results

PM Data (E2515-11)

Preburn

Some of this data can be entered into the spreadsheet and imported – Tunnel Traverse information and Temperatures (Figure 138).

The following header data will need to be hand-entered:

ID (optional): Identification number or code assigned for test program

Reading Interval: The interval of recorded data in minutes.

Run time Pre Burn (min): Duration of the pre-burn test time.

Pitot Tube Initial (Cpi): Calibration of the Pitot tube, usually 0.99.

Pitot Tube Correction (Cpfc): Correction factor used for pitot tube.

Pitot Tube (Cp): This will be calculated from Cpi multiplied by Cpfc.

Dilution Tunnel MW (dry) lb/lb-mole: Dilution tunnel dry gas molecular weight (may be assumed ato be 29 g/g mole (lb/lb mole).

Dilution Tunnel MW (wet) lb/lb-mole: This will be calculated (if using assumed values – 28.78).

Dilution Tunnel H_2O (%): Water vapor in gas stream, proportion by volume (assumed to be 0.02 (2.0%))

Dilution Tunnel Static (in H_2O): Static pressure in dilution tunnel in inches of water.

Tunnel Area (ft_2): Cross-sectional area of the dilution tunnel in square feet.

Tunnel Traverse Information:

Pt: Sampling point identification

dP: delta P – the velocity pressure measurement in the dilution tunnel as measured with the pitot tube

Temp: Temperature of dilution tunnel in fahrenheit

calcsqrtdP: The calculated column (orange color) is the square root of the delta P.

The Temperature table:

ET: Elapsed Time – time reading at each recorded point in minutes

Scale Reading: Weight of the load by the scale recorded at each recorded point in pounds

Flue Draft: Temperature of the flue draft gas in fahrenheit

Left Side: Temperature of the left side of the firebox of the appliance in fahrenheit

Right Side: Temperature of the right side of the firebox of the appliance in fahrenheit

Back: Temperature of the back of the firebox of the appliance in fahrenheit

Top: Temperature of the top of the firebox of the appliance in fahrenheit

Bottom: Temperature of the bottom of the firebox of the appliance in fahrenheit

Stove T (average): This is a calculated average from the temperatures provided

Tunnel velocity, initial tunnel flow and average tunnel flow are calculated values. The barometric pressure must be entered into Box A header and the update button on the preburn tab must be selected to complete the calculation.

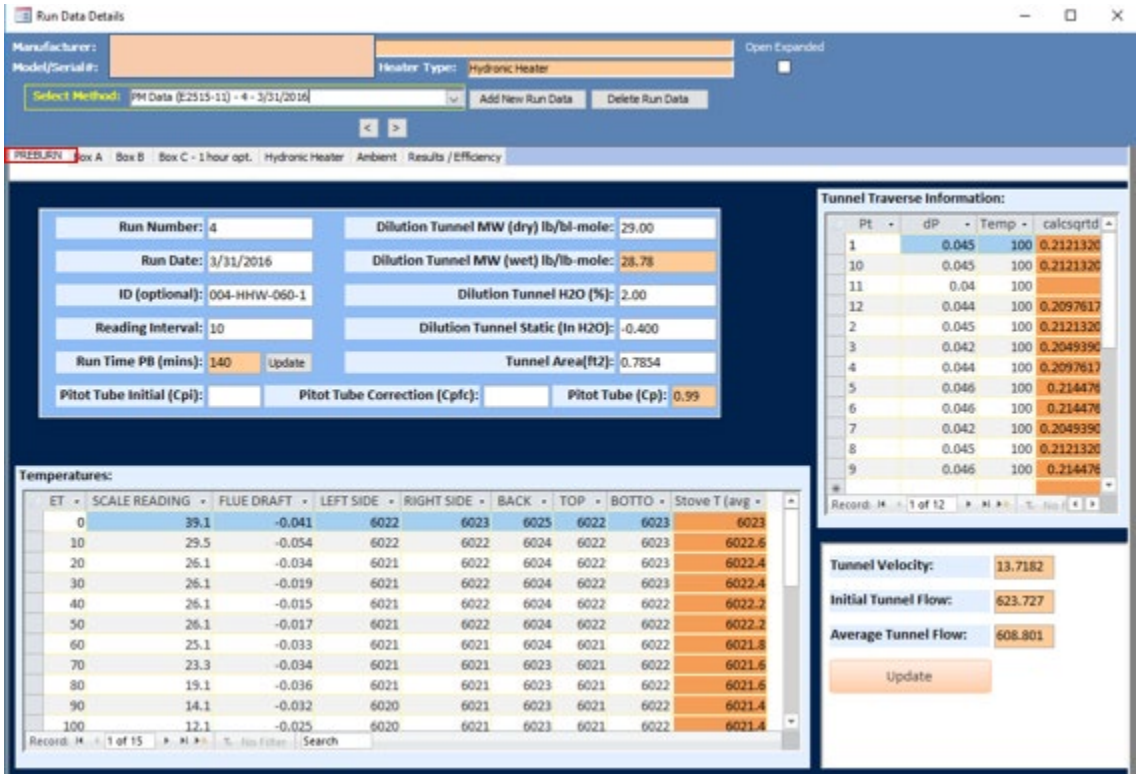


Figure 138 – Particulate Matter Data (E2515-11) Preburn

Box A, Box B and Box C

Box A, Box B and Box C general header data elements are similar. Box A is the only box that has the barometric pressure and the ambient train leak check information. The data needs to be entered according to the information for each box. The spreadsheet template should be used to import the point data.

Box A

The header data elements for Box A tab (Figure 139) are as follows:

Reading Interval:	The interval of recorded data, in minutes
Sample Box:	Sample box identification
Front Filter #:	Sample identification number of front filter
Final Leak Rate (cfm):	Leak rate on Box A front filter sample train in cubic foot per minute
Test Start Time:	Clock test start time
Room Temp (F):	Room temperature of test location, in fahrenheit
Meter Y Factor:	Gamma calibration factor of meter box
Rear filter #:	Sample identification number of rear filter
Final leak Rate CFM:	Leak rate on Box A rear filter sample train in cubic foot per minute
Run time (min):	Duration of test run, in minutes
Barometric Pressure:	Barometric pressure at sampling site recorded at the beginning, middle and end of the test, in inches of mercury
Probe Material:	Probed material used to sample flue gas
Ambient Filter#:	Sample identification number of ambient filter

Filter Final Leak Rate:	Leak rate on ambient sample train in cubic foot per minute
Fuel Moisture DB (%):	The weight of water in wood divided by the weight of the dry wood only (oven-dry weight) expressed as a percentage.
Volume:	Volume of ambient sample collected, in liters

The Box A Point data (Figure 36) is as follows:

ET:	Elapsed Time – time reading at each recorded point in minutes
Gas Meter Volume:	Volume reading at each recorded point dry cubic meter
Delta P:	Velocity pressure in dilution tunnel as measured with the pitot tube at each recorded point of the test in inches of water
Delta H:	Average differential pressure across the orifice meter, if used, in inches of water
Filter Vacuum:	Vacuum across the filter at each recorded point
Scale Weight:	The weight of the fuel on scale at each recorded point, in pounds
Tunnel Temp:	Dilution tunnel temperature at each recorded point, in fahrenheit
Flue Temp:	Flue gas temperature at each recorded point, in fahrenheit
Filter Temp:	Filter temperature at each recorded point – must be below 90°F
FB Rear Temp:	Firebox rear temperature at each recorded point, in fahrenheit
Impinger Temp:	Impinger temperature at each recorded point, in fahrenheit
Meter Temp:	Meter temperature at each recorded point, in fahrenheit
Ambient Temp:	Ambient temperature at each recorded point, in fahrenheit

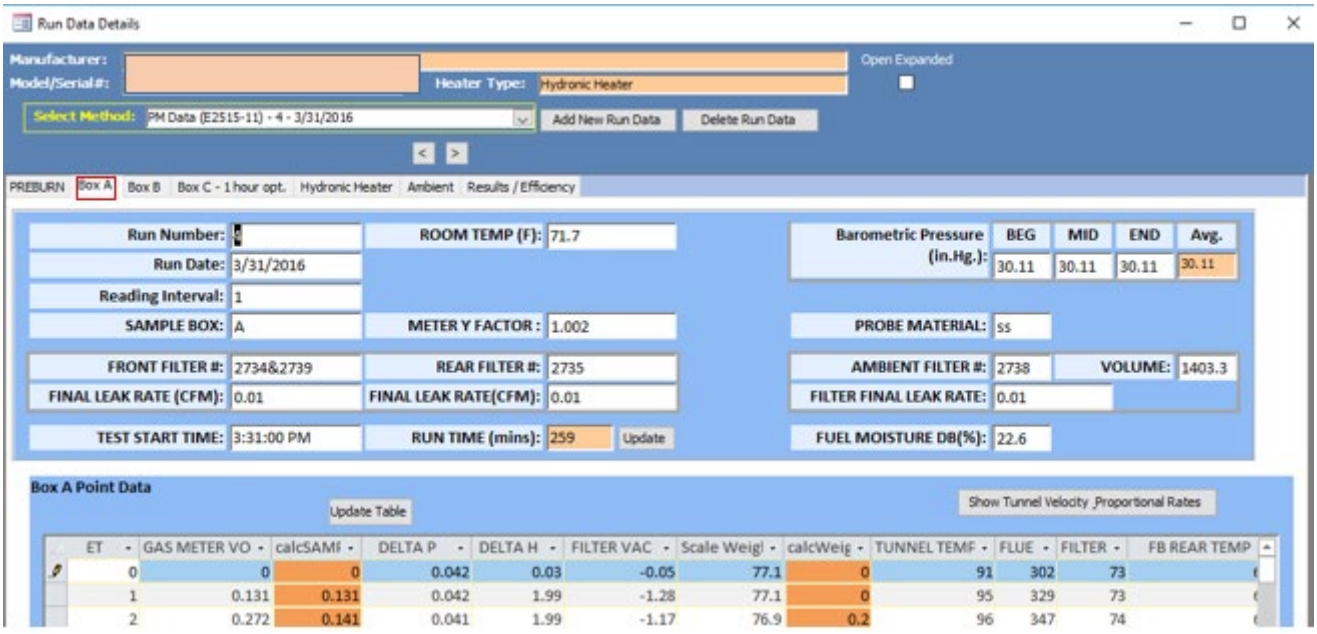


Figure 139 - Particulate Matter Data (E2515-11) Box A

Box B

The header data elements for Box B tab (Figure 140) are as follows:

Reading Interval:	The interval of recorded data, in minutes
Sample Box:	Sample box identification
Front Filter #:	Sample identification number of front filter
Final Leak Rate (cfm):	Leak rate on Box B front filter sample train in cubic foot per minute
Test Start Time:	Clock test start time
Room Temp (F):	Room temperature of test location, in fahrenheit
Meter Y Factor:	Gamma calibration factor of meter box
Rear filter #:	Sample identification number of rear filter
Final leak Rate CFM:	Leak rate on Box B rear filter sample train in cubic foot per minute
Run time (min):	Duration of test run, in minutes
Probe Material:	Probed material used to sample flue gas

The Box B Point data (Figure 37) is as follows:

ET:	Elapsed Time – time reading at each recorded point in minutes
Gas Meter Volume:	Volume reading at each recorded point dry cubic meter
Flue Draft:	delta P - Velocity pressure of the flue gas as measured with the pitot tube at each recorded point of the test in inches of water
Orifice Delta H:	Average differential pressure across the orifice meter, if used, in inches of water
Filter Vacuum:	Vacuum across the filter at each recorded point
Left Side:	Temperature of the left side of the firebox of the appliance at each recorded point in fahrenheit
Right Side:	Temperature of the right side of the firebox of the appliance, in fahrenheit
Filter Temp:	Filter temperature, in fahrenheit
FB Rear Temp:	Temperature of the back of the firebox of the appliance, in fahrenheit
FB Bot Temp:	Temperature of the bottom of the firebox of the appliance, in fahrenheit
Meter Temp:	Meter Temperature, in fahrenheit

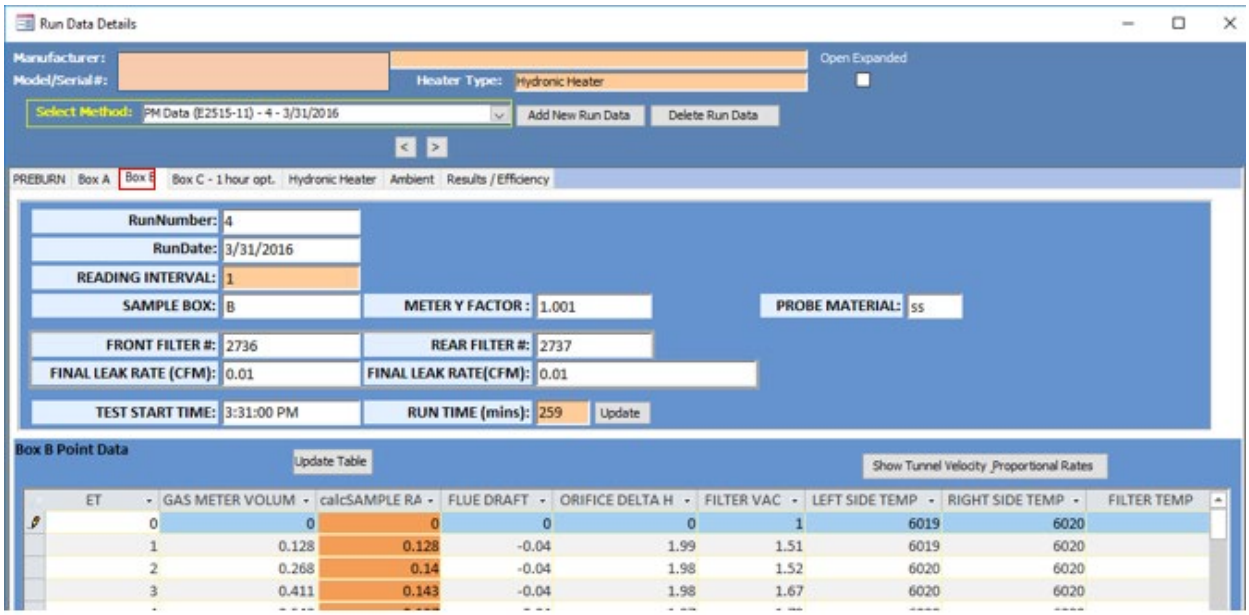


Figure 140 - Particulate Matter Data (E2515-11) Box B

Box C – 1-hour Option

Data elements for the Box C – 1-Hour Option (Figure 141) tab are the same as Box B

Figure 141- PM Data (E2515-11) Box C – 1 Hour Option

Hydronic Heater

The Hydronic Heater tab (Figure 142) contains information only about the Hydronic Heater testing parameters. If this appliance is not a hydronic heater, this tab can be skipped. The data elements are:

ET: Elapsed Time – time reading at each recorded point in minutes

APPL GPM: Volumetric flow rate of water in heat exchange system in gallons per minute

APPL Tin: T6 - Temperature of return water as it enters the heater/boiler in fahrenheit.

APPL Tout: T5 - Temperature of hot water supply as it leaves the heater/boiler in fahrenheit.

LOAD GPM: Vfi – total water volume at the beginning of the test time interval in gallons per minute

LOAD Tin: T3 – Temperature of cooling water at the inlet of the load side of the heat exchange in fahrenheit

LOAD Tout: T4 - Temperature of cooling water at the outlet of the load side of the heat exchange in fahrenheit

T PILE: The thermopile reading the differential water temperature at each recorded point

LD BTU/hr: The average heat output rate on the load side of the heat exchanger based on water temperature and flow rate

Appl Dry: Weight of appliance without water

Appl Water: Weight of the appliance and water

From this data, Hydronic Heater Summary Calculations will be conducted for temperature average at the beginning and ending of the run, Appliance weight and water weight, Appliance average change in temperature, total minutes of run, total BTU, Total BTU with water, Total BTU with water and steel, BTU/hr.

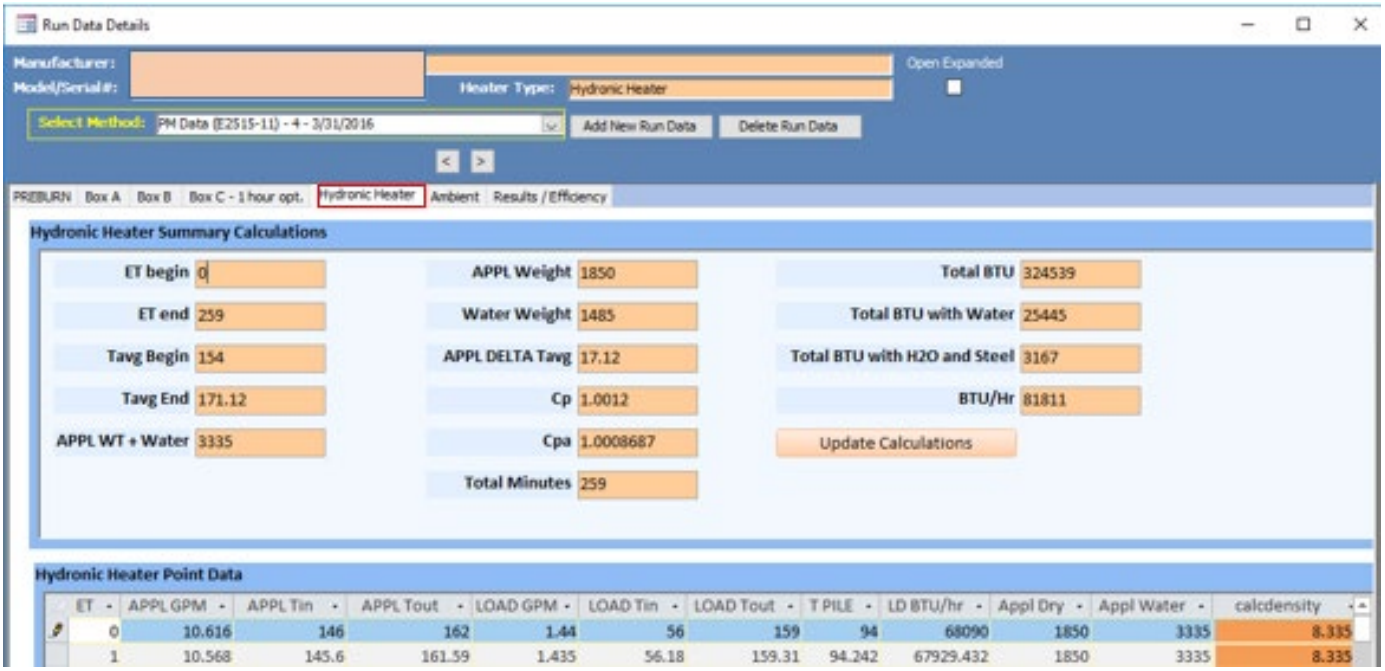


Figure 142 - Temperature Data (E2515-11) Hydronic Heater

Ambient

The Ambient tab (Figure 143) contains the following data elements for the ambient train:

Meter Y Factor: Gamma calibration factor of ambient meter box

Sample volume (L) start: Volume recorded at the start of the test

Sample volume (L) end: Volume recorded at the end of the test

Meter Temp (F) start: Temperature of the meter box at the start of the test

Meter Temp (F) end: Temperature of the meter box at the end of the test

Delta H start: Differential pressure across the orifice meter, if used, in inches of water at the start of the test

Delta H end: Differential pressure across the orifice meter, if used, in inches of water at the end of the test

Delta P start:	Velocity pressure for ambient probe in inches of water at start of test
Delta P end:	Velocity pressure for ambient probe in inches of water at end of test
Total particulates (mg):	Total mass of particulate matter collected on filter, filter gasket, and probe assembly from ambient train in mg

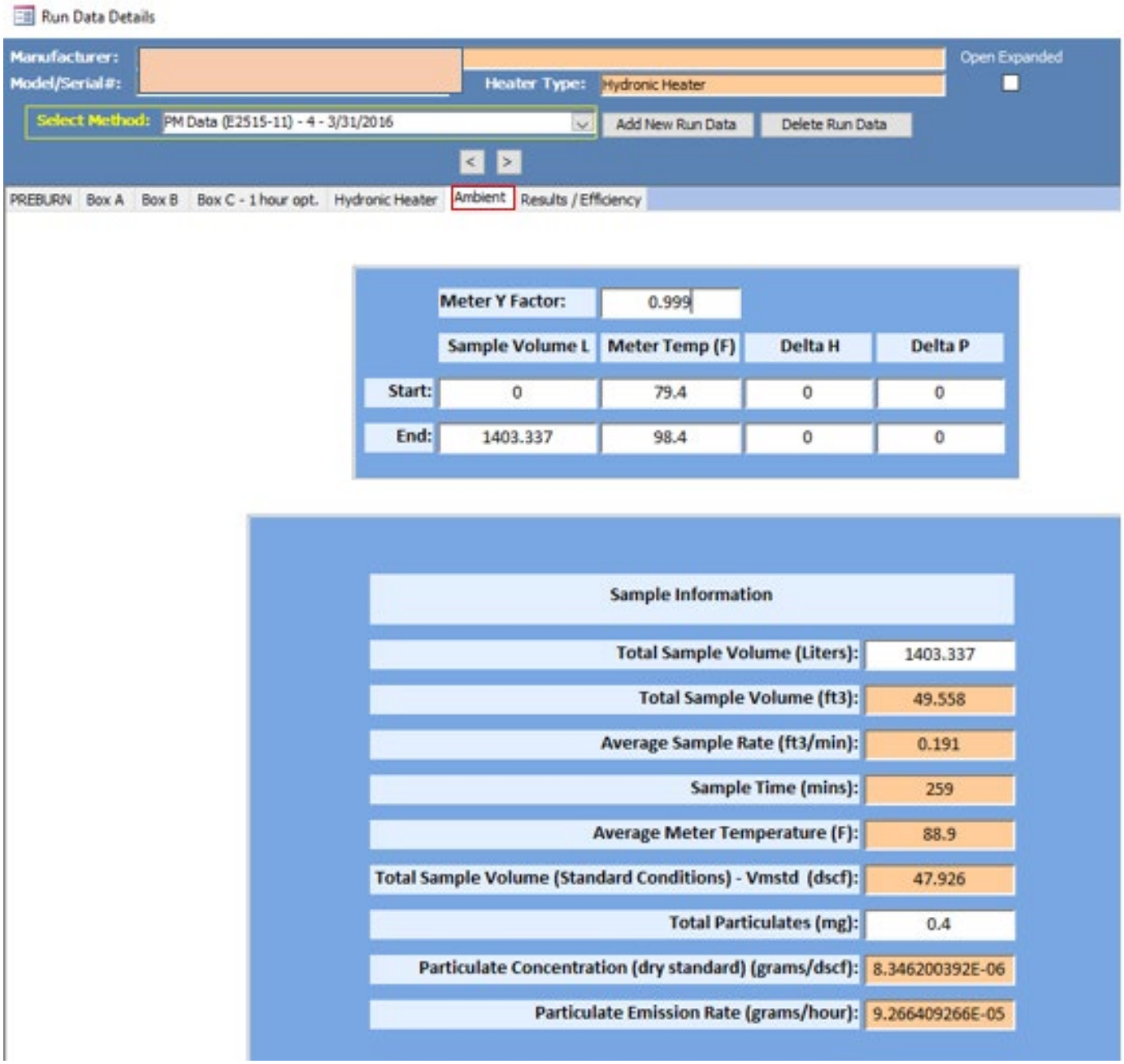


Figure 143 - PM Data (E2515-11) Ambient

Results / Efficiency

This tab (Figure 144) displays the results and efficiency information from the particulate matter testing method- ASTM 2515-11. The button *Show Results* and *Show Efficiency Calcs* open windows showcasing this data (Figure 145 and 146). Each filter particulate mass needs to be entered, the train (box) used for one-hour sampling and the mass collected on the one-hour filter and the HHV and LHV for efficiencies. If this is a partial thermal storage unit, the start-up, steady state and end time needs to be recorded and the mass on the filter for each section needs to be entered.

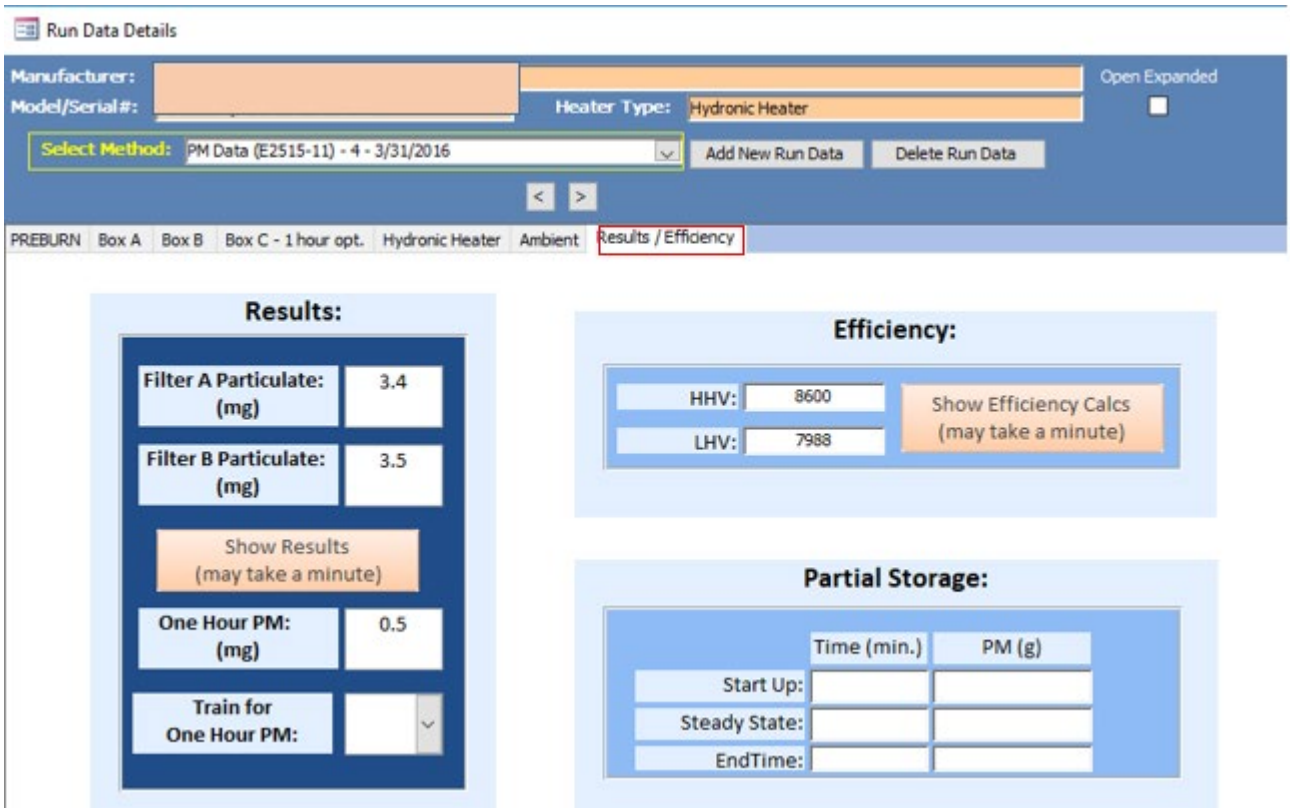


Figure 144 - PM Data (E2515-11) Results / Efficiency

Show Results

Results for Run Number: 4 Run Date: 3/31/2016

Burn Rate (Kg/Hr Dry):	6.61	Sample A Information	Sample B InformaTion
Total Sample Volume - Vm:		36.81	36.19
Average Gas Velocity in Dilution Tunnel - vs (ft/sec):		13.72	13.72
Average Gas Flow Rate in Dilution Tunnel - Qsd (dscf/hour):		36,528.04	36,528.04
Total Sample Volume (Standard Conditions) - Vmstd (dscf):		35.24	34.79
Average Tunnel Temperature (F):		92.4	92.4
Average Delta P:		0.041	0.041
Average Gas Meter Temperature (F):		99	96
Average Delta H (in-H20):		1.99	1.98
Total Time of Test (mins):		259	259
Total Particulates (mg):		3.4	3.5
Particulate Concentration (dry-standard) (grams/dscf):		0.000096469	0.000100596
Ambient Train (dry-standard) (grams/dscf):		0.000008346	0.000008346
Net (dry-standard) (grams/dscf):		0.000088122	0.000092250
Particulate Emission Rate (grams/hour):		3.22	3.37
Total PM Emissions (grams):		13.90	14.55
Average Total PM Emissions (grams):		14.22	
AVERAGE PARTICULATE EMISSIONS RATE (grams/hour):		3.29	
% OF AVERAGE:		97.7	102.3
Emissions Factor (g/kg-Dry):		0.487	0.510
ONE HOUR PARTICULATE EMISSIONS RATE (grams/hour):		Select One Hour Train	
ONE HOUR PM (grams):		0.500	
ONE HOUR BOX USED:			

Figure 145 – Particulate Matter Data (E2515-11) Show Results

Show Efficiency Calcs

Show Efficiency Calculations opened from the Show Efficiency Calcs button (Figure 146).

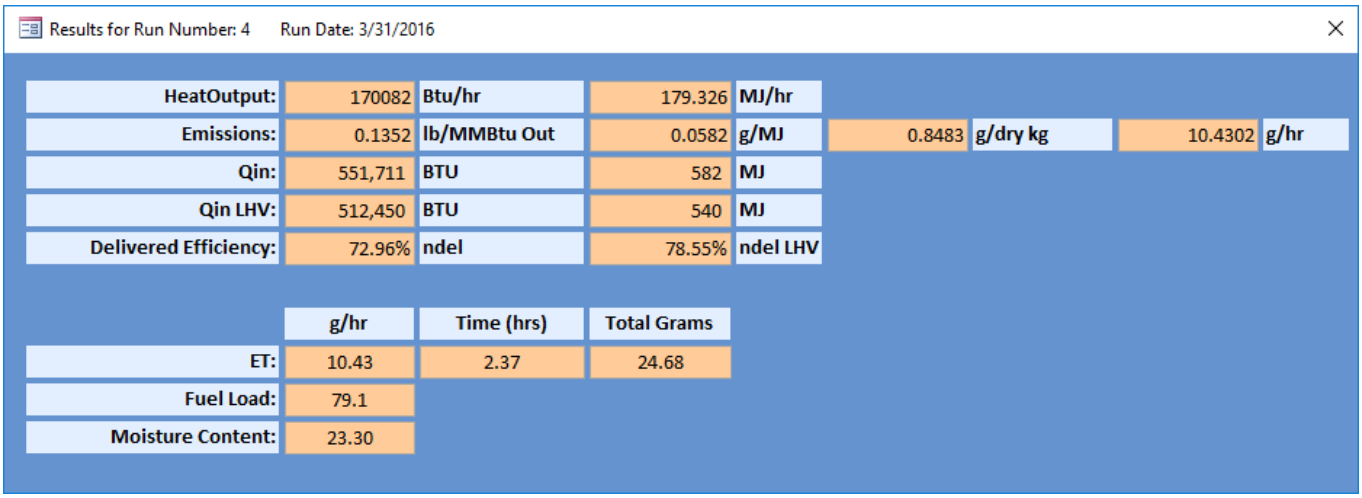


Figure 146 - PM Data (E2515-11) Show Efficiency Calculations

Chapter 5: Wood Heater Summary Tables

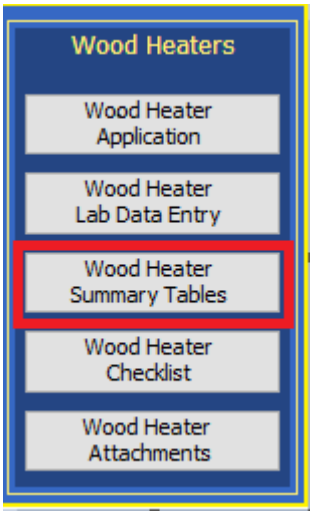


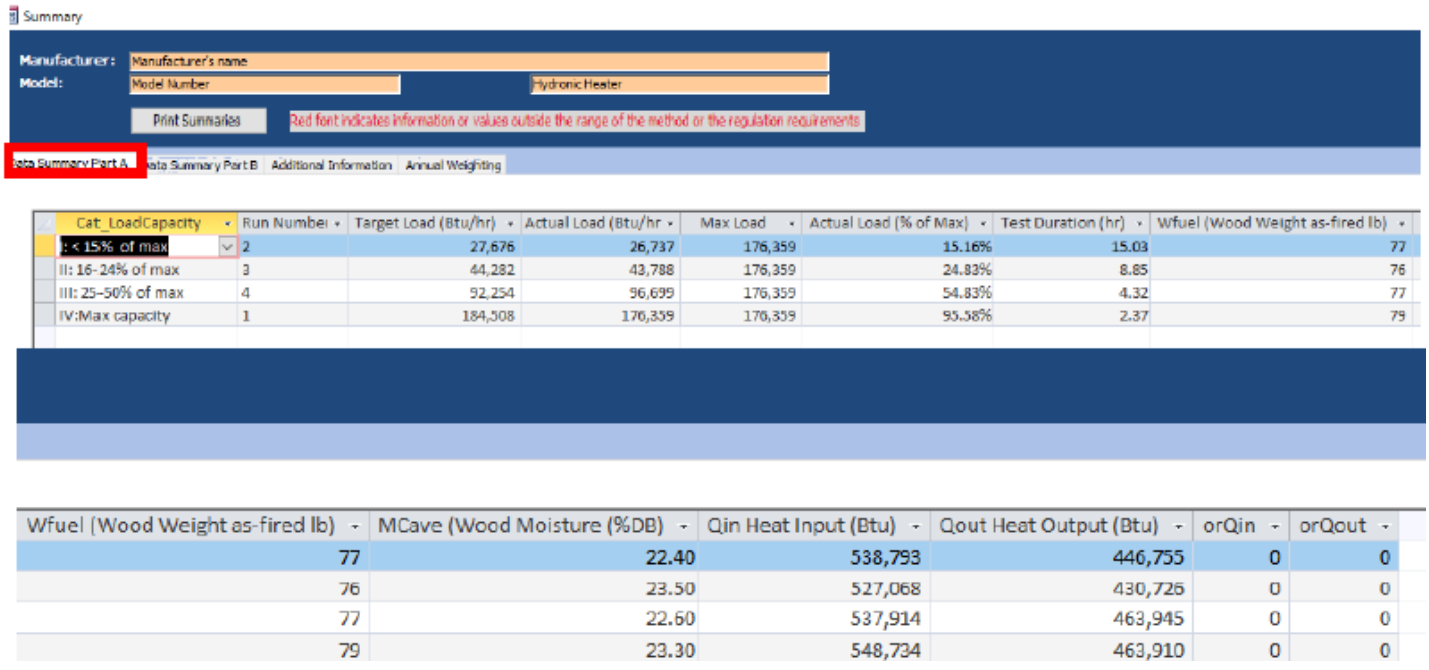
Figure 147 – Wood Heater Summary Table Menu

Summary tables are accessed in the wood heater model by selecting The "Wood Heater Summary Tables" button (Figure 147). Summary tables are determined by the appliance, fuel type, loading and test methods. These summaries are autogenerate from selection made in the application section and data entered into the Wood Heater Lab Data Entry section.

Hydronic Heaters

Data Summary Part A

Hydronic Heaters Data Summary Part A data table (Figure 148).



Cat_LoadCapacity	Run Number	Target Load (Btu/hr)	Actual Load (Btu/hr	Max Load	Actual Load (% of Max)	Test Duration (hr)	Wfuel (Wood Weight as-fired lb)
I: < 15% of max	2	27,676	26,737	176,359	15.16%	15.03	77
II: 16-24% of max	3	44,282	43,788	176,359	24.83%	8.85	76
III: 25-50% of max	4	92,254	96,699	176,359	54.83%	4.32	77
IV:Max capacity	1	184,508	176,359	176,359	95.58%	2.37	79

Wfuel (Wood Weight as-fired lb)	MCave (Wood Moisture (%DB)	Qin Heat Input (Btu)	Qout Heat Output (Btu)	orQin	orQout
77	22.40	538,793	446,755	0	0
76	23.50	527,068	430,726	0	0
77	22.60	537,914	463,945	0	0
79	23.30	548,734	463,910	0	0

Figure 148 - Hydronic Heaters – Data Summary Part A

Data Summary Part B

Hydronic Heaters Data Summary Part B data table (Figure 149).

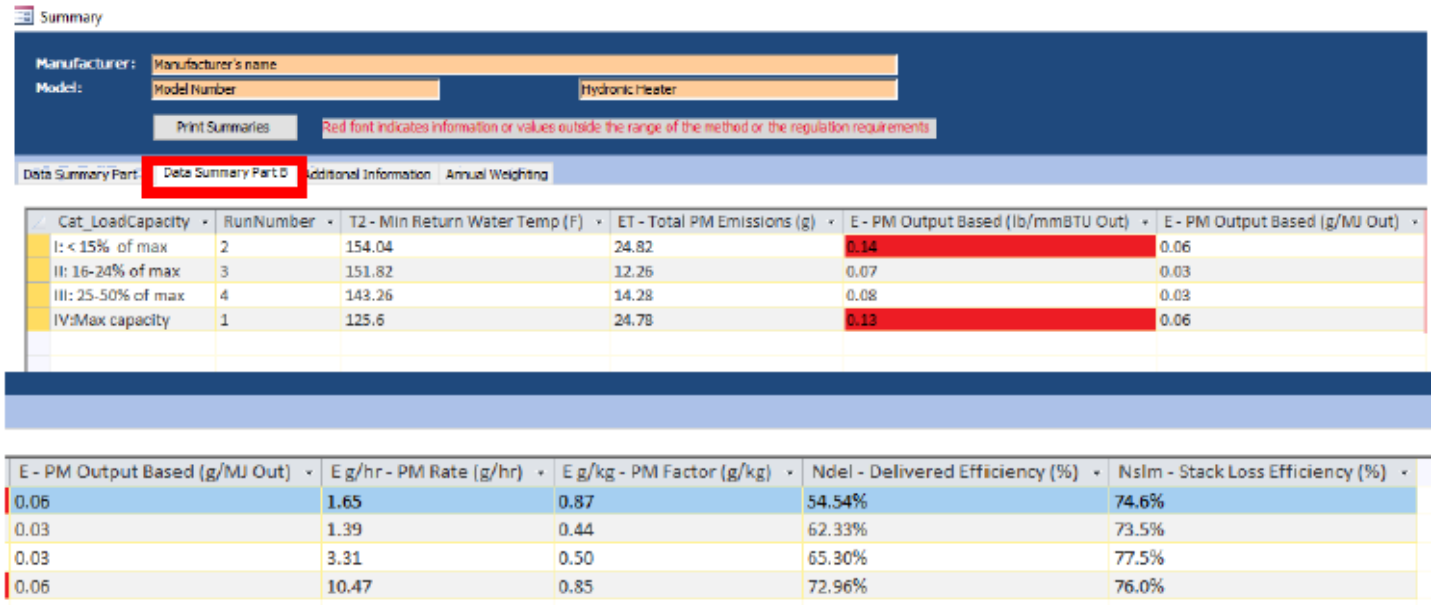


Figure 149 - Hydronic Heaters – Data Summary Part B

Additional Information

Hydronic Heaters Additional Information data table (Figure 150).

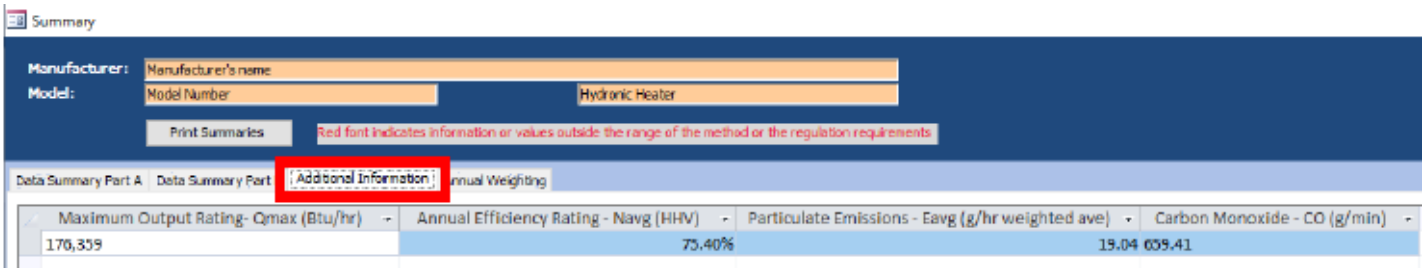


Figure 150 - Hydronic Heaters – Additional Information

Annual Weighting

Hydronic Heaters Annual Weighting data table (Figure 151).

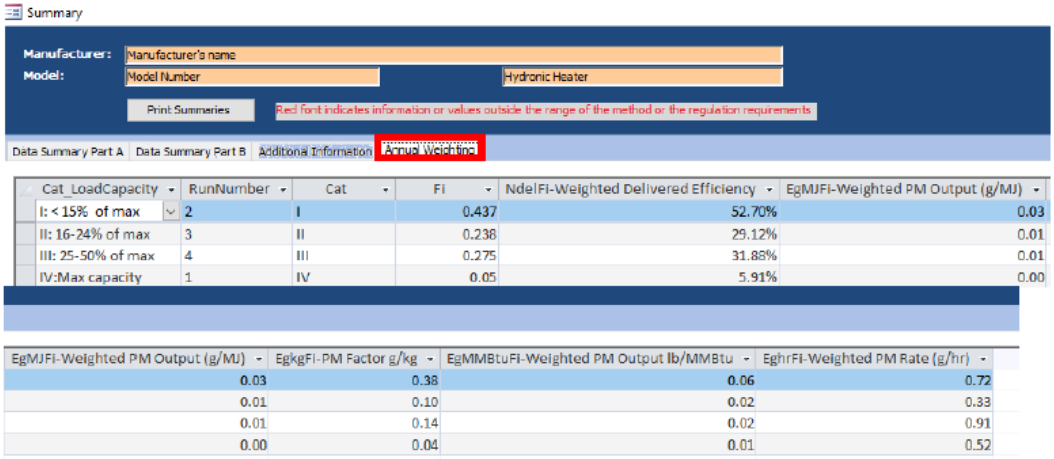
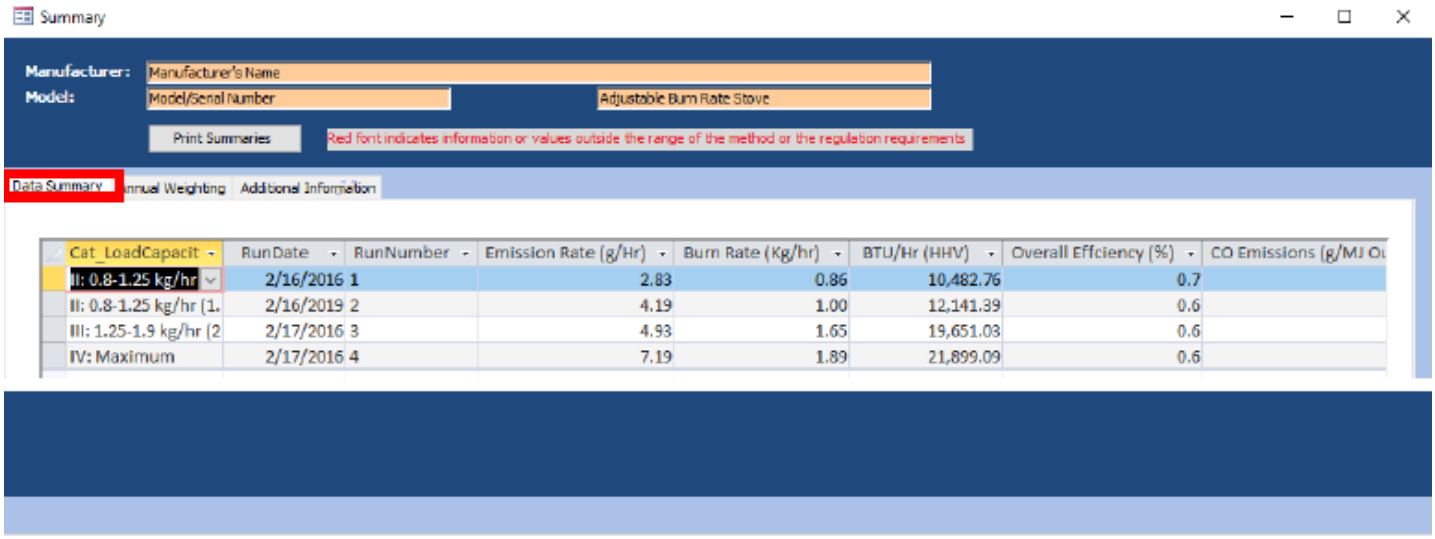


Figure 151 - Hydronic Heaters – Annual Weighting

Adjustable Burn Rate

Data Summary

Displays a data summary of the Adjustable Burn Rate Stove testing (Figure 152).



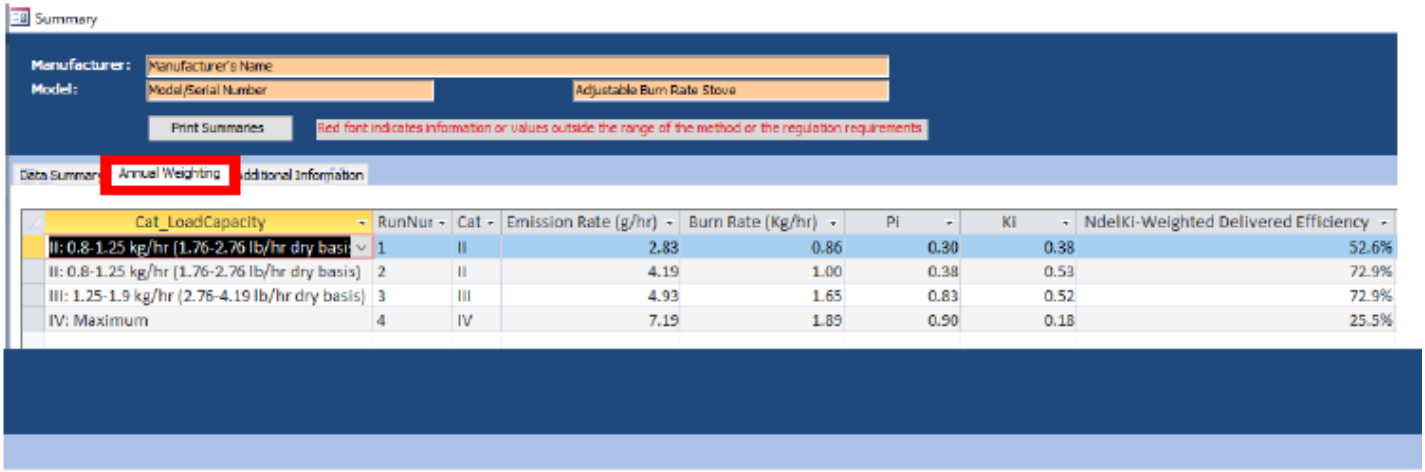
Overall Effciency (%)	CO Emissions (g/MJ Output)	CO Emissions (g/kg Dry Fuel)	CO Emission	ASTM E2515 Emissions - First Hour (g/hr)
0.7	10.05	129.40	111.03	15.79
0.6	10.36	132.91	132.62	21.22
0.6	8.82	111.01	182.81	14.81
0.6	6.99	85.39	161.48	20.15

Figure 152 - Adjustable Burn Rate Stove – Data Summary

.

Annual Weighting

Displays the Annual Weighting of the Adjustable Burn Rate Stove testing (Figure 153).



NdelKi-Weighted Delivered Efficiency	EgMJKi-Weighted PM Output (g/MJ)	EgkgKi-PM Factor g/kg	EgMMBtuKi-	EghrKi-Weighted PM Rate (g/hr)
52.6%	0.097	1.251	0.226	1.074
72.9%	0.172	2.203	0.399	2.198
72.9%	0.123	1.541	0.285	2.538
25.5%	0.054	0.665	0.127	1.258

Figure 153 - Adjustable Burn Rate Stove – Annual Weighting

Additional Information

Displays Additional Information for the Adjustable Burn Rate Stove testing (Figure 154).

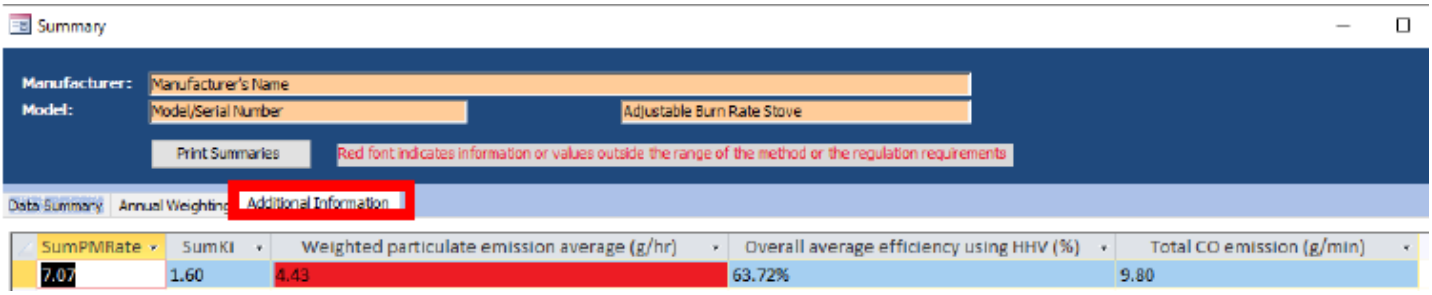


Figure 154 - Adjustable Burn Rate Stove – Additional Information

Single Burn Rate

Data Summary

Displays a data summary for the Single Burn Rate Stove testing (Figure 155).

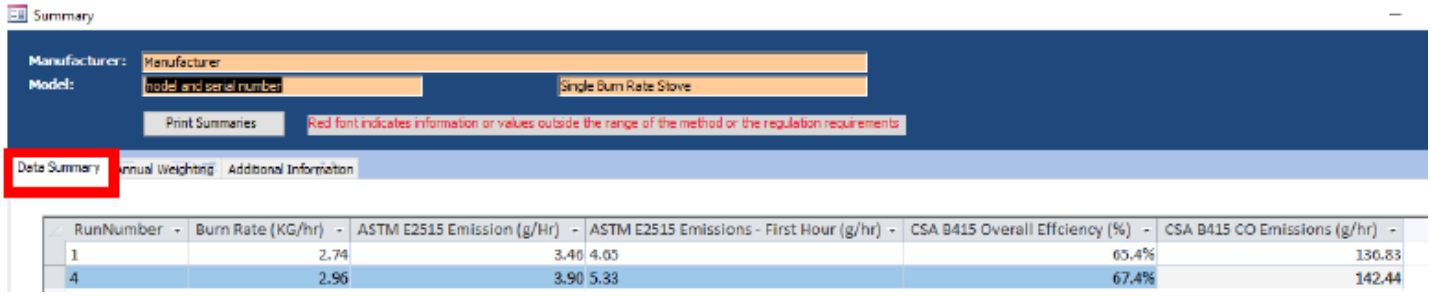


Figure 155 – Single Burn Rate Stove – Data Summary

Annual Weighting

Displays the Annual Weighting for the Single Burn Rate Stove testing (Figure 156).

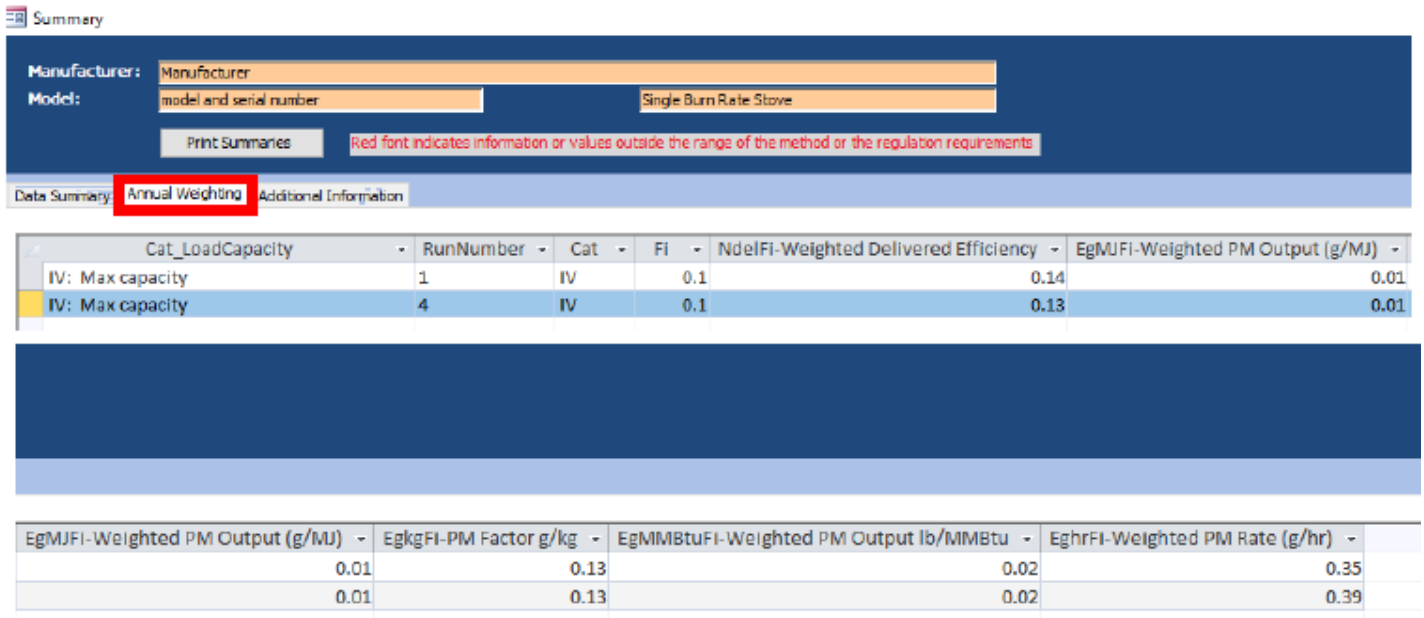


Figure 156 – Single Burn Rate Stove – Annual Weighting

Additional Information

Displays the Additional Information for the Single Burn Rate Stove testing (Figure 157).

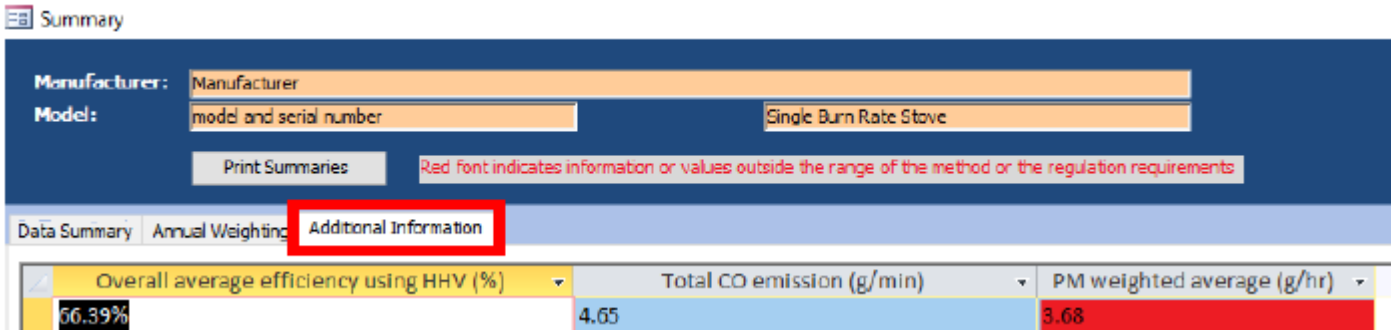


Figure 157 - Single Burn Rate Stove – Additional Information

Pellet Stove

Summary Results – Pellet Stoves

Displays the Summary Results from the Pellet Stove testing (Figure 158).

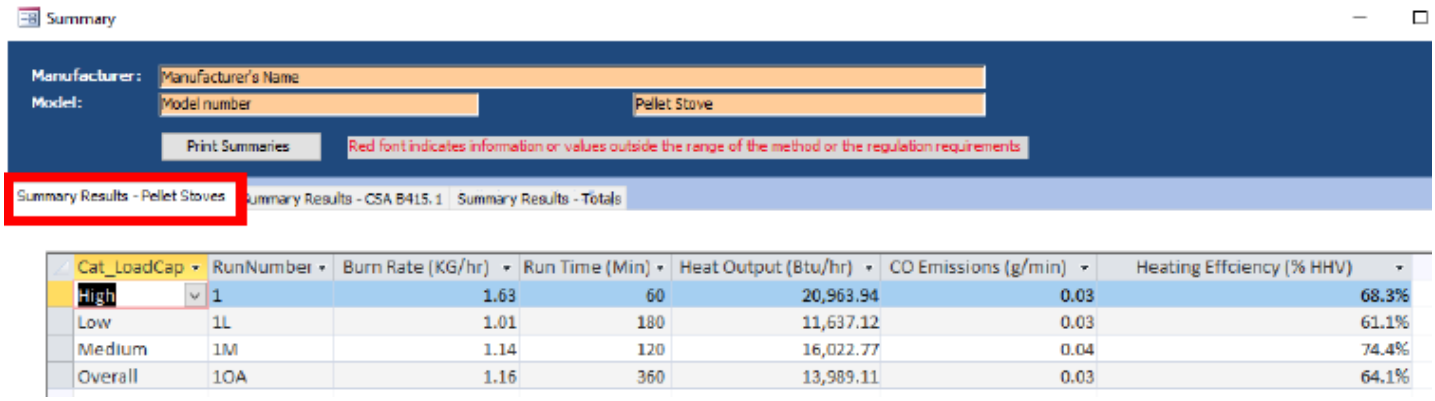


Figure 158 - Pellet Stoves – Summary Results

Summary Results – CSA B415.1

Displays the Summary Results from the Pellet Stove testing with the CSA B415.1 method (Figure 159).

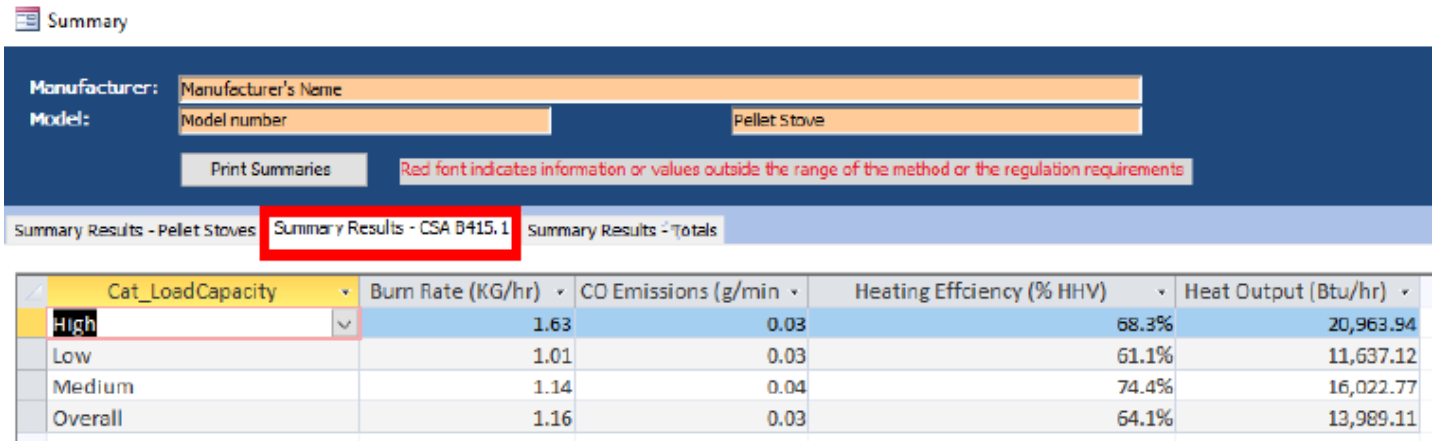


Figure 159 - Pellet Stoves – Summary Results (CSA B415.1)

Summary Results – Totals

Displays the Summary Result Totals from the Pellet Stove testing (Figure 160).

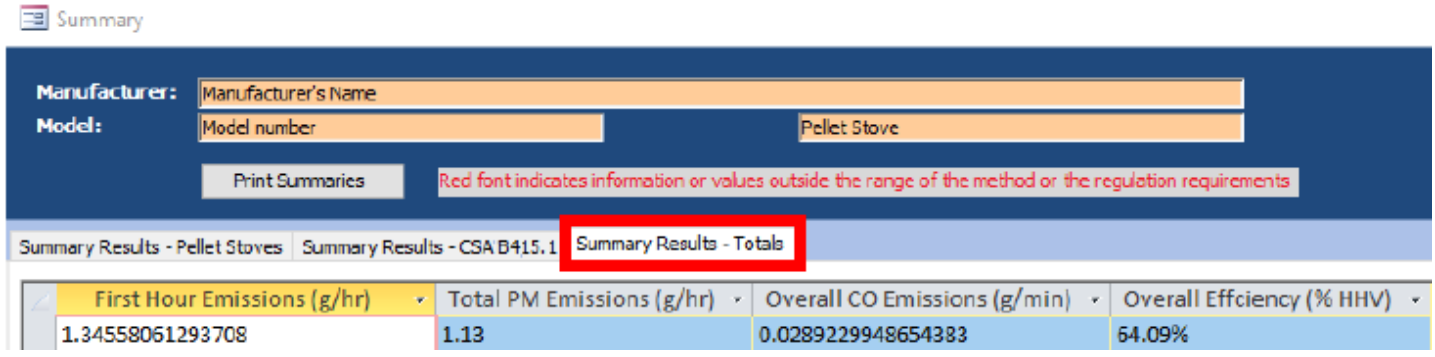


Figure 160 - Pellet Stoves – Summary Results - Totals

Forced Air Furnace

Data Summary

The data summary from Forced Air Furnace testing (Figure 161).

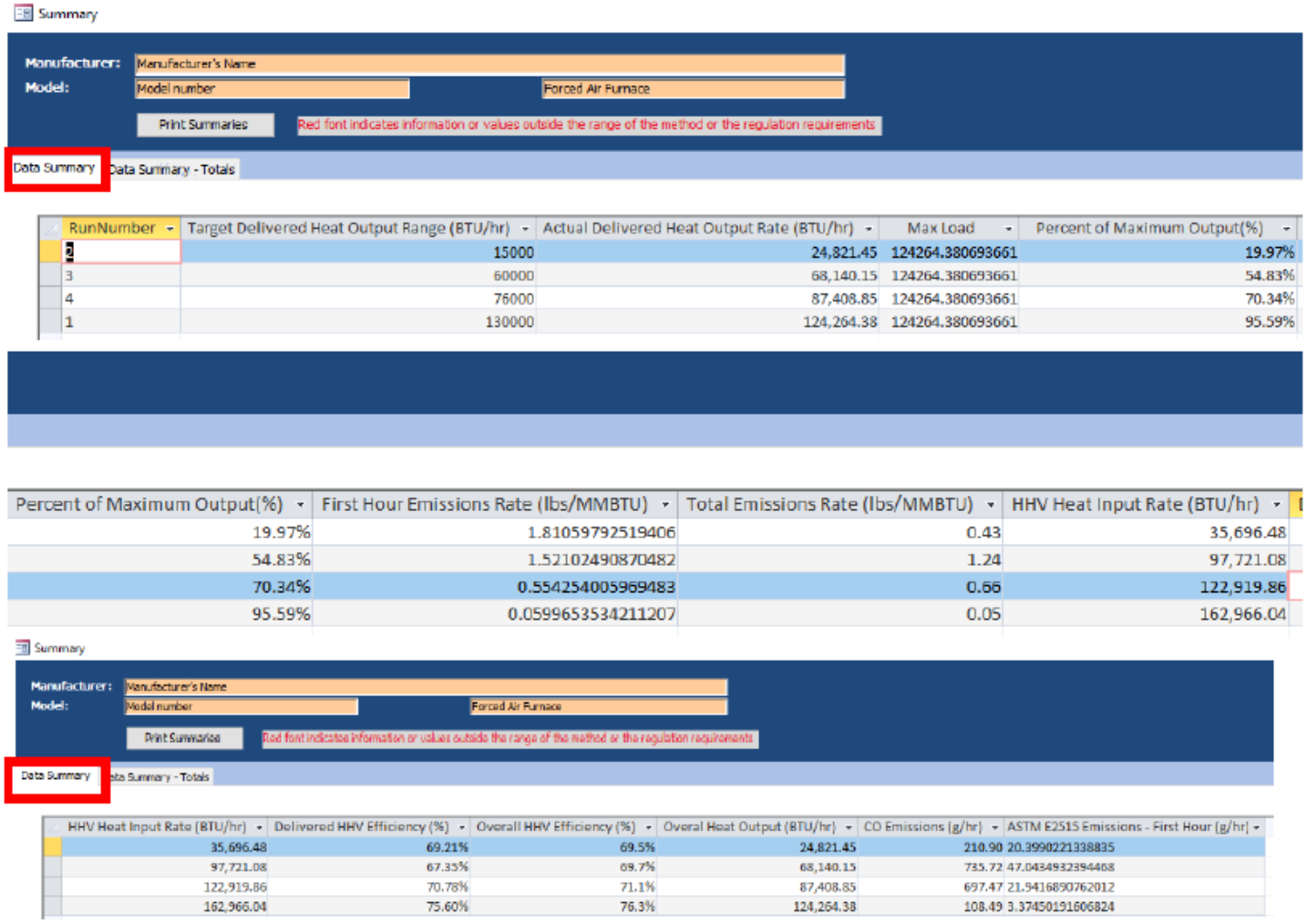


Figure 161 - Forced Air Furnace – Data Summary

Data Summary Part B

The data summary Part B from Forced Air Furnace testing (Figure 162).

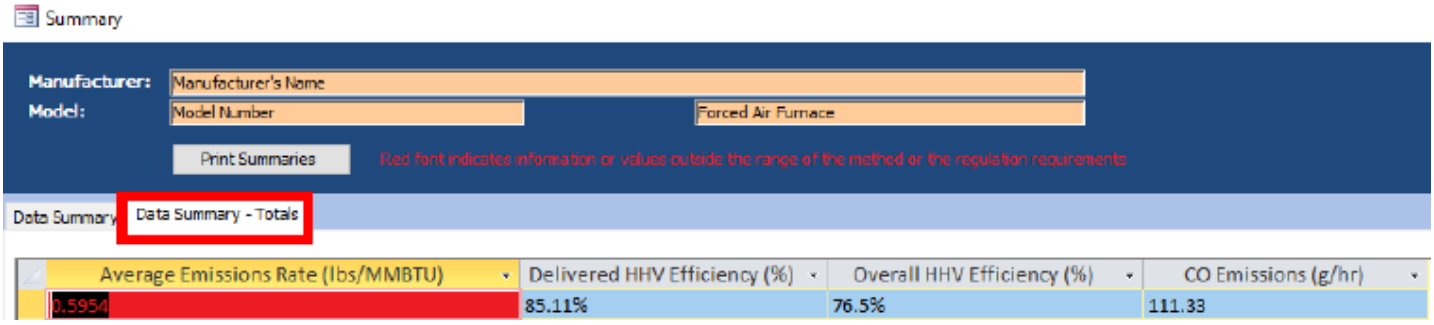
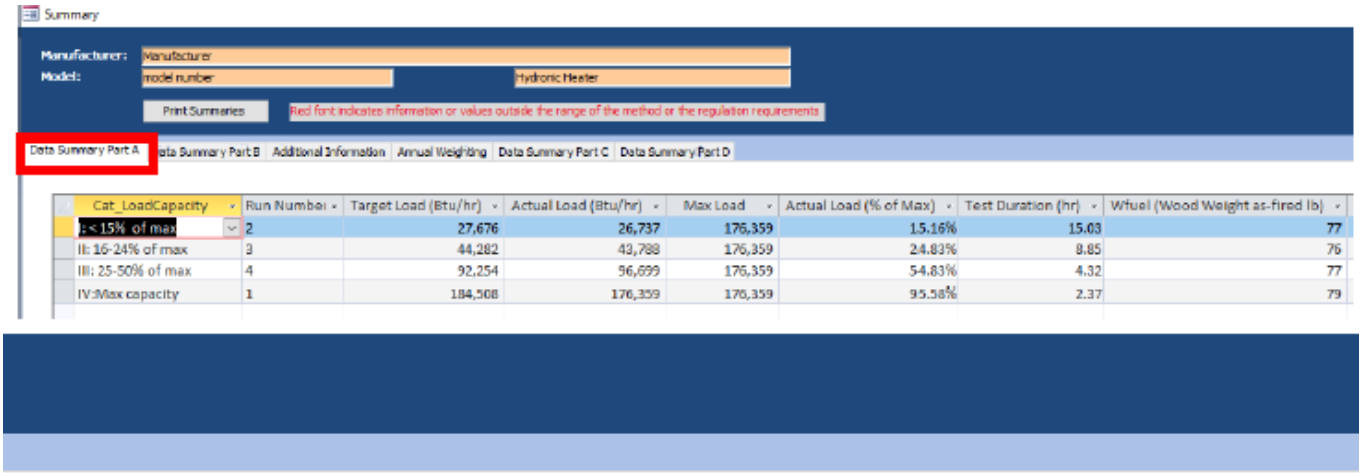


Figure 162 - Forced Air Furnace – Data Summary Part B

Hydronic Heater – Partial Thermal Storage

Data Summary Part A

The data summary Part A from Hydronic Heater – Partial Thermal Storage testing (Figure 163).

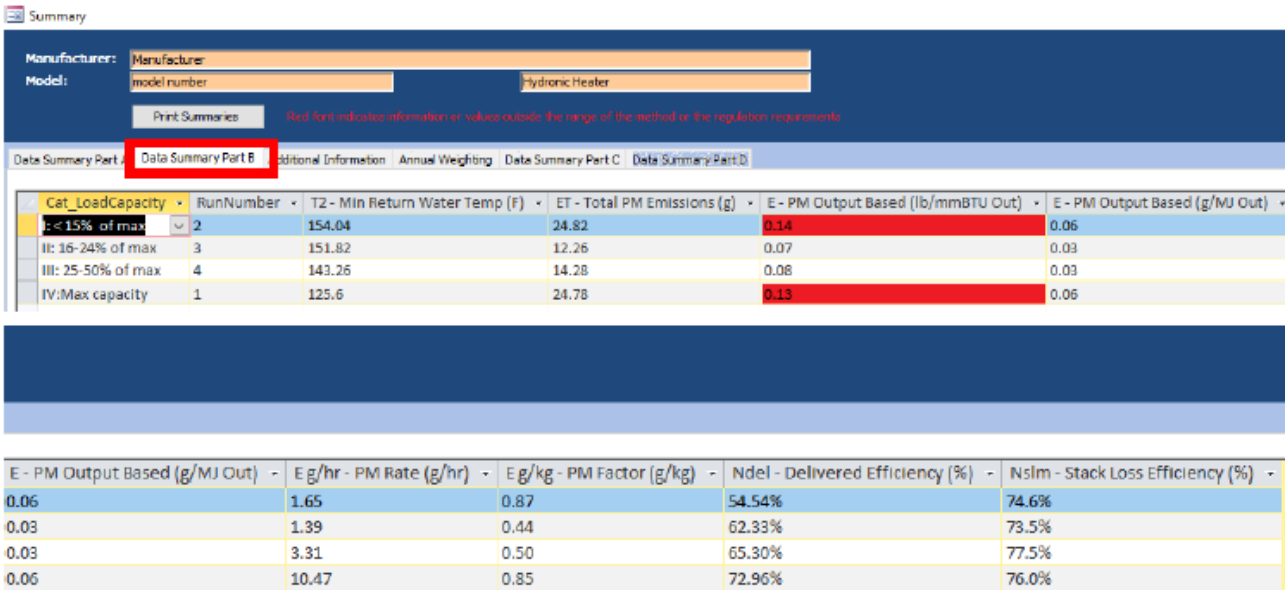


Wfuel (Wood Weight as-fired lb)	MCave (Wood Moisture (%DB)	Qin Heat Input (Btu)	Qout Heat Output (Btu)	orQin	orQout
77	22.40	538,793	446,755	0	0
76	23.50	527,068	430,726	0	0
77	22.60	537,914	463,945	0	0
79	23.30	548,734	463,910	0	0

Figure 163 – Hydronic Heater – Partial Thermal Storage Data Summary Part A

Data Summary Part B

The data summary Part B from Hydronic Heater – Partial Thermal Storage testing (Figure 164).

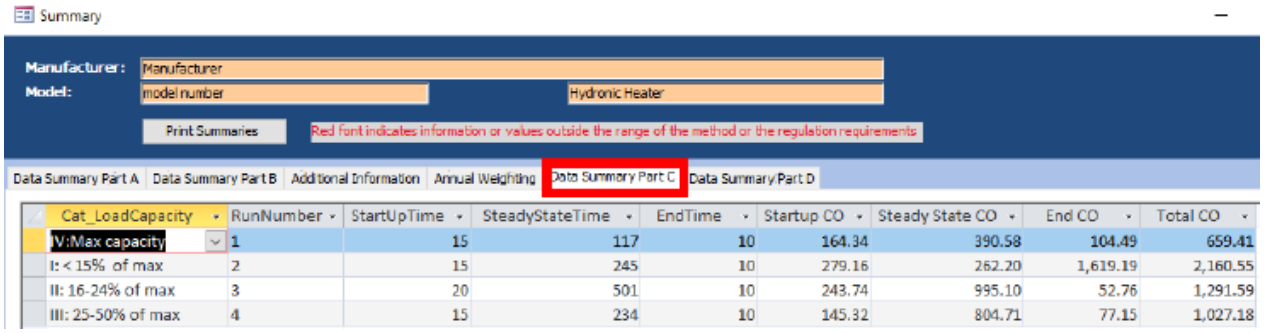


E - PM Output Based (g/MJ Out)	E g/hr - PM Rate (g/hr)	E g/kg - PM Factor (g/kg)	Ndel - Delivered Efficiency (%)	Nslm - Stack Loss Efficiency (%)
0.06	1.65	0.87	54.54%	74.6%
0.03	1.39	0.44	62.33%	73.5%
0.03	3.31	0.50	65.30%	77.5%
0.06	10.47	0.85	72.96%	76.0%

Figure 164 – Hydronic Heater – Partial Thermal Storage Data Summary Part B

Data Summary Part C

The data summary Part C from Hydronic Heater – Partial Thermal Storage testing (Figure 165).

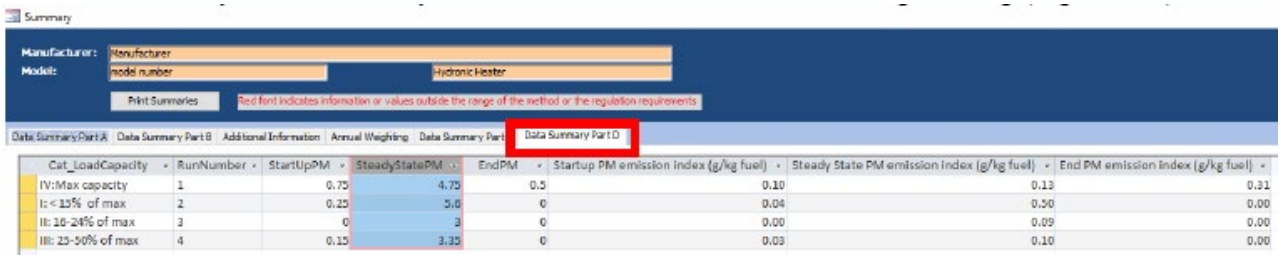


Cat_LoadCapacity	RunNumber	StartUpTime	SteadyStateTime	EndTime	Startup CO	Steady State CO	End CO	Total CO
V:Max capacity	1	15	117	10	164.34	390.58	104.49	659.41
I: < 15% of max	2	15	245	10	279.16	262.20	1,619.19	2,160.55
II: 16-24% of max	3	20	501	10	243.74	995.10	52.76	1,291.59
III: 25-50% of max	4	15	234	10	145.32	804.71	77.15	1,027.18

Figure 165 - Hydronic Heater – Partial Thermal Storage Data Summary Part C

Data Summary Part D

The data summary Part D from Hydronic Heater – Partial Thermal Storage testing (Figure 166).



Cat_LoadCapacity	RunNumber	StartUpPM	SteadyStatePM	EndPM	Startup PM emission index (g/kg fuel)	Steady State PM emission index (g/kg fuel)	End PM emission index (g/kg fuel)
IV:Max capacity	1	0.75	4.75	0.5	0.10	0.13	0.31
I: < 15% of max	2	0.25	5.0	0	0.04	0.50	0.00
II: 16-24% of max	3	0	3	0	0.00	0.09	0.00
III: 25-50% of max	4	0.15	3.35	0	0.03	0.10	0.00

Figure 166 - Hydronic Heater – Partial Thermal Storage Data Summary Part D

Additional Summary Information Part E

Additional summary Information from Hydronic Heater – Partial Thermal Storage testing (Figure 167).

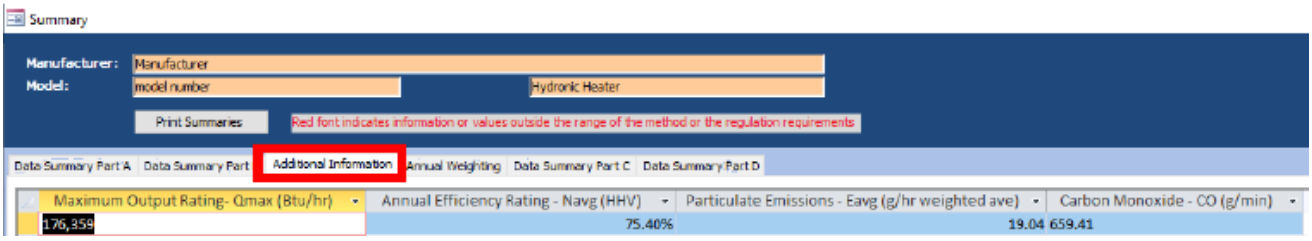
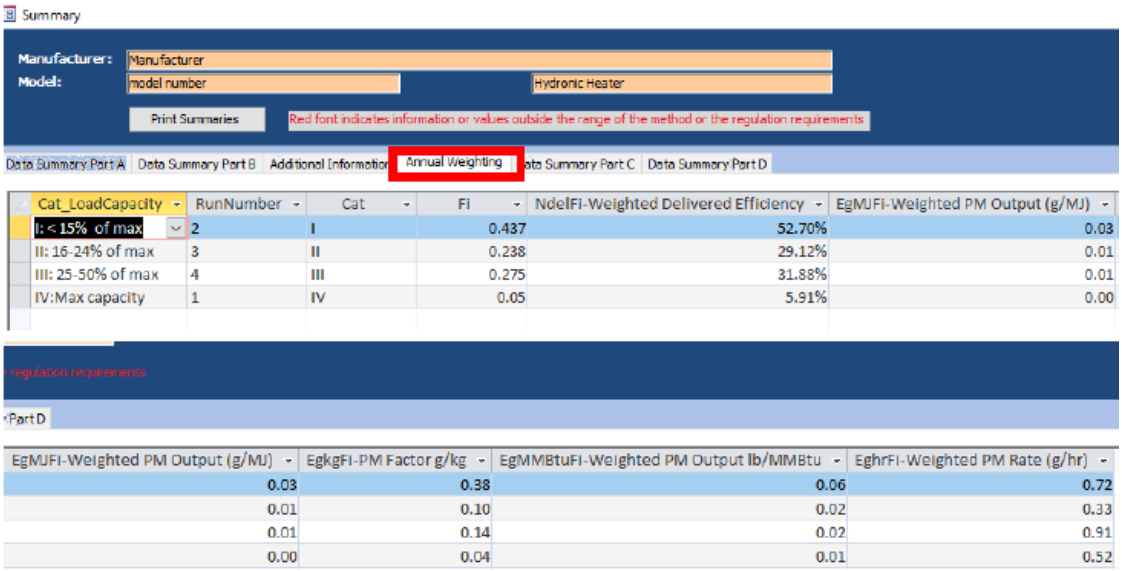


Figure 167 – Hydronic Heater – Partial Thermal Storage – Additional Summary Information

Annual Weighting

Annual weighting from Hydronic Heater – Partial Thermal Storage testing (Figure 168).



Cat_LoadCapacity	RunNumber	Cat	FI	NdelFI-Weighted Delivered Efficiency	EgMJFI-Weighted PM Output (g/MJ)
I: < 15% of max	2	I	0.437	52.70%	0.03
II: 16-24% of max	3	II	0.238	29.12%	0.01
III: 25-50% of max	4	III	0.275	31.88%	0.01
IV:Max capacity	1	IV	0.05	5.91%	0.00

EgMJFI-Weighted PM Output (g/MJ)	EgkgFI-PM Factor g/kg	EgMMBtuFI-Weighted PM Output lb/MMBtu	EghrFI-Weighted PM Rate (g/hr)
0.03	0.38	0.06	0.72
0.01	0.10	0.02	0.33
0.01	0.14	0.02	0.91
0.00	0.04	0.01	0.52

Figure 168 – Hydronic Heater – Partial Thermal Storage – Annual Weighting

Chapter 6: Wood Heater Checklist

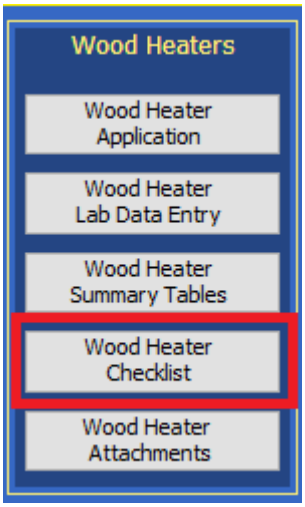


Figure 169 - Wood Heater Checklist Menu

General and General Information

Manufacturer and General Information certification checklist (Figure 169). The same checklist is utilized for Wood/Pellet Stoves, Hydronic Heaters, and Forced Air Furnaces.

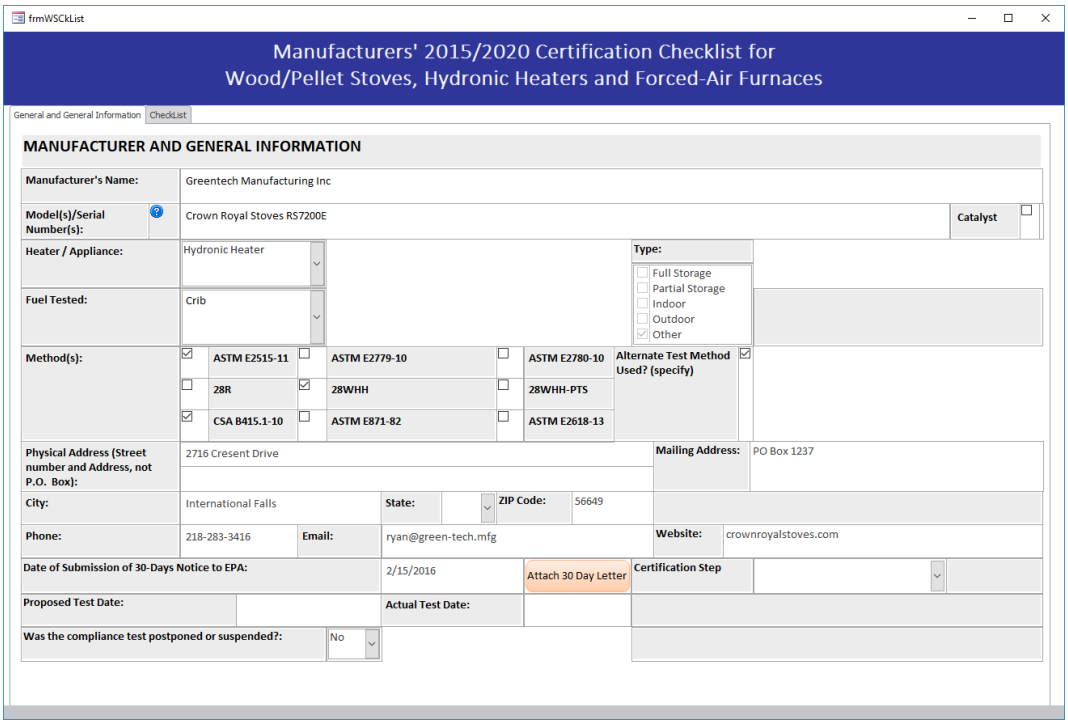


Figure 170 – Wood Heater Checklist – General Information

Checklist

Checklist of data for the Wood Heater. The same checklist is utilized for Wood/Pellet Stoves, Hydronic Heaters, and Forced Air Furnaces (Figure 170 and 171).

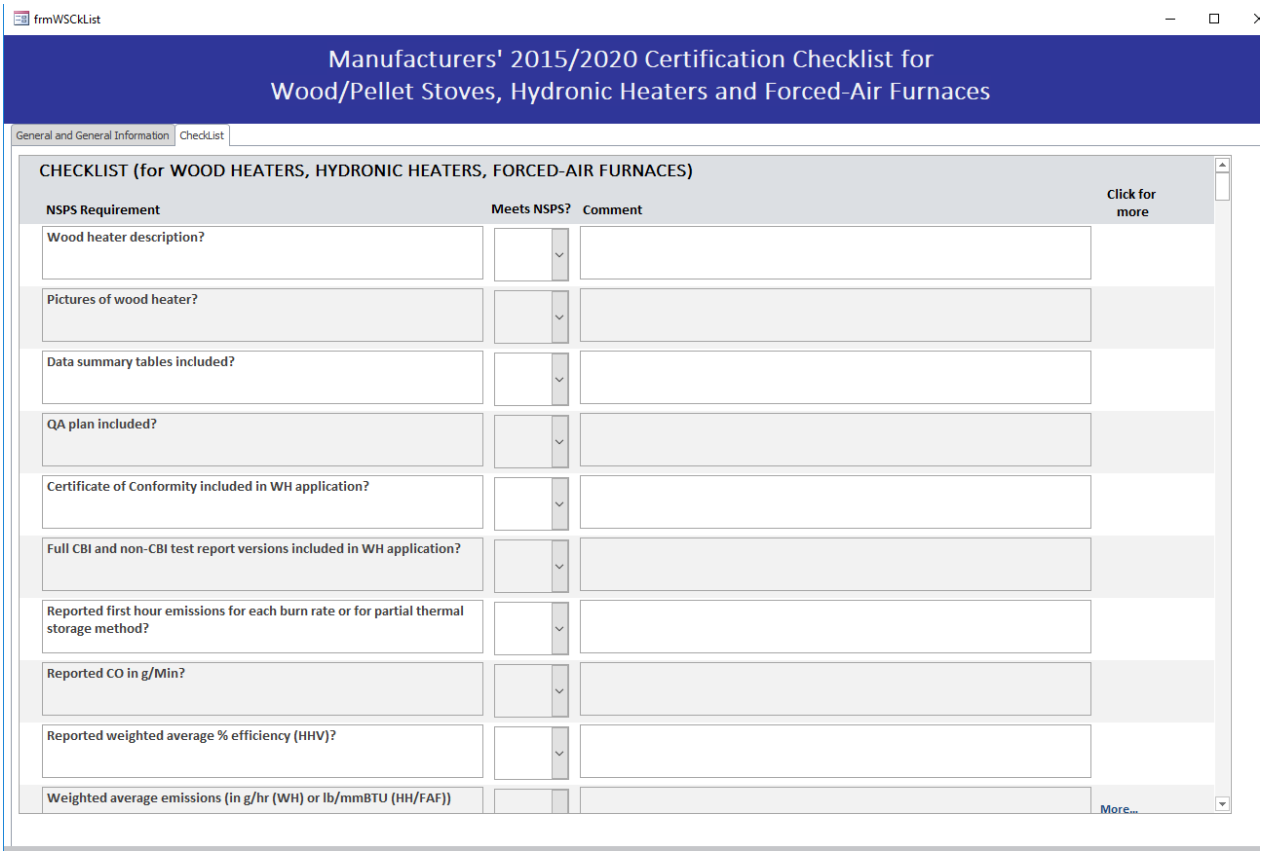
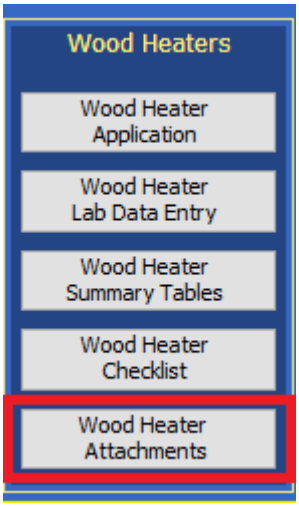


Figure 171 – Wood Heater Checklist

Chapter 7: Wood Heater Attachments



The attachments added to the Wood Heater are summarized in this section. Additional Documents can also be added at this point in the process to ensure documentation has been provided for each required test and certification (Figure 172 and 173).

Figure 172 – Heater Attachment Menu

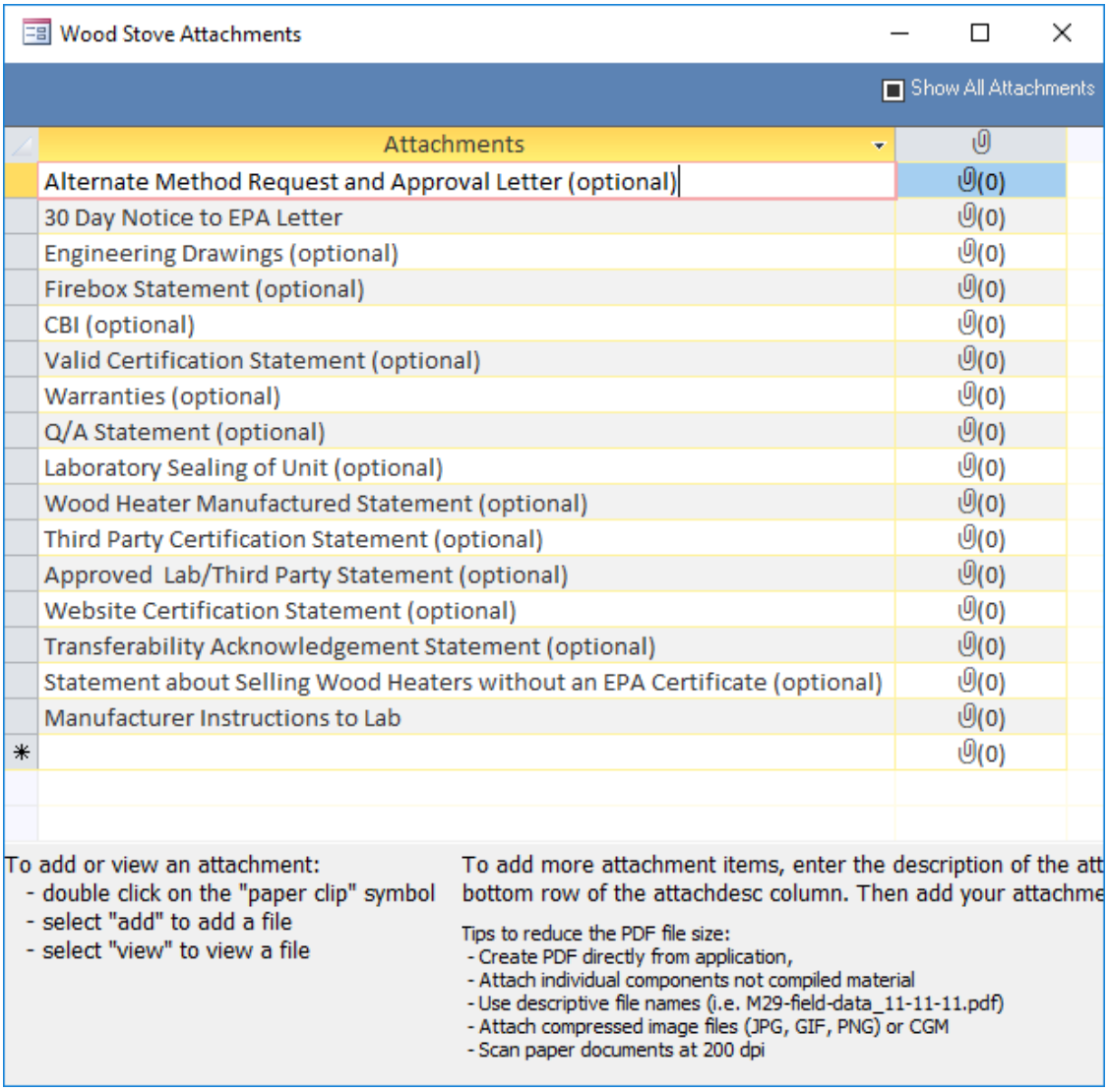


Figure 173 - Wood Heater Attachments list

Chapter 8: Administration

Help/ System Reports

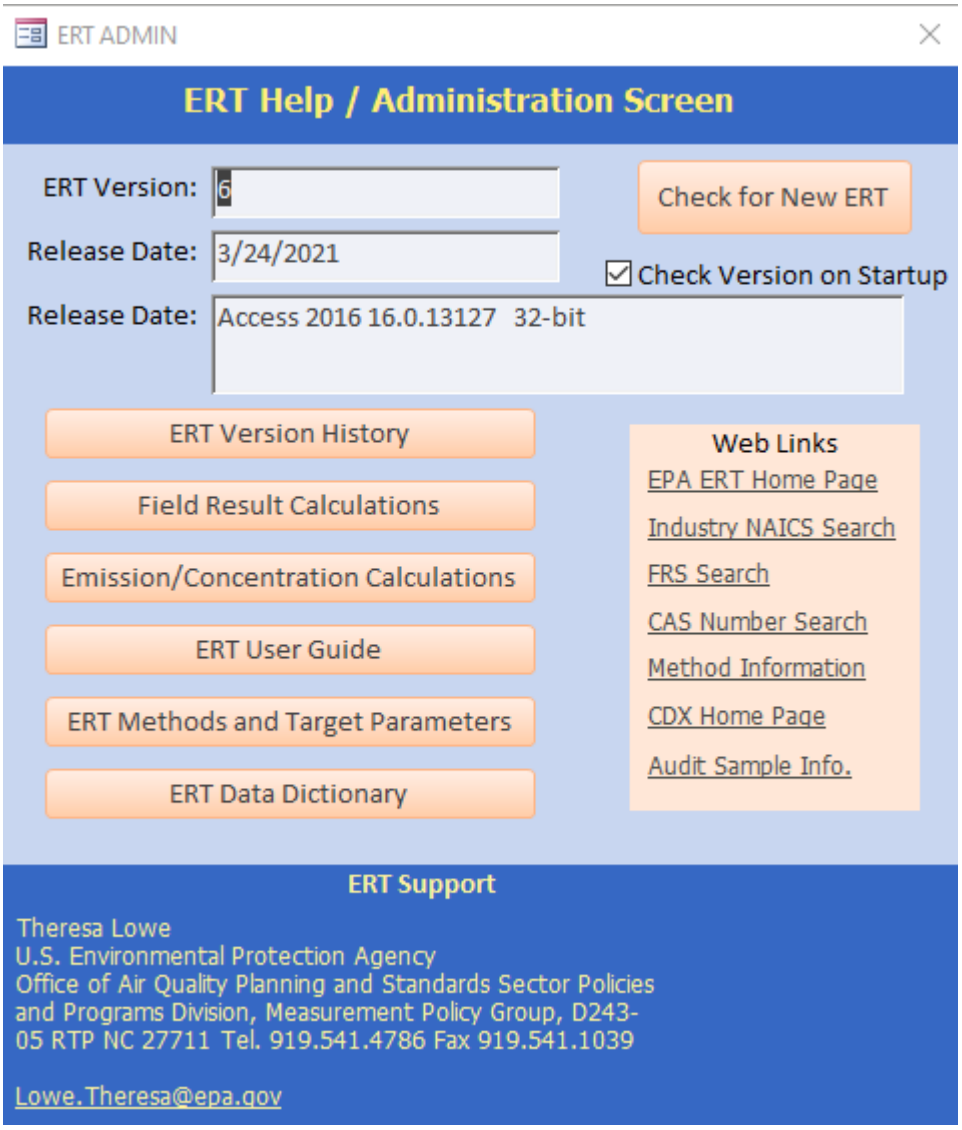


Figure 174 – The ERT Help/Adminstration Screen

The administration area of the ERT includes a "**Help /System (Sys) Reports**" button (Figure 174). Clicking on the button will open the "***ERT Help / administration***" screen. 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
ERT Data Dictionary	

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 whichprovides 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